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Co-Teaching from the Perspective of Students

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While co-teaching has been around for almost 70 years, co-teaching models have been limited when used in higher education courses and have been scarcely researched. Despite this gap in research, co-teaching offers benefits, especially to students (Walters & Misra, 2013). This topic proves important to study because it would allow an understanding of co-teaching approaches as it relates to the growth of undergraduate students in higher education.

For students in a co-teaching classroom, there is the potential for better learning outcomes. As a practice, co-teaching has been implemented to increase student learning outcomes and model collaborative processes within the classroom (Dugan & Letterman, 2008). The increase in student learning outcomes can be attributed to a variety of characteristics offered in the co-teaching classroom. First and foremost, students gain from the diverse knowledge base and experiences of two instructors in the classroom. For example, it is common to pair two or more instructors with different areas of expertise or fields of study when teaching course topics (Kalchman & Kozoll, 2012). Students appreciate when their instructors examine theories and concepts differently, take different stances, and argue from distinct positions while in the classroom (Harris & Harvey, 2000). Additionally, through such perspectives, students enhance their social skills and therefore contribute to a stronger classroom community (Wu, 2012). The different perspectives, areas of study, and teaching methods are linked directly to amplified student interest in subject matter, increased critical thinking skills, and greater class attendance records (Gaytan, 2010; Yanamandram & Noble, 2005). Furthermore, while fostered in a controlled educational environment, the discussion of different opinions by two teachers can model the way for students, who may not always know how to articulate their viewpoints effectively. This can be empowering.

Despite the research revealing positive benefits of co-teaching for students, there is simply not enough of it. Sweigart and Landrum (2015) posit that limited empirical evidence has been collected regarding co-teaching within higher education classrooms. Of the studies conducted, none of the research has utilized group experimental designs to understand whether co-teaching

is an evidence-based practice. McDuffie, Landrum, and Gelman (2008) suggest that co-teaching has the power to be an evidence-based practice; co-teaching allows for individualized instruction for struggling students, more positive reinforcement from teachers, increased student engagement, and individually targeted behavioral interventions. In an attempt to fill a gap in the literature, this study uses an experimental design to assess the impact of co-teaching upon student perceptions of affective and cognitive learning. In addition, qualitative data were collected to explore student perspectives on the benefits and drawbacks of co-teaching. These data were used to answer the following research questions:

1. From the perspective of students, what are the benefits and drawbacks of co-teaching versus traditional approaches?
2. Do students perceive higher levels of affective learning in co-taught or traditional classrooms?
3. Do students perceive higher levels of cognitive learning in co-taught or traditional classrooms?

Literature Review

An examination of existing literature pertaining to the topic of this study resulted in identification of several intersecting themes: co-teaching models, student perspectives on co-teaching, and the impact of co-teaching on learning outcomes.

Co-Teaching Models
According to Villa, Thousand, and Nevin (2004), co-teaching is "two or more people sharing responsibility for teaching some or all of the students assigned to a classroom" (p. 3). When planned and implemented properly, co-teaching is built upon trust, healthy communication, and collaborative approaches (Villa et al., 2004). Furthermore, healthy conversations between co-teaching partners that encourage relationship building, lesson planning, and co-teaching instructional strategies is crucial since the relationship between instructors is a key factor in the success of the co-teaching classroom (Lava, 2012).

According to Potts and Howard (2011), there are six models of co-teaching: (1) one teach, one observe; (2) one teach, one assist; (3) station teaching; (4) parallel teaching; (5) alternative teaching; and (6) team teaching. In the *one teach, one observe* co-teaching classroom, one instructor teaches a lesson while the corresponding teacher observes the students and offers remedial attention to students who are struggling to grasp specific concepts. In *one teach, one assist*, one instructor teaches the lesson while the other floats around the room providing assistance to individuals or groups of students. In *station teaching,* teachers share equal responsibility in implementing the lessons at stations through which students rotate. In *parallel teaching*, each instructor simultaneously provides instruction to a smaller section of students, lowering the teacher-to-student ratio. In *alternative teaching,* teachers provide additional instruction to groups of students when necessary. Finally, in *team teaching*, instructors equally share the planning, teaching, and assessment of all students. When choosing a model, instructors must consider their comfort with planning together, their time commitments, their familiarity with course content, and the size of the classroom (Potts & Howard, 2011). The team-teaching model was used in this study.

Student Perspectives on Co-Teaching
There are a number of benefits associated with co-teaching from the perspective of students: exposure to diverse experiences and backgrounds, individualized instruction, and other positive outcomes. Because co-teaching is a model of collaboration, students have the benefit of learning from two or more instructors. Due to the likelihood of collaboration among instructors from different disciplines and/or with different experiences or identities, Hinton and Downing (1998) posit that co-teaching classrooms often include members of different ethnic, racial, and/or cultural backgrounds. This indicates that students in co-teaching classrooms have a greater likelihood of exposure to diverse individuals and experiences. In addition, the diversity of knowledge and experience that co-teaching instructors bring to the classroom enhances the student learning experience. Students appreciate when their instructors examine theories and concepts differently, take different stances, and argue from distinct positions while in the classroom (Harris & Harvey, 2000). Such distinct positions, while fostered in a controlled educational approach, provide a model for students to model to follow in their own discussions with students and instructors.

Besides exposure to diverse perspectives, co-teaching offers students individualized instruction. In fact, the focus upon collaboration of the co-teaching model helps to foster a learning environment that emphasizes individual needs of students (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). In other words, two instructors can simultaneously address individual students' needs while providing instruction to the rest of the class. With reduced student-teacher ratios, students are likely to be more engaged; this is in part because they receive more individualized instruction, more positive and constructive feedback, and more opportunities for praise or acknowledgment of positive behavior (Sweigart & Landrum, 2015). Individualized instruction also increases opportunities to build better relationships with teachers and to observe effective communication up close (Dugan & Letterman, 2008; Hinton & Downing, 1998).

Finally, research also shows that students leave co-teaching classrooms with more positive outcomes. For example, Nead (1995) found that following a co-teaching experience, students feel more prepared for future courses in their field when compared to students of traditional courses because they are found to successfully integrate disciplines into everyday practice. Johnson, Johnson, and Smith (2000) claim that co-teaching may lead to higher achievement levels, greater retention rates, and improved interpersonal skills. Harris and Harvey (2000) found that the co-teaching model fostered the development of voice and critical thinking skills in a degree program for nontraditional students; such students learned the value of collaborative learning rather than competition when speaking within the classroom. Finally, Beavers and DeTurck (2000) argue co-teaching challenges students' assumptions that "a college course [is] legitimate only when information comes from one source." In other words, co-teaching may provide students with the opportunity to be reflexive about their learning environments and to consider alternative paths to learning. Because of the increasing benefits students gain from co-teaching, it is imperative to examine the student perceptions of the value of co-teaching when compared to traditional, single-instructor classrooms (Dugan & Letterman, 2008).

Although there are clearly benefits to students, co-teaching models are likely not beneficial if they are not implemented properly. For example, Dugan and Letterman (2008) found that co-teachers who do not have clear goals in mind can incite frustration for students. In addition,

Blanchard (2012) posits that students are likely to feel uncomfortable with co-teaching if the instructors are disorganized or difficult to follow; students with more experience in traditional classrooms may also be uncomfortable with co-teaching classrooms because such classrooms are different from the norm. To ensure that these would not be concerns in this study, an effort was made by the co-teachers to develop clear goals, learning objectives, and lesson plans.

Impact of Co-Teaching on Learning Outcomes
Empirical evidence related to student learning within co-teaching classrooms has been neglected, according to Sweigart and Landrum (2015). They conclude that "there is simply a dearth of empirical study of co-teaching in ways that allow for causal inferences about what student outcomes can be attributed to co-teaching" (p. 28). Due to this lack of evidence, this study aims to explore the effects of co-teaching on student affective and cognitive learning.

Affective learning. Wrench, Richmond, and Gorham (2009) define affective learning as "focusing on how teachers and students feel about each other, about the communication process, and about what is being taught and learned" (p. 2). Simply put, affective learning involves a student's feelings, emotions, and acceptance of subject matter (Goodboy, Weber, & Bolkan, 2009). Affective learning is important because it reveals students' respect, appreciation, and value of the knowledge they receive (Mottet, Richmond, & McCroskey, 2006). Gauging student perceptions of affective learning can help instructors to better understand their students and what motivates them to learn.

Cognitive learning. While affective learning focuses on student feelings and attitudes, cognitive learning emphasizes student knowledge. Cognitive learning can be conceptualized as the comprehension of new information and the ability to retain such knowledge (Christophel, 1990). A taxonomy of cognitive learning created by Bloom, Engelhart, Furst, Hill, and Krathwohl (1956) focused on the recall of information and the development of intellectual skills. Bloom et al. posit six hierarchical levels that describe the process of acquiring knowledge: recall, comprehension, application, analysis, synthesis, and evaluation. At lower levels of cognitive learning, students recall information, explain concepts, and apply information in new and meaningful ways. At higher levels of cognitive learning, students are able to analyze, synthesize, and evaluate new information.

Both affective and cognitive learning are crucial to student success. Because of the lack of empirical evidence examining the relationship between co-teaching and affective and cognitive learning, this study explores such a relationship.

Research Design

The purpose of this quasi-experimental study was to examine student perspectives on co-teaching models within higher education classes and to examine the impact of co-teaching on perceived affective and cognitive learning. To do so, both qualitative and quantitative types of data were collected for analysis. It is important to juxtapose the following two designs for the purpose of data analysis:

Co-Teaching Course Design. Two sections of the basic communication course (one section of 25–30 international students and one section of 25–30 American students) at a midsize Midwestern university were combined for 50% of the semester classes. With clear goals in mind, lessons were co-constructed and co-taught by two GTAs. The team-teaching model of co-teaching was used. GTAs equally planned, taught, and took responsibility for the students. Mindful of their strengths and weaknesses, the GTAs would simultaneously deliver lessons, taking the lead at times, and supporting at other times.

Traditional Teaching Course Design. In the traditionally taught classroom of the basic communication course, one GTA teaches the course to a section of approximately 25–30 undergraduate students. The course is taught with traditional methods of instruction such as lecture, discussion, and classroom activities such as small group work and pair shares. Because the two instructors who co-taught the basic communication course did not also teach traditional sections of the course, participants in the control group were solicited from traditional sections of the course with "similar" instructors. In other words, in an attempt to control for differences in affect toward instructors, care was taken to solicit participants from sections whose instructors who had been evaluated (i.e. on course evaluations) in a similar way in previous semesters of teaching the same course.

Data Collection

Recruitment. Following approval from the Institutional Review Board, student participants were recruited through convenience sampling. The recruitment script was read to students in sections of the basic communication course at a midsize Midwestern university. Two sections of students in co-teaching classrooms and two sections of students in traditional classrooms were invited to participate. Students interested in participating were given a subject ID and emailed an anonymous survey through Qualtrics to complete. Students were given extra credit in exchange for their participation.

Participants. Thirty-six undergraduate students enrolled in the basic communication course completed the survey on student perspectives of co-teaching models. The basic communication course was selected because it is taught by GTAs to undergraduate students. Seventeen of the student participants were enrolled in a co-teaching classroom, while 19 student participants were enrolled in a traditional classroom. Of the 36 participants, 14 were female, 19 were male, and 3 participants did not disclose their gender. Aside from gender, demographic data was not collected; this was to protect the anonymity of the participants and to encourage open and honest responses. However, due to the nature of the class (basic communication course), it can be assumed that the participants were largely freshmen, aged 18–21. It can also be assumed that the participants in the experimental group were a mix of international and American students since the two sections collaborating included an international section and an open enrollment section. The participants in the control group came from open enrollment sections and were likely predominantly American students.

Procedures

Previous research shows that it is important to understand the learning experiences of students from their perspectives (e.g., Van Manen, 1990). In addition, many studies have demonstrated student evaluations to be reliable and valid instruments for measuring learning outcomes (e.g.,

d'Apollonia & Abrami, 1997; Marsh & Roche, 1997). In fact, d'Apollonia and Abrami (1997) found that almost half of the variation in student learning was explained by student perceptions of teaching effectiveness. Therefore, student perceptions of co-teaching, affective learning, and cognitive learning were chosen as the focus of this study.

Survey instrumentation. The survey consisted of open-ended questions, two subscales of the Affect toward Instructor Instrument to measure affective learning, and the Cognitive Learning scale to measure cognitive learning.

Open-ended questions. In an attempt to understand the learning experience from students' perspective as Van Manen (1990) suggests, we asked seven open-ended questions of participants in the survey. Students received open textboxes to respond at any length. This allowed for a qualitative exploration of student perceptions of co-teaching approaches in the college classroom. We asked participants in both co-teaching and traditional classrooms to evaluate classroom approaches they perceived to be effective and ineffective. Sample questions asked of co-teaching participants include: "What approaches did your GTA use to illustrate collaborative teaching inside and outside of the classroom?" and "Of these approaches, which did you find to be the most/least effective?" We asked students in traditional classrooms similar questions, adapted for their classroom experiences.

Affect toward instructor. To assess student perceptions of affective learning, we utilized two subscales of the Affect toward Instructor (ATI) Instrument developed by McCroskey (1994). The scale has 16 items for assessment of student affect towards the class and affect toward the instructor. McCroskey (1994) reports high internal reliability of the scale, with an average Cronbach's alpha of .90. Additionally, the face validity of the scale is high as it is a general evaluative tool for affective learning in research (e.g., Christophel, 1990; Chory & McCroskey, 1999; Sanders & Wiseman, 1990).

In this study, only two of the four subscales of the ATI were used: (a) Affect toward Instructor scale and (b) Affect toward Taking Classes with this Instructor scale. The two 4-item Likert scales allow students to respond to this scale variable using a range from 1 to 7, with 7 indicating high levels of affect and 1 indicating low levels of affect. In the present study, the Cronbach's alpha of the ATI was .93, confirming the ATI as a reliable instrument to measure affective learning. In addition, alphas were high for both subscales: .83 for the Affect toward Instructor subscale and .97 for the Affect toward Taking Classes with this Instructor subscale.

Cognitive Learning Scale. To determine student perceptions of cognitive learning, we administered the Cognitive Learning scale (CLS) developed by Richmond, Gorham, and McCroskey (1987). The 2-item Likert scale asks students to report the amount they feel they learned in the current course compared to the amount learned in an ideal course. Response options on this scale variable ranged from 0 (student learned nothing) to 9 (student learned more than any other class they have had). The score from the first response is subtracted from the score of the second response to obtain a "learning loss" score. Richmond et al. do not report an estimate of alpha reliability due to the fact that the scale consists of just two items. However, in their pilot study, they report test-retest reliabilities of the instrument ranging from .85 to .88.

Methods of Analysis

Qualitative Data Analysis. We analyzed responses to the open-ended questions of the survey using a thematic analysis approach (Owen, 1984). We used three criteria for theme selection: recurrence, repetition, and forcefulness. Recurrence involves finding two or more responses that share the same meaning, but not necessarily the same words verbatim. For example, themes such as "classroom discussion" and "group work" surfaced during the coding process. Repetition is found by identifying repeated words, phrases, and sentences in the data. For example, participants repeatedly used words such as "interaction," "collaboration," and "communication.". Forcefulness is identified by inflection, volume, and dramatic pauses; this is exhibited in the text with capitalized words and punctuation used to accent information. Although this is one of the criteria of Owen's, we did not use it because participants did not add emphasis to words or phrases with use of punctuation or capitalization in their open-ended survey responses.

Quantitative Data Analysis. We used independent samples t tests to test for significant differences in the means between student participants in the co-teaching classrooms and student participants in the control group on measures of affective and cognitive learning. Additionally, we reported effect sizes to allow a better understanding of the t-test results. An effect size of $r = .2$ indicated a small effect, while $r = .5$ indicated a medium effect and $r = .8$ indicated a large effect.

Research Findings and Discussion

The results of qualitative data analysis points to four benefits and two drawbacks of co-teaching. The benefits indicate the potential for enhanced affective and cognitive learning of students. On the other hand, the results of quantitative data analysis reveal significantly higher levels of perceived affective learning in co-teaching classrooms but no significant differences in perceptions of cognitive learning. The following description of the results speak to the research questions posed for this study.

Benefits and Drawbacks of Co-Teaching per Students

Benefits. Four themes emerged from the data as pertinent to the benefits of co-teaching from the perspective of students. These included: increased instructor perspectives, a variety of teaching styles, increased communication skills, and a unique approach compared to the traditional style.

Increased instructor perspectives. Students in both co-teaching and traditional classrooms found merit in having increased instructor perspectives in the classroom because such perspectives enhanced lecture, discussion, and classroom activities. For example, one student from the co-teaching classroom noted, "Any question asked was perfectly answered because it was always confirmed by the second person, so that is like two teachers answering one question." Even during moments of uncertainty between the instructors, students noticed the importance of different perspectives. "It is good to have another teacher in the class so they can cover each other," claimed another student. When one instructor was uncertain about how to respond to a student's question, the instructor could often rely on a co-teaching partner.

Students from the traditional class also recognized the benefit of multiple perspectives. One student said, "I would prefer collaborative teaching because I feel like it would help [students] focus on both teachers rather than having one professor talking the whole time. I also believe that each professor knows different information." In reflecting on a recent co-teaching experience, another traditional student made a similar claim: "It helps to have more than one mind in the fold because sometimes they are able to present the material better than the other." Clearly, students in both the co-teaching and the traditional classroom recognized additional perspectives as a benefit.

Variety of teaching styles. In addition to more perspectives, students in co-teaching classrooms are exposed to a variety of teaching styles. One student said, "You get to learn from different teachers and therefore with different techniques." Another student claimed co-teaching "helped because [both instructors] had different teaching styles." While these students did not give specific examples that illustrate the difference in teaching styles between their instructors, clearly they found merit in the co-teaching classroom structure as a result of the various teaching styles.

Students from the traditional class were less likely to see the variety of teaching styles as a benefit of co-teaching. However, one student from a traditional classroom claimed, "Not everyone teaches the same. I might enroll in a co-teaching course and find that both TAs don't explain things very well, but it is a chance that I am willing to take." While most traditional students (84%) did not claim different teaching styles to be a benefit, some expressed interest due to the opportunity to experience different teaching styles. For example, one participant posited, "I would be likely to take a co-teaching class because it would be cool to experience the teaching style and see what it is about." For the traditional classroom students, co-teaching was appealing because it offered an opportunity to experience different teaching styles.

Increased communication skills. The co-taught class used in this study focused on combining an international student section with a domestic student section, with a special emphasis on building cultural competency. One student's words confirmed the utility of this structure for enhanced communication skills: "The co-teaching model was a really great approach and was a platform for international students to meet the American students and interact with them and learn about their native culture." Due to the collaborative learning approaches utilized in this co-teaching setting, students reported increased communication skills. Specifically, students reported the benefits of communication in small group activities, the increased likelihood to answer questions in class, and the feeling of having their voices heard in the classroom. For example, one student stated: "The co-teaching model enabled us to learn and have good communication. There was hesitation at first, but when we started talking it became effective as everyone was really helpful in everything, and interaction made it easier." In addition to feeling more supported, students felt less nervous about participating. One student claimed that this was because "students got comfortable with seeing a particular face more often." Another student claimed that the "co-teaching model helps students easily say their own opinion." While students in the traditional classroom reported enjoyment with classroom activities and discussions, none reported an increase in communication skills or opportunities to increase these skills as a benefit of co-teaching.

Alternative method offers fresh perspective. Traditional classrooms with one instructor are considered the norm in education, yet the students in co-teaching and traditional classrooms both discussed interest in the co-teaching approach as an alternative method. For example, one student claimed, "Most of the students have traditional types of classes, so I think it is good to have some [co-taught] classes … so that students can feel different than their other classes." This response illustrated the need to break from the repetitive nature of traditional teaching and implement a new teaching style that allows learning to be fresh and exciting. Another student offered a more detailed explanation of the benefits of co-teaching:

> I think [co-teaching] fits my personality of learning … it is an interesting way to take a course, and I have more resources and professors to help me understand. Any opportunity I can get with a co-teaching course, I would most likely take it without hesitation.

These words convey the co-teaching classroom as unique in that it offers opportunities for additional resources and may even be better for some learning styles. Overall, students in traditional classes seemed likely to enroll in co-teaching course despite the fact that it was a setting with which they likely did not have prior experience.

Drawbacks. Two drawbacks of co-teaching emerged from the qualitative data: confusion about course structure and dismissal of the traditional approach.

Confused by course structure. Co-teaching and traditional students found the structure of co-teaching courses to be confusing at times. A student from a co-teaching classroom said he prefers traditional approaches in the classroom because "co-teaching can get overwhelming trying to follow both teachers instead of one." Another co-teaching student claimed the use of time in the co-teaching classroom was confusing when compared to traditional classrooms. This student explained, "I feel like the fact that we only did collaborative days on Thursdays kind of made it feel like we had different classes. There wasn't enough time with other students." However, these comments reflected the opinion of just these two students from the co-teaching classroom; the majority of these students expressed a preference for the co-teaching model.

For some traditional students, the idea of co-teaching seemed like a foreign concept that would lead to confusion. For example, one student claimed the following: "Collaborative teaching can be confusing because each instructor has his/her own style of teaching; the students might be confused if trying to listen to both instructors at the same time." Another student reaffirmed this idea, saying, "I like traditional teaching because only one person is giving me information. When two people are giving me information, sometimes things become unclear as to what we're supposed to do." In fact, over one-third of the participants surveyed in the traditional classroom claimed confusion in co-teaching courses to be justification to not enroll in a co-taught course.

Dismisses traditional approaches. Some students perceived that the co-teaching model contradicts traditional teaching and learning approaches with which students are familiar. For example, one student said,

> I do not want to experiment with my education. Therefore, I want to take classes like they have been taught for hundreds of years and how I grew up. Why spend all my life going to school only to get to college and have to relearn how the education system works?

Another student claimed, "I have never been in a co-teaching class so I am unsure if I would like it or not. I just like the traditional [classroom] with a teacher. I feel like having two would make it overwhelming." While some students were certain they did not want to experience co-teaching, others were simply afraid to switch from the norm. One student claimed that while enjoying the co-teaching experience, he/she was simply unprepared to make the switch from traditional to co-teaching classrooms in the future. Another student claimed co-teaching was simply too chaotic when compared to traditional classrooms, thus the desire to enroll in co-teaching courses was low. While many students found merit in co-teaching, drawbacks were also present regarding their perspectives of co-teaching classrooms.

Perceptions of Affective Learning in Co-Taught vs. Traditional Classrooms

We conducted an independent samples t test to compare student affect toward instructor in co-teaching and traditional classrooms. There was a significant difference between the ATI scores for student affect in co-teaching classrooms, $t(34) = 3.54$, $p = .001$. The mean score for students in the co-taught classrooms ($M = 6.78$, $SD = .384$) was significantly higher than the mean for students in traditional classrooms ($M = 5.61$, $SD = 1.31$). Results suggest that students in co-teaching classrooms perceive higher levels of affective learning than students in traditional classrooms. Results indicated a medium effect size ($r = .518$).

Additionally, we ran independent samples t tests for the two subscales of the ATI. On the Affect toward Instructor subscale, there was a significant different between the scores for student affect toward instructor in co-teaching classrooms, $t(34) = 2.40$, $p = .022$. The mean score for students in the co-taught classrooms ($M = 6.85$, $SD = .343$) was significantly higher than the mean for students in traditional classrooms ($M = 6.25$, $SD = .982$). These results suggest that students in co-teaching classrooms perceive higher levels of affect towards their instructor than students in traditional classrooms. Results indicated a small effect size ($r = .377$).

On the Affect toward Taking Classes with this Instructor subscale, there was a significant difference between the scores for student affect toward taking classes with their instructor in co-teaching classrooms, $t(34) = 3.68$, $p = .001$. The mean score for students in the co-taught classrooms ($M = 6.70$, $SD = .56$) was significantly higher than the mean for students in traditional classrooms ($M = 4.97$, $SD = 1.86$). These results suggest that students in co-teaching classrooms were more likely to re-enroll in another course with the same instructor(s) than students in traditional classrooms. Results indicated a medium effect size ($r = .532$).

Perceptions of Cognitive Learning in Co-Taught vs. Traditional Classrooms

An independent samples t test used to compare "learning loss" in co-teaching and traditional classrooms revealed no significant difference, $t(34) = -1.81$, $p = .079$. The mean score for students in the co-taught classrooms ($M = -.352$, $SD = 1.41$) was similar to the mean for students in traditional classrooms ($M = .368$, $SD = .955$), suggesting no significant differences in student perceptions of cognitive learning by students in this sample.

It is important to note that the results of qualitative data analysis suggest that students in higher education value the opportunities presented by co-teaching models in higher education. While the findings reflect a positive perception of co-teaching models, students also perceived drawbacks. The findings from quantitative data analysis suggest that students in co-teaching classrooms have higher levels of affect towards their instructor(s) when compared to students in traditional classrooms. However, there were not significant differences in perceptions of cognitive learning between students in co-teaching and traditional classrooms.

Significance and Implications for Practice

The findings of this study suggest the need to consider the potential of co-teaching as a tool to encourage reflexivity and to increase opportunities for student learning.

Co-Teaching as a Tool to Encourage Reflexivity

Results of this study suggest that co-teaching may encourage students to reflect on their learning style and their needs within the educational system. Interestingly, students engaged in reflexivity when examining the benefits of co-teaching as compared to traditional approaches. The students found co-teaching offered an avenue for learning different perspectives from their instructors, modeled different teaching styles and approaches in the classroom, and increased the opportunity to seek advice or help. This is consistent with Beavers and DeTurck's (2000) finding that co-teaching challenged students' assumptions about the nature of education in college classrooms. When students in the current study made claims pertaining to the value of co-teaching for various reasons, it was clear that they were reflecting upon their education, comparing their observations to their experiences within traditional classrooms. Thus, experience in the co-teaching classroom provided the platform for students to explore and to be reflexive about their education and the approaches that were best for them. In the end, these students found their experiences to be positive and even noted their likelihood of enrolling in another co-teaching classroom.

On the other hand, students in traditional classrooms did not have the platform from which to explore co-teaching classrooms as a comparison. As a result, they were far less reflexive in their thinking about the potential of other educational approaches. Many reported that they were comfortable in their traditional classroom setting and expressed resistance to exploring new approaches. One participant even stated that it would be problematic to "experiment with their education." The students in traditional classrooms were less willing to enroll in co-teaching classrooms and were not encouraged to reflect on their educational experiences in higher education.

The findings suggest that co-teaching students have opportunities to compare and reflect on their classroom experiences and ultimately evaluate the effectiveness of co-teaching classrooms. This level of reflexivity encourages students to be invested in the educational process, leading them to be less passive and instead make conscious decisions that contribute to their learning.

Potential to Enhance Student Learning

The findings of this study suggest that the co-teaching classroom has the potential to enhance student learning through variety (i.e. diverse instructor perspectives and experiences) and learning outcomes.

The participants in this study found co-teaching offered an opportunity for increased student learning when compared to traditional teaching approaches. Students believed that having more than one instructor in the classroom provided a wealth of expertise. For example, students in co-teaching classrooms appreciated getting two answers to questions they asked in class because it provided greater depth of understanding of course material. Additionally, students in co-teaching classrooms heard about different life experiences from their instructors, and how to relate those experiences to course content. The findings of this study are congruent with those of Yanamandram and Noble (2005), who found that co-teaching allows students to experience different perspectives in the classroom, especially as it relates to course content and application. The implementation of co-teaching models in higher education allows students to experience content application through incorporation of diverse experiences and viewpoints that may not be offered in a traditional learning format.

The findings pertinent to learning outcomes in this study also indicate the potential for enhanced student learning. Co-teaching participants in this study reported higher levels of perceived affective learning than traditional participants. In other words, students in the co-teaching classrooms liked their teachers more and were more likely to enroll in future courses with those instructors. This is significant because when students like their teachers and courses, they are more motivated to engage, and they tend to learn more (Yanamandram & Noble, 2005). In fact, some have even argued that affective learning is a more valid indicator of effective instruction than cognitive learning (e.g., Richmond & McCroskey, 1992). However, these findings must be considered with caution. The mean differences on the ATI scale as a whole and on both subscales of the ATI were statistically significant between participants in co-teaching and traditional classrooms. These differences were conceptually distinct and therefore meaningful on the ATI as a whole and on the subscale pertinent to the likelihood to enroll in future classes with their instructors. Yet, it is important to note that although the mean difference was statistically significant on the subscale pertaining to affect toward the instructor, the difference in this case was not conceptually distinct. In both co-teaching and traditional classrooms, student participants reported high levels of affect for the instructor.

In addition, the lack of significance in perceived levels of cognitive learning between co-teaching and traditional student participants in this study suggests that students are going to find avenues to be successful in the classroom, regardless of their classroom structure. This is upheld by Bolkan, Goodboy, and Myers (2017), who found that students self-regulate their learning despite their perception of the teaching effectiveness of the instructor. Perhaps this explains the small difference in cognitive learning outcomes between co-teaching classrooms and traditional classrooms, hinting that students will be audacious in their learning techniques regardless of delivery style and instructional techniques. Furthermore, these findings are reassuring. While it may seek risky to adopt co-teaching models and change the way students learn in higher education, there is assurance in the fact that students appear to self-regulate and perceive that they will succeed regardless of the instructional approach.

Further research is warranted in exploring the influence of co-teaching on student learning. Participants in this study found diversity of instructor perspectives, different expertise and experiences, and varying instructional styles to be benefits to co-teaching; ultimately, these also contribute to student learning. However, no differences were found in student perceptions of cognitive learning; additional research is needed to explore this further.

Limitations

This study had several limitations that may have influenced the results. One of the limitations was the small sample size. Due to the limited pool of participants in co-teaching classrooms, convenience sampling was used and resulted in a fairly low number of participants. The sample was largely homogeneous, comprised of students from the same communication department. In addition, no pretest was used to compare levels of affective or cognitive learning from the beginning to the end of the semester. These limit generalizability of findings. A similar study with the addition of a pretest and a larger, more heterogeneous sample would allow examination of co-teaching in departments outside of the communication discipline and allow for generalizability of results. In addition, this study examined *perceived*, not *actual* levels of cognitive learning. Student perceptions were examined and not course grades, test scores, or other performance measures of cognitive learning, which may be better indicators of actual levels of cognitive learning.

In addition to using larger, more diverse samples, future research could examine how the gender, race, and/or experience level of co-teaching instructors influences student perceptions of affective and cognitive learning. To address the limitation of this study in measures of cognitive learning, future research could collect data using performance measures of cognitive learning.

Conclusions

The findings of this study illustrate a variety of benefits of co-teaching from the perspective of undergraduate students. Students claimed benefitting from diverse instructor perspectives and teaching styles, increased communication skills, and the nontraditional nature of the approach. Furthermore, students in co-teaching classrooms reported higher levels of perceived affective learning. While there were numerous benefits, students reported drawbacks as well. Some were confused by the co-teaching structure and felt co-teaching dismisses traditional learning approaches. Finally, there were no significant differences in perceptions of cognitive learning, which may be due to the fact that students tend to self-regulate and adapt to their learning environment. Future research to further examine the utility and benefits of co-teaching in higher education is warranted and encouraged.

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