

Co-Teaching in Higher Education: Mentoring as Faculty Development

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"In learning you will teach, and in teaching you will learn." ~
Phil Collins – Musician/Composer

This paper develops the concept of mentoring through co-teaching as a framework for faculty development in higher education. Mentoring relationships provide an excellent method of improving growth and development of workers within virtually every profession. As a structure for professional development, a mentoring model centered on the concept of co-teaching can maximize instructional competency and scholarship for both faculty and graduate students in the higher education setting. Implementation of successful co-teaching strategies into the higher education mentoring environment requires consideration of several factors, including an understanding of the model, creation of a joint teaching plan, and ongoing development of a collaborative relationship. Creating learning through co-teaching experiences may enhance mentoring relationships, produce better faculty, enrich experiences for students, and empower all to become more effective and self-directed learners in the 21st century.

Mentoring as Teaching Scholarship

There are many challenges in the world of the academia. One of the most critical issues for higher education today is the need to produce 21st century learners with critical thinking and problem-solving skills (OECD, 2018). In order to meet this challenge, faculty have recognized the need to move from a traditional teacher-directed approach to a more learner-centered approach, thus shifting toward an andragogical framework for learning (Knowles, 1980). This change in paradigm has a direct implication on the Scholarship of Teaching and Learning (SoTL), as at the core of the SoTL paradigm is the concept of shared knowledge and mutual learning (Cassard & Sloboda, 2014; Potter & Kustra, 2011). Indeed, sharing of acquired knowledge is one hallmark of a true scholar. We, as have others (Kreber, 2007; Trask, Marotz-Baden, Settles, Gentry, & Berke, 2009), argue that teaching scholarship includes mentoring and falls within the SoTL domain. As such, it should allow for the development of a collaborative, mutually respectful relationship based on andragogical principles (Knowles, 1980; Merriam & Caffarella, 1991). Therefore, while mentoring in academia has been traditionally viewed as a method to increase the scholarship of mentees, we view the mentoring process itself as being teaching scholarship. Mentoring is critical to authentic, evidenced-based methods of professionalizing the teaching practice, as good teachers require nurture and guidance on best practices.

Mentoring as a form of faculty development can function as an invaluable tool for increasing instructional skills which, in turn, improve the higher education learning environment (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). In virtually every

profession, mentoring relationships are considered excellent routes for growth and development of workers within that profession (Ramaswami & Dreher, 2011). In higher education, mentoring can be employed as a valuable approach to aid the development of faculty (Boyle & Boice, 1998a; Hénard & Roseveare, 2012; Johnson et al., 2016). Yet, for its importance, there is no standardized mentoring model in academia (Nick et al., 2012; Ortiz-Walters & Gilson, 2005).

Mentoring in academia takes a variety of forms, partially because of the independent nature of academicians, but also as a response to the individual differences among participants. Gender, race, ethnicity, culture, disability, and generation are all elements that must be factored into a successful mentoring strategy (Crisp & Cruz, 2009; Dhed & Mollica, 2013). Today, the diverse, talented, and well-qualified group of those seeking faculty positions in higher education includes increasing numbers of candidates from varied backgrounds and abilities. Diversity in all forms adds positive value to the intellectual and cultural array on a college or university campus. Moreover, a diverse faculty provides valuable role models for college students while also enhancing learning outcomes (Badiali & Titus, 2010; Gillespie & Israetel, 2008). Whatever their background, history has shown that new faculty and graduate students require mentoring in order to become successful in academia (Boyle & Boice, 1998b; Johnson, 2015; Zellers, Howard, & Barcic, 2008). We suggest that co-teaching is a valuable way of mentoring the diverse groups in academia, thus ensuring success in the higher education environment for faculty, graduate students, and 21st century learners from all backgrounds.

This paper will focus on the concept of mentoring and the practical instructional strategies to increase the development of faculty and graduate students of diverse

backgrounds within higher education. Our intent is to present the basics of a mentoring model based on the concept of co-teaching, and to use co-teaching as a platform for an instructional protocol that maximizes the success of faculty, graduate students, and instructors in academia. We start from the premise that mentoring may be the most important variable related to academic and career success for graduate students (Boyle & Boice, 1998a), early career development of faculty (Duda, 2004; Morin & Ashton, 2004; Malaney, 1988), and retention of diverse faculty in higher education (Beretz, 2003; Hénard & Roseveare, 2012; Piercy et al., 2005). Mentoring through co-teaching may create a better learning environment for both faculty and students by supporting a strong, diverse faculty with a common set of instructional practices. In building our model, we start by providing our definition of mentoring, then develop our concept of co-teaching, and finally describe the key components for a successful Co-Teaching as Mentoring (CTM) strategy and best practices for mentoring in higher education.

Higher Education Mentoring

Since it has been utilized in a variety of workspaces for multiple centuries, many definitions for mentoring can be found in the literature. Broadly defined, mentoring includes techniques as contrasting as the practices of apprenticeship as used in various permutations throughout human history that involve some form of tutoring (D'Abate, Eddy, & Tannebaum, 2003). A definition that is useful for higher educational mentoring involves the process of one individual supporting, teaching, leading, and serving as the role model for another individual (Buell, 2004). This definition describes well the role of the traditional mentor, who serves as an experienced advisor in the teaching setting in higher education (Brown, 1999; Johnson, 2015). We propose expansion of this mentoring concept to incorporate joint participation of both the mentor/mentee by using reciprocal communication and collaboration within a co-teaching environment, in essence, CTM. We will argue that the CTM approach represents a successful strategy for mentoring academic professionals in the higher education learning environment (Johnson, 2015; Orlander, Gupta, Finke, Manning, & Hershmann, 2000).

While a long-held practice in many K-12 institutions, awareness of mentoring as co-teaching needs to be promoted in higher education for the development of new faculty, those in graduate teaching programs, or doctoral students who plan on going into academia (Boyle & Boice, 1998a; Harris & Harvey, 2000; Henderson, Beach, & Famiano, 2007; Johnson, 2015; Lester & Evan, 2009). As doctoral programs remain the premier training ground for the world's future scientists

and scholars, higher education needs to ensure mentoring opportunities for graduate students so they can develop into successful, productive faculty members (Clark, Harden, & Johnson, 2000; Johnson, 2002).

In addition to aiding new tenure-track faculty and doctoral students, mentorship programs are also essential for success of adjunct professors, instructors, and other graduate students in the higher education environment (Walters & Misra, 2013). Sparkman, Maulding, and Roberts (2012) found that success in college, as defined by student retention and academic performance, may be related to other variables or combinations of variables connected to mentoring, including development of emotional intelligence, and the variety of interactions with faculty, including cooperative learning experiences. Given this correlation, we propose that a well-designed CTM model can provide many of the key components for a successful mentoring program in higher education, for faculty and graduate students alike, by developing instructional best practices within a collaborative relationship.

Co-Teaching in Higher Education

The higher education environment includes a need to focus on many different issues, such as diversity, inclusion, problem-solving, and other issues (Kuh, 2007). Co-teaching and collaboration can assist faculty in the higher education environment to manage these diverse issues. In higher education and professional schools, co-teaching often equates to having multiple instructors present material independently as a series of related lectures (Bacharach, Heck, & Dahlberg, 2011). We are interested in an alternative model, whereby instructors interact more directly with one another, are often present in the same class sessions, and prepare for the entire curricula as a unit. This forms the basis of the proposed CTM model in this paper.

Co-Teaching as Mentoring (CTM)

The specific form of mentoring in higher education highlighted in this concept paper is co-teaching with either a graduate student or an instructional colleague. Both formal and informal methods of mentoring are included in the CTM model. Bacharach and colleagues (2011) define co-teaching as two instructors working together directly for student teaching; sharing responsibility for the planning, organization, delivery, and assessment of instruction; and sharing the physical space in which learning occurs. The senior (i.e., in terms of experience, not age) instructor or teacher serves as the formal mentor, with the colleague (i.e., graduate student or junior faculty member)

being the mentored protégé. The actual roles and responsibilities in CTM for the mentor / mentee are discussed later in this paper.

Model of Co-Teaching as Mentoring (CTM)

The purpose for co-teaching in higher education is for new and future faculty to develop in all areas of the teaching discipline and become highly skilled facilitators of learning. Sharing of the curriculum, classroom, and students during co-teaching allows for both the mentor and mentee to benefit from the experience. CTM is an excellent model for mentoring in higher education as it allows for negotiation and collaboration of teaching roles, takes advantage of the expertise that each person brings to the partnership / teaching experience, and helps to set aside assumptions about traditional roles, thereby forging new ways of thinking, teaching, and learning (Brookfield, 2017; Harris & Harvey, 2000). The mentee, be it graduate student or new faculty member, is allowed to be fully engaged in teaching, while experiencing active mentoring.

Different from traditional student teaching models where the mentor separates from classroom instruction as time progresses, CTM retains the expertise and added value of the faculty mentor as an active collaborator throughout the entire teaching and learning experience (Mastropieri et al., 2005). CTM as co-teaching allows for professional growth during the mentoring process based on reflective dialogue that occurs before, during, and after the experience (Brookfield, 2017; Lester & Evans, 2009). Both self-reflection and collaborative reflection are essential components in CTM, and they develop based on the teaching and mentoring experiences that occur during the co-teaching process.

Co-teaching can be synchronous or asynchronous. The asynchronous model is common in professional schools and generally involves individuals providing a discrete lecture set during a course, often completely independent of other instructors. In contrast, the CTM model focuses on the synchronous approach. Synchronous co-teaching occurs when both instructors present material together (Beninghof, 2012; Cook & Friend, 1995). Teachers participate equally by creating discussion and building on concepts the other teacher has presented in the same lesson, usually in the same learning space.

Synchronous co-teaching requires both cooperation and a commitment of time from each instructor (Beninghof, 2012). Time is needed for role development, course planning, and coordination of teaching styles. It may also demand a higher level of trust to allow one teacher to empower another teacher in his/her classroom and to share course materials and responsibilities. When synchronous co-teaching works, innovative approaches and spontaneity are usually the

result (Gillespie & Israel, 2008). This form of co-teaching is the essence of CTM in that it involves mentoring through development and nurturing of the mentor/mentee relationship. Results from this form of mentoring can lead to highly collaborative and authentic outcomes, with the added element that it provides opportunities for both the mentor and mentee in terms of shared experiences (Beard & Wilson, 2002; Kreber, 2007). The results of CTM are authentic and form the basis for future successful experiences and scholarship of teaching as individuals advance in academia (Kreber, 2007).

Strategies for Success in Mentoring through Co-Teaching

Over the past decade, versions of co-teaching strategies have been successfully adapted for practicing faculty use when mentoring pre-service faculty during student teaching (Bacharach et al., 2011). Following these examples, we argue that co-teaching strategies can be adapted to provide a mentoring framework in higher education. The approach allows all participants to be actively engaged in the shared work of planning, organizing, and delivering, as well as assessing instruction and outcomes. Implementation of successful co-teaching strategies in the higher education mentoring environment requires consideration of several factors, including an understanding of the learner (both mentor / mentee), regular planning, and ongoing development of a collaborative relationship.

Adult Learning Principles

Research suggests that mentors and mentees in a CTM experience should be aware of their differences and their values in order to perform effectively (Conderman, Bresnahan, & Pedersen, 2009; Lester & Evans, 2009). This means that the mentor/mentee must develop an appreciation for the other's preferences, attributes, and stages of development (Crow & Smith, 2005; Di Prospero & Bhimji-Hewitt, 2011). The psychosocial development of both the mentor and mentee may include generational attitudes toward work and other characteristics that are important for both to understand (Merriam & Caffarella, 1991; Mastropieri et al., 2005; Nelsey & Brownie, 2012). For instance, a faculty member born in the 1950's (Baby Boomer generation) may initially have difficulty mentoring a new faculty member born in the 1980's (Millennial) due to their different developmental experiences and values (D'Abate et al., 2003; Johnson, 2002; Nelsey & Brownie, 2012). However, the existence of differing life experiences among mentors/mentees may be a highly valuable reciprocal learning opportunity when approached properly by both parties.

Thus, a key consideration of the CTM model is that the both the mentor and mentee are adult learners. Both of the learners have significant past experiences that can serve as resources for learning, tend to be self-directed, and are generally intrinsically motivated (Knowles, 1980). Therefore, in developing a CTM mentoring relationship, both parties need to have an understanding of the interplay between psychosocial experiences and thinking of adult learners (Merriam & Caffarella, 1991). Building awareness of how adults learn also develops insight into the different types of learning strategies that may be used by the mentor and mentee in the classroom, as both will have individual preferences and values in terms of learning. To ensure a positive outcome from the CTM experience, the mentor and mentee need to use this knowledge to create a balanced use of teaching approaches (Merriam & Caffarella, 1991).

One of the most difficult issues for the mentor/adult learner (vs. the mentee/adult learner) in the academic environment is to understand how to share creative instructional products yet retain academic freedom and a position of expert learner (Gappa & Austin, 2010). In developing a lesson or any curricula, the mentor and mentee need to understand the process of compromise. Often, the mentor, who rightfully has a sense of ownership and pride about their scholarly products, may have developed the original course and instructional materials that will be used in the CTM experience individually. This may make it difficult for them to take input from the mentee during the curriculum development and co-teaching process. It will be especially important for the mentor to provide an atmosphere that encourages collaboration when actually teaching the course with a mentee. Mentors need to have the capability to plan, observe, and facilitate discussions effectively with their mentees regarding curriculum and other issues (Duda, 2004; Harris & Harvey, 2000). Collaboration and communication strategies are discussed in the following sections.

Planning for CTM

The first step in CTM is creation of a planning process which begins well in advance of when instruction occurs. The definition of co-teaching and the roles in a co-teaching model need to be detailed and understood by both the mentor and mentee. During the planning process, the mentor and mentee team also need to discuss the philosophy of learning and the expectations for the roles of instructor and student. It is crucial that each person understands the viewpoint of the other and that they articulate a common view for the course objectives in order to avoid conflict and confusion for students (Bacharach et al., 2011; Johnson, 2015). For instance, it would be important if a mentor was a Traditionalist

(teacher as expert) and the mentee was a Radicalist (teacher as provocateur) to discuss their philosophies on the learning environment (Zinn, 2004). Describing and negotiating their differences in teaching and learning philosophies would be a valuable first session.

Thus, the first goal of an effective CTM relationship is to develop parity during the initial planning process, no matter what the philosophical differences. Parity (i.e., equality) ensures that the mentor's and mentee's instructional contributions are equally valued and implies shared power and decision making for the instructional process (Conderman et al., 2009; Lester & Evans, 2009). In effect, co-teachers collaborate to divide responsibilities and share accountability for student learning. This is different from more traditional models of instruction or mentoring in higher education, in which the mentor directs the experience with minimal input from the mentee (Johnson, 2015).

Parity can be a difficult concept to implement, but it lays the foundation for the CTM relationship. According to Bacharach et al. (2011), the following factors are most important to parity in co-teaching:

- Equivalent instructional time;
- Equal classroom management and discipline responsibilities;
- Use of language like “we,” “us,” or “our” to the students when describing the course and philosophies;
- Similar work/contact with ALL students;
- Use of both names on syllabus and other course materials.

These parity factors may be necessary from the onset of CTM and continue to develop over time through the mentoring experience. For instance, the use of both names on the syllabus and other course materials may be essential at the beginning to establish the significance of the relationship. Actual equivalent instructional time may happen only over time as the relationship matures and trust is developed during the mentoring and planning process.

Mutual respect and equivalent goals are also needed for building a successful foundation in the co-teaching mentoring experience (Cook & Friend, 1995). In the literature, the need for co-teachers to develop a strong professional partnership is highlighted. Kohler-Evans (2006) described co-teaching as being a strong collaboration similar to that of a marriage. The higher education literature discusses CTM experiences more as a business partnership in which the focus is on the mentor/mentee relationship and student-learning outcomes, not necessarily on the specific relationship attributes of the co-teachers (Crow & Smith, 2005; Lester & Evans, 2009). Both practices are important in

terms of understanding viewpoints, yet maintaining a professional relationship. In addition, most partnerships are time-limited and /or may not endure due to “irreconcilable differences,” changes in agreements, or dissolution of the relationship.

Roles and Responsibilities in CTM

Although academics are usually expected to know how to collaborate and communicate in higher education, these skills are seldom identified and / or taught in higher education (Johnson, 2002; Johnson, 2015; Mastropieri et al., 2005). For instance, graduate students spend a significant amount of time in isolation while conducting research and writing dissertations. As these graduate students become higher education faculty members, they are typically encouraged to develop a research agenda that highlights their individual contributions. As such, collaborative efforts are rarely rewarded in the tenure-track process (Kezar, 2006). Therefore, faculty are not inclined to work with others and do not seek out experience or the skills to work collaboratively.

Each member of a CTM relationship has a particular role that provides the foundation for a successful teaching experience. Because mentors and mentees work together during a CTM teaching experience, it is essential that each individual fully understands their responsibilities and expectations. This knowledge will help ensure a constructive experience, not only for the students in the classroom in terms of the teaching experience, but also for the mentor and mentee’s overall working experience making (Conderman et al., 2009; Lester & Evans, 2009). Again, multiple planning sessions should be held throughout the entire co-teaching experience to ensure dialogue and feedback about the process. It is helpful to formalize the agenda of such meetings to allow adequate opportunity and time to discuss goals and to set mutually agreeable expectations (Conderman et al., 2009; Lester & Evans, 2009). Regularly scheduled meetings with an agenda allow for areas of disagreement to be shared, discussed, and resolved through dialogue.

At the initial CTM meeting the mentor and mentee should have discussed overall mentoring goals and objectives for the CTM experience. Along with the planning process, the ‘rules of engagement’ and expectations for the experience should be discussed and detailed (Conderman et al., 2009; Lester & Evans, 2009). This planning process takes the form of a learning contract and establishes guidelines for the rest of the sessions (Zinn, 2004). As time evolves, future planning sessions may be structured more equally between the mentor and mentee in terms of responsibilities. As the semester progresses and

mentees gain experience, they should be expected to take more responsibility for planning, as the relationship has gained trust and respect.

Communication strategies. As noted earlier, clear communication is crucial for establishing and maintaining parity, and thus it is key to the formation of an effective CTM relationship. In general, co-teaching involves discussion on a wide array of communication topics, including classroom rules, instructional procedures, handling of problems in the classroom, and grading (Crow & Smith, 2005). As the CTM relationship develops and deeper communication arises, more difficult discussions and differences in philosophies arise. For instance, the process of grading may lead to disagreements as the course progresses (Johnson, 2002). It is important for mentors to anticipate and recognize areas where issues may potentially occur, prepare a strategy to address the issues ahead of time, and plan for discussions that will lead to appropriate and agreeable outcomes (Johnson, 2015). This preparation by the mentor helps mentees develop insight into understanding colleague’s expectations, ways to handle conflict issues in the workplace, and proper organizational and management skills in higher education (Johnson, 2002; Johnson, 2015).

Cooperation strategies. CTM requires effective communication skills for cooperation and collaboration. As the leader in the mentoring process, it is extremely important for the mentor to consider and evaluate their leadership role in the collaboration process (Buell, 2004; Johnson, 2015). The mentor must understand that there is a distinct difference between simple cooperation and collaboration. Cooperation relates to the concept of a shared agreement to proceed toward a common outcome, while collaboration extends this idea to include a fully synergistic relationship among the participants (Buell, 2004). One way to understand the distinction is for mentors and mentees to take a self-assessment and to understand their respective strengths and weaknesses in the instructional environment (Sambunjak, Straus, & Marusic, 2010). This assessment may also help in understanding differences between teaching and learning philosophies. Once the mentor and mentee find out their respective styles, along with their strengths and weaknesses, they can better understand themselves and then how to work more effectively with differing styles (Merriam & Caffarella, 1991).

Enhancement of compromise and negotiation skills is another important element within the CTM model. The mentor and mentee need to effectively communicate any questions or issues about the lesson and decide on instructional strategies together to meet the needs of the students. In addition, evaluation of co-teaching sessions should be completed immediately after the lesson or during the next pre-planning session. This allows for relevant discussion on the successes and failures during the class, reflection on the learning

experiences, and examination of any specific areas of concern in order to improve the next session (Beard & Wilson, 2002). Self-assessment and improvement are among the most valuable parts of the CTM process, as they provide reflective learning for both the mentor and mentee (Brookfield, 2017).

Interestingly, the root of many communication and collaboration problems associated with academic settings are generational differences (Mastropieri et al., 2005). Often mentors and mentees are from different generations. These generational differences can have a significant impact on communication and expectations in the mentoring relationship. Mentoring research characterized mentors as typically 8 to 15 years older than their mentees, with this gap larger in higher education (Stewart, 2006). Diverse generations portray distinct worldviews and attitudes in the workplace. Researchers believe that behaviors are driven by individual values and that these diverse values can collide when members of different generations work and learn together (Nelsey & Brownie, 2012). As with the adult learner strategies discussed earlier, it is important for both the mentor and mentee to be aware of individual differences and to develop an appreciation of the strengths and differences in the relationship. Using the CTM process will help in navigating the areas of concern.

Mentoring and Co-Teaching with Technology

One area of importance in CTM, and in faculty development in general, is the growing use of instructional technologies in teaching. The idea of teaching and learning with technology may have various meanings to both the mentor and mentee (Zhu & Kaplan, 2013). Educational technology, digital learning, technology-enhanced learning, instructional technology, and other phrases are often used interchangeably, especially in higher education settings (Kirkwood & Price, 2014). Developing online modules in a learning management system, taking classroom attendance with clickers, or using video are just some examples of how technology can be used to facilitate teaching and learning in higher education. Yet, technology is only a tool for delivering instruction within the teaching and learning environment; the facilitator or instructor is key to choosing how to best design and develop the instruction and utilize the technologies available for successful student learning (Kirkwood & Price, 2014).

Educational technology can be used more appropriately and effectively if it is carefully integrated into the instructional process. Using CTM allows for both mentors and mentees to take into account the various factors involved in teaching and learning, including ways to best utilize technology, along with delivery methods

(Kukulska-Hulme, 2012; Morra & Reynolds, 2010). Effective integration of technology means devoting time during the mentoring process to curriculum development as well as integrating universal design principles to facilitate student learning throughout the co-teaching experience (Izzo, Murray, & Novak, 2008).

CTM and the co-teaching process lends itself well to effective integration of technology in the classroom because two individuals are present to handle the added complexity. Teaching with technology typically involves four major components: the course content, the instructor, the students, and the technology tools (Morra & Reynolds, 2010; Zhu & Kaplan, 2013). The mentor and mentee must consider each of these components in planning a lesson and in curriculum development (Kirkwood & Price, 2014). Using a framework that incorporates each of these elements during CTM planning sessions can maximize instructional success with technology.

How Technology Changes the Mentoring Roles

Technology platforms and their use vary widely across academic settings. During a CTM experience, the best way is to start with adding instructional technology components slowly. Even if both mentor/mentee are technologically savvy, the relationship between the mentor and mentee needs to develop around the facilitation of teaching and learning process, not the type of technology (Zhu & Kaplan, 2013). For those mentees with lower technology literacy levels, providing small steps and building experiences may be essential. The more complex the educational technology, the more time that may be needed for course planning, development of materials, and the overall mentoring process (Kirkwood & Price, 2014; Stansberry, 2003; Zhu & Kaplan, 2013). Therefore, time for managing activities throughout a term would be greater than expected for both the mentor and mentee when using any types of educational technologies in CTM. Both mentors and mentees need to be aware of this time commitment when integrating technology tools, to discuss the issues in the planning session(s), and to be flexible throughout the entire learning experience, as new or unexpected situations arise (Henderson et al., 2007).

One final issue to consider is how the mentor views their role during the teaching process and how technology integration could support or conflict with that view (Zhu & Kaplan, 2013). If a mentor sees their primary role in teaching as that of an expert, an authority in a given field whose main task is to deliver information, it may be disconcerting to be placed in a situation where the incorporation of technology limits options for their scholarly input or control of the curriculum. There may be a role reversal with the mentee as the expert in the educational

technologies rather than the mentor (Jethro, Grace, & Thomas, 2012; Stansberry, 2003; Zhu & Kaplan, 2013). Moreover, compared to the mentor or mentee, students in today's higher education environment may know more about, and are more comfortable with, technology in some cases (Zhu & Kaplan, 2013). Again, if the co-teaching planning process is done well, the discussion on philosophies of teaching and learning will help guide the level of technology integration into the course and develop a more organized and beneficial mentoring process (Henderson et al., 2007).

Successful Mentoring Scholarship through Co-Teaching

A recent report (Hanover Research, 2014, p. 3) stated, "Although the particular format of successful mentoring models sometimes varies, successful programs all share certain characteristics that support the personal and professional development of faculty as they transition into new roles or seek to advance their careers." Following this argument, we suggest that CTM can be used as an established model for mentoring in a variety of disciplines and institutions of higher education. The key parts of mentoring through co-teaching discussed as the CTM model includes understanding the adult learner, building relationships, collaborating and communicating, identifying the various roles of the co-teaching members, and utilizing universal design for learning principles during the co-teaching process. If these ideas are utilized, we believe CTM will provide more successful faculty development experiences in the higher education environment.

Challenges for CTM

The framework we have laid out in this paper provides a plan for best practices in co-teaching. While the focus has been mostly positive, we understand that there are areas of concern in co-teaching. Some of the areas of concern addressed in this paper were differences in age, teaching philosophy, and technology proficiencies. There may be other areas that need further discussion including peer evaluation, administrative support, and unequal instructional responsibilities, yet these are common issues for any teaching and learning environment, not just for co-teaching (Johnson et al., 2016). We believe that by focusing on the planning and the learning outcomes, the mentor/mentee can build a strong foundation for CTM in any teaching environment.

Need for CTM in Higher Education

CTM can provide a support system that can foster equality and respect in the higher education

environment. The co-teaching strategies in the CTM model we propose provides a mentoring framework for how faculty members in higher education can engage in the shared work of planning, organizing, delivering, and assessing instruction. Each of these CTM components is a standard element within the SoTL, which increases the success and scholarship of both the mentor and mentee. CTM is an effective model for mentoring in higher education as it allows for negotiation of roles in teaching, takes advantage of the expertise that each person brings to the partnership, and helps to set aside assumptions about traditional roles, thereby forging new ways of thinking, teaching, and learning (Harris & Harvey, 2000). As doctoral programs remain the premier training ground for our future scientists and scholars, higher education needs to ensure mentoring opportunities for graduate students so they can progress to be successful faculty members (Clark et al., 2000; Johnson, 2002; Johnson, 2015). Most importantly, CTM represents a powerful model of mentoring that allows for carefully chosen developmental experiences that are supported by reflection, critical analysis, and construction of meaning (Beard & Wilson, 2002; Brookfield, 2017).

The results of CTM are authentic and form the basis for future successful experiences as individual faculty members in higher education. Creating learning experiences through co-teaching may develop and enhance mentoring relationships, help create better professors and learning experiences for students, and empower all to become more effective and self-directed learners. We believe that CTM provides an evidence-based mentoring framework for faculty development for the higher education environment.

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