A Mutual Aid Conceptual Model for Teaching Interprofessional Education: The Art of Developing Collaboration, Cooperation, and Communication

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A Mutual Aid Conceptual Model for Teaching Interprofessional Education:
The Art of Developing Collaboration, Cooperation, and Communication

by

Rebecca E. Coleman

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Abstract

This banded dissertation proposed the use of mutual aid for teaching interprofessional education in healthcare. The structure of this dissertation includes seven sections: introduction, conceptual framework, discussion, implications, and three scholarly products. The first scholarly product was a phenomenological qualitative study. The research question sought to explore faculty perceptions of the most effective approach for teaching interprofessional education. Nine faculty members, who taught at least one graduate or undergraduate interprofessional activity, participated in semi-structured interviews. The findings suggested teaching approaches to interprofessional education should focus on the planning, teaching, and evaluation processes.

The second scholarly product was a conceptual paper introducing a teaching model for interprofessional education. The model, called the Mutual Aid Conceptual Model (MACM), was designed using the mutual aid processes from ecology theory. The MACM was designed to provide a practical interdisciplinary approach for teaching collaboration, cooperation, and communication skills with interprofessional students and faculty. For the third scholarly activity, two professional presentations pursued information about how conference participants might use the MACM in their own academic institutions. Evaluative feedback showed the MACM was practical, easy to understand, and theoretically connected to ecology theory. The three scholarly products informed the progression and final outcome of the banded dissertation. The discussion section wove together the overarching themes from the scholarly products. In other words, the discussion section explored the best practices for teaching interprofessional education based on faculty perception and a conceptual model using mutual aid processes from ecology theory. In closing, implications for social work practice, policy, and research were noted.

*Key words:* mutual aid teaching model, interprofessional education, conceptual framework
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We are on to our next journey! Where shall we go?
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A Mutual Aid Conceptual Model for Teaching Interprofessional Education: The Art of Developing Collaboration, Cooperation, and Communication

Interprofessional education is defined as structured learning activities whereby interdisciplinary students learn about, from, and with each other and their respective disciplines (World Health Organization [WHO], 2010; Interprofessional Education Collaborative [IPEC], 2011). In healthcare education, faculty are required to teach students interprofessional skills by fostering teams who collaborate, cooperate, and communicate (WHO, 2010; IPEC, 2011). Since social workers understand the importance of mutual aid for empowering teams to accomplish group goals (Gitterman & Shulman, 2005), the social work profession may be able to contribute a theoretically informed teaching approach for interprofessional education. Hence, this dissertation sought to explore the use of mutual aid processes for the teaching of team building skills through interprofessional learning experiences.

In 2010, the WHO acknowledged the poor quality of patient care resulting from fragmented, expensive healthcare systems. In order to find a solution, WHO (2010) advised the implementation of interprofessional care by appealing to policy makers and professional organizations for financial and academic support. The goal was to deliver patient centered care while simultaneously reducing healthcare costs (WHO, 2010). The hallmark of effective and efficient interprofessional care teams would be their ability to collaborate, cooperate, and communicate across professional disciplines (WHO, 2010).

After the call to action from WHO, accrediting associations for healthcare programs in higher education formed a collaborative called IPEC (2011). Subsequently, IPEC released academic standards for interprofessional education. The new standards required healthcare programs to graduate students who were competent in ethical practice, role and responsibility
clarification, respectful communication, and collaborative teamwork skills (IPEC, 2011). In 2016, the Council on Social Work Education (CSWE) joined the collaborative. This action broadened the provision of health services to include social and behavioral care (Coyle, 2016). Likewise, CSWE (2015) released an updated Educational Policy and Accreditation Standards including a provision for interprofessional collaboration.

The purpose of interprofessional education is to train undergraduate and graduate healthcare students to learn the skills of collaboration, cooperation, and communication while learning from, with, and about their roles on interprofessional teams (IPEC, 2011). The responsibility of faculty is to facilitate interprofessional learning experiences whereby the students initially develop mutual understanding and clarify interdisciplinary responsibilities (IPEC, 2011). As interprofessional teams mature, their tasks transition from learning about interprofessional roles to collectively solving healthcare problems (IPEC, 2011). In turn, WHO (2010) hopes healthcare graduates are competent in skillfully working together on interprofessional care teams in employment settings. The onus for laying this foundation of interprofessional care depends on higher education and its ability to teach interprofessional healthcare curriculum.

To date, research findings suggest interprofessional education curriculum is created and taught based on institutional factors, such as existing funding, faculty interest and availability, and administrative support (Anderson, Smith, & Hammick, 2015; Charles, Bainbridge, & Gilbert, 2010; Loversidge & Demb, 2015). These institutional influences may create challenges for teaching the interprofessional education curriculum (Anderson et al., 2015; Charles et al., 2010; Loversidge & Demb, 2015). In other words, interdisciplinary faculty may have limited time and resources to work as collaborative teams in order to prepare, teach, and evaluate
interprofessional learning opportunities. Internal institutional limitations may also be compounded by external persuasion from professional health organizations. Sims (2011) viewed professional organizations as the driving force for socializing students to their respective academic disciplines. As a result, professional silos evolve. The consequence of professional isolation is separation between education programs, which eventually leads to barriers with collaboration, cooperation, and communication between faculty and students (Sims, 2011).

When interdisciplinary professionals and students work within the confines of their own practice area, they may not fully understand the expertise of interprofessional team members (Jacobsen & Lindqvist, 2009). The rigid boundaries of professional silos seem to stifle communication regarding the unique expertise of each professional role (Jacobsen & Lindqvist, 2009; Sims, 2011). Jacobsen & Lindqvist (2009) described this phenomenon as role confusion. In response to role confusion, interprofessional education may benefit from a teaching approach emphasizing mutual respect and role clarification through dialogue between students. A teaching method should focus on defining roles through mutual appreciation of every interprofessional team member (Acquavita, Lewis, Aparico, & Pecukonis, 2014; Addy, Browne, Blake, & Bailey, 2015; Chan, Lam, & Yeung, 2013; Head et al., 2014; Kent, Drysdale, Martin, & Keating, 2014; Suter, et al., 2009). Since the mutual aid processes use discussion to help group members develop mutual understanding and respect (Gitterman & Shulman, 2005), the application of mutual aid to the formation of interprofessional teams may promote role clarification through communication and cooperation.

Reeves, Boet, Zierler, & Kitto (2015) recommended the use of a conceptual framework to construct a teaching approach. If mutual aid processes are grounded in ecology theory, then ecological assumptions purporting resiliency and reciprocal relationships may be applied to
teaching interprofessional education (Gitterman & Germain, 2008; Gitterman & Shulman, 2005). Resiliency in mutual aid seeks to create a goodness of fit between all team members, and interdependence is a core concept related to reciprocity in relationships (Gitterman & Germain, 2008; Gitterman & Shulman, 2005). Therefore, a interprofessional teaching approach may use mutual aid processes to help students develop resiliency of thought pertaining to professional role clarification and apply interdependence among team relationships in order to solve healthcare problems. In summary, this dissertation uses mutual aid processes to design a theoretically informed teaching approach to interprofessional education called the Mutual Aid Conceptual Model (MACM).

This dissertation incorporates three scholarly products into new knowledge about teaching interprofessional education. The dissertation purpose, process, and products will be shared throughout seven sections. First, the conceptual framework based on ecology theory will be posited. A summary of the three scholarly products will be offered then followed with a discussion about each product, implications for social work practice and research, and a comprehensive reference list. Each of the last three sections will share an academic product. The scholarly work will be a qualitative study of faculty perception on teaching interprofessional education, a conceptual paper about the MACM, and a reflective summary of the MACM based on peer reviewed feedback obtained during professional conference presentations. In conclusion, the collective contributions will be appraised in relation to the teaching of collaboration, cooperation, and communication through interprofessional education.

**Conceptual Framework**

The conceptual framework for studying the teaching of interprofessional education is supported with ecology theory, which underpins the person in environment perspective from
social work practice (Gitterman & Germain, 2008). The assumptions and core concepts of ecology theory are used to deconstruct and reconstruct propositions in order to develop a deeper understanding of the processes related to the teaching of interprofessional education (Forte, 2014). In other words, the assumptions, core concepts, and propositions related to the ecology theory and person in environment perspective establish a conceptual framework for a teaching model of interprofessional education.

Assumptions

Three components relevant to ecology theory and the teaching of interprofessional education are the person, the environment, and their transactions. Assumptions related to the person include the belief that every individual is capable of change; however, this potential for transformation must be understood within the historical, social, and cultural context of each individual (Gitterman & Germain, 2008; Rotabi, 2007). In other words, each faculty member and student involved in interprofessional activities has the capacity for professional growth. Each can learn new ways of thinking and doing especially if a learning environment facilitates the development of new knowledge and skills.

The second assumption relates to the environment. Systems within the environment fluctuate between stability and instability (Gitterman & Germain, 2008; Rotabi, 2007). Stable environments typically have strong environmental supports and experience minimal threats; however, the opposite may be true for unstable environments (Gitterman & Germain, 2008; Rotabi, 2007). The vacillation between environmental supports and threats is due to the natural, inevitable, and evolutionary nature of change (Gitterman & Germain, 2008; Rotabi, 2007). The third assumption presumes relationships between the person and the environment are reciprocal and necessary for adaptation to change (Gitterman & Germain, 2008). In regards to teaching
interprofessional education, these assumptions reinforce the need to minimize threats to the learning environment by understanding how to construct optimal learning activities, recognizing the process of teaching in relation to student learning, and paying attention to the relational developments occurring between and among faculty and students. Therefore, the mutual aid processes of the MACM may provide the structure and process for developing collaboration, cooperation, and communication skills within and between students and faculty on interprofessional teams.

**Core Concepts**

Core concepts of ecology theory connected to the previously noted assumptions are resiliency and reciprocal relationships. The following discussion defines the concepts and articulates their significance especially in relation to the teaching of interprofessional healthcare.

**Resiliency.** Resiliency is the ability of an individual or system to adapt to crises, such as developmental risks or environmental threats, in order to individually and collectively reach the highest possible potential (Saleebey, 1997). In order to do so, people and environments strive to find goodness-of-fit. Gitterman & Germain (2008) discuss goodness of fit as a process whereby an individual or system experiences stress due to a crisis, develops coping mechanisms, adapts to the situation, and finds a new niche. Thus, resiliency views crises as a transformational opportunity. Perhaps the crisis of fragmented healthcare systems (WHO, 2010) is the impetus for encouraging professional organizations and academic programs to redefine how healthcare is taught. With the introduction of interprofessional education, the faculty and students are taking the nascent steps to change the healthcare delivery systems. In doing so, new knowledge and skills may be used to clarify and adapt professional roles on interdisciplinary teams. Students, who graduate with competency in collaboration, cooperation, and communication skills, may
create a new niche by providing interprofessional, quality patient centered care at lower costs. Thus, a goodness of fit may potentially evolve between professionals, patients, and the healthcare delivery systems.

**Reciprocal relationships.** Reciprocal relationships are interconnected and interdependent (Germain & Gitterman, 2008). The resulting transactions may provide a positive or negative energy flow. Consequently, transactional energy creates productive interactions which aid people and systems in reaching stability or deficit interactions leading to or maintaining instability (Germain & Gitterman, 2008; Rotabi, 2007). Reciprocity in relationships between and among faculty and students seems important to the interprofessional teaching process. If mutual appreciation for interdisciplinary roles is important to quality patient centered care, then the learning process may benefit from the use of mutual accountability and respect to enable positive interactions. In doing so, the interdisciplinary faculty and students are using mutual aid processes to learn about, from, and with each other.

**Summary of Banded Dissertation Products**

The goal of interprofessional education is to graduate students prepared to work on interdisciplinary healthcare teams for the purpose of improving the delivery of effective and efficient healthcare (WHO, 2010; IPEC, 2011). In order to do so, the interprofessional learning environments must provide opportunities for students to learn about, from, and with each other through collaboration, cooperation, and communication (WHO, 2010; IPEC, 2011). Reeves et al. (2011) advocate for a conceptual framework for designing and teaching interprofessional curriculum. In more recent years, similar recommendations have continued to encourage the use of a theoretically informed model for the process of developing, teaching, and evaluating interprofessional education (Acquavita et al., 2014; Reeves et al., 2015). Hence, the purpose of
this dissertation was to critically study the teaching of interprofessional education through the perceptions of interdisciplinary faculty, then construct a conceptual model for interprofessional teaching supportive of faculty experiences regarding what was working well. The result of these efforts was a theoretically informed teaching approach based on the mutual aid processes from the work of Gitterman and Shulman (2005). The result is a banded dissertation created with three scholarly products: a qualitative research study, a conceptual article, and two professional presentations.

**Discussion**

Boyer, Moser, Ream, and Braxton (2015) expanded the notion of scholarship as solely being original research. Their vision portrayed scholarship as peer reviewed activities related to processes of discovery, integration, application, and teaching. Each form of scholarship contributes to the professoriate and academy in uniquely different ways. For example, the scholarship of discovery adds to our body of knowledge whereas the scholarship of integration incorporates knowledge into a new perspective (Boyer et al., 2015). In addition, teaching becomes scholarship when learners are transformed into passionate scholars with a curiosity for new learning (Boyer et al., 2015).

Each of the three products for this banded dissertation employed a different form of scholarship (Boyer et al., 2015). The first product used the scholarship of discovery to complete qualitative research regarding faculty perceptions about the most effective ways to teach interprofessional education. The second product applied the scholarship of integration by incorporating the research findings from the first product into a conceptual framework using mutual aid for teaching interprofessional education. The conceptual model developed in the second product was called the MACM. The third product involved the scholarship of teaching by
way of delivering two professional presentations at different social work conferences. In doing so, social work educators learned about the MACM and participated in discussions about its practicality for teaching interprofessional education and potential application within their own academic institutions. The culmination of these three products provided insight into usefulness of mutual aid processes in the MACM for teaching interprofessional education.

**Scholarship of Discovery: Qualitative Research of Faculty Perceptions**

The first scholarly product was a phenomenological study exploring faculty perceptions of the most effective ways to teach interprofessional education. A semi-structured interview gathered interdisciplinary faculty stories about teaching interprofessional education. The findings suggested faculty members viewed effective interprofessional teaching as a process involving the planning, teaching, and evaluation of learning activities. In essence, the delivery of interprofessional curriculum was viewed as a process beginning with planning and extending through evaluation. Most importantly, interdisciplinary faculty noted that collaboration, cooperation, and communication skills were applicable for building effective faculty teams. Based on these research findings, a conceptual model for building interprofessional faculty and student teams was designed using the mutual aid processes from Gitterman and Shulman (2005).

**Scholarship of Integration: Mutual Aid Conceptual Model**

The research findings from the first product supported the development of a conceptual framework for teaching interprofessional education. In turn, the conceptual model emerged as the foundation for the second product, which was a conceptual paper. The proposed framework was named the MACM, a conceptual model using mutual aid processes from ecology theory (Gitterman & Germain, 2008; Gitterman & Shulman, 200). The mutual aid processes in the MACM empower interdisciplinary group members to discover, clarify, and negotiate the
differences between professional roles, identify a common group goal, create a team culture of mutual respect, support, and accountability, and engage in seeking solutions to resolve problems (Gitterman & Shulman, 2005). As a result, the mutual aid processes embedded in the MACM require interprofessional team members to learn from and about each other through communication, cooperation, and collaboration.

The MACM was intentionally designed with three purposes in mind. First, the MACM attempts to generate a practical framework with a common language understood by all interdisciplinary faculty and student. At the same time, the MACM endeavors to help faculty teach students to engage in teamwork in order to provide patient centered healthcare through collaboration, cooperation, and communication (WHO, 2010; IPEC, 2011). Finally, the MACM provides a theoretically informed conceptual framework for teaching interprofessional education (Acquavita et al., 2014; Reeves et al., 2015).

Scholarship of Teaching: Professional Presentations

The MACM, a conceptual framework created in the second product, was shared at two social work conferences. One presentation was a poster session; the other was a round table discussion. Both presentations explained how the MACM may be used to teach interprofessional education. A dialogue followed the presentation and encouraged conference attendees to discuss their thoughts about the MACM, especially the feasibility of the model. Feedback from conference attendees articulated ways in which they might apply the model in social work education and practice settings. Almost all the discussion participants mentioned the practicality of the MACM. Several suggested the common language may help to decrease the negative impact of professional silos. In addition, participants voiced a clear understanding of how ecology theory informed the model, especially how the mutual aid processes might be used to
teach collaboration, cooperation, and communication skills to interprofessional faculty and students.

In summary, the scholarships of discovery, integration, and teaching were interwoven throughout this dissertation. The synergistic interconnectedness of the three scholarly products produced a conceptual framework to teach interprofessional education. The framework was informed by faculty perception and underpinned by the mutual aid process of ecology theory. The cumulative result was the MACM, which has potential for teaching collaboration, cooperation, and communication skills necessary for delivering patient centered, cost efficient healthcare services.

**Implications**

Since the MACM has the potential for shaping best practices in teaching social work and interprofessional education, several implications are important to consider. The MACM needs to be applied and evaluated within the academic environment. Moreover, research methods should inform the evaluation of the use of mutual aid processes in the MACM (Reeves et al., 2015). More specific implications related to social work education, policy practice, and future research are provided in the following discussion.

**Implication for Social Work Education**

The MACM may provide a conceptual framework for best teaching practices of interprofessional education. In order to discover the prospective strengths and challenges of the MACM, it must be implemented and evaluated in diverse academic settings. Since social workers understand and value mutual aid, they should be leaders in using the MACM to facilitate the development and evaluation of interprofessional teams. Of utmost importance is gaining an understanding of if and how the MACM may promote collaboration, cooperation, and
communication between and among faculty and students. In doing so, social workers are adding to the body of knowledge informing social work and interprofessional education and practice.

**Implications for Policy Practice**

Accrediting associations, university administrators, and public policymakers should aid the continued development of interprofessional education. In order for interprofessional learning experiences to occur, provision of resources is necessary. This need includes the provision of time, finances, and personnel for the planning, teaching, and evaluation of the most effective and efficient teaching practices of interprofessional education. In order to evaluate the use of the MACM as a best practice for teaching interprofessional education, the support of those who are able to influence policy and provide resources is important.

**Implications for Future Research**

Reeves et al. (2015) recommended the evaluation of interprofessional education to create a structured plan using empirical research methods. Since the MACM is a conceptual idea and has not been tested, pilot studies may be the next step. These studies would require the teaching of interprofessional education using the MACM followed by the evaluation of student learning using a combination of standardized perception scales, faculty observations, and other empirical testing methods. In doing so, the strengths and weaknesses of the MACM may be assessed. After a pilot study is completed and appropriate revisions are made to the MACM, a mixed methods study should follow. Finally, social work educators should advocate for the involvement of interdisciplinary faculty throughout the evaluation process.

In conclusion, the three scholarly products for this dissertation have informed the development of the MACM, which has the potential to be a best practices model for teaching interprofessional education. If the MACM is able to promote collaboration, cooperation, and
communication among and between faculty and students, then graduating students may be entering the healthcare workforce with the skills needed to provide quality patient centered care at reduced costs. If interprofessional education is the first step toward effective and efficient healthcare delivery, then its success depends on us to be collaborative, cooperative, and communicative team members. So, believe that mutual respect, support, and accountability will make a difference in the lives of the people we serve and create a much needed change within our healthcare systems. Believe.
Comprehensive Reference List


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Best Practices for Effective Teaching of Interprofessional Education: Listening to Faculty Stories and Uniting Their Voices

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Abstract

This exploratory qualitative study sought to more deeply understand faculty perceptions of the most effective ways to teach interprofessional education. Interview data were collected from nine faculty members who taught undergraduate and graduate interprofessional education in healthcare. Findings suggested the best approach for teaching interprofessional activities occurred when the interdisciplinary team planned, taught, and evaluated the learning experiences together. In other words, team members negotiated common goals, collectively facilitated the learning activities, shared evaluation results, and jointly revised future events based on evaluative feedback. Accordingly, faculty valued the collaborative process of interprofessional education. Three implications emerged from the study. Each faculty member, who is a part of the interprofessional teaching team, should be involved in the planning, teaching, evaluating, and modifying of interprofessional activities. Next, university administration should support the efforts of interprofessional faculty by providing the necessary resources. Finally, future mixed methods research should focus on recognizing effective interprofessional teaching practices related to student learning.

Keywords: interprofessional healthcare education, qualitative study, faculty perception
Best Practices for Effective Teaching of Interprofessional Education: Listening to Faculty Stories and Uniting their Voices

The prevalence of interprofessional education is increasing throughout undergraduate and graduate curricula (Addy, Browne, Blake, & Bailey, 2015). Studies of its effectiveness tend to focus on the assessment of student perception of their learning (Reeves, 2010). If the student perception of learning is important for understanding the impact of interprofessional education, then evaluation of teaching practices should be equally important. The exploratory purpose of this qualitative study was to provide interdisciplinary faculty a voice in identifying the best practices for teaching interprofessional healthcare curriculum.

Teaching interprofessional learning activities is more likely guided by existing funding, availability of physical space, and intuition of best practices rather than the use of research informed approaches (Anderson, Smith, & Hammick, 2015; Charles, Bainbridge, & Gilbert, 2010). In addition, professional identity silos (Sims, 2011) and contextual differences in academic environments create barriers for teaching interprofessional education (Loversidge & Demb, 2015). To date, evaluation of interprofessional education has focused on measuring student perception of learning (Anderson et al., 2015; Charles et al., 2010) and student competency of learning outcomes (Egan-Lee, et al., 2011) rather than the practices of teaching (Reeves, 2010). Therefore, listening to the faculty stories and gaining insight into their teaching experiences is of utmost importance.

This exploratory qualitative study used a semi-structured interview to hear the faculty voices tell about their teaching experiences with interprofessional education. The overarching research question was “what do faculty perceive as some of the best ways to teach interprofessional education?” The goals were two-fold. First, awareness into how faculty
perceived effective teaching practices was gained. Second, a conceptual model based on some emerging teaching practices was designed. As a result, the faculty voices shaped a model that may be used for future research, specifically the evaluation of teaching interprofessional education.

**Literature Review**

As a result of fragmented healthcare systems, the World Health Organization (WHO) (2010) acknowledged a need for higher education to prepare an interprofessional workforce capable of collaboration, communication, and cooperation. The WHO (2010) defined interprofessional education as an academic activity where “two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (p. 13). The subsequent development of interprofessional education focused on creating curriculum based on an intuitive sense of what seemed to work best (Charles et al., 2010). Although much has been done to produce interprofessional curriculum, studies evaluating the effectiveness of teaching interprofessional education have been limited (Reeves, Boet, Zierler, & Kitto, 2015). Thus, this study sought to gain a deeper understanding of how faculty perceived the best ways to teaching of interprofessional education.

**Teaching Interprofessional Education**

Interprofessional curriculum was initially constructed using accessible resources provided by academic institutions, grant agencies, and community settings (Anderson et al., 2015; Charles et al., 2010). These social and financial contexts impacted the teaching approach as faculty naturally responded to their environments. Interprofessional education faculty taught how they thought it was best to teach (Charles et al., 2010). Consequently, a variety of interprofessional education models and teaching approaches evolved (Charles et al., 2010).
One approach to teaching interprofessional education was the integration of students from various degree programs into one learning activity, which was embedded within a course from one profession (Addy et al., 2015). For example, social work students joined nursing students to complete an interprofessional activity in a nursing course. On other occasions entire courses, either required or elective, were designated as interprofessional classes with open enrollment for interdisciplinary students (Addy et al., 2015).

Furthermore, community based clinicals or internships provided interprofessional learning experiences (Acquavita, Lewis, Aparico, & Pecukonis, 2014; Addy et al., 2015; Haines, Kent, & Keating, 2014; Kent, Drysdale, Martin, & Keating, 2014). Chan, Lam, & Yeun (2013) suggested the use of seminars for interprofessional learning while Acquavita et al., (2014) described extracurricular trainings. Additionally, simulation labs with case studies incorporated interprofessional students into the learning activities (Livingston et al., 2016; Nimmagadda & Murphy, 2014).

Despite the variety of interprofessional education models, research related to the effectiveness of how to best teach interprofessional education is limited (Eagan et al., 2011; Reeves et al., 2015). Most of the evaluation efforts related to interprofessional education focused on student perception of learning rather than on the best teaching methods (Reeves, 2010; Reeves et al., 2015). A review of the student perceptions regarding their interprofessional learning will guide the continued inquiry process about interprofessional teaching.

**Evaluating Interprofessional Education – A Student Perspective**

To date, a majority of studies evaluated interprofessional education based on student perception (Reeves, 2010; Reeves et al., 2015). Three areas commonly measured are (a) knowledge and skill acquisition; (b) attitudes about working on interprofessional teams; and (c)
readiness to learn (Charles et al., 2010; Reeves et al., 2015). In the literature, the student voices were well represented.

In one study, student perception of their knowledge acquisition was measured using course evaluations, surveys, and questionnaires. These evaluation tools used scaling measurements to gather student perception of their learning, specifically achievement of content areas and learning objectives (Addy et al., 2015; Anderson et al., 2015; DeBonis, Becker, Yoo, Capobianco, & Salerno, 2015; Solberg, Solberg, & Carter, 2015). In other instances, knowledge attainment was measured across settings through student reflection papers and debriefing groups (Appleton & Nacht, 2015; Nimmagadda & Murphy, 2014).

Regarding skill achievement, student perception of their teamwork abilities was also measured with a Likert scale on the course evaluations (Addy et al., 2015). Vignettes with debriefing groups provided students with an opportunity to reflect on their abilities to communicate with interprofessional team members (Nimmagadda & Murphy, 2014). Chan, Lam, & Yeung (2013) used focus group interviews to assess the perception of interprofessional students regarding their capability for communicating and participating on teams.

Student attitudes toward interprofessional education were measured with self-assessment questionnaires and surveys administered as either pretest and posttest or posttest only (Anderson et al., 2015; DeBonis et al., 2015; Solberg, Solberg, & Carter, 2015; Villadsen, Allain, Bell, & Hingley-Jones, 2012.) In addition, course evaluations using Likert scales measured the student appreciation of interprofessional collaborations (Anderson et al., 2015; Kent et al., 2014). Focus groups (Anderson et al., 2015; Smith, & Hammick, 2015; Kent et al., 2014) and case study reflections (Appleton & Nacht, 2015) also offered insight into student attitudes about interprofessional learning.
Parsell and Bligh (1999) developed the Readiness for Interprofessional Learning Scale (RIPLS) in order to assess student perception of their preparedness to engage in interprofessional learning. Anderson et al., (2015) and Uden-Holman, Curry, Benz, and Aquilino (2015) administered the RIPLS as a pretest and posttest measure of student readiness. In both studies, the RIPLS was used in conjunction with other student perception evaluation tools.

On one hand, the use of student perception to evaluate interprofessional education is viewed as important to curriculum development. Wright and Lindqvist (2008) described the importance of using the reflective comments from the students to revise interprofessional curriculum. On the other hand, the solitary use of student perceptions to evaluate the effective teaching of interprofessional education may have limitations (Colthart et al., 2008; Domac, Anderson, & Smith, 2016; Reeves et al., 2015). In order to comprehend the best approaches for teaching interprofessional education, faculty perceptions should be considered. Therefore, this study explored faculty perceptions of interprofessional education in hopes of understanding their view of effective teaching practices.

Effective Teaching of Interprofessional Education – A Faculty Perspective

While student perceptions of interprofessional education have been explored, faculty perceptions have received less attention especially in the area of effective teaching practices (Reeves et al., 2015). To date, studies about faculty perception of interprofessional education have described the structural and procedural challenges related to the logistical, financial, professional identity, and faculty capacity dimensions (Loversidge & Demb, 2015; Uden-Holman et al., 2015). Generally speaking, faculty voices have presented stories related to the logistical and financial dimensions of interprofessional education.
Logistical challenges related to facilitating an interprofessional education activity included scheduling and location (Kent et al., 2014; Loversidge & Demb, 2015). Scheduling became problematic when an interprofessional education event was not a course requirement or occurred outside of programmed class time (Loversidge & Demb, 2015). Likewise, finding a facility with adequate space to hold a large number of students was difficult (Loversidge & Demb, 2015). Depending on the type of interprofessional learning experience, legal and insurance risks also became problematic (Kent et al., 2014).

Limited financial resources and questions about the cost-effectiveness of maintaining an interprofessional education program were discussed (Charles et al., 2010; Haines et al., 2014; Loversidge & Demb, 2015). Often times, faculty were asked to create, teach, and evaluate interprofessional education curriculum outside of the assigned, customary workload and to do so with little to no financial reimbursement (Anderson et al., 2015; Charles et al., 2010; Loversidge & Demb, 2015). Pilot projects received funding; however, the financial sustainability of interprofessional education depended on existing funding from the university (Charles et al., 2010). A few interprofessional programs, such as community based, student lead clinics, were evaluated for cost-benefits, and their financial feasibility was questioned (Haines et al., 2014).

When considering the larger social context, professional identities and accrediting standards presented challenges to interprofessional education (Loversidge & Demb, 2015). Professional degree programs, supported by their professional organizations, created silos whereby students, faculty, and practitioners learn from those within their profession and not with interdisciplinary professionals (Sims, 2011). Therefore, the interprofessional competencies released by IPEC (2011) concentrated on the development of healthcare teams who were skilled in collaboration, communication, and cooperation.
Due to the unique knowledge, values, and skills of each profession, individual academic programs dissimilarly interpreted the interprofessional competencies (Uden-Holman et al., 2015). In addition, interdisciplinary faculty approached teaching with distinct pedagogies (Loversidge & Demb, 2015). Lastly, professional accrediting standards required different competencies related to interprofessional education (Dunworth, 2007; Egan et al., 2011; Loversidge & Demb, 2015). In order to teach interprofessional learning activities, interdisciplinary faculty must discover a way to collaboratively achieve the goals of interprofessional education while accomplishing the goals of individual professional disciplines.

In some cases, building faculty capacity to teach interprofessional education required a developmental training program and administrative support (Anderson & Thorpe, 2010; Loversidge & Demb, 2015; Schrader, Mauldin, Hammad, Mitcham, & Blue, 2015). Faculty reported development activities were helpful in cultivating faculty skills to co-teach and facilitate teams necessary for problem based learning (Anderson & Thorpe, 2010; Loversidge & Demb, 2015). Training activities were also required to increase knowledge about interprofessional education competencies, instructional design, and curriculum development and evaluation methods (Schrader et al., 2015). Most importantly, faculty stated administrative support in terms of time, financial, and recognition was necessary for faculty to invest in interprofessional education (Schrader et al., 2015).

In summary, studies regarding faculty perception of interprofessional education have benefitted the continued development of interprofessional curriculum (Reeves et al., 2015). A clearer picture of structural and procedural challenges, such as logistical, financial, professional identity, and faculty capacity, have been explored. However, these studies do not address faculty perception of effective teaching practices related to interprofessional education. Hence, this
exploratory qualitative study sought to recognize how faculty perceives some of the most effective ways to teach interprofessional education.

Conceptual Framework

The goal of interprofessional education is to graduate healthcare students who know how to collaborate, communicate, and cooperate with interprofessional teams (IPEC, 2011; WHO, 2010). In addition, systematic reviews of interprofessional education encourage the use of teaching approaches based on a theoretical framework (Reeves et al., 2015). For this study, the theoretical foundation was the ecological perspective (Gitterman & Germain, 2008).

Gitterman & Germain (2008) define the ecological perspective as an evolutionary process where the interdependence between and among people and their social environments create change. Interdependence, a core concept of the ecological perspective, assumes that if people and environments are interrelated and dynamic living entities, then they will change over time based on reciprocal exchanges between and among individuals and their environments (Gitterman & Germain, 2008). The exchanges influence individual and collective development, identities, and transformation (Gitterman & Germain, 2008). This study sought to appreciate the faculty perspective about the most effective approaches to teaching interprofessional education and, to do so, from an ecological perspective of interdependence (Gitterman & Germain, 2008).

Methods

This exploratory qualitative study sought to develop a deeper comprehension of how faculty perceived effective teaching of interprofessional education. To date, a majority of studies have evaluated interprofessional education based on student perception (Addy et al., 2015). Several descriptive studies have reported faculty perception of the structural challenges related to interprofessional education (Loversidge & Demb, 2015; Uden-Holman et al., 2015). However,
faculty perceptions of the best teaching practices have received less attention (Reeves et al., 2015). This study used a semi-structured interview to ask faculty what they perceived as some of the most effective ways to teach interprofessional education.

**Research Design**

This descriptive phenomenological study used qualitative methods to explore faculty perception of some of the most effective ways to teach interprofessional education. According to Creswell (2013), a study investigating phenomenology searches for a common meaning among those who have had a similar lived experience. This study interviewed faculty members whose lived experience included teaching interprofessional education.

During the semi-structured interviews, participants were provided with two questions. Each participant was initially asked “what are your experiences with teaching interprofessional education?” The next question was “what are the most effective ways to teach interprofessional education?” After the interviews, conclusions were drawn from the dominant themes of the responses. In summary, this study used an exploratory qualitative method based on a descriptive phenomenological approach.

**Sample**

A non-probability, purposive sampling strategy was used to select participants. The most important selection criteria included actual teaching experience in interprofessional education as a higher education faculty member. Teaching experience was defined as having taught at least one interprofessional education activity in an academic class or during an extracurricular event.

Additional selection criteria included the level of higher education taught and geographic region. Undergraduate and graduate faculty were invited to participate. A few of the graduate faculty belonged to a regional interprofessional education consortium; however, consortium
membership was not required. In addition, the sample included faculty who taught at one of five universities in a northeastern geographic area of a Great Lakes state.

In summary, faculty receiving invitations were from one of three categories: (a) faculty who taught at the same university as the researcher and were not members of the interprofessional education consortium; (b) faculty who taught at the same university as the researcher and were members of the interprofessional education consortium; or (c) faculty who taught at a university different from the researcher and were members of the interprofessional education consortium.

Sample demographics. Initial email invitations were sent to 17 faculty members. Ten individuals responded by expressing an interest to participate in the study. One of the respondents did not meet the sample selection criteria and was excluded. The total number of participants for the study was nine. A detailed description of the participant demographics follows (see Appendix A for a table of the sample demographic information).

Five invitations were emailed to undergraduate faculty, who worked at the same university as the researcher. Four invitations were sent to nursing faculty while one was sent to a physical therapy assistant faculty member. Three of the four nursing and one physical therapy assistant faculty accepted the invitation to participate in the study. Thus, four undergraduate faculty members, who had taught at least one interprofessional learning experience, participated in the study.

The remaining eleven invitations were sent to graduate faculty. Two nurse practitioner and two of the three physician assistant faculty members accepted the invitation to participate in the study. All worked at the same university as the researcher and were members of the regional interprofessional education consortium. One of the two occupational therapy faculty expressed
an interest to participate in the study. This faculty member was employed at a university different from the researcher and was part of the regional interprofessional education consortium. None of pharmacy, physical therapy, or physician faculty members responded to the invitation. No graduate social work program is involved in interprofessional education in this geographic region; therefore, no invitations were sent to social work faculty. The total number of graduate faculty who participated in the study was five.

**Protection of participants.** Institutional Review Board (IRB) approval was obtained through the appropriate universities. A consent form was sent with the initial email invitation and also with a subsequent email confirming participation in the study. The consent form was also reviewed with each participant at the beginning of the interview. Since participation in the study was voluntary, participants had the right to withdraw from the study at any time. In addition, the study results would be presented as group data; therefore, no identifying information beyond the professional discipline, undergraduate or graduate teaching level, and teaching at the same university as the researcher would be released in written reports, publications, or presentations.

**Data Collection**

Prior to data collection for this phenomenological study, a pilot interview was completed. Based on the pilot interview, no changes were made to the semi-structured interview format or questions. The study proceeded by selecting and engaging the participants.

Participants were engaged in the study through the following protocol. First, potential participants in the sample were emailed an invitation to participate in the study. If the participant affirmatively responded, then a subsequent email was sent seeking feedback from the participant about the best day, time, and place for the interview. In addition, the follow up email provided the two interview questions and explained an attached consent form. Participants were asked to
review the consent form, then either sign and return it via email or wait to sign it at the beginning of the interview session. Participants were also encouraged to email any questions or concerns.

Data collection was accomplished through individual interviews with nine participants. Eight were completed as face to face interviews. One interview was done by phone. Each interview was approximately 60 minutes. The face to face interviews were audio recorded and field notes were taken. Due to a recording malfunction, only field notes were taken during the phone interview. All interviews were completed in a private location chosen by the participant, such as an office of the participant or a conference room on a university campus.

A semi-structured interview with two open-ended questions was used to collect data. The interview began with a welcome followed by a review of the consent form. If the participant had not returned a signed consent form prior to the interview, then the consent form was signed at this time. Next, two open-ended questions were asked. First, the participant was asked to share his or her experiences with teaching interprofessional education. Next, the participant was asked to describe experiences demonstrating the most effective ways to teach interprofessional education. During the interview, additional questions were asked for the purpose of clarifying information. Summaries were also used as a way to affirm the information provided by the participant. At the end of the interview, the participant was thanked for being a part of the study.

Data management included storing the audio recordings on a handheld recorder. Interviews were transcribed verbatim in an Excel spreadsheet by the researcher. If questions arose with the audio recording, field notes were used for clarification. Due to the recorder not working appropriately, one interview used the field notes to create the transcription. All field notes and consent forms were scanned and saved as PDF documents. The transcriptions were saved as Excel documents.
Data Analysis

In this exploratory study, the researcher sought to explore faculty perceptions of some of the most effective teaching of interprofessional education. Creswell (2014) states that analysis of qualitative data must focus on the emergent, holistic picture created from the view of the participants. In order to do so, seven steps for analysis of qualitative data were used, including clustering, memoing, and categorizing themes (Creswell, 2014) and qualitative validity was established using triangulation (Creswell, 2014).

Data analysis protocol. The data were coded by the researcher using the seven steps for analysis of qualitative data (Creswell, 2014). The first step was to transcribe, organize, and prepare the data for analysis. Second, the data were inductively reviewed. Third, similar topics were clustered together. Fourth, code clusters were created using abbreviations for each cluster. A codebook organized the code clusters and included a definition and memos about each code. Fifth, code clusters with similar topics were merged into thematic categories, and each category was given a descriptive name. Sixth, final abbreviations were assigned to each category. Finally, the data were analyzed by using the thematic categories. In doing so, the data were analyzed for recurring themes (Creswell, 2014).

Qualitative validity. Triangulation was used to assure authenticity from the viewpoint of the participants and accurate reporting by the researcher (Creswell, 2014). Participants were offered an opportunity to review the interview transcript. Membership checking was used by asking participants to comment on the emerging themes. Peer debriefing with a colleague, who is not a study participant and is familiar with interprofessional education, was utilized.

Strengths and Limitations
A strength of this study was the exploratory, qualitative approach to seeking faculty perceptions of the components of effective teaching of interprofessional education. However, faculty interviews were the sole form of data collection. The study may have benefitted from a review of documents and observations of interprofessional education activities.

Reflexivity, the lens through which the researcher views the qualitative data, is a concern (Creswell, 2014). Prior to this study, the relationship between the participants and researcher was characterized as acquaintances. For example, the researcher attended four interprofessional education events prior to the beginning of this study. Throughout this time, the role was an observer. During the research, the role transitioned from acquaintance to researcher. Due to the multiple roles, the potential for interview bias was present. However, efforts to triangulate the findings with the participants and a peer reviewer were used for the purpose of validating the results. This triangulation of the findings added strength to the study.

Summary

This descriptive phenomenological study sought to create a deeper understanding regarding faculty perceptions of interprofessional education. The qualitative study explored the question “What do faculty perceive as the most effective way to teach interprofessional education?” The subsequent data analysis provided insight into thematic categories of common faculty perceptions of effective teaching of interprofessional education.

Results

This exploratory qualitative study sought to understand how faculty perceived and experienced effective teaching of interprofessional education. The participants (N = 9) consisted of a group of higher education faculty, who taught at least one interprofessional education activity in an academic class or during an extracurricular event in a northeastern geographic
region of a Great Lakes state. The results indicated faculty perceived effective interprofessional teaching as the process whereby an interprofessional activity was planned, briefed, implemented, debriefed, and evaluated. In other words, the actual teaching of an interprofessional activity was only a small part of an effective process for teaching interprofessional education.

Five essential themes emerged related to the effective process for teaching interprofessional education. Those themes included planning, briefing, teaching, debriefing, and evaluating an interprofessional activity. One of the participants, who coordinated an interprofessional education disaster drill simulation, summarized the effective teaching process using the five themes as follows:

- It is a lot of work prior to the simulation event. Everyone involved in the event needs to be involved in the planning. Takes a lot of meetings, follow-through, and coordination.
- After the first event, we added briefing and debriefing times. We decided it was important to review or redesign the event based on evaluation feedback from students, professionals, and faculty, and rework the learning objectives so each professional group can successfully meet their objectives. We have discovered that briefing and debriefing sessions with students are critical to learning through (interprofessional) simulation (nursing faculty member).

**Planning an Interprofessional Education Activity**

A majority of the participants indicated the planning process was crucial to an effective interprofessional education event. The planning process was defined as the time when the interprofessional education faculty would meet, email, or have phone conversations to identify common goals and learning objectives, create the curriculum, and decide who was completing the logistical tasks.


**Learning goals and objectives.** Most of the participants agreed that common goals and learning objectives are essential to the effective teaching of interprofessional education. A nursing faculty member, who planned an interprofessional education disaster drill, indicated the need to “review, revise, and edit the learning objectives to fit the all professional accreditation standards and the student learning needs.” Another nursing faculty person, who worked with pharmacy faculty, mentioned interprofessional education must teach students to work with different disciplines in order to meet the long term goals of the patients. For example, if patient safety is a goal for the patient, then interprofessional education events should include this goal as a learning objective. “If we understand patient safety and we understand each other’s roles, then we can look at how you can work together to meet that long term goal” (nursing faculty member).

**Curriculum.** In order to effectively teach interprofessional education, almost all the interprofessional faculty stated the curriculum needs to be collaboratively created by all those involved with the delivery of the activity. One nursing faculty member communicated an experience when this did not happen.

For the first event, the other faculty member basically designed the entire thing and plugged our students in. She basically wanted me to show up with my students by telling me the day and time. She never tried to work out what was best for my students. My students and I just showed up at the pre-scheduled day and time. She did send me the materials ahead of time so we knew what we were doing, and she did ask for a little feedback but my feedback was ignored. I still found it a valuable experience. The student feedback was okay. But it was difficult. I thought it would be more collaborative. To just plug your students in does not work (nursing faculty member).
On the other hand, the same nursing faculty member had a different experience for the second interprofessional event. She commented,

The most important thing is the collaboration - at least to me. The second time, we came together and identified a goal. With that one, the teaching responsibilities fell on me to teach the vital signs . . . they looked at me as the expert in the community. So, I pulled in the teaching case studies. It was really good. They were responsive to emails. It worked really, really well (nursing faculty member).

**Logistics.** Quite a few of the participants emphasized the importance of advanced planning for the interprofessional event. Participants reported the effective teaching of interprofessional education included making decisions about how to coordinate day, time, location, and technology needs, assign students to small interprofessional groups, and decide on the professional dress for the students. One nursing faculty member stated the importance of having curriculum coordinators, who were responsible for securing “the place, the signage, audio video equipment, and a person to help with technology problems.” Another nursing faculty person described a problem with students gravitating to small groups with their peers. “So, it was helpful to mix them. We made sure they were on interprofessional teams. You really had to be directive.”

In regard to professional dress, two nursing faculty members relayed the same story occurring at separate interprofessional education events. They both commented that their nursing students came from their clinical in their scrubs. The pharmacy students arrived in their clinical attire of white lab coats. The two groups were immediately set apart and created difficulties with team building. Prior to the next interprofessional events, the nursing faculty discussed professional dress. The interprofessional planning team agreed to white lab coats as the
professional dress for the next event. The professional distinction lessened, and the interprofessional student teams completed their tasks with increased collaboration.

**Briefing an Interprofessional Education Activity**

Many of the participants indicated the use of a briefing session. The briefing was defined as the period of time prior to the interprofessional activity where professional relationship building was initiated and a brief introduction to knowledge and skills needed for the interprofessional event was provided. The briefing may have been held in one of three ways: (a) in a discipline-specific course with students from one profession; (b) with all the students together in a class prior to the interprofessional activity; or (c) with all the interprofessional students at the beginning of the interprofessional activity.

**Professional relationship building.** A nursing faculty member commented, “We need to prepare students through interprofessional briefings. The relationship building between students from different disciplines must begin in the classroom briefing.” The professional team building began with professional introductions focusing on professional roles and responsibilities. “It starts when they do their introductions with each other. . . that helps to break the ice” (nurse practitioner faculty member).

However, several faculty members noted students need additional preparation in their discipline specific classes prior to the interprofessional event. The occupational therapy faculty member said, “One of the things that I do specifically with my students is in professional development that first week, I have them practice their elevator speech. I tell them you will be doing this the rest of your life - explaining what OT is.” In addition, students are asked to talk about their educational level, what is your curriculum like, and what kind of duties they do” (physical assistant faculty person) and “who their certifying body is and how long it will take
them to complete their degree program” (nursing faculty member). As noted by many of the participants, respectfully learning about interprofessional roles enhanced the effectiveness of teaching interprofessional education.

**Knowledge.** In order to effectively teach interprofessional activity, most participants noted students needed a short briefing about the knowledge and skills required to successfully complete the interprofessional education event. A nursing faculty member said, “So, our thought was to obviously create team building and be interactive - not just lecturing. So, all of our sessions would have a theory burst but we also had interactions going on. So, the first session we told the students what interprofessional education is and provided an overview of the knowledge they needed for the activity.”

**Teaching an Interprofessional Education Activity**

A majority of the participants described collaborative team building as an essential ingredient to effectively teaching interprofessional education. Effective teaching was defined as the facilitation of the interprofessional activity in order to encourage students to respectfully build professional relationships through communication and collaboration while at the same time acquiring new knowledge and developing team problem solving skills.

**Professional relationship building.** Most of the participants identified communication as the key to effectively teaching students how to build collaborative teams. The nursing faculty member, who was part of the interprofessional disaster drill, described the importance of communication and collaboration through the following scenario.

During the last IPE, the nursing students were appalled that the EMTs and paramedics stepped over someone who was triaged as code red. The victims, who were dying, were not the EMTs’ and paramedics’ focus. It was the victims, who they could help in the
amount of time and with the resources they had. The nursing students did not understand this frame of reference, so they needed to ask (nursing faculty member).

**Peer learning.** Another example came from the physical therapy assistant faculty, who noted effective teaching lies in the ability of the interprofessional faculty members to structure peer learning experiences. The physical therapy assistant and nursing faculty members created an interprofessional activity where the nursing students would train the physical therapy assistant students how to do vital signs, and the physical therapy assistant students would train the nursing students about working with mobility challenges. During the activity, the students helped each other learn the correct ways to perform their healthcare related tasks. Students could be heard saying, "I did it this way, and it is wrong. Doing it this way is better" (physical therapy assistance faculty person). In addition, “the students valued the fact a peer was telling them what was right and what to correct. They seemed to value it so much more. Even if it was the same thing they learned from us the semester before” (physical therapy assistant faculty member).

**Group facilitators.** The use of small groups for effective teaching of interprofessional education was recommended by almost all the participants. Interprofessional education events hosted by the physician assistant, nurse practitioner, occupational therapy, and physical therapy programs used faculty facilitators to build teams capable of collaboratively solving problems. “Facilitators for each small group were trained to not lead the group but rather step away and only step in if the group was stuck. . . We wanted students to lead the group but have assistance if needed” (occupational therapy and nursing faculty members).

**Role modeling.** A few of the participants noted the effective teaching of interprofessional education occurring during clinical experiences. “We can integrate interprofessional education into every clinical experience we are in. It's all about role modeling. The nursing clinical
instructor may ask the respiratory therapist, ‘How do the patient’s lungs sound to you?’ Students learn by watching the clinical instructor interact with the other professional, then doing it themselves” (nursing faculty person).

**Debriefing an Interprofessional Education Activity**

Most of the faculty stated debriefing was important to effectively teach interprofessional education. Debriefing was defined as the period of time immediately following the interprofessional education event when students discussed what they learned during the interprofessional activity.

For the student debriefing, a nursing faculty member described the use of an evaluation process focusing on how to improve future interprofessional activities. “We used a Delta. What did we do well? What do we need to improve? We have small and large group discussions with all the students and professionals at the end of the simulation using these questions” (nursing faculty member).

Another nursing faculty member stressed the importance of structured debriefing. “Structured debriefing focuses specific questions about the interprofessional event. It stimulates as much feedback as you can from the student participants and guides them into reflection. Ask probing questions. Let the students see at a deeper level, what they may have experienced, what they may be feeling, and to truly reflect on what just happened” (nursing faculty person).

**Evaluating an Interprofessional Education Activity**

A majority of the participants reported evaluation is crucial for the sustainability and continued improvement of the effective teaching of interprofessional education. Evaluation was defined as the activities used to assess student and faculty perceptions and measure student acquisition of knowledge and skills. Student and faculty observations, standardized tools, and
pretest and posttest surveys were referenced as the most common ways to collect data. However, participants reported varying degrees on how the data was shared and used to improve the effective teaching of interprofessional education.

**Student and faculty observations.** More participants mentioned the collecting of student perceptions in relation to gathering faculty perceptions. Students’ perceptions were gathered through debriefings, reflections, and surveys with Likert scales and open-ended questions. “What I did with my own students is they had to write a reflection. To me, that was helpful because that was part of their participation. I wanted to know their thoughts about how they learned” (nursing practitioner faculty person). One nursing faculty member commented on asking for faculty perceptions by saying, “We informally assess the simulation activity through educator feedback on what students are learning.”

**Standardized tools.** Two standardized tools, the Simulation Effectiveness Tool (SET) and Readiness for Interprofessional Learning Scale (RIPLES), where used to measure student the effectiveness of a simulation activity or indicate student readiness to participate in interprofessional learning. Both instruments were discontinued after a few uses, because they were “too long and students wouldn’t complete them. It was too complicated and not worth the time” (nursing faculty member).

**Pretests and posttests.** Participants indicated these tests were administered as surveys with Likert scaled responses and open-ended questions. The surveys sought to identify knowledge or skill acquisition and student perception of the interprofessional education event. They were most commonly administered as paper-pencil or online surveys.

**Data evaluation and feedback loop.** Several of the participants expressed concern that evaluation data was not shared with all the interprofessional education faculty, who participated
in the event. “The students all do an evaluation before they leave the event. One school gets all the data. So, I do not know what the evaluation results said. They wanted to wait until the summer to analyze it, but I haven't heard anything back from them” (nursing faculty member). Another nursing faculty person commented, “I was not in charge of compiling (evaluation) data. I found through experience that if I wanted that data, I had to create my own.”

On the other hand, a few participants recognized the importance of how evaluation data may create a feedback loop for revisions of curriculum and teaching practices.

Yes, we always process after the simulation with the students and professionals. We discuss all the feedback in the next few days or weeks with all the professionals involved in planning the next event and use it to revise the simulation. Also, make sure to plan the briefing and debriefing. The before and after the simulation are just as important as the simulation (nursing faculty member).

Conclusions

A majority of the participants indicated the effective teaching of interprofessional education involved a process of planning, briefing, teaching, debriefing, and evaluation stages. Thus, implications for the effective teaching of an interprofessional education must address the entire process.

Discussion

Although much has been done to describe the teaching practices related to interprofessional education curriculum, most of the literature explains how faculty intuitively teach in the manner they think is best (Charles et al., 2010). Furthermore, the evaluation of the effectiveness of teaching interprofessional education is limited (Reeves et al., 2015). As a result, this study explored faculty perceptions about the most effective ways to teach interprofessional
education. The findings from this study suggested that faculty, who taught interprofessional education, viewed effective teaching as an intentional, collective process of planning, teaching, and evaluating the interprofessional education curriculum.

Gitterman & Germain (2008) define the ecological perspective as an evolutionary process where the interdependence between and among people and their social environments create change. Interdependence, a core concept of the ecological perspective, assumes that if people and environments are interrelated and dynamic living entities, then they will change over time based on reciprocal exchanges between and among individuals and their environments (Gitterman & Germain, 2008). The exchanges influence individual and collective development, identities, and transformation (Gitterman & Germain, 2008). This study sought to understand the faculty perspective with regard to effectively teaching interprofessional education based on interdependence as described in the ecological perspective (Gitterman & Germain, 2008).

Particularly noteworthy was the importance interprofessional faculty members placed on the collective planning and evaluating of the interprofessional education experiences. This finding may be explained by applying interdependence, a core concept from the ecology perspective (Gitterman & Germain, 2008). Interdependence is the development of reciprocal relationships between and among individuals and their environments (Gitterman & Germain, 2008). When individuals communicate, collaborate, and cooperate, their transactions promote the development and transformation of individual and collective knowledge and skills (Gitterman & Germain, 2008). In relation to this study, faculty members viewed collective communication, collaboration, and cooperation as essential to the development of reciprocal professional relationships between and among themselves in order to effectively teach interprofessional education and, thereby, develop interprofessional teams.
Faculty described the importance of collaboration and communication between all faculty involved in teaching an interprofessional activity. In accordance with the Interprofessional Education Consortium (IPEC, 2011), the interprofessional competencies of collaboration, communication, and cooperation are not only learning outcomes for students but are also professional standards expected of interprofessional education faculty (Loversidge & Demb, 2015). Thus, most faculty members in this study described the effective teaching of an interprofessional education activity as a process oriented framework whereby participating faculty work as a team to collaboratively plan, teach, and evaluate the interprofessional education event (see Appendix B for a graphic representation of the process oriented framework of effective teaching of interprofessional education).

In other words, faculty valued collaboration as essential to building interprofessional teams who were directly involved in the interprofessional education experience. This collaboration developed when faculty communicated and cooperated as they planned, facilitated, and evaluated the interprofessional education activity. Hence, the entire process was viewed as crucial for the effective teaching of interprofessional education. Faculty explicitly described collaborative activities necessary for the planning and evaluation phases. During the planning activities, faculty noted the need for the interprofessional team to talk about profession-specific accreditation standards related to interprofessional education. Based on these accreditation requirements, which are sometimes not aligned between professions, the interprofessional team must negotiate a common ground. Rooted in a common understanding, the faculty team needs to establish goals and learning objectives for the interprofessional activity.

For the evaluation phase, faculty provided examples of the useful evaluation activities. When evaluation results were gathered and evaluated by the entire interprofessional team,
faculty reported a collaborative revision of interprofessional curriculum and teaching approaches. When the evaluation results were not collectively shared or reviewed, the interprofessional faculty developed their own methods of evaluation. When the team collaboration ended, faculty expressed feelings of being devalued, and professional silos began. Thus, faculty in the study noted the most effective way to teach interprofessional education was to form interprofessional teams built on collaborative relationships and to utilize the team throughout the planning, teaching, and evaluation phases.

A strength of this exploratory study is the richness of the faculty stories related to the most effective ways they have experienced the teaching of interprofessional education. However, this strength may also be a limitation. Since the interprofessional faculty for this study came from a narrowly defined geographic area, the findings of the study describe a particular group of people in a specific location. Hence, the findings may not be generalized to other interprofessional education faculty members, curriculum, and locations.

A second strength is the broad representation of professions. Participants in the study represented the professions of nurse practitioner, nursing, physician assistant, physical therapy assistant, and occupational therapy. At the same time, several professions were absent. Professions missing from the study included pharmacy, physical therapy, medical doctor, and social work. If these other professions had been represented in the study, the results may have been different.

A way to build on this study would be to consider future studies using a mixed methods design. If a quantitative phase is added to the qualitative research design, then the sample could possibly include a wider range of interprofessional faculty from more disciplines and across diverse locations. In doing so, a greater chance of generalizability may be created.
In terms of implications for interprofessional educators and practitioners, the process of teaching interprofessional education is important. All faculty members involved with facilitating interprofessional education should be involved with the planning, teaching, and evaluation of interprofessional learning experiences. As a result, faculty may begin to develop collaborative relationships built on communication and cooperation, thereby, demonstrating the same competencies expected of students.

Implications for accreditation organizations, university administration, and public policymakers include recognizing the importance of the process for developing effective teaching practices of interprofessional education. This recognition includes the provision of resources, such as time, finances, and personnel, needed to plan, facilitate, and evaluate the most effective teaching practices of interprofessional education. In the end, interprofessional education will require a team effort made up of researchers, educators, practitioners, and policymakers.

Conclusions

According to participants in this study, the most effective ways to teach interprofessional education are to involve the interprofessional team in the planning, teaching, and evaluation process. This includes beginning with the negotiation of common goals and ends with the sharing of evaluation results specifically for the purpose of revising interprofessional curriculum and facilitation of interprofessional activities. Nevertheless, faculty cannot achieve effective teaching of interprofessional education alone. It takes a team of educators, researchers, administrators, and policy makers to collaboratively communicate and cooperate to identify the needed resources. After all, aren’t we all on the same team?
References


Appendix A

Qualitative Research Sample Demographics

<table>
<thead>
<tr>
<th>Degree Programs</th>
<th>Received Invitations</th>
<th>Accepted Invitation</th>
<th>Graduate (G) or Undergraduate (U)</th>
<th>Taught Same University</th>
<th>Consortium Member</th>
</tr>
</thead>
<tbody>
<tr>
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<td>4</td>
<td>3</td>
<td>U</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Physician Assistants</td>
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<td>2</td>
<td>G</td>
<td>2</td>
<td>2</td>
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<td>G</td>
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<td>0</td>
<td>1</td>
</tr>
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<td>0</td>
<td>G</td>
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Appendix B

Process Oriented Framework for Effective Teaching of Interprofessional Education

Plan
- Create curriculum with common goals and learning objectives

Teach
- Complete briefing
- Facilitate activity
- Complete debriefing

Evaluate
- Discuss results
- Revise curriculum

Collaborative relationship building through communication and cooperation.
A Mutual Aid Conceptual Model for Teaching Interprofessional Education: The Art of Developing Collaboration, Cooperation, and Communication

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Abstract

The purpose of interprofessional education is to graduate healthcare students who engage in collaborative, patient centered practice. Recent evaluations of interprofessional education suggest the need for a theoretically informed teaching approach. This conceptual article introduces a theoretically supported teaching model called the Mutual Aid Conceptual Model (MACM). The mutual aid processes extending from ecology theory, specifically interdependence and goodness of fit, provide a conceptual framework for the MACM. The model provides faculty with a practical framework to teach and role model the formation of interprofessional teams, who collaborate, cooperate, and communicate.

*Keywords*: teaching interprofessional education, conceptual framework, mutual aid
A Mutual Aid Conceptual Model for Teaching Interprofessional Education: The Art of Developing Collaboration, Cooperation, and Communication

Unmet healthcare needs are the result of fragmented healthcare systems delivering patient care through a uniprofessional approach (World Health Organization [WHO], 2010). The result is a poor quality of healthcare at a high cost (WHO, 2010). In response, professional healthcare organizations and policy makers advocated for the use of interprofessional teams (Interprofessional Education Collaborative [IPEC], 2011; Frauenholtz, 2014). The healthcare system responded by increasing efforts to use interprofessional teams for collaborative practice while higher education answered by implementing interprofessional education (IPEC, 2011; WHO, 2010). A recent systematic review of interprofessional education specified an urgent need for a conceptual underpinning to the interprofessional curriculum, evaluation process, and teaching pedagogy (Reeves, Boet, Zierler, & Kitto, 2015). Thus, the development of a conceptual framework based on a theoretical perspective is relevant to teaching interprofessional education (Acquavita, Lewis, Aparico, & Pecukonis, 2014).

When considering how to advance the teaching of interprofessional education based on a theoretical foundation, understanding the student learning experience is important. Loversidge & Demb (2015) reported students learned best by observing faculty model collaboration, communication, and cooperation necessary for effective patient centered teamwork. Faculty perceptions indicated students, who experienced collaborative interprofessional learning opportunities, expressed safety in asking critical questions about patient care (Loversidge & Demb, 2015). However, teaching interprofessional curriculum is more likely guided by existing funding and intuition of best practices rather than a conceptual framework with a theoretical foundation (Anderson, Smith, & Hammick, 2015). Hence, the author will propose a conceptual
framework whose theory adopts the mutual aid process of the ecological perspective for the purpose of teaching collaboration, cooperation, and communication skills in interprofessional education.

**Purpose of Study**

Mutual aid involves interdependent relationships occurring when group members begin listening to the concerns of each other, establish a common goal, engage in problem solving, and use support and accountability to achieve individual and group goals (Gitterman & Shulman, 2005). If interprofessional education uses mutual aid to teach group formation through skill development, then faculty and students may develop interpersonal communication skills necessary for trusting relationships. A common goal of providing quality healthcare may become the focus of teamwork thereby reducing a strict allegiance to individual professional roles. As the learning progresses, collaborative problem solving, mutual support, and group accountability may aid in the implementation of the team decisions. Therefore, the application of mutual aid to the teaching of interprofessional curriculum holds great potential.

Even though mutual aid is generally used with client groups (Gitterman & Shulman, 2005), this paper will argue for an alternative, yet viable, application of mutual aid to interprofessional teams. The argument will be supported with key concepts from the ecological perspective as related to the mutual aid processes (Gitterman & Shulman, 2005). Those concepts will include interdependence and goodness of fit (Gitterman & Germain, 2008). In doing so, the transferability of the mutual aid processes from group practice with clients to interprofessional teams will strengthen collaborative group decision making and, in turn, may increase the quality of patient centered healthcare. Hence, the author will provide a conceptual framework using
mutual aid to teach collaborative interprofessional skills, namely collaboration, cooperation, and communication.

**Mutual Aid Conceptual Framework**

The provision of quality patient centered healthcare at an affordable cost is dependent upon healthcare providers collaboratively working together (IPEC, 2011; WHO, 2010). Higher education is tasked with the responsibility to graduate healthcare students who will enter the workforce with the ability to collaborate, cooperate, and communicate with professionals from various disciplines (IPEC, 2011; WHO, 2010). In an ideal world, healthcare professionals would engage in collaborative teamwork; however, reality points to a uniprosfessional education model, which socializes students to the unique roles and responsibilities of individual professions (VanderWielen et al., 2014). As a result, professional identity silos with rigid boundaries appear, and ineffective teamwork skills develop (VanderWielen et al., 2014; Sims, 2011). Thus, faculty must discover the best way to teach students about collaboration, cooperation, and communication between and among students and professionals from different disciplines.

Systematic reviews of interprofessional education support the development of a conceptual framework for a teaching skill development (Reeves et al., 2015) emphasizing the process whereby students learn to collaborate, cooperate, and communicate (IPEC, 2011). The author introduces a conceptual framework for a teaching approach based on the mutual aid processes underpinned with the theoretical concepts from the ecological perspective. Mutual aid is defined as the supportive process of developing interdependent relationships between and among group members and their social environment in order to advance the common goal of the group and at the same time respectfully promote individual aspirations (Gitterman & Shulman, 2005). When mutual aid is effectively working within the group, a goodness of fit develops
between individuals and their social environments (Gitterman & Shulman, 2005). For groups to maximize their benefits, each group member finds a goodness of fit between group members and subsequently focuses their work toward the common group goal instead of competing individual aspirations (Gitterman & Germain, 2008).

The concepts of interdependence and goodness of fit are best understood when considering the ecological perspective, which provides a theoretical foundation for mutual aid. (Gitterman & Germain, 2008). Gitterman & Germain (2008) define the ecological perspective as an evolutionary process with a simultaneous focus on the interdependence between and among people and their social environments, in such a manner that their exchanges influence individual and collective development, identities, and transformation. Interdependence, a core concept of the ecological perspective, assumes that if people and environments are interrelated, dynamic living entities, then they will change over time based on reciprocal exchanges between and among individuals and their environments (Gitterman & Germain, 2008). Goodness of fit, also a core concept of the ecological perspective, assumes an evolutionary process whereby people and environments experience stressors. In turn, the stressors require personal, environmental, and transactional resources to cope, adapt, and change (Gitterman & Germain, 2008). Based on the concepts of interdependence and goodness of fit, the author will apply the ecological perspective to a teaching approach using mutual aid.

In summary, the author will propose a conceptual framework, called the Mutual Aid Conceptual Model (MACM). This model may be used for teaching interprofessional education based on the mutual aid processes of the ecological perspective. This model, built on the theoretical concepts of interdependence and goodness of fit, will serve three purposes. First, faculty will have a theoretically informed teaching approach for developing student capacity to
collaborate, cooperate, and communicate. Second, students will learn the skills necessary for effective interprofessional teamwork focusing on patient centered healthcare. Third, healthcare patients will benefit from a system of professionals, who know how to work together in order to provide quality healthcare while potentially reducing healthcare costs.

**Literature Review**

The purpose of interprofessional education is to graduate healthcare students who know how to engage in collaborative, patient centered practice. In 2010, the World Health Organization defined interprofessional education as an academic activity in which interdisciplinary students cooperatively learn about, from, and with each other. Over the last five years, the interprofessional healthcare curriculum was taught in academic course work, simulation labs, extra-curricular trainings, or collaborative community practice experiences (Acquavita et al., 2014; Addy, Browne, Blake, & Bailey, 2015; Kent, Drysdale, Martin, & Keating, 2014; Chan, Lam, & Yeun, 2013; Nimmagadda & Murphy, 2014). These curriculum development efforts were guided by available funding, facilities, and faculty (Anderson et al., 2015). As a result, the intentional application of a theoretical foundation to the curriculum development and evaluation as well as the teaching of interprofessional education was limited (Reeves et al., 2015).

Since theory should inform practice, educators ought to use a theoretically informed teaching approach to interprofessional education. If theoretically informed interprofessional education is limited (Reeves et al., 2015), then faculty would do well to develop and teach interprofessional curriculum based on a conceptual framework. Thus, an urgent need exists for the development of a theoretically-informed teaching approach to interprofessional skills. In turn, student learning of collaboration, cooperation, and communication skills may be enhanced.
In light of the need for a theoretically based approach for teaching interprofessional education, the author argues for developing interprofessional teams by teaching collaboration, cooperation, and communication skills using the Mutual Aid Conceptual Model (MACM). This conceptual framework will be constructed on the mutual aid processes, which are theoretically informed by the ecological perspective of social work practice with groups (Gitterman & Shulman, 2005). Two key concepts of ecological perspective, namely goodness of fit and interdependence (Gitterman & Shulman, 2005), will be used to inform the MACM. Thus, the purpose of this paper will be to provide a conceptual framework using mutual aid processes to teach students the communication and cooperation skills needed to develop collaborative interprofessional teams, who may advance quality patient centered healthcare at a reduced cost.

**Theoretical Practice of Interprofessional Education**

Interprofessional education is a multifaceted, complex approach to learning (Reeves et al., 2010). Multiple factors impact curriculum development, delivery, and evaluation. Learner backgrounds, faculty member ability to facilitate learning, organizational structures and processes, cultural dimensions, funding, and professional identities influence teaching effectiveness of interprofessional education (Anderson et al., 2015). Another and more important influencing factor is the lack of a theoretically informed approach to the creation, delivery, and evaluation of interprofessional education (Reeves et al., 2015). If faculty had a conceptual framework for teaching interprofessional education, then their ability to facilitate student learning may be enhanced.

Reeves et al. (2015) asserts the need for a theoretical based approach to creating, teaching, and evaluating interprofessional education. The existing research applies singular theories to support curriculum design in a specific location or situation, explain a particular
phenomenon of interprofessional education, or assess student perception of their learning experiences (Reeves et al., 2015; Reeves et al., 2010). The single theoretical approaches range from cognitive behavioral to social cultural orientations (Anderson et al., 2015; Kitto, Nordquist, Peller, Grant, & Reeves, 2013) and limit our understanding to a narrowly defined perspective. Given the complexities of interprofessional education, the use of singular theories compartmentalizes our pedagogical approach to teaching teamwork skills, such as collaboration, cooperation, and communication. When faculty teach from diverse yet singular theoretical approaches, a systematic and comprehensive evaluation of teaching interprofessional curriculum is lost (Reeves et al., 2015). However, a conceptual model adaptable to diverse learning environments with a common language understood by interprofessional faculty may enhance student learning. The MACM may provide this comprehensive, practical framework.

Hean, Cradock, & Hammick (2012) created a comprehensive framework in order to enhance a systematic understanding of interprofessional education. They propose a multi-theoretical framework with the intent of providing a thorough understanding of the complexities of interprofessional education (Hean et al., 2012). Their framework organizes theories through the lenses of micro and macro learning theories. For example, micro learning processes explain how individual learning occurs through cognitive and behavioral processes, such as problem solving, facilitation, and scaffolding (Kitto et al., 2013). Macro learning theories discuss how group learning occurs within the social context, such as workplace learning, situated learning theory, communities of practice and systems and organizational theories (Kitto et al., 2013; Suter et al., 2013). The multi-theoretical framework proposed by Hearn et al. provides an organized approach by grouping theories according to system levels (2012). Their framework offers an excellent tool for deepening our understanding of the complexities of interprofessional education
but is difficult to adapt to a teaching model. Teaching faculty may benefit from a comprehensive conceptual framework with a practical, adaptable approach to teaching students how to collaboratively work on effective interprofessional teams. The MACM may provide such a model.

The lens used to view interprofessional education is evolving from a singular theory to a multiple theoretical framework. As a result, the multi-theoretical framework organizes our understanding of the singular theories by identifying the learning processes occurring within individuals and social contexts. Nonetheless, this framework proposed by Hean et al. (2012) separates individual learning from social learning theories. Their multi-theoretical framework does not provide a rationale regarding the impact of the relationship between the micro and macro learning on the teaching of interprofessional education. Faculty may benefit from a comprehensive conceptual framework, such as the MACM, allowing them to focus on how the exchanges between micro and macro learning systems impact the capacity of students to learn. Therefore, the MACM may provide a theoretically informed, practical teaching model aimed at developing collaboration, cooperation, and communication skills between and among interprofessional students.

A gap in the literature remains regarding a comprehensive, systematic theoretical approach focusing on how the interactions between the individual learners, the interprofessional team, and the social environment promote student learning. The author argues that the ecological perspective of social work practice (Gitterman & Germain, 2008) may offer a comprehensive theoretical understanding of interprofessional education. More specifically, the ecological perspective provides a simultaneous focus on the interdependence between and among people and their social environments in such a manner that their exchanges influence individual and
social learning (Gitterman & Germain, 2008). Thus, an assumption from the ecological perspective states that the reciprocity of relationships, or interdependence, enhances the capacity for individual and social growth (Gitterman & Germain, 2008). This assumption also supports a key concept from the ecological perspective called mutual aid (Gitterman & Shulman, 2005). The Mutual Aid Conceptual Model (MACM) may provide a practical teaching model for the purpose of facilitating the exchanges between and among the individual, group, and social learning systems. If faculty were to use this conceptual framework to teach interprofessional skills, student learning may be enhanced regarding how to collaboratively and cooperatively communicate with interprofessional team members.

**Mutual Aid Conceptual Model (MACM)**

The Mutual Aid Conceptual Model (MACM) is a conceptual framework built on the mutual aid processes developed by Gitterman & Shulman (2005) and the ecological perspective used by Gitterman & Germain (2008). For the purposes of this paper, mutual aid is defined as the supportive process of developing interdependent relationships between and among group members and their social environments in order to advance the common goal of the group and, at the same time, respectfully promote individual aspirations. The MACM may provide the theoretically informed, comprehensive framework needed to develop, teach, and evaluate interpersonal education. Since the supportive processes of mutual aid develop interdependence between and among group members and their social environment, the common goal of the group as well as individual group member goals may be attained (Gitterman & Shulman, 2005). Thus, the teaching power of mutual aid may afford faculty with a process to facilitate professional relationships between and among faculty from other professions while creating learning
environments to model and develop the collaboration, cooperation, and communication skills students need to learn for interprofessional team work.

**Collaboration, cooperation, and communication.** There is an urgent need to enhance our understanding about the challenges related to teaching interprofessional education. Findings from studies about student perceptions of interprofessional education suggested faculty should teach about professional role clarification and the related role responsibilities (Acquavita et al., 2014; Chan et al., 2013; Head et al., 2014; Kent et al., 2014; Suter et al., 2009). Most importantly, students reported the best learning occurred when faculty role modeled effective teamwork skills, such as of collaboration, cooperation, and communication (Acquavita et al., 2014; Loversidge & Demb, 2015). Furthermore, faculty perception indicated students, who experienced cooperative and collaborative interprofessional learning, expressed safety in asking critical questions about patient care thereby promoting a higher quality of patient health care (Loversidge & Demb, 2015). Thus, role clarification is necessary in order to develop effective interprofessional teams, who respectfully communicate, collaboratively resolve conflict, demonstrate flexibility, and cooperatively negotiate solutions (Head et al., 2014; Kent et al., 2014; Chan, Lam, & Yang, 2013).

In addition to interpersonal relationship challenges with developing collaborative interprofessional teams, environmental factors hinder the teaching of role clarification. According to Sims (2011), professional identity silos are constructed by virtue of our specialized training and socialization. As a result, rigid professional boundaries encumber faculty’s ability to role model collaboration, cooperation, and communication necessary to develop strong, effective teams (Sims, 2011; Suter et al., 2009). IPEC (2011) recognizes the environmental barriers to interprofessional education and clearly challenges interprofessional educators to practice
“flexibility within the professions” (as cited in Uden-Holman, Curry, Benz, & Aquilino, 2015, p. S104).

Collaboration, cooperation, and communication are team building skills required to develop effective interprofessional teams (Acquavita et al., 2014; Loversidge & Demb, 2015; Sims, 2011). Based on studies of student perception related to role confusion, faculty would do well to role model effective teamwork skills (Acquavita et al., 2014; Loversidge & Demb, 2015; Sims, 2011). The MACM may offer a framework for faculty to teach and role model collaborative interprofessional skills. In order to develop these teamwork skills, faculty may enhance student learning by showing them how to negotiate the strong boundaries established by professional silos and mediate professional role confusion between and among interprofessional team members. Throughout the mutual aid process, students learn how to create respectful and reciprocal professional relationships.

**Ecological perspective.** The author argues for the application of the ecological perspective as a comprehensive theoretically informed approach to the MACM. Gitterman & Germain (2008) define the ecological perspective as an evolutionary process with a simultaneous focus on the reciprocity of relationships between and among people and their social environments. The relationship exchanges become influential in individual and collective development, identities, and eventual transformation. Interdependence, a core concept of the ecological perspective, assumes that if people and environments are interrelated and dynamic living entities, then they will change over time based on reciprocal exchanges between and among individuals and their environments (Gitterman & Germain, 2008). Goodness of fit, also a core concept of the ecological perspective, is an evolutionary process whereby people and environments experience stressors, which in turn require personal, environmental, and
transactional resources to cope, adapt, and change (Gitterman & Germain, 2008). The core concepts of interdependence and goodness of fit from the ecological perspective provide a theoretical underpinning for the mutual aid processes found in the MACM. If faculty use a conceptual framework for teaching interprofessional education, they may enhance student learning about the importance of relating theory to practice. In addition, the MACM may also provide faculty with opportunities to role model interprofessional skills. Students may be prepared for professional practice by engaging in mutual aid activities in order to develop collaboration, cooperation, and communication skills.

When placed in an interprofessional learning situation, the students and faculty experience stress in two ways. First, a lack of collaboration, cooperation, and communication leads to professional role confusion among interprofessional team members (Acquavita et al., 2014; Chan et al., 2013; Head et al., 2014; Kent et al., 2014; Suter et al., 2009). Second, stress is experienced when professional identity silos create rigid professional boundaries thereby creating barriers among and between interprofessional team members (Sims, 2011; Suter et al., 2009). This stress experienced by the students and faculty may be the result of a deficit in interpersonal exchanges, more specifically a lack of collaboration, cooperation, and communication. The professional identity silos, representing the social environment, also produces a deficit energy flow among and between the students and faculty. Therefore, the interdependence among relationships is missing, and the goodness of fit is not present. In order to transform the deficit energy into a positive one, the interprofessional faculty member mediates the stressful exchanges through role modeling collaboration, cooperation, and communication. By doing so, the faculty member is teaching interprofessional skills from a theoretically informed approach – the ecological perspective with a focus on developing mutual aid.
Enhancing Student Learning in Interprofessional Education by Teaching with MACM

The Mutual Aid Conceptual Model (MACM) may provide faculty with a framework for enhancing student learning through the practice of mutual aid. The concept of mutual aid is described as the supportive process of developing interdependent relationships between and among group members and their social environment in order to advance individual and common goals (Gitterman & Shulman, 2005). When mutual aid is effectively working within the group, a goodness of fit develops between individuals and their social environments, and the group provides mutual support in order to achieve the common goal (Gitterman & Shulman, 2005).

The common goal of interprofessional education is to graduate students who enter the healthcare workforce with the capability to collaboratively work on interprofessional teams in order to advance quality patient centered healthcare while reducing the cost of healthcare expenses (IPEC, 2011; WHO 2010). During the academic career of students, faculty must teach the skills of collaboration, cooperation, and communication while creating learning environments for students to negotiate rigid professional boundaries and mediate interpersonal relationships. The mutual aid processes from the ecological perspective provides a theoretically informed framework for the MACM and may be useful for teaching interprofessional skill development.

Gitterman & Shulman (2005) noted nine processes, which are necessary for mutual aid groups. Those mutual aid process are (a) sharing information with other groups members in order to learn about their life experiences and resources; (b) engaging in dialectical discussions about similarities and differences and eventually negotiating the differences; (c) discussing taboo subjects; (d) realizing everyone is in the same boat and striving for the same common goal; (e) lending mutual support for the achievement of individual and group goals; (f) providing mutual accountability for choices; (g) engaging in individual and group problem solving; (h) practicing,
role playing, or rehearsing new behaviors; and (i) recognizing the support and positive energy available in a group versus an individual (Gitterman & Shulman, 2005). By applying the mutual aid processes, groups are able to achieve group and individual goals through the development of interdependence and goodness of fit among and between group members.

Faculty may find the common language used to describe the mutual aid processes of the MACM helpful for constructing learning opportunities to teach collaboration, cooperation, and communication skills. The MACM may socialize students to their own professions while developing a respectful understanding among and between students from other professions. The healthcare system may experience the influx of graduates, who are prepared to work on interprofessional teams and strive to improve the quality of patient center healthcare while reducing costs. In addition, the MACM may provide a teaching example of how theory may inform practice and, in turn, be used to create, teach, and evaluate interprofessional education. Hence, the MACM may hold potential in developing a comprehensive theoretical framework for teaching interprofessional team skills.

**Discussion**

Interprofessional education requires faculty to teach students how to collaborate, cooperate, and communicate between and among students from various healthcare professions (IPEC, 2011; WHO, 2010). The purpose of this article is to introduce a Mutual Aid Conceptual Model (MACM), a theoretically informed teaching approach, which may be useful in developing collaborative interprofessional teams. The subsequent discussion provides a practical application of the MACM along with implications for interprofessional education and suggestions for future research.

**Application of MACM**
The MACM is a conceptual framework based on mutual aid processes (Gitterman & Shulman, 2005), specifically the interdependence of relationships and goodness of fit concepts from the ecological perspective (Gitterman & Germain, 2008). As a result, the MACM has the potential to increase student learning by offering interprofessional educators a theoretically informed teaching model. The MACM also provides educators with a practical, common language teaching model, which facilitates student learning of the interprofessional education skills of collaboration, cooperation, and communication.

The MACM is informed by the mutual aid processes based on the group work of Gitterman & Shulman (2005; see Appendix A for graphic representation of MACM). The mutual aid processes use the natural evolution of group development to empower group members to reach their individual and collective group goals (Gitterman & Shulman, 2005). The group facilitator uses negotiation and mediation skills to nurture the growth of mutual aid between and among group members and to hold group members accountable for the achievement of goals (Gitterman & Shulman, 2005). The following discussion presents practical teaching techniques (see Appendix B for graphic representation of teaching application of MACM) designed to help faculty develop mutual aid within interprofessional teams.

**First and second mutual aid processes.** The faculty member uses getting acquainted activities to initiate the development of mutual aid. Second, the faculty member uses didactic learning and facilitates discussions enabling group members to discover the similarities and differences between different healthcare professions, specifically roles and responsibilities. During the discovery process, learning activities provide opportunities to discuss taboo subjects related to professional silos, such as professional hierarchies, rigid role boundaries, and the subsequent ineffective collaboration, cooperation, and communication.
Third and fourth mutual aid processes. Collaborative interprofessional practice is taught in the third and fourth processes. The third process focuses on identifying the common goal of interprofessional education, which is providing quality patient centered care through an interprofessional team (IPEC, 2011; WHO, 2010). In other words, all team members recognize they are in the same situation, or on the same team, working for the one outcome. The focus of the outcome is patient care and not exclusionary individual professional goals, which are typically structured for success within a specific profession.

The fourth process involves learning the art of negotiation as related to professional roles and responsibilities. In doing so, each individual team member is encouraged to honor and respect the contribution of each profession to the interprofessional team yet establish individual professional goals. The combination of the third and fourth processes offers opportunities to place the common goal of interprofessional education first and foremost while creating a group culture of respect for the uniqueness of each professional role. In other words, the common goal establishes a group focus helping to unify team members by using the contributions from each professional role. Hence, collaboration, cooperation, and communication may begin development through the third and fourth processes.

Fifth, sixth, and seventh processes. Mutual support and accountability, the fifth process, purposively teaches how mutual support and accountability develop and discusses how they are useful to the interprofessional team. The sixth process engages team members in seeking solutions, or problem solving, in order to provide quality patient centered healthcare. Collaborative interprofessional teamwork, the seventh process, provides time for educators and students to apply their solution to case scenarios, role plays, or community based experiences.
Eighth process. Finally, the eighth process encourages reflection on how the interprofessional team used collaboration, cooperative, and communication. The reflection reviews two dimensions of mutual aid. First, the team assesses how a goodness of fit developed between team members and their respective professions. Second, the team considers the extent to which the common goal of quality patient centered care was achieved. Reflection on the accomplishments of the interprofessional team may lead to celebration of successes and identification of areas for growth. As a result, the mutual aid process of the MACM may provide a useful teaching approach, which may promote student learning of the interprofessional skills, such as collaboration, cooperation, and communication.

Implications for Interprofessional Education

Given the need to graduate healthcare students, who know how to work on effective interprofessional teams, interprofessional education must begin to identify theoretically informed best practices for teaching collaboration, cooperation, and communication skills (IPEC, 2011; Reeves et al, 2015; WHO, 2010). The MACM conceptual framework may provide a practical approach using common language easily understood by professionals from various healthcare professions. In order to teach the mutual aid processes of the MACM, interprofessional educators must develop negotiation and mediation skills. Since social workers value the empowerment of groups through mutual aid processes (Gitterman & Shulman, 2005), social work educators are equipped to provide leadership in facilitating interprofessional team development using the MACM model.

Social workers value the unique dignity and worth of all people and understand the importance of human relationships in creating change (International Federation of Social Workers, 2004; National Association of Social Workers, 2008). Likewise, social work educators
are well positioned to negotiate and mediate professional silos by transforming the rigid boundaries of ineffective interprofessional teams. As a result, interprofessional educators and students learn to honor the knowledge and skills each profession brings to the team and, at the same time, embrace the power of mutually respectful collaboration, cooperation, and communication.

Ultimately, interprofessional faculty must teach students how to collaborate, cooperate, and communicate. Since social work undergraduate and graduate students are part of interprofessional healthcare teams, they must learn with students from nursing, pharmacy, occupational therapy, physical therapy, nurse practitioner, and medical programs. Therefore, interprofessional educators must teach through role modeling collaborative teamwork skills. The MACM may provide interprofessional faculty with a useful teaching approach in order to promote student learning of collaboration, cooperation, and communication.

**Future Research**

Future research should focus on completing a pilot study based on the mutual aid processes in the MACM. Based on the findings from the pilot study, adaptations should be made to the MACM. Next, the MACM should be studied using a mixed methods design using empirical research methods.

**Conclusions**

This article attempts to provide a collaborative, supportive approach to teaching interprofessional skills. Interprofessional teachers, students, and the healthcare professions may stand to benefit. For educators, the MACM may provide a theoretically informed, practical teaching model with processes described in a common language understood across healthcare professions. Student learning may be enhanced through engagement in the mutual aid processes,
which focus on attainment of individual and common goals through collaboration, cooperation, and communication. In regard to the healthcare professions, they may retain their individual identities, roles, and responsibilities but also socialize students to respect and collaboratively work with students from other professions. In doing so, quality patient centered care with reduced healthcare costs may be a reality and not only a possibility.
References


Appendix A

Mutual Aid Conceptual Model (MACM)

Appendix B

Teaching Application for Mutual Aid Conceptual Model (MACM)

A Mutual Aid Conceptual Model for Teaching Interprofessional Education: Perspectives Based on Social Work Educators and Practitioners Experiences

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Abstract
Ecology theory forms the theoretical underpinning for comprehending the development of mutual aid in social work groups and, subsequently, the application of the Mutual Aid Conceptual Model (MACM) to interprofessional education. The MACM may provide a tool for creating collaborative interdisciplinary faculty teams for the purpose of teaching interprofessional education. In addition, it may facilitate the teaching of collaboration, cooperation, and communication skills to students participating in interprofessional activities.
This paper describes the MACM as understood through the perspective of social work educators and practitioners. Social workers, who attended one of two professional conferences, critiqued the MACM from the lens of their interprofessional education and practice experiences. Evaluative feedback from conference participants was used to critically assess the strengths and challenges of the model. Implications for social work education, research, and policy are proposed.

Keywords: interprofessional education, mutual aid teaching model, ecology theory
A Mutual Aid Conceptual Model for Teaching Interprofessional Education: Perspectives Based on Social Work Educators and Practitioners Experiences

The aim of interprofessional education is to reduce the silos around professional disciplines whereby students learn to collaborate and cooperate through communicating with, from, and about each other (Interprofessional Education Collaborative [IPEC], 2011; Sims, 2011). The goal is to graduate health care professionals invested in a team based approach to improving the quality of patient care through efficient delivery of health care services (World Health Organization [WHO], 2010). Reeves, Boet, Zierler, & Kitto (2015) identified a need for a conceptual model to guide the development, teaching, and evaluation of interprofessional education.

In response to Reeves et al., (2015), the Mutual Aid Conceptual Model (MACM) for teaching interprofessional education was created. The conceptual framework was theoretically grounded in the mutual aid processes of ecology theory with an emphasis on the development of collaboration, cooperation, and communication skills through interdependence and goodness of fit (Gitterman & Shulman, 2005). In order to obtain feedback about the usability of the MACM, the model was presented at two professional social work conferences. This paper reviews the conference presentation proposals, reflects on feedback from conference participants, and proposes implications for teaching interprofessional education using the MACM.

Conference Presentations

The MACM was introduced at two social work conferences. Both conference presentations were accepted through a peer review process. The first was a poster presentation for the International Association of Social Work Groups (IASWG) – XXXVIII Annual Symposium at New York University, New York City, on June 17, 2016 (see Appendix A for
acceptance documentation). The second demonstration was a round table discussion for the 2017 Baccalaureate Program Directors (BPD) Annual Conference, at New Orleans, Louisiana, on March 3, 2017 (see Appendix B for acceptance documentation). The following information provides the abstract, learning objectives, key points, and literature review submitted with each proposal. At the end, an assessment of each presentation and participant feedback is shared.

**International Association of Social Work Groups – XXXVIII Annual Symposium**

The accepted proposal for the poster presentation at the IASWG – XXXVIII Annual Symposium included an abstract, learning objectives, key points, and a summary of the literature review. The following discussion describes the sections of the proposal and reviews the evaluation of the poster session, specifically the usefulness of the Mutual Aid Conceptual Model (MACM) from the viewpoint of social work educators and practitioners.

**Abstract.** The purpose of interprofessional education is to graduate health care students, who engage in collaborative, patient-centered practice. Recent reviews of interprofessional education suggest the need for a theoretically informed teaching approach. This poster presentation will introduce a theoretically supported teaching model called the Mutual Aid Conceptual Model (MACM) designed to promote collaboration, cooperation, and communication among interprofessional team members. The model aims to empower interdisciplinary teams to collaborate, cooperate, and communicate through the development of interdependence and goodness of fit. At the beginning of the process, role clarification with a focus on the well-being of clients and society is the primary goal.

**Learning objectives.** As a result of attending this session, the participants will be expected to demonstrate three objectives: (a) articulate how ecology theory and mutual aid processes theoretically inform teaching interprofessional education; (b) describe how mutual aid
empowers interprofessional teams to collaborate, cooperate, and communicate; and (c) articulate collaboration, cooperation, and communication skills necessary for role clarification, goal development, mutual support, and accountability.

**Key points.** Three fundamental points will outline the structure for the poster and develop talking points for the presentation. First, interprofessional education will be defined. An explanation of the MACM and its application to teaching interprofessional education will follow. In closing, implications for social work education and practice will be offered. The following overview further highlights the essential information in each of these three key points.

**Interprofessional education.** A definition and description of the purpose of interprofessional education will be supported with a description of its historical and social contexts (IPEC, 2011; WHO, 2010). Barriers to the effective delivery of interprofessional education will be identified as professional silos with rigid boundaries and role confusion (Sims, 2011) and the absence of a theoretically informed interprofessional education curriculum (Reeves et al., 2015).

**Mutual aid conceptual model.** The conceptual framework of the MACM will be explained through three forms: a written definition, graphic representation, and verbal conversation. Discussion will focus on how the theoretical underpinning of the MACM is based on the assumptions of interdependence and goodness of fit from the ecological perspectives of the mutual aid processes (Gitterman & Germain, 2008; Gitterman & Shulman, 2005). An example will illustrate how the mutual aid processes aim to increase collaboration, cooperation, and communication among interprofessional team members thereby applying the MACM to the teaching of interprofessional education.
Implications for social work education and practice. The presentation will urge social workers to lead by example when serving on interprofessional teams. Discussions will articulate how social workers have the facilitation skills to empower others through the mutual aid processes in order to develop collaboration, cooperation, and communication skills. As a result, role clarification, goal development, mutual support, and accountability may become reality.

Literature review. In 2010, the World Health Organization defined interprofessional health care practice as a team activity in which interdisciplinary professionals collaboratively learn about, from, and with each other. In order to do so, professionals from different disciplines must effectively collaborate, cooperate, and communicate (WHO, 2010). In the following year, the Interprofessional Education Collaborative acknowledged the urgent need to provide health care education by designating academic standards for interprofessional education (IPEC, 2011).

In an ideal world, interprofessional teams would communicate, cooperate, and collaborate in order to deliver patient-centered, effective health care services (IPEC, 2011); however, the reality points to a uniprofessional education and practice model. The uniprofessional model socializes students to the unique roles and responsibilities of individual professions (VanderWielen, et al., 2014). As a result, professional identity silos with rigid boundaries appear and ineffective teamwork skills develop (VanderWielen et al., 2014; Sims, 2011). Thus, social work educators must discover ways to teach by facilitating the development of collaboration, cooperation, and communication between and among interprofessional students and educators.

A recent systematic review of interprofessional education identified a need for a theoretical and conceptual underpinning to interprofessional education curriculum, evaluation processes, and teaching pedagogy (Reeves et al., 2015). Currently, teaching interprofessional
curriculum is more likely guided by existing funding and intuition of best practices rather than a conceptual framework with a theoretical foundation (Anderson, Smith, & Hammick, 2015).

Hence, the presenter proposes a conceptual framework for teaching interprofessional education, which is theoretically grounded to the mutual aid process of the ecological perspective.

The MACM may provide a conceptual framework to teach students how to collaborate, cooperate, and communicate with interprofessional team members (see Appendix C for a graphic representation of the conceptual model). The MACM is a theoretically informed framework based on mutual aid processes (Gitterman & Shulman, 2005), specifically the interdependence of relationships and goodness of fit concepts from the ecological perspective (Gitterman & Germain, 2008). The MACM provides a practical, common language model, which aims to facilitate the development of interprofessional skills especially collaboration, cooperation, and communication (see Appendix D for a graphic representation of a teaching application of the model). As such, interprofessional educators may find the MACM helpful when facilitating, negotiating, and mediating collaborative interprofessional team work.

This poster presentation will explore the use of the MACM to build effective interprofessional teams. Participants will gain an understanding of how to teach collaboration, cooperation, and communication skills in order to clarify roles, develop goals, and practice mutual support and accountability. In addition, participants will conceptualize how the MACM may transfer to interprofessional teams within each of their education or practice settings. In closing, a call to action will be extended for social workers to lead the way by using mutual aid in empowering interprofessional teams to focus on the well-being of individuals and societies.

**Poster.** The poster used for the presentation is available in Appendix E.
Evaluation. During the poster session, feedback about the presentation was provided through discussions with eight of the conference participants. They noted three strengths of the model. First, the practicality of the graphic figure and common language used to communicate the design and function of the model. Second, the transferability of the MACM between disciplines. Third, the transformative application of mutual aid from direct practice in social work to interprofessional education. For example, five conference participants remarked how the common language would easily be understood by professionals from different disciplines. One conference participant said, “Other professionals will understand the necessary steps for building collaboration because of the common language.” Six of the conference participants expressed interest in the visual representation of the model, especially the graphic design of a circular flow for facilitating the development of collaboration, cooperation, and communication. In addition, three conference participants expressed an interest in learning more about the mutual aid model and the possible application of mutual aid to interprofessional education.

On the other hand, one conference participant proposed an alternative viewpoint regarding the use of mutual aid for interprofessional education. This participant noted mutual aid has not undergone rigorous testing; therefore, application to interprofessional education should be carefully considered. In light of this comment, the use of mutual aid to develop collaboration, cooperation, and communication within interprofessional education groups should be deemed worthy of future inquiry.

2017 Baccalaureate Program Directors Annual Conference

The proposal accepted for a round table presentation at 2017 Baccalaureate Program Directors (BPD) Annual Conference included similar information as found in the IASWG poster presentation proposal. The learning objectives, key points, and literature review summary were
the same; however, an abbreviated abstract was submitted due to a word limitation on the proposal application. The following account provides the revised abstract, references the PowerPoint presentation and discussion handout, and evaluates the presentation from the perspective of social work educators and practitioners.

**Abstract.** This round table presentation will introduce a theoretically supported teaching model called the Mutual Aid Conceptual Model (MACM) designed to promote collaboration, cooperation, and communication among health care professionals. The model aims to empower interprofessional teams by reducing professional silos while focusing on the well-being of individuals and society.

**Learning objectives.** The learning objectives for the round table presentation were the same as noted in the poster presentation proposal.

**Key points.** The key points for the round table presentation were the same as described in the poster presentation proposal.

**Literature review.** The summary of the literature review was the same as written in the poster presentation proposal.

**PowerPoint.** The PowerPoint presentation is available in Appendix F.

**Handout.** The handout used during the presentation is available in Appendix D.

**Evaluation.** Three conference participants completed a written evaluation of the presentation (see Appendix G). The first three questions focused on content. The initial question asked if conference participants could “articulate how ecology theory and mutual aid processes theoretically inform teaching interprofessional education.” Two conference participants strongly agreed and one respondent agreed. The second question sought to understand if conference participants could “articulate collaboration, cooperation, and communication skills necessary for
role clarification, goal development, mutual support, and accountability.” All three conference participants strongly agreed. The third question wanted to know if conference participants believed they could “apply the mutual aid conceptual framework to their respective academic settings.” All three strongly agreed.

The last three items asked for feedback on the presentation. All three strongly agreed the information was conveyed “in an organized manner that was easy to understand” and “enhanced my knowledge about the topic.” Qualitative feedback included the following comments. “Good discussion about experience and opportunities for interdisciplinary practice.” “The interactive (mutual aid) nature of the presentation helped me think about how mutual aid was beginning to form within our group during the roundtable discussion.” “The model itself is exceptionally well done. The application of the concept of mutual aid was well done in a workshop setting.” Throughout the roundtable discussion, participants were using communication about different ways to apply mutual aid within different practice settings yet still maintained the common goal of improving the well-being of clients.

**Reflection of Learning**

The feedback from both presentations supplied additional thoughts about the application of the MACM to teaching interprofessional education. A common theme from both evaluations focused on the practicality of the model; however, plausible suggestions surfaced from each presentation. The following reflection reviews the learning acquired through the critique of the poster and roundtable discussions.

**Reflections on IASWG Presentation**

Three considerations emerged from the dialogue during the poster presentation at the IASWG – XXXVIII Annual Symposium. Those thoughts included the application of the MACM
to interdisciplinary faculty and student groups, practicality of the model, and recommendations for future research. The following reflection offers considerations about how the MACM may inform the teaching of interprofessional education primarily the facilitation of collaboration, cooperation, and communication skill development.

**Model application.** The application of mutual aid is generally perceived as direct social work practice with client groups (Gitterman & Shulman, 2005). However, the MACM proposes to transfer the mutual aid processes from work with client groups to interdisciplinary education teams. If the mutual aid processes are transferable to work with faculty and students, then the conceptual framework of the MACM may be useful in teaching collaboration, cooperation, and communication skills in interprofessional settings.

The discussions during the poster presentation granted insight into the possibility of transferring the use of mutual aid from social work practice groups to interprofessional education teams. Curiosity about the mutual aid model was evident. Conference participants suggested potential activities and approaches for using the MACM to teach interprofessional education within their respective institutions. As with any nascent conceptual model, the hope is for others to see the possibilities, apply the ideas to their own learning environments, and subsequently evaluate the results. Therefore, the potential for the application of the MACM seems relevant to the teaching of interprofessional education.

**Model practicality.** The purpose of mutual aid, and likewise the MACM, is to enable group members to achieve individual and group goals through discussion, accountability, respect, and mutual support (Gitterman & Shulman, 2005). In order to develop mutual aid in direct practice with social work groups, Gitterman & Shulman (2005) described the use of nine processes. The MACM reframed the mutual aid processes into a model for teaching
interprofessional education. The new perspective used common language and a graphic representation to illustrate the mutual aid processes in the MACM (see Appendix D).

Feedback from conversations during the poster presentation supported the use of a common language to describe the mutual aid processes. Of special interest were the discussions about how a common language may lessen the impact of professional languages creating discipline specific silos. Secondly, the discussions affirmed the use of a graphic representation in order to easily understand the flow of the mutual aid processes. Thus, the MACM seemed to be a practical teaching tool for interprofessional education.

Even though the conference participants affirmed the utility of the MACM, careful interpretation of the comments is warranted. All conference participants were social workers. In order to assess how interdisciplinary faculty members may perceive the MACM, professionals from diverse disciplines should be asked about their perceptions of the model.

**Research recommendations.** One alternative viewpoint emerged during the poster presentation discussions. This line of discourse is noteworthy, because the argument focuses on the limited amount of rigorous research demonstrating the effectiveness of mutual aid processes. On one hand, the application of mutual aid to interprofessional education should be carefully considered. On the other hand, the use of the MACM to develop collaboration, cooperation, and communication within interprofessional education groups should be deemed worthy of future examination.

**Reflections on BPD Presentation**

Feedback from the round table discussion at the BPD Conference offered three insights. First, the practicality of the model was emphasized. Second, conference participants articulated an understanding of the connection between ecology theory and mutual aid processes thereby
creating an awareness of a theoretical underpinning to the MACM. Third, the round table session enabled an interactive discussion about how each attendee might apply the model to disciplines other than health care. The following reflections highlight learning based on feedback from the conference participants about the presentation.

**Model practicality.** Regarding the viability of the model, the roundtable participants gave feedback comparable to the responses of the poster session participants. Their comments included the easily understood model mainly the use of common language. Even though both audiences were social workers, the parallel responses seem to lend support for the practicality of the model for teaching and practice. However, recommendations for future study would be to seek input from other interdisciplinary professionals.

**Theoretical foundation.** Reeves et al. (2015) recommended the development of interprofessional education models based on a theoretical framework and the scrutiny of such models through rigorous research. The MACM was created with this recommendation in mind. As a result, roundtable participants reported an awareness of how ecology theory informed the MACM, especially the use of mutual aid processes to teach interprofessional collaboration, cooperation, and communication skills. Nonetheless, the implementation and investigation using empirical research methods of the MACM remain necessary.

**Model application.** The roundtable presentation encouraged conference participants to share their thoughts about how they may apply the MACM to their respective academic settings. Based on evaluation responses, participants expressed an appreciation for the interactive nature of the presentation, specifically the opportunity to share diverse ideas about how they may apply the MACM. In turn, one participant noted an awareness of how mutual aid was beginning to form between the participants. This response may be the result of all the participants being
social work educators, who are interested in interprofessional education and may understand mutual aid. Alternatively, the conscious awareness of paying attention to the formation of mutual aid may also have been the result of our discussion. Regardless, the round table participants were noticing the potential of the MACM.

The social work profession suggests the use of mutual aid as an empowerment strategy (Gitterman & Shulman, 2005). Social workers, therefore, may be well-equipped to facilitate the use of mutual aid in interprofessional groups. As a result, interprofessional teams may begin to communicate, cooperate, and collaborate as interdependence emerges between its members. In other words, social workers may be leaders to develop and facilitate effective and efficient interprofessional groups focusing on the delivery of cost effective, quality patient care.

**Implications**

Implications for social work education, research, and policy should be considered if using the MACM for teaching interprofessional education. Even though the conceptual model appears to be practical, faculty from different disciplines should be asked for feedback regarding its feasibility. In addition, interdisciplinary faculty who teach interprofessional education should begin conversations about the potential applications of the MACM.

The MACM needs to be implemented, then assessed for successes and challenges. The best approach may be a pilot study involving several groups of interprofessional educators, who would apply the MACM in a variety of academic settings. These interprofessional groups might assess the model using observations and standardized perception scales for faculty and students. Next, the faculty groups may share information about the practicality of the model while suggesting possible revisions. Once the model is piloted and adjustments made, an evaluation plan using quantitative and qualitative research methodologies should be created.
Additional analysis may seek to understand the transferability of mutual aid processes to indirect practice with professional teams. Questions may focus on how interprofessional faculty members use the MACM to develop respect and accountability within their own interprofessional teaching groups. Additional explorations may look at the impact of using the MACM as an empowerment strategy to strengthen the development of collaboration, cooperation, and communication skills between and among faculty and students. Indeed, an intentional plan to evaluate the effectiveness and efficiency of the MACM is critical.

Policy makers would be wise to create funding streams to provide the financial and administrative resources needed for innovative interprofessional education models, such as the MACM. In doing so, efforts may identify the most effective and efficient approach to teaching interprofessional education. Since educating our current students about interprofessional collaboration, cooperation, and communication may possibly enable our future health care delivery systems to provide a higher quality of patient-centered care at a lower cost, providing financial and supportive resources for teaching interprofessional education with a focus on mutual aid seems prudent.

**Conclusions**

The MACM uses mutual aid processes to form a conceptual framework for teaching interprofessional education. The mutual aid processes of the MACM are based on the ecology theory and offer an empowerment focus for forming interprofessional teams, who learn how to collaborate, communicate, and cooperate. The practicality and applicability of the MACM seems realistic; however, evaluation of the model is critical to more fully understand its effectiveness and efficiency. If the MACM influences the teaching of interprofessional education in relation to
positive impacts on student learning, then our health care system and the patients served have the potential to be healthier. Together, we are healthier and stronger.
Annotated Bibliography


The authors describe the development and evaluation of interprofessional curriculum specifically designed to fit the context of their university. The theoretical foundation for the curriculum was based on adult learning theories, social constructivist theory, and contract hypothesis from the field of psychology. The comprehensive sample suggested a multilayer, complex approach to constructing curriculum, teaching interprofessional education, and assessing student learning.


The theoretical work of Gitterman and Germain was based on ecology theory, which became a theoretical foundation for social work group practice using mutual aid processes. The Mutual Aid Conceptual Model (MACM) was constructed using the assumptions of ecology theory and the life model of social work practice.


The theoretical work of Gitterman and Shulman informed social work group practice with clients. The authors described the use of nine mutual aid processes as a way to empower group members. Mutual aid processes use dialogue in order
to develop mutual respect and accountability thereby encouraging the attainment of individual and group goals. The nine mutual aid processes informed the Mutual Aid Conceptual Model (MACM).


The Interprofessional Education Collaborative was formed by the professional organizations of nursing, osteopathic medicine, pharmacy, dentistry, medicine, and public health. The collaborative, motivated by the interprofessional care policy established by the World Health Organization, designed academic standards and competencies for health care curriculums. All higher education health care programs belonging to the collaborative were expected to graduate students demonstrating competencies in the areas of interprofessional values and ethics, roles and responsibilities, communication, and teams and teamwork.


The authors proposed the simultaneous creation of interprofessional education curriculum with an evaluation plan. The curriculum should be grounded in a theoretical framework, and the evaluation plan should use empirical research methodology. The grounding of curriculum in a theory and an established evaluation plan using research designs informs implications for social work education.

The author suggested interdisciplinary professional groups were segregated by professional silos and, therefore, unable to effectively deliver interprofessional care. The rationale for rigid professional boundaries was attributed to socialization efforts by professional organizations and academic programs. These bodies focused on specialty knowledge and skills expected of individuals, who are members of the professional organization and their respective academic program. Thus, the importance of interprofessional education is emphasized.


The authors described the construction of an interprofessional education curriculum using a conceptual framework. Even though the framework identified the use of several mutual aid processes, a theoretical underpinning of the framework was missing. The application of a few of the mutual aid processes seemed relevant to formation of the Mutual Aid Conceptual Model (MACM).

The World Health Organization (WHO) provides an overview of the historical and social contexts leading to the development of social policy and guidelines regarding interprofessional health care. WHO defines interprofessional care as a team activity in which interdisciplinary professionals collaboratively learn about, from, and with each other by using effective collaboration, cooperation, and communication. The goal is the provision of quality, patient-centered health care at efficient costs.
Appendix A

Acceptance Letter for Poster Presentation at IASWG - XXXVIII Annual Symposium

From: symposium@iaswg.org [mailto:symposium@iaswg.org]
Sent: Monday, March 21, 2016 8:45 AM
To: Coleman, Rebecca E <RColeman@sf.edu>
Subject: Congratulations! Your IASWG 2016 presentation proposal has been accepted!

Congratulations!

On behalf of the IASWG 2016 New York City Symposium Planning Committee, we are happy to accept your poster presentation proposal for the IASWG Symposium, June 15-18, 2016 in New York City.

Please indicate that you will participate in the symposium as a presenter within 10 days of receipt of this acceptance email. If we do not hear from you within 10 days, we will assume you have decided not to participate in the symposium.

We are notifying you because you are the “Primary Presenter”. If you have co-presenters, please be responsible for notifying them of this acceptance. Since presenters must be registered for the Symposium and be IASWG members, please make sure your co-presenters: 1) register as soon as possible to attend the symposium; and 2) join IASWG as soon as possible.

All presenters must be current IASWG members. To join or renew, please visit: www.iaswg.org/join. If you are not sure your current membership status, please email Emily Wilk at membership@iaswg.org.

Session Date & Time: We will host our poster session on Friday, June 17th from 5:45 PM to 7:15 PM, which is a main feature of our Gala Reception. Due to the significance of Gala Reception, we ask individuals to purchase a ticket for the event. Since you will be presenting during the Gala, we want to assure you that you will not be asked to pay for your ticket to the Gala. When you pick up your registration packet at the Symposium Registration Desk, you will receive a complementary ticket to the Gala Reception.

Please contact us with any questions by email at symposium@iaswg.org. Once again, congratulations, and we are excited to see you and learn about your poster presentation at our IASWG Symposium in June!

Best regards,

Dana Grossman Leeman
Chair, IASWG Symposium Committee

Christine Wilkins, Sari Skolnik, Emily Wilk & John Genke
2016 IASWG New York City Symposium Planning Committee
Appendix B

Acceptance Letter for 2017 Baccalaureate Program Directors Annual Conference

From: noreply@precismail.com <noreply@precismail.com> on behalf of BPD Conference Planning Committee <noreply@precismail.com>
Sent: Tuesday, September 20, 2016 5:11 PM
To: Coleman, Rebecca E
Subject: BPD Annual Conference Submission Decision Letter A

Dear Rebecca Coleman:

We are delighted to inform you that your proposal, reference # 0844-000313, has been accepted by our reviewers and recommended for presentation at the 2017 BPD Annual Conference in New Orleans, LA. Please review the information below and adhere to all noted deadlines for having your presentation included in the conference program. All information to be included in the program is listed below and will be printed as submitted if no changes are received by the deadline.

Accepted presenters should plan to attend the entire conference and be prepared to present on any of the conference dates (March 1-5, 2017). We will be scheduling sessions over the next few weeks and all presentations will be scheduled and/or paired according to topic area.

Please review the information and deadlines below as they relate to your presentation and travel planning. Again, we thank you for your submission and look forward to a wonderful conference.

Presentation Information (to be listed in the program):
Title: Collaboration, Cooperation, Communication: A Mutual Aid Conceptual Model for Interprofessional Team Building
Track: Core Competencies
Format: Roundtable

Abstract: This round table presentation introduces a theoretically supported teaching model called the Mutual Aid Conceptual Model (MACM) designed to promote collaboration, cooperation, and communication among health care professionals. The model aims to empower interprofessional teams by reducing professional silos while focusing on the well-being of clients and society.

Primary Presenter: Rebecca Coleman
University/Affiliation: University of Saint Francis
State/Location: Indiana

Amanda Scott
BPD Executive Director

Shannon Cambron
Conference Chair
Appendix D

Teaching Application for Mutual Aid Conceptual Model (MACM)

A Mutual Aid Conceptual Model for Interprofessional Education: The Art of Developing Collaboration, Cooperation, and Communication

Rebecca E. Coleman, MSW, LCSW
St. Catherine University and the University of St. Thomas; Faculty Advisor: Catherine L. Marrs Fuchsel, PhD., LICSW, LCSW

ABSTRACT
The purpose of interprofessional education is to graduate health care students who engage in collaborative, patient-centered practice. Recent evaluations of interprofessional education suggest the need for a theoretically informed teaching approach. This poster presentation introduces a theoretically supported teaching model called the Mutual Aid Conceptual Model (MACM) designed to promote collaboration, cooperation, and communication among interprofessional team members. The model aims to empower interprofessional teams by reducing professional silos through role clarification and, subsequently, focus on the well-being of clients and society.

OBJECTIVES
1. Articulate how ecology theory and mutual aid processes theoretically inform teaching interprofessional education.
2. Describe how mutual aid empowers interprofessional teams to collaborate, cooperate, and communicate.
3. Articulate collaboration, cooperation, and communication skills necessary for role clarification, goal development, mutual support, and accountability.

INTERPROFESSIONAL EDUCATION
Definition
Interdisciplinary academic activity where students learn about, from, and with each other in order to collaborate, cooperate, and communicate about high quality of patient-centered health care.

Contextual Challenges
• Fragmented and expensive health care system
• Unprofessional approach
• Professional silos
• Role conflict
• Lack of collaboration, cooperation, and communication
• Curriculum lacks theoretically informed conceptual framework

CONCEPTUAL THEORY
Ecology Theory Assumptions
• If people and environments are interdependent and dynamic, then all entities will evolve due to transactional exchanges.
When people and environments experience stress, then transactional resources are used to cope, adapt, and find a goodness-of-fit.

Interprofessional Education Application
• Stress is experienced as a deficit energy flow
• Role confusion
• Professional identity silos
• Mutual aid provides a practical process to teach skills of collaboration, cooperation, and communication to negotiate and mediate professional identity silos and role confusion.

MUTUAL AID CONCEPTUAL MODEL
Mutual Aid Conceptual Model (MACM) is built on the mutual aid processes used in social work group practice. The model provides an adaptable, practical conceptual framework which focuses on empowering groups to teach individual and collective goals.

APPLICATION OF MACM

CONCLUSIONS
Benefits
• Theoretically inform teaching approach adaptable to the academic context
• Teaches collaboration, cooperation, and communication skills through problem-based and experiential learning
• Focus on common goal – patient-centered care and allows for individual goals
• Socializes students to interprofessional teams while respecting the unique roles of each profession

Limitations
• Mutual aid group facilitator needs negotiation and mediation skills.
• Implementation and evaluation of model is needed.

Call to Action
• Social work educators and practitioners need to lead the way. We are equipped to do so!

REFERENCES

CONTACT
Rebecca E. Coleman, MSW, LCSW
University of Saint Francis, 7811 Spring Street, Fort Wayne, IN 46802 USA
Email: Rebecca.Coleman@usf.edu

Appendix E
Poster for International Association of Social Work Groups – XXXVIII Annual Symposium
Appendix F1

PowerPoint Presentation for 2017 BPD Annual Conference

Collaboration, Cooperation, Communication: A Mutual Aid Conceptual Model (MACM) for Interprofessional Team Building

Rebecca F Coleman, MSW, LCSW
Roundtable Presentation
Baccalaureate Program Directors Conference
New Orleans, LA
March 3, 2017

Learning Objectives

1) Articulate how ecology theory and mutual aid processes theoretically inform teaching interprofessional education

2) Articulate collaboration, cooperation, and communication skills necessary for role clarification, goal development, mutual support, and accountability

3) Apply the mutual aid conceptual framework may be applied to participants’ academic settings
Interprofessional Education (IPE)

- Definition
  - A team activity in which interdisciplinary professionals collaboratively learn about, from and with each other

World Health Organization (WHO), (2010)

Interprofessional Education (IPE)

- Goals
  - Increase human and social well-being of patients
  - Involve patients in health care decisions
  - Deliver efficient health care

World Health Organization (WHO), (2010)
Appendix F3
PowerPoint Presentation for 2017 BPD Annual Conference

Interprofessional Education (IPE)

• Barriers
  • Rigid boundaries with professional silos
  • Role confusion
  • Absence of theoretically informed curriculum

Reeves, Boet, Zierler, & Kitto, (2015)

Mutual Aid Conceptual Model (MACM)

• Theoretical Underpinning for Teaching
  • Mutual aid processes (Gittelman & Shulman, 2003)
  • Ecology theory assumptions (Gittelman & Germain, 2008)
    • Interdependence
    • Good of fit
Mutual Aid Conceptual Model (MACM)

• Application
  • Mutual Aid Conceptual Model (MACM)

See Appendix D in Banded Dissertation

Mutual Aid Conceptual Model (MACM)

• Implications
  1. Educators and practitioners role model how to cross professional boundaries to mutually understand, respect, and support each other with focus on quality patient care.
  2. Process of planning, implementing, and evaluating is what creates the communication, cooperation, and collaboration.
  3. Policy makers and administrators need to support the provision of financial, administrative, and work release time to engage in interprofessional education.
Mutual Aid Conceptual Model (MACM)

Response? Ideas? Questions?

References


Appendix F6

PowerPoint Presentation for 2017 BPD Annual Conference

Contact Information

Rebecca Coleman, MSW, LCSW, Social Work Program Director
Social Work Program
University of Saint Francis
Fort Wayne, IN 46808
rcoleman@sf.edu
260-399-7700 x 8430
Appendix G

Round Table Evaluation Form

2017 Baccalaureate Program Director’s Annual Conference

March 3, 2017

Collaboration, Cooperation, Communication: A Mutual Aid Conceptual Model for Interprofessional Team Building

Presenter: Rebecca E Coleman

Directions: Please select the best response.

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<th>Neutral</th>
<th>Disagree</th>
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What I liked best about the presentation was:

The presentation could be improved if: