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# Explaining Collaboration in Nursing Education Programs

Jason Powell

*The University of Western Ontario*

Supervisor

Orchard, Carole

*The University of Western Ontario*

Finegan, Joan

*The University of Western Ontario*

Laschinger, Heather

*The University of Western Ontario*

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## **Abstract**

As a result of 2000, legislation changes regarding entry-to-practice for nurses, collaborative nursing education programs were formed in Ontario. These legislative changes required Colleges of Applied Arts and Technology (CAATs) to find university partners to enter into collaborative arrangements in order to continue delivering nursing education, due to their inability to confer university baccalaureate degrees independently. Subsequently, 21 CAATs in Ontario merged with 13 university nursing programs and entered into an education partnership in order for their graduates to meet an entry-to-practice requirement of a university baccalaureate degree. These newly formed collaborative nursing education programs varied in delivery formats and structures. After more than 17 years of program collaboration, perceptions of intergroup collaboration within these education partnerships, as well as the best practices for maintaining collaboration, have not been fully studied. The purpose of this study was to examine the utility of a theoretically derived model, linking contributory factors to collaboration within collaborative nursing education programs amongst full-time CAATs and university faculty groups. This study used structural equation modeling to examine the relationships between faculty members' perceived group identity salience, agreeableness, intergroup conflict, and structural empowerment on their perceptions of faculty group collaboration. The results revealed a significant relationship between intergroup conflict and collaboration, as well as structural empowerment and collaboration. However, group identity salience was not related to intergroup conflict. Finally, the variables of agreeableness and structural empowerment did not have significant moderating effects in the model. Further research is required in order to further illuminate the antecedent contributory variables to group collaboration between university and college educator teams charged with implementing collaborative nursing education programs.

*Keywords:* Collaboration, Nursing Education, model testing, organizational structures, group conflict, conceptual framework

## **Co-Authorship Statement**

I, Jason Powell, acknowledge that this thesis includes five integrated manuscripts that evolved as a result of collaboration with my supervisor and committee members. In the five manuscripts, the primary contributions were made by the first author in terms of the methodology, study design, research ethics boards applications, conduction of the literature review, data collection, reviewing and analyzing the data, and writing the manuscript. The contribution of the co-authors, Dr. Carole Orchard, Dr. Joan Finegan, and Dr. Heather Laschinger (deceased) was within the provision of supervision, guidance, and intellectual and editorial support in writing the multiple iterations of the manuscripts.

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## **Chapter 1**

### **Explaining Collaboration in Nursing Education Programs**

## **Introduction**

In February, 2000 the Ontario government enacted legislation changes requiring baccalaureate education for all registered nursing graduates. To achieve the outcome associated with this legislation, Colleges of Applied Arts and Technology (CAATs) were required to find a collaborating university partner in order to continue delivering nursing education. These collaborative programs were necessary due to CAATs inability to confer university baccalaureate degrees independently. Essentially, CAATs and their associated nursing workforce were required to merge and form partnerships with university undergraduate programs, in order to continue providing nursing education at the RN level. Subsequently, 22 CAATs in Ontario merged and formed educational partnerships with 14 university nursing programs in order for their graduates to meet the entry-to-practice requirement of the university baccalaureate degree.

For the purposes of this study, a collaborative nursing education program is defined as a baccalaureate-level nursing education unit whose delivery includes contributions (curricular delivery) from both university and CAAT educators, and has as its outcome a level of learning that meets university standards for conferring the baccalaureate degree by the university partner.

The Ontario collaborative nursing education programs, now in their eighteenth year of operation, vary in delivery formats and structures, but all enable graduates to obtain a baccalaureate degree upon successful graduation. To date, collaborative relationships between university and CAAT educator groups within these programs have not been fully investigated. Moreover, the graduates, or products of these programs (baccalaureate level nurses), are largely dependent on these two educator groups partnering, cooperating, coordinating, and sharing in decision-making processes, and not operating in isolation.

This research study, in totality, proposes to gain an understanding of the relationships between university and CAAT faculty groups and the factors that influence intergroup collaboration between these faculty teams. These relationships will be examined with a theoretically derived model that links group identity salience and intergroup conflict to collaboration. Further, this study will assess the extent to which faculty members' agreeableness moderates the relationship between group identity salience and intergroup conflict. Lastly, this



study will assess the extent to which structural empowerment provided by institutions moderates the relationship between intergroup conflict and collaboration.

### **Background and Significance**

Since the early 1980s, Canadian nurse leaders have asserted that university education is necessary to prepare nurses for ongoing changes in the health care system. These nurse leaders argue that the university baccalaureate degree provides the requisite knowledge, skills, and abilities to assist nurses in providing optimal patient-care within the ever-changing landscape of healthcare (Rheaume, 1998; Bajnok, 1992). Subsequently, in 2000, the Ontario government mandated baccalaureate-level entry-to-practice for Registered Nurses (RNs) to begin January 1, 2005 (Government of Ontario, 2000). Prior to 2001, nursing education in Ontario was independently delivered in both CAAT and university settings albeit for differing levels of educational attainment. These institutions operated in isolation of each other, and independently awarded diplomas or conferred degrees to students who satisfied the College of Nurses of Ontario entry-to-practice requirements.

Historically, CAATs and universities offered markedly different nursing programs with varying program objectives, entry requirements, faculty qualifications, and curricular directions. Additionally, these institutions often subscribed to differing instructional philosophies and curricular content. CAATs and university academies were also founded under opposing ideologies for admission and education (i.e., open access for CAATs, competitive admissions for universities with a focus on high academic achievement levels versus meeting minimal entry requirements within an acceptable achievement level in a college). These differing ideologies resulted in profoundly different institutional philosophies (MTCU, 2000). Accordingly, faculty groups involved in nursing education within these organizations were likely acculturated with these markedly different philosophies, curricula, and program outcomes. These varying cultures have the potential to create tensions between these two distinct faculty groups unless attention is given to specific organizational structures and processes.

The development and implementation of Ontario's collaborative nursing education programs has resulted in two culturally distinct faculty groups being required to work together in their delivery of nursing education. To date, the impact of these mergers on faculty group relations

and collaboration occurring between faculty groups has not been thoroughly investigated. Specifically, successes, failures, and dissolution of these collaborative partnerships have been reported. Reasons cited for success include the working relationships established between cross-institutional faculties (Thompson, 2007; McIntosh & Wexler, 2005). In contrast, reasons for failure and dissolution of these collaborative partnerships include: administrative barriers; shifts in collaborative spirit (group conflict); changes in leadership; irreconcilable differences between parties; institutional culture and value differences; disparities in workloads; and varied expectations of teaching and learning (CNA, 2003).

The costs associated with collaboration failures are substantial in terms of program delivery, human resource strain, workload, public image, and ongoing relationships. For instance, the Ontario Supreme Court decision, Hickey-Button vs. Loyalist College of Applied Arts and Technology, awarded \$7 million in damages to 70 former nursing students involved in the Loyalist-Queens University collaborative nursing program which dissolved in 1998 (Miller, 2011). Although the students were admitted into the program, education was not delivered due to a disintegration of negotiations between the two institutions. As such, an examination of the factors contributing to collaboration between faculty groups in collaborative nursing education is both timely and necessary.

In summary, the 2000 Ontario RN entry-to-practice legislation changes created the opportunity for CAAT and University faculty groups to collaborate in the delivery of nursing education. Prior to this legislative change, university and college faculties operated in isolation in two distinct types of organizations. Within a short time span, CAATs and universities in Ontario were required to shift from being competitors with varied cultures, capacities, and structural formations to being collaborators working in partnerships to deliver nursing education. This seemingly straightforward concept of collaboration has resulted in successes, challenges, transitions, and dissolutions of some collaborative nursing programs in Ontario at a significant financial and human resource impact (Miller, 2011). In Ontario and throughout Canada, collaborative nursing education programs have evolved, and will undoubtedly continue to innovate with the addition and subtraction of partners highly likely to occur. There is a dearth of studies examining relational outcomes associated with collaborative education, particularly nursing education program initiatives, occurring in Ontario as well as throughout Canada.

Specifically, successful collaboration between two faculty groups within these collaborative nursing programs has not been thoroughly investigated in the literature. To address this research gap, the proposed study will test and refine a theoretically derived model explaining the factors that contribute to CAAT-university faculty collaboration. Based on a comprehensive review of the literature, the current state of knowledge regarding intergroup collaboration, and research on organizational behaviour, including post-merger factors are hypothesized to contribute to collaboration between faculty groups. The proposed study will contribute to understanding of the nuances of CAAT-university faculty group mergers within collaborative nursing education programs, and what contributes to successful collaboration between these educator groups. Specifically, the intent is to implement a research study that highlights factors that contribute to college and university faculty collaboration including contributory and moderating variables.

### **Research Purpose**

The purposes of this study were to explore and describe contributory antecedents, mediators, and/or moderators to successful and meaningful collaboration between faculty members in Ontario collaborative nursing education programs and finally to test and refine a theoretically derived model linking selected antecedent contributory variables to collaboration among faculty members in nursing education programs.

### **Research Question**

The research question guiding this research was:

What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?

### **Hypotheses**

Specifically, the hypotheses tested in this study were:

- Hypothesis 1: educators' perceptions of their pre-merger *group identity salience* will be positively related to their perceptions of *intergroup conflict*.
- Hypothesis 2: educators' *agreeableness* will moderate the relationship between perceived *group identity salience* and perceived *intergroup conflict*.

- Hypothesis 3: educators' perceptions of *intergroup conflict* will be negatively related to perceptions of *collaboration* within the post-merger consortia. And,
- Hypothesis 4: *structural empowerment* will moderate the relationship between perceived *intergroup conflict* and perceptions of *collaboration*.

## **Methodology**

A non-experimental survey design will be used to determine the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs. Specifically, the proposed model linking interpersonal (group identity salience and intergroup conflict), dispositional (agreeableness) and organizational (structural empowerment) constructs with the selected outcome (collaboration) will be tested using Structural Equation Modelling.

## **Chapter Overviews**

This dissertation follows an integrated article format whereby each chapter is a separate manuscript. Chapter 2 is a manuscript titled “***Conceptual Framework Explaining Collaboration in Nursing Education Programs in Ontario***”. This manuscript provides a chronological description of progress of collaborative nursing education programs in Ontario and outlines a conceptual framework that was theoretically derived, linking explanatory variables to collaboration. The conceptual framework presented in this manuscript informed the basis of the empirical evaluation of the perceptions of collaboration within nursing programs in Ontario.

Chapter 3 is a manuscript titled “***Psychometric Testing and Analyses of the Modified Assessment of Interprofessional Team Collaboration Scale (for Educators)***”. This manuscript provides an overview of the psychometric testing, analysis, and results of the implementation of a modified version of the Assessment of Interprofessional Team Collaboration Scale (AITCS) in a sample of college and university educators. The modified AITCS was used to tap the construct of educator collaboration within the empirical evaluation as such a comprehensive analysis of the reliability and validity of the measure was essential for the overall study.

Chapter 4 is a manuscript titled “***Methodology for Testing Collaboration Within Collaborative Nursing Programs in Ontario, Canada***”. This manuscript presents the methodology and step by step process that this research study will implement in order to test the theoretically derived model. An overview of the study design and proposed data analysis procedures are presented.

Chapter 5 is a manuscript titled “***Explaining Collaboration Between University and CAAT Faculty Within Collaborative Nursing Education Programs in Ontario***”. This manuscript presents the results of an empirical study that sought to: (1) explore and describe contributory antecedents, mediators, and/or moderators to successful and meaningful collaboration between faculty members in collaborative nursing education programs and (2) test and refine a theoretically derived model linking select antecedent variables to collaboration. Research methods including sampling and recruitment strategies, participant selection, inclusion and exclusion criteria, data collection, data analysis, results, discussion, limitations and conclusion are presented.

Chapter 6 is titled “***Study summary and its implications***” and provides a discussion, implications, conclusions, and a summary of this research study’s results for current and future collaborative nursing education. Institutional recommendations are identified and presented that address current barriers and facilitators to collaboration between educator groups within collaborating nursing education programs.

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## **Chapter 2**

### **Conceptual Framework Explaining Collaboration in Nursing Education Programs in Ontario**

## **Abstract**

As a result of 2000 legislative changes regarding entry-to-practice requirements for nurses, collaborative nursing education programs were formed in Ontario. These legislative changes required Colleges of Applied Arts and Technology (CAATs) to find university partners to enter into collaborative arrangements in order to continue delivering nursing education. Ontario CAATs do not have the authority to confer *university* baccalaureate nursing degrees independently. Subsequently, 22 CAATs in Ontario merged with 14 university nursing programs and entered into education partnerships. The intent of the partnerships was for graduates to meet entry-to-practice requirements of baccalaureate nursing degrees. Importantly, these newly formed collaborative nursing education programs varied in delivery formats and structures. However, the one common feature of these collaborative nursing programs was the delivery of curricula through collaborative arrangements, utilizing CAAT and university faculty groups.

After more than 17 years of CAAT/University program collaboration, perceptions of intergroup collaboration within these education partnerships, the antecedent variables that contribute to perceived collaboration, as well as the best practices for maintaining collaboration, remain unknown. This article provides a chronological description of the progress of collaborative nursing education programs in Ontario and outlines a conceptual framework that is theoretically derived, linking explanatory variables to collaboration. This framework provides a means to understand the perceptions of collaboration within nursing programs in Ontario.

This article provides a chronological description of the progress of collaborative nursing education programs in Ontario and outlines a conceptual framework that is theoretically derived, linking explanatory variables to collaboration. This framework provides a means to understand the perceptions of collaboration within nursing programs in Ontario.

*Keywords:* *conceptual framework*, collaboration, nursing education, educators



## **Introduction**

In 2000 the Ontario government enacted legislation requiring university baccalaureate credentials for all registered nursing graduates. To achieve this legislated outcome, Colleges of Applied Arts and Technology (CAATs) were required to find a collaborating university partner in order to continue delivering nursing education, and confer university baccalaureate degrees on their graduates. Essentially, CAATs and their associated nursing faculty members were required to merge and form partnerships with university nursing faculty, in order to continue providing nursing education at the Registered Nurse level. Subsequently, 21 CAATs in Ontario merged and formed educational partnerships with 13 university nursing programs. These partnerships provided the means for CAAT graduates to meet an entry-to-practice requirement along with university nursing students of the baccalaureate nursing degree. Thus, by definition, a collaborative nursing education program (CNP) is a baccalaureate-level nursing education unit whose delivery includes contributions (curricular delivery) from both university and CAAT educators, and has as its outcome, a level of learning that meets university standards for conferring the baccalaureate degree by the university partner.

Ontario collaborative nursing education programs, now in their eighteenth year of operation, vary in delivery formats and structures, but all enable graduates to obtain a baccalaureate degree upon successful program completion. To date, the success of collaborative relationships between university and CAAT educator groups within these programs has not been fully investigated. Conceptually, the success of graduates is largely dependent on the two professional educator groups (CAAT and University) partnering, cooperating, coordinating, and sharing in decision-making processes, and not operating in isolation. A lack of successful and effective collaboration could therefore potentially result in the production of a more inferior outcome than expected. As such, an investigation examining the status of CNPs is both timely and prudent.

This article proposes a theoretically derived conceptual model that depicts an understanding of relationships between variables that contribute to group collaboration between the CAAT and University nursing faculty members. In the paragraphs that follow, the author will describe the background to creation and implementation of collaborative nursing education programs (CNPs)

in Ontario as well as provide an overview of literature on the construct of collaboration and contributory variables associated with collaboration. This chapter will end with a presentation of a conceptual framework linking antecedent contributory variables to collaboration which will inform the basis of an empirical evaluation of perceptions of collaboration within Ontario nursing education programs.

### **Ontario Collaborative Nursing Programs (CNPs)**

The implementation of Ontario's CNPs spawned a variety of delivery models and associated structural arrangements (Kirby, 2007). In each of these collaborative nursing education models, students earn a baccalaureate degree, which is conferred by the university partner upon successful program completion. This baccalaureate level degree satisfies one critical criterion set by the College of Nurses of Ontario's (CNO) entry-to-practice requirements. In each Ontario collaborative nursing education program, both university and CAAT educators participate (in varying capacities) in delivery of their respective nursing education curricula. Accordingly, it is imperative for these two educator groups to engage in constructive and productive collaboration in order to optimize these educational partnerships.

Ontario CNPs are well-established but there is little systematic research associated with their faculty members' collaborations. The paucity of studies related to factors contributing to collaboration between college and university faculty groups within nursing education programs highlights the timely and prudent need to study variables believed to influence collaborative partnerships among the Ontario CNPs. Moreover, the study of collaboration occurring between faculty members in collaborative programs may provide insight for administrators and policy makers contemplating such collaborative ventures in their respective institutions for other practice-based programs contemplating collaborating in curriculum delivery. Specifically, expanded knowledge of collaboration within Ontario nursing programs could drive policy related to professional education ventures, and as such, this research is timely and fills a gap in our current understanding of factors which contribute to collaboration within CNPs.

## Literature Review

In the paragraphs that follow, the existing literature on collaborative nursing education programs will be presented to elucidate variables and concepts that may influence collaboration among nursing faculty members in Ontario collaborative nursing programs.

### Collaboration

An initial literature search using the term *college university nursing collaboration* revealed that there is scant research literature on any aspects of collaborative nursing education programs. Importantly, to date, no empirical research studies have assessed and evaluated the collaborative nursing education programs in Ontario or across Canada since their inception. The only studies located focus on qualitative assessments of these collaborative programs.

Thompson (2007) conducted a qualitative case study on collaborative nursing programs in Ontario in partial fulfilment of a doctoral program in Ontario. Specifically, Thompson recruited 30 Ontario participants (26 faculty members internal to, and four faculty members external to day-to-day college-university partnership development) and investigated contextually specific factors associated with perceived successes or failures of the program. Informants were from four institutional partnerships (cases). The inclusion criteria were: 1) multiple college partners, 2) an integrated approach (faculty from both partners contributed to curriculum delivery), and 3) an extended period before a formal agreement was reached (meaning delays in signing collaborative program agreements). Subsequently, themes with respect to ‘indicators of successful collaboration’ and ‘predictive problems in collaborative relationships’ were reported. Indicators of successful collaboration are included in Table 2.1

Table 2.1:

#### *Indicators of successful collaboration*

---

- (1) Clear, common goals developed together,
- (2) Mutual trust and respect,
- (3) Sufficient time and opportunity to strengthen relationships at all levels,

- (4) Quality and commitment of individuals involved,
  - (5) Constant interaction between top management, faculty, and support staff,
  - (6) Flexible institutional policies and processes,
  - (7) Frequent formative evaluation of a variety of activities among partnering institutions,
  - (8) Shared responsibilities and accountabilities among partners, and
  - (9) Crisp and inclusive lines of communication between all levels within the collaborating institutions.
- 

Predictive problems in collaborative relationships are summarized in Table 2.2

Table 2.2:

*Predictive problems in collaborative relationships*

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- (1) Negative attitudes and feelings about collaboration,
- (2) Programming related challenges (clinical placement competition, finances, infrastructure, resistance to change and shortage of staff),
- (3) Commitment to collaboration (feeling forced to partner, sense of withdrawing, lack of community),
- (4) Communication difficulties (lack of consultation between parties, open and honest communication, and dysfunctional techniques),
- (5) Cultural variances (institutional differences, and educational philosophies),
- (6) Decision-making (limits to conflict resolution, ambiguous decision making),
- (7) Difference between sites (power differentials, teaching approaches, and technology applications),
- (8) Faculty expectations (credentials, hiring practices, roles in collaboration, teaching assignments and workload, and professional development),
- (9) Inadequate financing of programs,
- (10) Geographic locations between partnering sites,
- (11) Governance,
- (12) Political (devaluing of college partners by others),

- (13) Varying program model (admissions, teaching consistency, resources, and structure of program),
  - (14) Relationships (accidental adversaries, factors interfering with cooperation, leadership changes and status of partnership),
  - (15) Territory (identity, ownership, partnership agreements, and accountabilities),
  - (16) Workload variations (collective agreements, stress, demands, and teaching and coordination), and
  - (17) Lack of recognition of work (between partners, for workload and time preparation requirements to make collaborative nursing education work).
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MacIntosh and Wexler (2005) provided a descriptive, non-empirical description of the collaborative nursing education program between Ontario's Humber College Institute of Technology and Advanced Learning and the University of New Brunswick (UNB). While most of the collaborative programs involved Ontario CAATs and its universities, the Humber College collaborative partnership was unique with an out of province university. McIntosh and Wexler (2005) discussed structural requirements for success within an interprovincial collaborative partnership including: management of student transfer credits, faculty qualifications, curriculum philosophy, course development and delivery mandates, learning strategies, and mitigation of challenges associated with implementation of the program.

The works of Thompson (2007) and McIntosh and Wexler (2005) were not empirical research studies. However, they were useful in describing thematic areas that contributed to successful Ontario collaborative nursing education programs. Specifically, existing literature in relation to the Ontario collaborative nursing context was helpful in identifying thematic areas that may contribute to sustaining collaborative relationships. In paragraphs that follow, the author will present an overview of existing literature on collaborative nursing education programs in Canada.

### **CNPs in Canada**

An historical overview of the Collaborative Nursing Program (CNP) in British Columbia was provided by Molzahn and Purkis, (2004). This overview described merging of different institutional cultures, priorities, and goals, across several educational institutions. Initially, all

students enrolled in this CNP received a baccalaureate degree conferred by the University of Victoria. However, changing legislative authority of some partners (creation of university colleges and then a further change in some to universities) led to the ability of all partnering sites to confer baccalaureate degrees unilaterally. This created tension amongst partners. Thus, when two colleges were able to grant their own baccalaureate degree, the resulting tensions between partners led to ‘*divorces*’. Identified strategies for successful collaboration were: clarity of both government policy and legal agreements, mutual and congruent expectations across sites, clear evaluation and review processes, as well as transparent plans, goals, and other requisite curriculum components (Molzahn & Purkis, 2004).

Importantly, the Canadian, and Ontario nursing collaborative education literature review did not identify any existing frameworks to which Ontario nursing programs could be evaluated. Further, none of the above descriptive papers (McIntosh & Wexler, 2005; Molzahn & Purkis, 2004) clearly identified specific antecedent variables for strengthening and/or sustaining collaboration between university and college faculty. Moreover, the impact of collaboration between individual faculty members across partnering institutions was not addressed.

Although most of the existing literature on collaborative nursing education programs is non-empirical and anecdotal, findings did provide some limited insight into what factors might influence successful faculty integration and resultant collaboration. Based on this literature review identified factors associated with challenges, frustrations, failures, and successes within collaborative nursing programs in Ontario and across Canadian nursing programs, may be linked to additional antecedent variables including interpersonal relationships, within individuals and between faculty groups, and organizational (structural) components (McIntosh & Wexler, 2005; Molzahn & Purkis 2004; and Thompson, 2007). Specifically, literature suggested the potential role of interpersonal relationships and structural components, as well as individual factors, in determining success of collaborative nursing programs. Accordingly, a further literature review was conducted in search of a framework which could be used to underpin an empirical evaluation of contributory variables to collaboration in CNPs. As a result, literature on interprofessional collaborative practice (ICP) was examined, as its concepts were transferable to the topic of collaborative nursing education. Specifically, the ICP literature described attributes

that enabled successful multi-group collaboration and is expanded on in the following paragraphs.

### **Attributes That Enable Group Collaboration**

Although research attention has been paid to teamwork, team operations, and team roles, there is a paucity of research around the processes that teams must go through to achieve successful collaboration (Orchard, Curran, & Kabene, 2005). Orchard and her colleagues argued that interprofessional employee groups must go through a change process (sensitization, exploration, intervention, and evaluation) allowing for a re-socialization towards collaboration between groups without which persistent power differentiation may continue, creating an environment for conflict between groups. Conflicts often arise due to challenges in role clarification, role valuing, and differing goals (Orchard, 2010). These conflicts can prevent or erode trusting relationships between groups, leading to resistance in power sharing and stifling collaboration.

When role socialization processes are successful, trusting relationships between collaborating groups can occur (Howarth Warne, & Haigh, 2012; Orchard, 2010; Orchard et al., 2005; Pinto, Pinto, & Prescott 1993; Sollami, Caricati, & Mancini, 2017). Further, in order for collaboration to be optimized, trust within merging groups must be fostered and members acculturated to accept shared goals and objectives of this new group as their own (Orchard 2010; Ashworth and Mael, 1996). Collaboration across faculty employee groups is also affected by bureaucratic structures and resources available within an organization (Gilbert, 2009, McIntosh & Wexler 2005). When faculty perceive an unequal distribution of structures and resources between different programs, strains within collaborative practices can result. Thus, for effective collaboration (partnerships, cooperation, and coordination) to occur, individual actors (personal characteristics) and the organizations (structural characteristics) must come together to create mutually agreeable ways to work together (Rosh, Offermann, & Van Diest, 2012; & Orchard et al., 2005). Moreover, according to Ashforth and Mael (1996) individual group member identification is a strong predictor of group cohesion and performance. According to Ashforth and Mael “it is important that organizational members share at least some common ground on what the organization represents,” (p.34). Moreover, they assert that gaining consensus on key

values, beliefs, and norms facilitate coordination and a common sense of direction. Finally, Ashforth and Mael (1996) asserted the work of Taifel (1982) and Turner (1984) was an important conceptual framework for interpretation of antecedent variables that contribute to group collaboration.

### **Social Identity Theory**

Group social identity refers to the extent to which an individual group member perceives oneness or belongingness to a group (Tajfel, 1982) and may be a powerful predictor to how faculty members in CNPs acculturate and subsequently work together. Tajfel (1982) posited that the degree to which a group member perceives his/her membership/association to a particular group to be salient to their existence. This acculturation is posited to predict certain behaviours should that group become threatened or invaded by another group or individual not part of that original group. Social identity is a significant predictor of group relations and subsequent tensions associated with group integration (Tajfel, 1982). Hence, the salience of an individuals' group identification has been found to be a strong predictor of outcomes following group integration (Turner, 1984).

Other researchers have also demonstrated effects of group identity salience on group categorization and subsequent behaviours (Chen & Li, 2009; Turner, 1982, 1984; Turner, Sachdev, & Hogg, 1983; and van Dick, Grojean, Christ & Wieseke, 2006). In a study by Turner, Sachdev, and Hogg (1983), research participants were assigned to a group, which was either explicitly categorized, or not categorized at all. The participant's subsequent attribution to the group was measured (positive, negative, or arbitrary). The findings revealed group formation to be a direct function of categorization and not of attraction. Turner (1984) concluded that group social identity salience affected outcomes associated with group formation. Further, group identity salience influenced intragroup cohesion, cooperation, intergroup conflict, altruism and subsequent positive evaluations of the in-group at the expense of the out-group. Thus, group identity salience may contribute to intergroup conflict and the resultant ability of collaborating employee groups to work together effectively.

Social Identity Theory (SIT) further posits that the perceived importance of membership in a group (group-identity salience) contributes to intra-group favouritism and inter-group



discrimination. Specifically, group identity salience results in more inter-group discrimination and bias causing individuals to allocate more resources to in-group members and fewer resources to out-group members (Hogg & Reid, 2006; and Tajfel, Billig, Bundy, & Flament, 1971).

Essentially, SIT is based on the assumption that humans are inherently motivated to maintain and preserve a positive self-image at the expense of the out group. Thus, group membership creates in-group self-categorization that favors the in-group at the expense of the out-group. Accordingly, in-group enhancement results in negative inter-group bias, whereby the in-group members view themselves more favourably than out-group members (Brown, 2000; and Sluss & Ashforth, 2007). For purposes of, and in relation to CNPs, the in-group refers to the employee membership group (i.e., CAAT group for CAAT educators and university group for university educators).

Ashforth and Mael (1989) suggested that social identity based categorization of employees has significant consequences to organizations. Specifically, strained relationships between in-groups and out-groups can affect staff turnover intentions, decrease self-esteem and productivity, increase stress levels among members, increased illness, desire to remain in the in-group, and likelihood of failed collaboration efforts. These authors further posit that it is “reasonable to expect that identification would be associated with loyalty to, and pride in, the group in which the individuals most identify with and their activities” (Ashford & Mael, 1989, p. 26).

Consequently, SIT provides a useful theoretical basis for identifying and describing the potential characteristics and variables that may contribute to faculty group collaboration in collaborative nursing education programs. Specifically, SIT may identify root causes of insurmountable challenges associated with the union of two distinct faculty groups (university and CAAT employee groups) and resultant tensions, conflict, and overall collaboration between the two groups that may occur within the CNPs. Essentially, self-categorization and group identification among CAAT and university group members may hinder the acculturation process, and result in intergroup bias and conflict, which may challenge the groups’ abilities and willingness to collaborate. Moreover, in the context of collaborative nursing education programs, challenges to the acculturation process may lead to an enhanced affinity for an individual’s in-group (CAAT and university employee group category). This in-group favouritism may severely

limit faculty willingness to work effectively with those perceived as out-group members and according to Chuang, Church, and Zikic (2004) this resultant divergence will “evoke conflict among group members” (p. 29).

## **Group Conflict**

Conflict is defined as any antagonistic opposition, disagreement, or incompatible state of being between two or more parties (Merriam-Webster Online Dictionary, 2011-12). Conflict between team members can impede collaboration (Orchard et al., 2005; & Sherif, 1967) and affects a host of individual and organizational processes and outcomes (Hartwick & Barki, 2004). Importantly, based on the literature, acculturation and a-priori group identification can lead to in-group favoritism and out-group bias, which will likely lead to tension, hostility, annoyance, and relational conflict (Hinds and Mortensen, 2005; & Tajfel and Turner, 1986). Regardless of form, party involvement, or situation, conflict can have either positive or negative impacts on group productivity. Further, its impact on working relationships depends on how conflict is managed or resolved (Behfar, Peterson, Mannix, & Trochim, 2008 and Simons & Peterson, 2000). In general, there are two types of conflict: task related and relational conflict. Task-related conflict refers to disagreements among group members about task issues including the nature and importance of task goals, key decisions, and procedural matters (Shah & Jehn, 1993; De Dreu & Weingart, 2003). In contrast, relational conflicts refer to interpersonal incompatibilities including tensions, animosities, hostilities, and annoyances among group members (Jehn, 1995; De Dreu & Weingart, 2003). Generally, task-related conflict is more likely to have a positive effect on group functioning, whereas relational conflict is more likely to have a direct negative impact on group relationships, performance, and outcomes (Bradley, Klotz, Postlethwaite, & Brown, 2013; and Janssen, de Jonge, & Bakker, 1999). Relational conflict tends to result in negative outcomes due to limited information processing ability of group members as their attentions are consumed with justification of their own group’s importance. Thus, relational conflict within an organization results in hostile interactions among group members, hindering group outcomes including task-related matters of the shared group and overall productivity (Evan, 1965; Janssen et al., 1999; de Dreu & Van Vianen, 2001). Further, relational conflict increases group members’ stress and anxiety levels, which can

negatively impact members' cognitive abilities (Simons & Peterson, 2000; Jehn & Bendersky, 2003; and Staw, Sandelands, & Dutton, 1981).

Therefore, when group identity salience is strong, a competitive intergroup orientation may replace a more cooperative intragroup orientation within the collective group (Brown, Condor, Mathews, Wade, & Williams, 1986; Brewer & Schneider, 1999 and Cuhadar & Dayton, 2011). Intergroup conflict may occur without any objective basis to perceived importance of belongingness to the group (Terry & O'Brien, 2001; Tajfel, 1982). An 'us' versus 'them' orientation may develop. Within an organization, intergroup conflict may result in challenges regarding resource allocation, status, and hegemony, ultimately creating winners and losers in the battle for resources, power, status, and recognition (Jehn & Bendersky, 2003; Terry, Carey, & Callan, 2001). When intergroup conflict occurs within, or across organizations, there will likely be strained relationships, which have the potential to decrease collaboration experienced between collaborating employee working groups.

According to Tajfel (1982), intergroup conflict between subgroups is expected to strengthen subgroup identification (in this case CAATs and university faculty groups), decrease organizational identification (the collaborative nursing education program), and thus decrease overall cooperation and collaboration within employee working groups. A lack of expected reciprocity between groups may lead to differing levels of cooperative behaviour from the start (i.e., self-fulfilling prophecy) and as such stifle the acculturation process (Ashforth & Mael, 1996). Further, boundaries around the in-group are likely to become more obvious when the group feels threatened by the out-group (Ashforth & Mael, 1989). According to Pettigrew, Tropp, Wagner, and Christ (2011), intergroup competition and intergroup conflict are a result of perceived negative intergroup contact. Essentially, when group members choose to join a newly formed or merged group other actions may arise amongst their remaining in-group members leading to: (a) distancing from the co-operators who are perceived as helping the other group (Tajfel, 1982); (b) a subgroup member choosing not to take an action that would benefit the other subgroup (out-group); or (c) members of the sub-group isolating group members who are supporting the out-group in retaliation for their actions (Schopler & Insko, 1992). According to Tajfel (1982), if cooperation within the collective group decreases in the presence of intergroup conflict people will project their self-interests, further strengthening their perceived (original) in-

group social identity. Tajfel further suggested that inter-group conflict may increase intra-group cooperation at the expense of the newly merged group. Therefore, in collaborative nursing education programs if there is resultant intra-group cooperation (university employee groups having an enhanced affinity for university educators, and college employee group members having an affinity towards college employee groups) continued solitary approaches to teaching, course implementation, curriculum delivery, and decreased collaboration with the other faculty group may be fostered. Any resultant decrease in collaboration (between the CAAT and university educator groups) may result in both less consistent program components for students across collaborating sites and less effective and inconsistent delivery of nursing education overall. Moreover, resultant decrease in collaboration between faculty groups may also reduce compliance in terms of the collaborative program's memorandum of understanding, committee terms of reference, and formal and informal policy and procedures that require bipartisan cooperation, coordination, or partnerships.

In summary, the literature revealed theoretical support for the notion that faculty responses to group integration within their education unit will be influenced by their perceived affinity or membership to their employee faculty group (CAAT or University). Thus, individuals involved in a collaborative working relationship between two or more employee groups who have a strong sense of belongingness to their employee category/group may experience enhanced in-group cooperation and negative out-group bias and conflict. Consequently, it is postulated that the perceived strength of group identity among CAAT and university educator employee groups will be related to their perceived levels of conflict with members of the respective out-groups. For example the CAATs educators would perceive the university educators as the out-group, and the university educator group would perceive the CAAT educators as their out-group. Further, it is posited that conflict will reduce cooperation, coordination, and shared decision making within the collaborative nursing program, which will result in a greater chance of ineffective collaboration across groups. Therefore, group identity salience among the individuals within each employee group (CAAT and university educator groups) will result in tensions between the groups. That is, intergroup conflict will arise within collaborative nursing education programs, which in turn, will influence perceptions of the degrees of collaboration.

## Personality

The potential for group conflict to occur as a result of group identity salience may further be influenced by faculty member's personality traits within groups (Hurtz and Donovan, 2000; Reynolds, Turner, Haslam, and Ryan, 2001; & Hackman, 1987). Personality traits are stable and tend to be important predictors of behaviours in group situations (Costa & McCrae, 1992; and Bradley, Klotz, Postlethwaite, & Brown, 2013). Personality traits are psychological structures that are related to individuals' styles of adaptation to their environment. Their subsequent behaviours, can be characterized by their patterns of thinking, perceiving, feeling, and behaving (Tellegen, 1991; Wiggins, 1973). Accordingly, it is prudent to explore faculty members' personality traits and their effects on group relationships in collaborative working environments.

Research evidence on the role of personality traits on behaviours in work groups has largely focused on personality traits as predictors of certain organizational performance indicators and job performance measures (Barrick, Mount, and Judge, 2008; Campion, Medsker, and Higgs, 1993; Guzzo & Dickson, 1996; and Hackman, 1987). One of the most useful models for examining/exploring the impact of personality is Barrick and Mount's (1991) '*Five Factor Model of Personality*' (The Big 5). Specifically, the Big 5 model includes five dimensions – extraversion, conscientiousness, agreeableness, emotional stability (neuroticism) and openness to experience which are comprised of six facets each. The Big 5 is the most widely used conceptualization of personality, and is stable and robust across cultures and languages.

Evidence suggests that the composition of specific personality traits within and across work teams plays a significant role in how organizations and teams will perform to achieve outcomes (Barrick, Mount and Judge, 2008; Barrick, Stewart, Neubert, & Mount, 1998; Barry & Stewart 1997; Heslin 1964; Neuman, Wagner, & Christianson, 1999; Thoms et al. 1996; Van Vianen, & De Dreu 2001). Large-scale meta-analyses have found the Big 5 predicts job performance and group functioning in organizations (Barrick and Mount, 1991; & Judge and Bono, 2001). Therefore, personality traits may also affect group performance within educator groups in collaborative nursing education programs and may have an effect on perceptions of intergroup conflict. It may also affect the ability and willingness of groups to collaborate. Alternatively, reduced perceptions of intergroup conflict within nursing faculty may result in successful

collaborative nursing education programs remaining intact, or not, after several years (Thompson, 2007). It is believed that group acculturation will be moderated or exacerbated by employees' personal characteristics (traits) and employees may shift their subsequent behaviours toward conflict or collaboration. Acculturation is believed to create a set of shared beliefs, assumptions, and values that may support how a person functions within group settings. Such beliefs, assumptions and values are believed to be exercised through one's personality. By definition, the sustained and consistent reaction from individuals under different situations is therefore likely to be a reflection of their personality (Costa & McCrae, 1989).

A relationship between certain personality traits identified in the Big 5 model and conflict within organizations has been reported (Bradley, Klotz, Postlethwaite, & Brown, 2013; Graziano, Jensen-Campbell, & Hair, 1996). Research suggests that individuals' personality traits can affect group outcomes and potentially mitigate or exacerbate the degree to which individuals perceive conflict including the effects of social identity salience on intergroup conflict (Barrick & Ryan, 2003; Hogan, Hogan, & Roberts, 1996). Research has focused on strategies for dealing with conflict situations by linking individual personality traits with a person's actions during a high conflict situation (McAdams, 1995). Specifically, research found that individuals who demonstrate agreeableness (e.g., morality, trust, cooperation, altruism, modesty, sympathy) have an affinity for interpersonal facilitation (Hurtz & Donovan, 2000) and seek to maintain social harmony and reduce intergroup competition and conflict (Graziano, Hair, & Finch, 1997). By way of definition, agreeableness is the degree of pleasantness versus unpleasantness exhibited in interpersonal relations (Hough, 1992). Moreover, the agreeable person is likeable, pleasant, tolerant to change, tactful, helpful, non-defensive, and fairly easily gets along with others. Further, an agreeable person's participation in a group will add cohesion rather than friction (Jensen-Campbell & Graziano, 2001). On the contrary, the disagreeable person is touchy, defensive, critical, alienating, and generally contrary to decisions, process, and procedures. Thus, personality factors, especially agreeableness, may affect how team members both approach certain tasks and interact with each other. Agreeableness may impact working relationships between collaborating groups and may affect group identity salience on employees' perceptions of inter-group conflict which could impact collaboration between groups. Essentially, the greater the number of agreeable team members in a group, the more likely the team is to engage in positive interpersonal processes, collaboration, and successful team performance (Bell, 2007). In

relation to collaborative nursing education programs, the personality composition of team members involved in a partnership may impact the overall integration and acculturation of these two distinct and different faculty teams and as such, impact their overall collaboration. Further agreeableness may mitigate the negative impacts of group identity salience on intergroup conflict. It is hypothesized that for individuals high in agreeableness, a strong group identity salience will not have as negative an impact on perceptions of intergroup conflict. In contrast, for individuals low in agreeableness, the effects of group identity salience on intergroup conflict will be further compounded due to a lack of amicability between groups. Moreover, when group members are not agreeable, more aggressive conflict reactions may occur. Graziano, Jensen-Campbell, and Hair's (1996) study of psychology students' reactions to a conflict vignette based on their personality using the Big Five Personality Index reported a significant interaction between individuals' agreeableness and their resolution choice. Individuals low in agreeableness rated power assertion tactics as significantly better choices than did those high in agreeableness. Thus, individuals low in agreeableness were more likely to select a violent (brute physical force) tactic when dealing with a conflict situation than individuals with a more prevalent agreeableness trait. In contrast, individuals high in agreeableness may have a desire to maintain harmonious social relations, whereas those low in agreeableness may prefer to force their perspectives on others, which may influence their conflict related behaviours and their interpretations of conflict-laden situations with group partners. An individual group member's perceived oneness with a group (group-identity salience) may be influenced by their personality and in turn may propagate intergroup discrimination which may lead to subsequent intergroup conflict. If true, the greater the number of agreeable team members in a group, the more likely the team is to engage in positive interpersonal processes and successful team performance (Bell, 2007). Consequently, agreeableness within and across members may have the potential to affect overall cooperation and collaboration between groups through its influence on collegiality, cooperation, and coordination between groups.

### **Organizational Characteristics**

In addition to personality traits, the salience of group identification, and intragroup conflict, characteristics and structural components of the organization have also shown to impact group

outcomes (Henneman, Lee, & Cohen, 1995). Specifically, an organization's structural environment is thought to impact group performance, and subsequent performance outcomes (Kanter, 1977, 1993, 1994; Laschinger, Finegan, Shamian, & Wilk, 2001, 2004). According to Lautizi, Laschinger, and Ravazzolo (2009) employees' perception of the actual workplace environmental conditions is a strong predictor of conflict, job stress, and subsequent burnout. Studies have also linked structural empowerment to employees overall job satisfaction (Orgambidez-Ramos & Borrego-Ales, 2014). In summary, there is evidence in the nursing literature that empowerment is positively related to job satisfaction, job stress, burnout, conflict, stress, and job related outcomes. Therefore, structural empowerment is hypothesized to impact collaboration between CAAT and university employee groups.

### **Structural Empowerment**

Kanter's structural power in organization theory (1993, 1994) posits that informal and formal workplace components provide access to organizational structures that empower individuals. According to Kanter, structural factors within the workplace including access to: information (having knowledge in regards to organizational decisions, policies, goals, direction, vision and mission), support (feedback and guidance received from superiors, peers, and subordinates including emotional support, advice, or assistance), resources required to complete the job (capacity to access materials, supplies, equipment, with sufficient time financial resources required to accomplish organizational goals), and opportunity to learn and grow (mobility and growth including access to challenges, rewards, and professional development opportunities to enhance an employee's ability to do their job effectively). According to Kanter, the above noted factors have a significant impact on employees' work attitudes and behaviours. Specifically, when information and support with sufficient resources required to complete their job/tasks in the workplace creates an environment whereby employees can utilize their technical knowledge and expertise required to be effective within the larger organizational context, employees are provided with a sense of purpose and meaning which enhances their ability to make decisions contributing to the organizations goals. Kanter suggests that structures of power and opportunity positively influence an employee's sense of empowerment (1993).



Empowerment arises from both formal and informal power. Formal power is enhanced when jobs are flexible, central to the organization's goals, and allow freedom for employees to exercise creativity and discretionary decision-making. In contrast, informal power is derived from development of effective relationships and communication channels with sponsors, peers, subordinates, and cross-functional groups within and outside of the organization. When formal and informal power is nurtured employees' empowerment is expected to improve (Laschinger, Finegan, & Shamian, 2001).

Individuals are more likely to engage in cooperative and collaborative practices and work more interactively in group settings when structural empowerment is high (Herschel & Andrews, 1993). For instance, when nurses perceive that their workplace is structurally empowering, they are more likely to demonstrate collaboration amongst themselves and physician groups (Laschinger, Almost, & Tuer-Hodes, 2003) and within the organization (Almost & Laschinger, 2002). Therefore, when high levels of structural empowerment (i.e., perceived access to information, support, resources, opportunity, and enhanced formal and informal power) are present, the resultant existence, and effects of intergroup conflict on collaboration may be reduced. Conversely, low levels of structural empowerment may increase the negative effects of intergroup conflict on collaboration between groups.

### **Summary**

Although collaborative nursing education programs have been operating in Ontario for over 17 years, there is a paucity of research describing the factors contributing to collaborative success in these programs. According to the existing literature, identification with one's employee group (i.e., group identity salience) may lead to in-group favouritism and out-group bias (VanKippenberg, VanKippenberg, & deLima, 2002). This bias may contribute to strained relationships and inter-group conflict arising from relational issues among, within, and across group members (Janssen et al., 1999; Miller, 2000). However, the effect of group identity salience on inter-group conflict may be mitigated by the agreeableness of individual group members. Specifically, individuals who are high in agreeableness may have reduced feelings of in-group favouritism and out-group bias, which may reduce inter-group conflict. Conflicts between groups have been shown to stifle collaboration (Jehn, 1995). The effects of inter-group

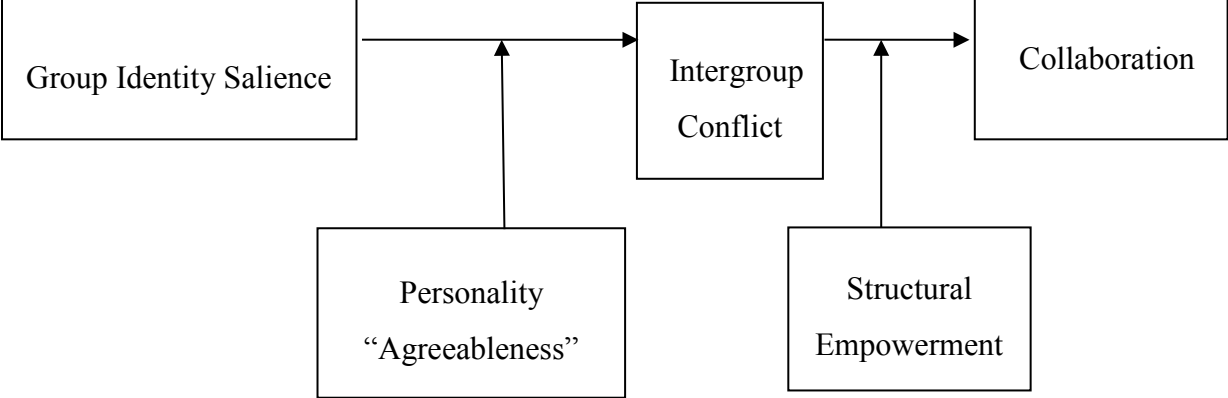
conflict on collaboration may further be impacted by structural factors that influence an individual's perceived level of empowerment (Almost & Laschinger, 2002). Structural empowerment may mitigate the existence and resultant effects of inter-group conflict on collaboration by providing the actors involved with many of the requisite features that support collaborative practice (i.e., access to information, opportunity, and resources, as well as formal and informal power).

The literature asserts that relationships exist between group identity salience, agreeableness, inter-group conflict, structural empowerment, and collaboration. As such, with theoretical underpinnings of Social Identity Theory, and concepts derived from organizational behaviour, collaborative practice, health care, and the work environment literature, a conceptual framework was formed linking the above variables in a theoretically plausible manner. The proposed theoretically derived conceptual framework is the first to draw connections between interpersonal, individual, and organizational factors within the area of intergroup collaboration in an academic setting.

### **Conceptual Framework**

Based on the review of this literature it is theorized that individuals' group social identity salience, or feeling of 'oneness' with their employee group will predict perceptions of intergroup conflict, which will predict perceptions of collaboration between groups of collaborative nursing education program faculty members. Further, it is hypothesized that individuals' agreeableness will moderate (or temper) the relationship between group social identity salience and intergroup conflict. Finally, it is further hypothesized that perceived structural empowerment within collaborating organizations will moderate the relationship between perceived intergroup conflict and collaboration. Based on these propositions, the following theoretical framework is hypothesized (Figure 2.1).

Figure 2.1: Proposed Conceptual Framework



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## **Chapter 3**

### **Psychometric Testing and Analyses of the Modified Assessment of Interprofessional Team Collaboration Scale (for Educators)**

## Abstract

The purpose of this article is to provide the results of psychometric testing of a revised instrument, *Assessment of Interprofessional Team Collaboration Scale* specifically for educators. (AITCS-E). This psychometric study of a convenience sample of professors involved in collaborative nursing education examined a modified version of the Assessment of Interprofessional Team Collaboration Scale for educators which measured faculty perceptions of collaboration within their work teams. The need for this measure resulted from the inability to locate a direct measure of faculty collaboration. The need for such a measure arose in a study about university and college faculty in nursing collaborative programs to assess their collaboration across the two types of post-secondary academic settings. The AITCS-E was found to be internally consistent ( $\alpha = .93$ ) with Cronbach  $\alpha$  subscale values ranging from 0.80 to 0.95. Exploratory Factor Analysis (using Principal Axis Factoring) with Varimax rotation and Kaiser normalization resulted in a 3-factor solution which was consistent with the original AITCS (Orchard, 2012) and the revised AITCS-II (Orchard, Pederson, Read, Mahler, & Laschinger, 2018). This was followed by a confirmatory factor analysis that demonstrated a good model fit of the variables. The findings support use of the modified AITCS-E for use in determining collaboration between college and university faculty groups. However, because the AITCS-E was implemented within Collaborative Nursing Programs in Ontario, Canada with a unique faculty population, it is unknown as to whether or not this tool will be useful in other collaborating educator populations. Still, these results are promising in that this tool has potential for wider usage in other educator populations where collaboration across programs is required to implement a program of study.

*Keywords:* collaboration, nursing education, educators

## Psychometric Testing and Analyses of the Modified Assessment of Interprofessional Team Collaboration Scale (for Educators).

There is a dearth of empirical research that examines collaboration between College and University educators. In a study to measure and evaluate nursing faculty collaborations across university and college settings reflects an alternate post-secondary education delivery model. However, the ability to measure inter- and intra-educator collaboration requires a valid and reliable measure of team collaboration that is sensitive to educator experiences in academic academies. To date, no tool was found that measures collaboration between university and college educator teams. A review of the literature found a paucity of survey tools that tapped the construct of collaboration within, and among educators that could be readily adopted for use in studying nurse educators within the Collaborative Nursing Programs (CNPs) in Ontario, Canada. However, there is a growing body of literature that unpacks the construct of interprofessional collaboration in healthcare settings that could be useful in evaluating faculty members' collaboration in CNPs in Ontario. Within this literature one instrument was found by Orchard, King, Khalili, and Bezzina (2012). Their Assessment of Interprofessional Team Collaboration Scale (AITCS), is a 37-item instrument to measure perceived collaboration among healthcare providers in the clinical setting. The AITCS has demonstrated evidence of reliability and validity. However, it has been tested primarily among non-academic samples including healthcare providers (Appendix A). Hence, it was decided to revise the ATICS for the use of assessing collaboration among educators within the CNPs in Ontario (Appendix B). Thus, the purpose of this paper is to provide the psychometric testing for validity and reliability of the revised instrument titled Assessment of Interprofessional Team Collaboration Scale for Educators (ATICS-E).

### Literature

Over the last decade, researchers have identified the contributions of inter/intra professional collaborative practice environments on patient outcomes in the health care domain (Baggs & Schmitt, 1988; Baggs, Schmitt, Mushlin, Mitchell, Eldredge, Oakes, & Hutson, 1999; Orchard, 2010), and have demonstrated significant direct relationships between the degree of collaboration between physicians and nurses and the health benefits for their patients. Moreover in recent



years, evidence has shown that collaboration between health professionals involved directly in the care of patients dramatically improved patient mortality rates (Wheelan, Burchill, & Tilin, 2003; Rose, 2011). Several researchers have extended inter/intra professional collaborative practice to include contributions of collaboration within pre-licensure education environments (Reeves, Zwarenstein, Goldman, Barr, Freeth, Hammick, and Koppel, 2011) and have documented considerable improvements to patient care as a result of collaboration experienced in pre-licensure academic program settings.

### **Defining Collaboration**

Collaboration is defined as “a dynamic, transforming process of creating a power-sharing partnership . . . for purposeful attention to needs and problems in order to achieve likely successful outcomes” (Sullivan, 1998, p. 118). Moreover, according to Orchard, King, Khalili, and Bezzina (2012) the attributes of team collaboration include:

coordination (the ability to work together to achieve mutual goals), cooperation (the ability to listen to and value the viewpoints of all team members and to contribute your own views), shared decision making (a process whereby all parties work together to explore options and plan patients’ care in consultation with each other, patients and relevant family members), and partnerships (creation of open and respectful relationships in which all members work equitably together to achieve shared outcomes) (Orchard et al., 2012, p. 59).

Collaboration involves respectful relationships between parties whereby all members work together, value each other’s viewpoints, and share work equitably to achieve common goals. Defined this way, collaboration between faculty members involved in collaborative nursing programs occurs between college faculty and university faculty members. Examples of collaboration in collaborative nursing education programs include but not limited to, curriculum development, course implementation, development of evaluation measures, involvement in committee work, and addressing policies and procedures related to admission decisions.

### **Previous Instrument Development and Dimensionality Studies**

Based on a thorough literature review, and adoption of Sullivan’s (1998) definition of collaboration, Orchard et al., (2012) created and tested a survey tool that tapped the collaboration construct. The Assessment of Interprofessional Team Collaboration Scale (AITCS) was initially

tested on 125 health care practitioners from seven health care teams. The four concepts of team collaboration (Cooperation, Coordination, Shared Decision Making, and Partnership), were each measured on a five point Likert type scale. Because the initial KMO Measure of Sampling Adequacy was 0.91, and the Bartlett's Test of Sphericity was significant ( $p < .001$ ) the data were appropriate to conduct an Exploratory Factor Analysis (EFA). Three distinct factors (Cooperation, Coordination, and Partnership) were found explaining 50.9% of the total variance -- factor 1 contributed 48.0%, factor 2 contributed 5.7%, and factor 3 contributed 4.2% of the total variance. To reduce the number of items and ensure retention of items that clearly discriminated on the three factors, items with factor loading greater than 0.5 were retained and those cross-loading on multiple factors (three items) were deleted resulting in the total variance increasing to 61.02% based on retention of 37 items (see Appendix A). Partnership (19 items), accounted for 51.20% of the variance; Cooperation (11 items), accounted for 5.47% of the variance; and Coordination (7 items), explained 4.34% of the variance. Reliability of the instrument revealed Cronbach  $\alpha$  values of .94, .80, and .97 respectively.

Orchard, Pederson, Read, Mahler, and Laschinger (2018) conducted further psychometric testing and analysis of the 37 item AITCS with a sample drawn from several healthcare settings. A forced three-factor Exploratory Factor Analysis using Principal Axis Factoring (PAF) was conducted. Essentially the results revealed a similar loading pattern to the study completed by Orchard et al., in 2012. The scree plot confirmed a 3-factor solution with eigen values greater than 1 and leading to a total variance of 62.6% (factor 1 [Partnership] accounted for 22.9%; factor 2 [Cooperation] accounted for 20.8%; and factor 3 [Coordination] accounted for 18.9% respectively). A review of the rotated factor loads found all items with a 0.5 loading or higher (as was used in 2012). The outcome was an opportunity to trim the original AITCS to identify the least number of items that would retain reliability and validity of the measure. The final instrument resulted in 23-item, for the 2018 modified AITCS-II (practitioners). In a subsequent CFA a reasonable model fit was obtained for the three dimensions in the AITCS-II.

In summary, dimensionality of collaboration in the academic setting has been under-explored, and as such adoption and testing of a revised AITCS measure in an academic setting is reasonable. This paper will outline the process involved in modifying the AITCS-II for use with Educators. Importantly, this study was informed by the following research questions:

- (1) Do the dimensions previously found using the AITCS emerge in a sample of University and College educators involved in collaborative nursing education programs in Ontario?
- (2) What is the most parsimonious set of indicators (either items or multi-item dimensions) most strongly related to the three criterion variables listed above?

## **Methods**

### **Procedure**

The original AITCS 37 item version's wording was modified to reflect the role of an educator within a collaborative teaching capacity by the instrument developer for this researcher (see Appendix B). Nursing Educators rated the extent to which they experienced each of the 37-items associated with collaboration during their work in the CNPs. An example item is "meet and discuss learners' progress on a regular basis" instead of "meet and discuss patient's progress on a regular basis". Responses were rated on a 5-point scale, ranging from 1 = "Never", 2 = "Rarely", 3 = "Occasionally", 4 = "Most of the time", to 5 = "Always".

The population of interest was College and University educators who were employed full time in Collaborative Nursing Programs in Ontario, Canada. All CNP program heads (Dean, Associate Dean, Director, or Chair) in Ontario were approached by the researcher at a program heads meeting about their willingness to assist in distributing a request for their faculty members to participate in the study.

### **Setting and Sample**

Initially a list of CNPs and their partnering sites within the province of Ontario, Canada was prepared from online resources. Upon receiving initial ethics approval from Western University, ethics approval was sought and obtained from each collaborative site(s) of the CNPs in Ontario, prior to implementing the study.

Once ethics approval was obtained from all participating sites (n=35), contact was made by the researcher with the Senior Administrator of each site's nursing program (Dean, Director, Program Head, or Chair). Specifically, an email including a summary and overview of the study was sent from the primary investigator to the administrator asking them to consider assisting in

distributing a further email invitation to all their full-time faculty teaching in the baccalaureate nursing program to participate in the study. The invitation email also included a letter of information about the study and the URL to access the on-line survey. Follow-up email reminders were re-sent to the Senior Administrators after one month, two months, and three months from the initial contact for further distribution to their full-time faculty members.

### **Inclusion/Exclusion Criteria**

Participants for this study were faculty members employed on a full-time basis within a baccalaureate CNP in Ontario, Canada. Faculty members were excluded from this study if they were employed on a casual or part-time basis, or if they were employed within multiple sites of a CNP.

Of the respondents within the final sample 70% of respondents ( $n=87$ ) and 30% of respondents ( $n = 38$ ) were employed in colleges and universities respectively. One-third of the respondents reported they had been employed within their CNP for 6-10 years ( $n = 40$ ), and 42% indicated they had been involved with their Collaborative Nursing Education Program for 6-10 years ( $n = 52$ ). More than two-thirds of the participants held a Master's degree or equivalent as their highest degree achieved ( $n = 84$ , 67%) and approximately one-third of the participants held a doctorate or equivalent degree ( $n = 37$ , 30%).

### **Data Management**

Data from the completed surveys were downloaded from [www.psychdata.com](http://www.psychdata.com) into the SPSS 24.0 software program for data cleaning and analysis. The raw data set contained 161 cases. Item by item frequencies and descriptive analyses were generated. Out of range scores and potential data entry errors were subsequently verified with a corresponding hard copy survey to facilitate any needed correction, no errors were found. Fourteen cases that did not fulfill the inclusion criteria, were subsequently excluded listwise from further analysis (i.e., no indication they were employed in a collaborative nursing education program on a full-time basis). Missing values analyses by case identification (ID) for all survey scales were then conducted to identify cases with large missing values (i.e. greater than 5%). This resulted in deletion of 22 further cases with lack of responses to any of the scale questions. Anomaly index, boxplot, and standard

deviation analyses by case ID for the scale was conducted to identify univariate outliers (e.g., anomaly index value greater than 3 and standard deviation scores +/-3). Significance testing of Mahalanobis Distance 2 by case ID for all survey variables was conducted to identify multivariate outliers (e.g., cases with significant Mahalanobis D2), and no cases were identified as having a  $p < .001$ . Descriptive analyses and tests of normality including skewness and kurtosis were conducted for each variable to assess for violations of normality assumptions using the Kolmogorov-Smirnov test of normality. The AITCS-E scale and subscales demonstrated a normal distribution. This resulted in a final useable data set with a final sample size of  $N = 125$ .

### **Missing Values**

A further missing values analyses were conducted on the entire remaining data set ( $N = 125$ ) to assess the extent, nature, and pattern of the missing data. Little's MCAR test was used and it was determined that the missing data were missing completely at random (e.g., significant Little's MCAR tests) with no systematic pattern.

### **Imputation**

Imputation was used to replace missing values found in the  $N = 125$  dataset. Random regression imputation was used for scale variables, which involved replacing the missing values in a variable with its mean value, and adding the prediction error (Tabachnick & Fidell, 2013; Gelman & Hill, 2007). A total of 180 missing values were replaced for the observed variables in collaboration.

## **Data Analysis**

### **Exploratory Factor Analysis**

Initially, the Kaiser-Meyer-Olkin ( $KMO = .934$ ) for sampling adequacy and Bartlett's test, and Bartlett's test of sphericity ( $\chi^2(276) = 2488.73, p < .05$ ) were both reviewed and found within expected ratings supporting the use of factor analysis for the data set (Pallant, 2011). A forced 3-factor, Exploratory Factor Analysis (using Primary Axis Factoring) with varimax rotation and Kaiser normalization was conducted using SPSS 25. Initially, the 37 AITCS items were examined. First, all 37 items correlated at least .3 with at least one other item, suggesting

reasonable factorability. The scree plot (see Appendix C) found three factors with eigen values about 1.00 and together these factors accounted for 71% of the total variance (factor 1 explained 61%, factor 2 explained 6%, and factor 3 explained 4%). The three-factor solution showed a ‘leveling off’ on the scree plot after three factors. Finally, item communalities were all above .3 (see Table 3.1) further confirming that each item shared some common variance with other items.

Table 3.1

*Factor loadings and communalities based on a principal axis factoring analysis with varimax rotation and Kaiser normalization for 37 items from the Assessment of Interprofessional Team Collaboration Scale for Educators (AITCS-E)*

Item	Cooperation	Partnerships	Coordination	Communality
Establish agreements on how the goals for the curriculum are enacted in the program delivery.	.33	.64		.55
Are committed to the goals set out by the teaching team.	.59	.47		.59
Include learners (students) in setting goals for courses.		.62	.56	.70
Listen to the wishes of learners when determining the process of learning chosen by the team.		.67	.41	.84
Meet and discuss learners’ progress on a regular basis.		.57	.34	.52
Would agree that there is support from the organization for their work.	.46	.52		.53

Item	Cooperation	Partnerships	Coordination	Community
Coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program.		.67		.56
Use consistent communication with program team members to discuss learning needs of learners.	.44	.75		.80
Use a variety of communication means (email, written messages, intranet, reports, phone, informal discussion).	.36	.65		
Are involved in setting learning activities for each course		.69		.58
Listen to and consider other program colleagues' voices and opinions/views in regard to deciding on individual teaching/learning planning processes.	.37	.78		.76
Would agree when teaching/learning decisions are made, the course leader strives to obtain consensus on planned processes from all parties.	.35	.77		.73
Feel a sense of belonging to the group.	.51	.70		.77
Establish deadlines for steps and outcome markers in regard to course delivery.	.41	.78		.80
Jointly agree to communicate plans for courses.	.40	.78		.80

Item	Cooperation	Partnerships	Coordination	Community
Consider alternative approaches to achieve shared course implementation.	.46	.71	.30	.80
Encourage each other and learners and practitioners in agencies to use the knowledge and skills that each of us can bring in developing professional practice of learners in the program.	.51	.69		.75
Focus of our teamwork is consistently the learner.	.45	.74		.81
Work with colleagues in adjusting teaching/learning plans.	.43	.77		.81
Share power with each other.	.69	.48		.74
Help and support each other.	.81	.43		.86
Respect and trust each other.	.80	.36		.81
Are open and honest with each other.	.75	.34		.72
Make changes to their teaching team functioning based on reflective reviews.	.61	.43	.31	.65
Strive to achieve mutually satisfying resolution for differences of opinions.	.77	.39		.80
Understand the boundaries of what each other can do.	.72	.41		.75



Item	Cooperation	Partnerships	Coordination	Community
Understand that there are shared knowledge and skills between each member on the team.	.82	.40		.83
Exhibit a high priority for gaining insight from learners about their needs.	.55	.51	.37	.69
Create a cooperative atmosphere among the members when addressing program implementation situations, interventions and goals.	.76	.50		.86
Establish a sense of trust among the team members.	.80	.40		.87
Equally divide agreed upon goals amongst the team.	.70	.33	.40	.75
Encourage and support open communication, including the colleagues and learners during team meetings.	.72	.33	.38	.78
Use an agreed upon process to resolve conflicts.	.60		.48	.64
Support the leader (course/year coordinator) for the team and varying depending on the needs of our work.	.70			.64
Together select the leader for our team.	.32		.80	.74
Openly support inclusion of learners in our team meetings.			.72	.62

**Note. Factor loadings < .3 are suppressed**

A total of 26-items were eliminated from the initial 37 item AITCS-E (Appendix D) based on a minimum criteria of having a primary factor load value of at least .4, and no cross-loading of .3

or above in the EFA.

### **Descriptive Analysis**

A descriptive analysis of the 11-item AITCS-E was then carried out assessing the means, standard deviations. Examination of the AITCS-E for skewness and kurtosis suggested that the distributions looked approximately normal. The data also revealed large correlations between each of the composite scores of the subscale variables (Cooperation—Partnership = .83, Partnership—Coordination = .73, and Coordination—Cooperation = .82) (see Table 3.2).

Table 3.2:

*Descriptive statistics for the three collaboration factors*

Factor Label	Items	<i>M</i> ( <i>SD</i> )	Skewness	Kurtosis	$\alpha$
Partnership	3	3.05 (.9)	-.14	-.99	.80
Cooperation	6	3.78 (.72)	-.1	-.94	.95
Coordination	2	2.35 (.88)	.42	-.55	.84
Collaboration Total	11	8.83 (.93)	.24	-.47	.93

### **Inferential Analysis**

A further EFA (using principal axis factor analysis) of the AITCS-E's 11-items, using a varimax rotation and Kaiser normalization was then conducted. Three factors explained 79% of the variance. All items had primary loadings over .5 and no items had a cross loading above .3. The factor loading matrix for the AITCS-E is presented in Table 3.3

Table 3.3: *Factor loadings and communalities based on a principal axis factoring analysis with varimax rotation and Kaiser normalization for 11 items from the Assessment of Interprofessional Team Collaboration Scale for Educators (AITCS-E)*

	Cooperation	Partnerships	Coordination	Community
Meet and discuss learners' progress on a regular basis		.65		.60
Coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program.		.76		.66
Are involved in setting learning activities for each course		.62		.53
Share power with each other	.72			.70
Respect and trust each other	.78			.77
Establish a sense of trust among the team members	.85			.88
Equally divide agreed upon goals amongst the team	.76			.78
Encourage and support open communication, including the colleagues and learners during team meetings.	.78			.80
Support the leader (course/year coordinator) for the team and varying depending on the needs of	.72			.65

	Cooperation	Partnerships	Coordination	Communality
our work				
Together select the leader for our team.			.93	.90
Openly support inclusion of learners in our team meetings			.74	.60

*Note.* Factor loadings < .4 are suppressed

The factor labels proposed by Orchard et al., (2012) suited the extracted factors and were retained. Internal consistency for each of the sub-scales was examined using Cronbach's  $\alpha$  and ranged from .80 to .95 (Partnership = .95 [3 items], Cooperation = .95 [6 items], and Coordination = .84 [2 items]).

Overall, these analyses indicated that three distinct factors explained College and University educator's responses to a modified version of the AITCS items and that these factors were moderately internally consistent. Even though fewer items were included, the factor structure was the same as that proposed by Orchard et al., (2012). An approximately normal distribution was evident for the composite score data in the current study. Thus, the 11 item AITCS-E with its three dimensions of collaboration was further analyzed for its model fit.

### **Confirmatory Factor Analysis (CFA)**

A CFA of the three-factor model was conducted. Three latent variables partnership, cooperation, and coordination were loaded into a path model with their relevant observed variables (Coordination with 2 observed variables ; Partnership with 3 observed variables; and Cooperation with 6 observed variables).

The CFA was conducted to assess whether or not the observed and latent variables would demonstrate valid model fit. The final theorized model is identified in figure 3.1.

Figure 3.1: Theorized Model for EFA and CFA analysis with the AITCS:E

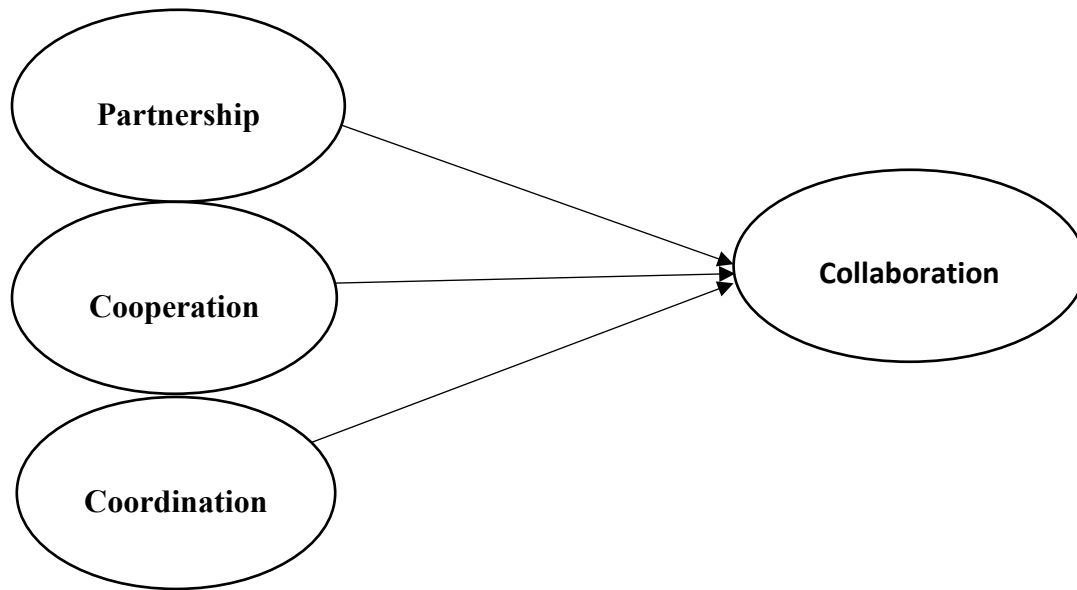


Table 3.4 notes the final 11 item survey tool and the associated observed and latent variables.

Table 3.4: *Final AITCS for Educators Survey tool with observed and latent variables*

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**Partnership**

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- 1: Meet and discuss learners' progress on a regular basis
- 2: Coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program
- 3: Are involved in setting learning activities for each course

## **Cooperation**

4: Share power with each other

5: Respect and trust each other

6: Establish a sense of trust among the team members

7: Equally divide agreed upon goals amongst the team

8: Encourage and support open communication, including the colleagues and learners during team meetings

9: Support the leader (course/year coordinator) for the team and varying depending on the needs of our work

## **Coordination**

10: Together select the leader for our team

11: Openly support inclusion of learners in our team meetings

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Table 3.5 notes the final correlation table and mean and standard deviations for the items in the measure.

Table 3.5: *Correlation Coefficients, Means, and Standard Deviations for Outcome Measures (n=125)*

Item/Measure	1	2	3	4	5	6	7	8	9	10	11
1. Meet and discuss learners' progress on a regular basis	–										
2. Coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program	0.62 <sup>a</sup>	–									
3. Are involved in setting learning activities for each course	0.53 <sup>a</sup>	0.56 <sup>a</sup>	–								
4. Share power with each other	0.48 <sup>a</sup>	0.47 <sup>a</sup>	0.55 <sup>a</sup>	–							
5. Respect and trust each other	0.50 <sup>a</sup>	0.46 <sup>a</sup>	0.53 <sup>a</sup>	0.74 <sup>a</sup>	–						
6. Establish a sense of trust among the team members	0.53 <sup>a</sup>	0.52 <sup>a</sup>	0.54 <sup>a</sup>	0.81 <sup>a</sup>	0.90 <sup>a</sup>	–					
7. Equally divide agreed upon goals amongst the team	0.54 <sup>a</sup>	0.45 <sup>a</sup>	0.48 <sup>a</sup>	0.70 <sup>a</sup>	0.79 <sup>a</sup>	0.76 <sup>a</sup>	–				
8. Encourage and support open communication, including the colleagues and learners during team meetings	0.58 <sup>a</sup>	0.43 <sup>a</sup>	0.43 <sup>a</sup>	0.72 <sup>a</sup>	0.80 <sup>a</sup>	0.80 <sup>a</sup>	0.81 <sup>a</sup>	–			

Item/Measure	1	2	3	4	5	6	7	8	9	10	11
9. Support the leader (course/year coordinator) for the team and varying depending on the needs of our work	0.43 <sup>a</sup>	0.41 <sup>a</sup>	0.38 <sup>a</sup>	0.56 <sup>a</sup>	0.85 <sup>a</sup>	0.74 <sup>a</sup>	0.72 <sup>a</sup>	0.84 <sup>a</sup>	–		
10. Together select the leader for our team	0.51 <sup>a</sup>	0.43 <sup>a</sup>	0.28 <sup>a</sup>	0.42 <sup>a</sup>	0.50 <sup>a</sup>	0.49 <sup>a</sup>	0.54 <sup>a</sup>	0.36 <sup>a</sup>	0.48 <sup>a</sup>	–	
11. Openly support inclusion of learners in our team meetings	0.35 <sup>a</sup>	0.30 <sup>a</sup>	0.29 <sup>a</sup>	0.42 <sup>a</sup>	0.43 <sup>a</sup>	0.50 <sup>a</sup>	0.50 <sup>a</sup>	0.53 <sup>a</sup>	0.44 <sup>a</sup>	0.73 <sup>a</sup>	–
Mean	2.84	2.91	3.16	2.96	3.35	3.11	2.89	3.04	3.18	1.93	2.02
SD (Standard Deviation)	1.2	1.2	1.3	1.1	1.0	1.2	1.1	1.1	1.2	1.2	1.1

<sup>a</sup> Indicates correlation statistically significant  $P < 0.05$ .



Fit indices were examined to identify model fit values (Kenny, 2015). In model 1, the initial results of the CFA showed a model fit ( $\chi^2(32) = 44.4$ ), and modification indices were examined to determine which parameter constraints were significantly limiting the model fit of the observed covariance structure (see figure 3.1). The error terms of e9 and e10 for the observed variable cooperation could be covaried to improve the model fit. Subsequently model 2 was run with these covariances added and showed a further improved fit, ( $\chi^2(31) = 42.59, p = .360, TLI = .99, CFI = .99, RMSEA = .02, SRMR = .04$ ) (see table 3.6 and figure 3.2).

Table 3.6.

*Fit indices for Confirmatory Factor Models in Overall Sample*

	$\chi^2$	df	<i>P</i>	TLI	CFI	<i>RMSEA</i>	SRMR
Model 1	50.33	41	.151	.982	.99	0.04	0.04
Model 2	42.59	31	.360	.995	.99	0.02	0.04

Legend: RMSEA = Root Mean Squared Error of Approximation; SRMS= Standardized Root Mean Square Residual; CFI = Comparative Fit Index; TLI= Tucker Lewis Index;

Figure 3.2

Path Model for the AITCS for Educators without covaried error terms.

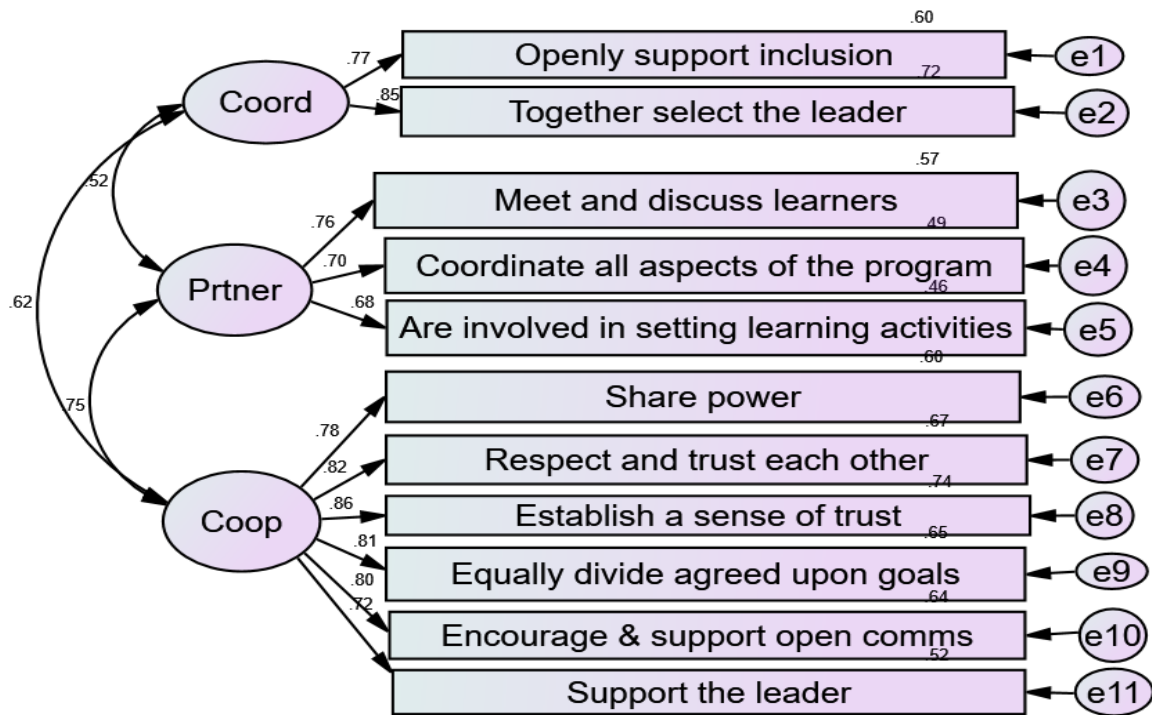
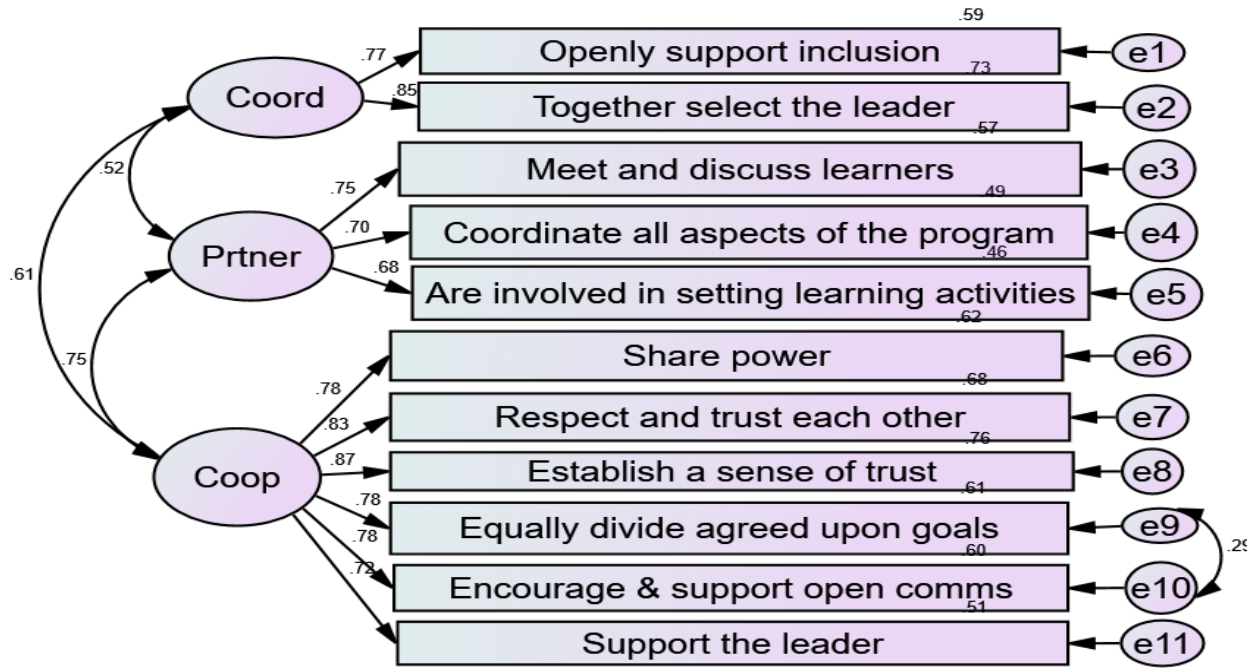


Figure 3.3

Path Model for the AITCS for Educators with covaried error terms.



## Discussion

The purpose of this study was to identify a tool that was valid and reliable for use within the educator population. A psychometric study of a convenience sample of 125 faculty members involved in collaborative nursing education was used to examine a modified version of the Assessment of Interprofessional Team Collaboration Scale for educators (AITCS-E) measuring faculty perceptions of collaboration within their work teams. Both descriptive and inferential analyses were carried out including Exploratory factor analyses (EFA) to examine the factor structure of the instrument and a Confirmatory factor analysis to further test the factor structure for a model fit.

The current study is the first to examine the factor structure of the modified AITCS-E using data collected within a university and college educator group. Data collected from university and college educators involved in collaborative nursing education programs in Ontario, Canada was used to examine the modified 37-item three-factor AITCS scale for educators (Orchard et al., 2012). Examination of the data included basic descriptive analyses among the 37 items of the AITCS for Educators. The initial EFA results for the AITCS-E demonstrated several cross-loading items. After several items were trimmed, a three-factor solution emerged comprised of 11-items. This 11-item AITCS-E was then subjected to a Confirmatory Factor Analysis to determine model fit. The initial results demonstrated a reasonable fit model. After modification indices were correlated, the results showed an acceptable fit to the data for the modified AITCS-E instrument. Modification indices provided a parsimonious model for the *AITCS for Educators Survey* (eleven items, with three subscales) and reliability using Cronbach's alpha exceeded .80.

## Limitations

While the data is encouraging, there are a number of limitations of the present study. The respondents were self-selected from a convenience sample who were employed as full-time faculty members in CNPs in the province of Ontario. The sample was drawn solely from nurse educators involved in collaborative nursing programs and so the question can be raised as to its applicability to other faculty populations or other collaborative initiatives in academic settings. Response biases and, more generally, common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) may be a problem. However, contrary to common method bias, no single factor

was found to underlie responses. Criterion validity was assessed based on survey responses and could not be triangulated using objectively determined information. Because 30% of respondents were from the University setting and 70% from the College, the data afforded little opportunity to inquire whether employment category, or other demographic variables might have especially skewed these results. Importantly, there was insufficient respondents to carry out sub-analyses by different categories (i.e. employer, setting, or status within the CNP). Finally, due to the nature of the population, sample, and work environments, there is the potential for respondents participating within the same collaborative programs across both the colleges and universities to cluster their data which may cause some variations in findings. If this clustering occurred it may violate the assumption of an absence of pairing, dependence, correlation, or any other association. As such, results may be inflated and the results should be interpreted accordingly.

### **Conclusions**

Collaboration between University and College faculty in the delivery and implementation of nursing education can exert a profound effect on the quality of the education nursing graduates receive and must be part of an overall strategy to evaluate collaboration among nursing faculty members in collaborative nursing programs in Ontario. This study was designed to see whether or not the Orchard et al., (2018) AITCS scale could be adapted for use within academic faculty members.

Findings of this study support the use of a modified version of the AITCS for educators that reflects their academic role in collaborating with each other. Future research should examine the possibility of response bias as well as explore whether a three-factor structure applies across other educational program areas. Moreover, research should investigate whether the eleven items used here effectively measure collaboration with larger samples. Research studies using the AITCS-E should also involve longitudinal study of collaboration with repeated measures following interventions by academic administrators to determine the process of collaboration within faculty members over time.

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## Appendix A

### *Factor Analysis*

Item	Factor 1 Partnership	Factor 2 Cooperation	Factor 3 Coordination
1. Apply a unique definition of interprofessional collaborative practice to the practice setting			<b>0.413</b>
2. Share the power with each other		<b>0.554</b>	
3. Help and support each other		<b>0.699</b>	
4. Respect and trust each other		<b>0.720</b>	
5. Are open and honest with each other		<b>0.731</b>	
6. Make changes to their functioning based on reflective reviews		<b>0.523</b>	
7. Establish agreements on goals for each patient we care for	<b>0.551</b>		
8. All team members are committed to the goals set out by the team	<b>0.625</b>		
9. Strive to achieve mutually satisfying resolution for differences of opinions		<b>0.674</b>	
10. Include patients in setting goals for their care	<b>0.606</b>		
11. The goals that team members agree upon are equally divided			<b>0.553</b>
12. Listen to the wishes of their patients when determining the process of care chosen by the team	<b>0.591</b>		
13. Encourage and support open communication, including the patients during team meetings			<b>0.548</b>
14. Use and agree upon process to resolve conflicts			<b>0.559</b>
15. Understand the boundaries of what each other can do		<b>0.754</b>	
16. Understand that there are shared knowledge and skills between health professions		<b>0.728</b>	



17. Exhibit a high priority for gaining insight from patients about their wishes/desires		<b>0.627</b>
18. Create a cooperative atmosphere among the members when addressing patient situations		<b>0.687</b>
19. Establish a sense of trust among the team members		<b>0.692</b>
20. Team members meet and discuss patient care on regular basis	<b>0.791</b>	
21. There is support from the organization for teamwork	<b>0.706</b>	
22. Team members coordinate health and social services (e.g., financial, occupation, housing, connections with community,	<b>0.746</b>	
23. Team members use a variety of communication means (e.g., written messages, e-mail, electronic patient records, phone, informal discussion, etc.)	<b>0.610</b>	
24. There is consistent communication with team members to	<b>0.660</b>	
25. All members of our team are involved in goal setting for each	<b>0.673</b>	
26. Listen to and consider other members' voice and opinions/views in regards to individual care plan process.	<b>0.660</b>	
27. The leader for the team varies depending on the needs of our patients		
28. Select the leader for our team		<b>0.820</b>
29. Team members openly support inclusion of the patient in their		<b>0.597</b>
30. When care decisions are made, the leader strives for consensus	<b>0.642</b>	
31. Feel a sense of belonging to the group	<b>0.586</b>	
32. Team members establish deadlines for steps and outcome markers in regards to patient care	<b>0.700</b>	
33. Team members jointly agree to communicate plans for patient	<b>0.720</b>	
34. Team members consider alternative approaches to achieve	<b>0.802</b>	
35. Encourage each other and patients and their families to use the knowledge and skills that each of us can bring in developing	<b>0.662</b>	
36. The focus of teamwork is consistently the patient	<b>0.757</b>	

37 Work with the patient and his/her relatives in adjusting care plans. **0.789**

## Appendix B

Modified AITCS for Educators (Orchard & Powell, 2016)

### Section 1: PARTNERSHIP/SHARED DECISION MAKING

When we are working as a team all of my team members...

	Never	Rarely	Occasionally	Most of the Time	Always
1. Establish agreements on how the goals for the curriculum are enacted in the program delivery.	1	2	3	4	5
2. Are committed to the goals set out by the teaching team	1	2	3	4	5
3. Include learners (students) in setting goals for their courses.	1	2	3	4	5
4. Listen to the wishes of learners when determining the process of learning chosen by the team.	1	2	3	4	5
5. Meet and discuss learners' progress on a regular basis.	1	2	3	4	5
6. Would agree that there is support from the organization for their work	1	2	3	4	5
7. Coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program.	1	2	3	4	5
8. Use a variety of communication means (email, written messages, intranet, reports, phone, informal discussion).	1	2	3	4	5

- |     |                                                                                                                                                                                           |   |   |   |   |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 9.  | Use consistent communication with program team members to discuss learning needs of learners.                                                                                             | 1 | 2 | 3 | 4 | 5 |
| 10. | Are involved in setting learning activities for each course.                                                                                                                              | 1 | 2 | 3 | 4 | 5 |
| 11. | Listen to and consider other program colleagues' voices and opinions/views in regard to deciding on individual teaching/learning planning processes.                                      | 1 | 2 | 3 | 4 | 5 |
| 12. | Would agree when teaching/learning decisions are made, the course leader strives to obtain consensus on planned processes from all parties.                                               | 1 | 2 | 3 | 4 | 5 |
| 13. | Feel a sense of belonging to the group.                                                                                                                                                   | 1 | 2 | 3 | 4 | 5 |
| 14. | Establish deadlines for steps and outcome markers in regard to course delivery.                                                                                                           | 1 | 2 | 3 | 4 | 5 |
| 15. | Jointly agree to communicate plans for courses.                                                                                                                                           | 1 | 2 | 3 | 4 | 5 |
| 16. | Consider alternative approaches to achieve shared course implementation.                                                                                                                  | 1 | 2 | 3 | 4 | 5 |
| 17. | Encourage each other and learners and practitioners in agencies to use the knowledge and skills that each of us can bring in developing professional practice of learners in the program. | 1 | 2 | 3 | 4 | 5 |
| 18. | Focus of our teamwork is consistently the learner.                                                                                                                                        | 1 | 2 | 3 | 4 | 5 |
| 19. | Work with colleagues in adjusting teaching/learning plans.                                                                                                                                | 1 | 2 | 3 | 4 | 5 |

Section 2: COOPERATION

When we are working as a team all of my team members.....

- |     |                                                                                                                               |   |   |   |   |   |
|-----|-------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 20. | Share power with each other.                                                                                                  | 1 | 2 | 3 | 4 | 5 |
| 21. | Help and support each other.                                                                                                  | 1 | 2 | 3 | 4 | 5 |
| 22. | Respect and trust each other.                                                                                                 | 1 | 2 | 3 | 4 | 5 |
| 23. | Are open and honest with each other.                                                                                          | 1 | 2 | 3 | 4 | 5 |
| 24. | Make changes to their teaching team functioning based on reflective reviews.                                                  | 1 | 2 | 3 | 4 | 5 |
| 25. | Strive to achieve mutually satisfying resolution for differences of opinions.                                                 | 1 | 2 | 3 | 4 | 5 |
| 26. | Understand the boundaries of what each other can do.                                                                          | 1 | 2 | 3 | 4 | 5 |
| 27. | Understand that there are shared knowledge and skills between each member on the team.                                        | 1 | 2 | 3 | 4 | 5 |
| 28. | Exhibit a high priority for gaining insight from learners about their needs.                                                  | 1 | 2 | 3 | 4 | 5 |
| 29. | Create a cooperative atmosphere among the members when addressing program implementation situations, interventions and goals. | 1 | 2 | 3 | 4 | 5 |
| 30. | Establish a sense of trust among the team members.                                                                            | 1 | 2 | 3 | 4 | 5 |

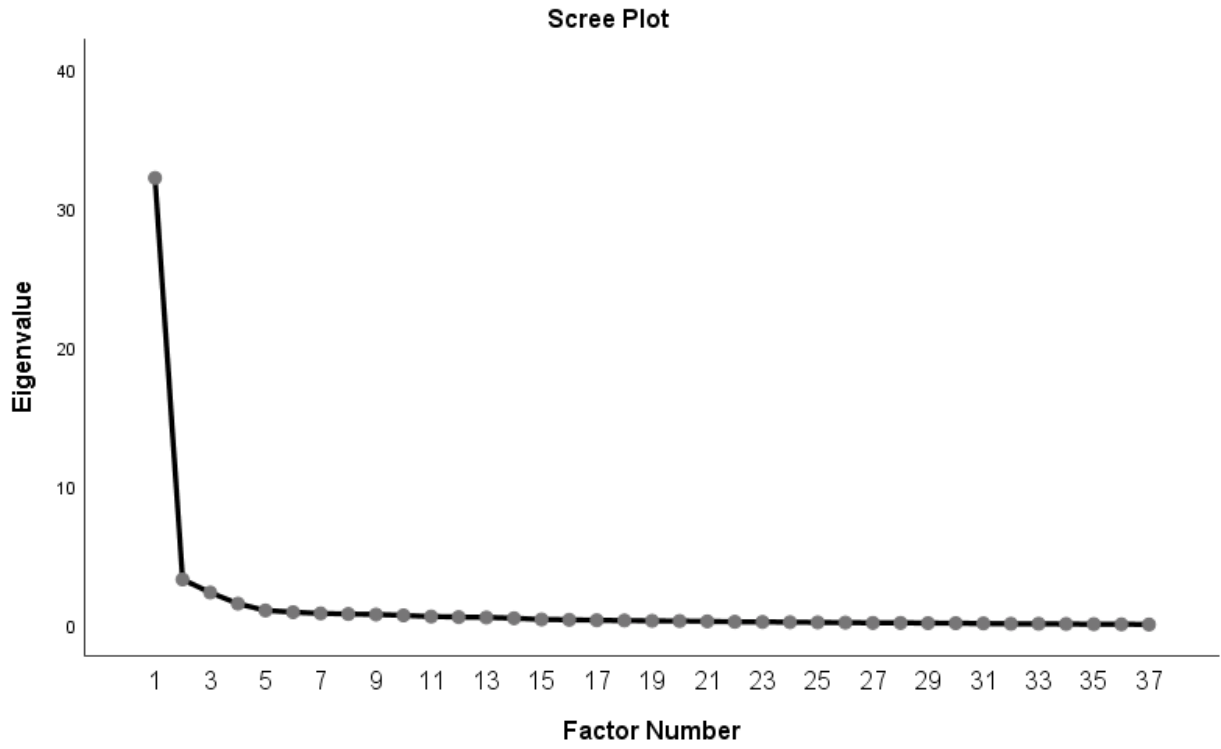
### Section 3: COORDINATION

When we are working as a team all of my team members....

- |     |                                                                                                           |   |   |   |   |   |
|-----|-----------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 31. | Apply a unique definition of collaborative practice to the program setting.                               | 1 | 2 | 3 | 4 | 5 |
| 32. | Equally divide agreed upon goals amongst the team.                                                        | 1 | 2 | 3 | 4 | 5 |
| 33. | Encourage and support open communication, including the colleagues and learners during team meetings.     | 1 | 2 | 3 | 4 | 5 |
| 34. | Use an agreed upon process to resolve conflicts.                                                          | 1 | 2 | 3 | 4 | 5 |
| 35. | Support the leader (course/year coordinator) for the team and varying depending on the needs of our work. | 1 | 2 | 3 | 4 | 5 |
| 36. | Together select the leader for our team.                                                                  | 1 | 2 | 3 | 4 | 5 |
| 37. | Openly support inclusion of learners in our team meetings.                                                | 1 | 2 | 3 | 4 | 5 |

Appendix C

Scree Plot for 3 factor solution: AITCS:E



## Appendix D

*Dropped items from the 37 factor solution.*

1. Establish agreements on how the goals for the curriculum are enacted in the program delivery
2. Are committed to the goals set out by the teaching team
3. Include learners in setting goals for their courses.
4. Listen to the wishes of learners when determining the process of learning, chosen by the team.
6. Would agree that there is support from the organization for their work
8. Use consistent communication with program team members to discuss learning needs of learners.
9. Use consistent communication with program team members to discuss learning needs of learners.
11. Listen to and consider program colleagues' voice and opinions/views in regard to deciding on individual teaching/learning planning process.
12. Would agree when teaching/learning decisions are made, the course leader strives to obtain consensus on planned processes from all parties
13. Feel a sense of belonging to the group
14. Establish deadlines for steps and outcome markers in regard to course delivery
15. Jointly agree to communicate plans for courses
16. Consider alternative approaches to achieve shared course implementation



17. Encourage each other and learners and practitioners in agencies to use the knowledge and skills that each of us can bring in developing professional practice of learners in the program
18. Focus on our teamwork is consistently the learner
19. Work with colleagues in adjusting teaching/learning plans
21. Help and support each other
23. Are open and honest with each other
24. Make changes to their teaching team functioning based on reflective reviews.
25. Strive to achieve mutually satisfying resolution for differences of opinions
26. Understand the boundaries of what each other can do.
27. Understand that there are shared knowledge and skills between each member on the team
28. Exhibit a high priority for gaining insight from learners about their needs
29. Create a cooperative atmosphere among the members when addressing program implementation situations, interventions and goals
31. Apply a unique definition of collaborative practice to the program setting.
34. Use an agreed upon process to resolve conflicts.

**Chapter 4**  
**Methodology for Testing Collaboration Within Collaborative Nursing Programs in Ontario, Canada**

## Abstract

The purpose of this article is to provide a description of a process used for investigating collaboration within Collaborative Nursing Education Programs (CNPs) in Ontario, Canada. Due to Ontario legislation changes in February 2000, requiring baccalaureate degrees for nurses' entry-to-practice, CNPs were formed in Ontario in response. Specifically, these legislative changes required Colleges of Applied Arts and Technology (CAATs) to find university partners to enter into collaborative arrangements in order to continue delivering nursing programs at their site, due to their inability to confer university baccalaureate degrees independently. The overall research question for this study was: '*What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?*'. This article presents a methodology for testing a theoretically derived model, linking predicted antecedent variables to the construct of collaboration. Specifically, through a comprehensive review of the literature, a theoretical model linking Group Identity Salience, Intergroup Conflict, Structural Empowerment, and Agreeableness was developed. Structural Equation Modelling (SEM) informed the analysis and hypothesis testing of the predicted model.

*Keywords:* *Conceptual Model, Theoretical Framework*, collaboration, nursing education, educators

## Introduction

In 2000, the Ontario government passed legislation requiring baccalaureate level education for all Registered Nurse (RN) program graduates. To achieve the outcome associated with this legislation, Colleges of Applied Arts and Technology (CAATs) were required to find a collaborating university partner in order to continue delivering nursing education, due to their inability to confer university baccalaureate degrees independently. Essentially, CAATs were required to merge and form partnerships with university undergraduate programs, in order to continue providing nursing education at the RN level. Thus, two groups of faculty members coming from different cultures were required to work together in collaborative arrangements.

Collaborative practice has long been touted as an effective means of establishing a cooperative and coordinated partnerships in which members from different groups contribute to common goals (Orchard, Curran, & Kabene, 2005; Bronstein, 2003; Almost & Laschinger, 2002). However, there was a paucity of research around the antecedent variables that contribute to successful collaboration (Orchard et al., 2005). This was true in relation to the literature available on Ontario collaborative nursing education programs, while being well-established lacked systematic research associated with their faculty members' collaboration. Thus, there was a need to focus on the faculty members' collaboration itself, which lent to the unique nature of the current study.

The purposes of this study were to explore and describe the contributory antecedents, and moderators to successful and meaningful collaboration between faculty members in collaborative nursing education programs and finally to test and refine a theoretically derived model linking selected antecedent contributory variables to collaboration among faculty members in Ontario nursing education programs. The methodology for this study proposed that an individual's perceived group social identity salience, or feeling of '*oneness*' with their nursing faculty employee group predicts perceptions of intergroup conflict, which predicts perceptions of collaboration between employee groups of collaborative nursing education program faculty members. Further, an individual's agreeableness (dispositional characteristic) moderates the relationship between group social identity salience and intergroup conflict. Additionally,

perceived structural empowerment within collaborating organizations moderates the relationship between perceived intergroup conflict and collaboration.

### **Literature Review**

Although collaborative nursing education programs have been operating in Ontario for over 17 years, there was a paucity of research describing factors contributing to collaborative success in these programs. According to the literature, identification with one's in-group (i.e., group identity salience) may lead to in-group favouritism and out-group bias (VanKippenberg, VanKippenberg, & de Lima, 2002). This bias may contribute to strained relationships and intergroup conflict arising from relational issues among, within, and across group members (Miller, 2000; Janssen, De Jonge, & Bakker, 1999). However, the effect of group identity salience on intergroup conflict between groups may be mitigated by the agreeableness of individual group members. Specifically, individuals who are high in agreeableness may have reduced feelings of in-group favouritism and out-group bias, which may reduce intergroup conflict. Conflicts between groups have been shown to stifle collaboration (Jehn, 1995). The effects of intergroup conflict on collaboration may further be impacted by structural factors that influence an individual's perceived level of empowerment (Almost & Laschinger, 2002). Specifically, structural empowerment may mitigate the effect of intergroup conflict on collaboration by providing many of the requisite features that support collaborative practice (i.e., access to information, opportunity, support, and resources, as well as formal and informal power).

### **Theoretical Model**

The theoretical model used in the study (see Figure 4.1) has its underpinnings in Social Identity Theory (Tajfel, 1982). Tajfel posited that the degree to which a group member perceives his/her membership to a particular group (termed group identity salience), predicts certain behaviors to occur should that group become threatened or invaded by another group or individual deemed not to be a part of that original group. Tajfel contended that *group identity salience*, or the extent to which group ties are centralized, can often become fractured due to various *intergroup conflicts*, which can lead to a breakdown in perceived organizational *structural empowerment* and hinder *collaboration*.

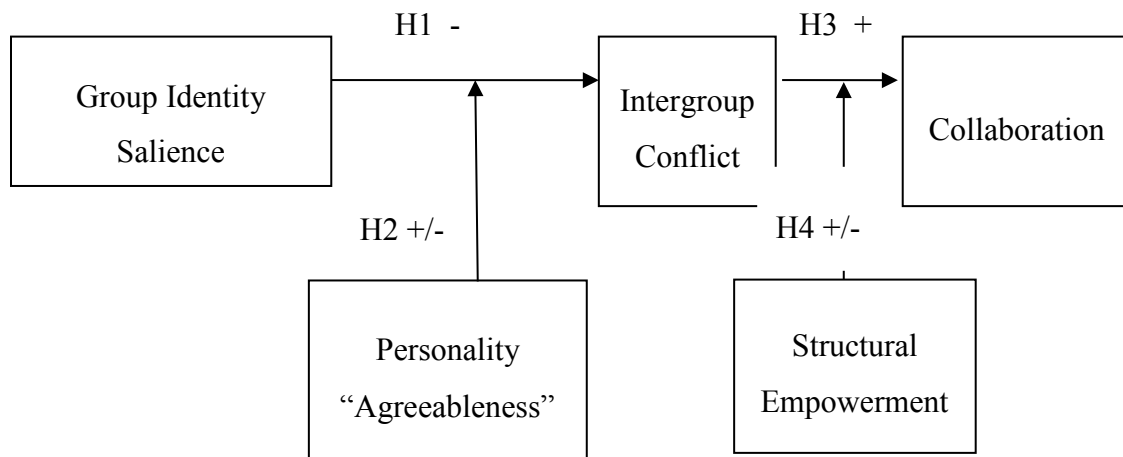


Figure 4.1. Theoretical Model.

### Research Design

A non-experimental survey design was used to examine factors that contribute to faculty collaboration within Collaborative Nursing Education Programs. Specifically, the theorized model tested linked interpersonal (group identity salience and intergroup conflict), dispositional (agreeableness) and organizational (structural empowerment) constructs with the selected outcome (collaboration) variable (Figure 4.1).

### Research Question

The overall research question for this study was: *What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?* Specifically, the hypotheses tested were:

- Hypothesis 1: educators' perceptions of their pre-merger *group identity salience* positively related to their perceptions of *intergroup conflict*.
- Hypothesis 2: educators' *agreeableness* moderates the relationship between perceived *group identity salience* and perceived *intergroup conflict*.
- Hypothesis 3: educators' perceptions of *intergroup conflict* negatively related to perceptions of *collaboration* within the post-merger consortia. And,
- Hypothesis 4: *structural empowerment* moderates the relationship between perceived *intergroup conflict* and perceptions of *collaboration*.

## **Sample and Sampling Frame**

A convenience sample of nursing faculty was utilized for the proposed study. The setting for this study was collaborative baccalaureate nursing education programs in Ontario, Canada. Specifically, any collaborative nursing education program that conferred a baccalaureate degree in Nursing, in Ontario was selected to participate, inclusive of both CAAT and university delivery sites. A list of eligible nursing education programs in Ontario was prepared from online resources describing accredited collaborations within the Canadian Association of Schools of Nursing (CASN) website. (<http://www.casn.ca/en/>). At the time of this study, all nursing programs in Ontario leading to entry to practice were required to submit their programs for CASN accreditation in order for graduates to be eligible for registration in the Registered Nurse category. As such, a comprehensive and accurate listing of the programs was readily available.

## **Inclusion and Exclusion Criteria**

The Collaborative Nursing Program heads (Dean, Director, Chair, or Associate Dean) at the university and CAAT sites involved in Collaborative Education Programs were approached to disseminate study information (information sheet and study description) to potential faculty participants. Eligible participants were full-time faculty members in a CAAT or university setting that delivered collaborative nursing education. Part-time educators were excluded because they may not have sufficient employment experience within their specific site/organization to develop significant relationships or ties within their group. Additionally, faculty members were not eligible for participation if both university and CAAT institutions simultaneously employed them. Educators who were employed by both a CAAT and university organization within the collaborative program may experience a dual identity with their CAAT and university group, and therefore, may have shared allegiance with both faculty groups. Thus, only full-time nurse educators who identified as belonging to either a CAAT or university within a collaborative nursing education program in Ontario were recruited for participation in the study.

A comprehensive list of full-time nursing faculty members employed in collaborative nursing education programs within Ontario was unavailable to the researcher. However, academic leaders within all collaborative programs in Ontario (through the provincial heads of nursing

committee meetings, and CASN annual council meetings) provided estimates of the number of full-time faculty in their collaborative nursing programs. Specifically, all program heads estimated that there were at least 30 (and may be as high as 70) full-time faculty members employed within each of the Ontario collaborative nursing programs. Thus, based on the 22 CAATs and 13 universities, there were approximately 1400 full-time nursing faculty members employed within Ontario collaborative nursing education programs, of which approximately 600 were university and 800 were CAAT educators.

### **Sample Size Calculation**

The sample size required for this study was based on the assumption that the theoretical model tested by path analysis, and measurement modelling in a structural equation modelling (SEM) framework. This type of analysis typically required a minimum of 10 participants per free parameter in order to provide reliable estimates of the parameters (Kline, 2011). Thus, a sample size of at least 200 participants was necessary for the current study, as there were 20 free parameters to be estimated in the proposed model. The average response rate for survey research was estimated to be between 30% and 50% (Baruch & Holtom, 2008). Because approximately 1400 educators from a total of 13 Collaborative Nursing Education Programs (combined CAAT/University sites) were invited to participate, it was hoped that 420 faculty members would participate (based on a 30% response rate), which would be sufficient for the analyses. To achieve the requisite 30% response rate, the researcher used a tailored Dillman Design Method with two reminders to increase faculty response rates (Dillman, 2000). Two weeks following the initial invitation letter an email reminder letter was sent to the Program Heads (Dean, Associate Dean, Chair, or Director) and a further reminder notice was sent to the Program Heads (Dean, Associate Dean, Chair, or Director) four weeks after the first reminder letter with a request to distribute the materials to their full time faculty members. The above technique ensured the highest response rate possible.

### **Data Collection**

Program Heads (Dean, Director, Associate/Assistant Dean) for 22 CAATs and 13 universities were approached, via email, and requested to distribute an information sheet about the study to engage participation in this study. This information sheet contained a link to an online survey for



all full-time faculty members who teach in their undergraduate collaborative programs. The information sheet provided an e-mail address of the researcher, and instructions were included for the survey completion in a paper-based format should participants wish to complete the survey in that format. The survey took approximately 40 minutes to complete. The on-line survey allowed participants to take breaks, and then resume their progress once they were ready to continue. With the exception of the survey's paper version, all components of the survey were completed online. The survey was completed through the on-line survey company PsychData (<https://www.psychdata.com>).

### **Survey Instruments**

A set of instruments was administered in a single on-line survey (Appendix A). The survey included measures of group identity salience, intergroup conflict, agreeableness, structural empowerment, and educator collaboration. Scale development, scoring conventions, and psychometric properties for each measure are further detailed in paragraphs that follow (see Appendix B for the instruments).

### **Demographic Data**

A short demographic variable and program feature questionnaire was included in the survey to assess the respondents' characteristics (see examples in Table 4.1) as well as certain program features applicable to the respondent's program of employment.

Table 4.1: *Demographic Questionnaire*

1. Are you currently employed in a Collaborative Nursing Education Program?
2. With which Collaborative Nursing Education Program are you employed?
3. Are you employed full-time with this institution?
4. How long have you been employed in this job?

## **Group Identity Salience**

The Social Identity Scale (Cameron, 2004) consisted of 12-items measuring three key factors of group identity salience (i.e., centrality, in-group affect, in-group ties) rated on a 7-point scale from 1 = strongly disagree to 7 = strongly agree and used to assess faculty perceptions of their group social identity salience. Items on each of the three subscales (centrality, in-group affect, in-group ties) were summed and then averaged to provide a score for each subscale. The scores of the three subscales were summed to create the overall group social identity salience score. Construct validity for the Social Identity Scale was substantiated through a confirmatory factor analysis that revealed a good fit of the hypothesized factor structure ( $\chi^2$  (df) = 91.2 (41), CFI = .923, IFI = .901, RMSEA = .077, NNFI = .917) (Obst & White, 2005).

## **Intergroup Conflict**

Intergroup conflict was measured using the Intergroup Conflict Scale (Cox, 2008) which consisted of 30-items rated from 1 = strongly disagree to 5 = strongly agree. The measure assessed six sub-categories of intergroup conflict, including: Interference – Task (7 items); Negative Emotion – Task (6 items); Negative Emotion and Interference R/T Interpersonal Incompatibilities (6 items); Disagreement – Task Process (5 items); Disagreements – Task (4 items); and Disagreement – Interpersonal Incompatibility (2 items). Items within each of the six subscales were summed and then averaged to provide a score for each subscale. The subscales were then summed to create a total intergroup conflict score. According to Cox (2008), reliability for this measure was acceptable ( $\alpha = .70 - .93$  for individual subscales;  $\alpha = .97$  for the overall measure).

## **Agreeableness**

Individuals' agreeableness was measured with the agreeableness component of the Big Five Inventory Scale (BFI; John, Nauman, & Soto, 2008; John, Donahue & Kentle, 1991). Although this study utilized one factor in this measure, the full BFI was included in the survey in order to avoid positive response bias among the respondents. The BFI consisted of 44-items comprised of five personality constructs including: extraversion (8 items), agreeableness (9 items), conscientiousness (9 items), neuroticism (8 items), and openness (10 items) assessed on a scale

from 1 = disagree strongly to 5 = agree strongly. Research indicated acceptable reliabilities for each of the five subscales in the measure, ranging from .75 to .95 (Benet-Martinez & John, 1998), while the reliability for agreeableness was found to be .81 (John & Srivastiva, 1999). For the purposes of this study, individuals' ratings on the nine items assessing agreeableness was summed and then averaged to determine an overall agreeableness score for each participant.

### **Structural Empowerment**

Structural Empowerment was evaluated with the Condition for Work Effectiveness Questionnaire II (CWEQ-II; Laschinger et al., 2001). This 19-item survey consisted of six primary subscales including: opportunity (3 items), information (3 items), support (3 items), resources (3 items), formal power (3 items), and informal power (4 items) that were rated from 1 = None to 5 = A lot. Items on each of the six subscales were summed and averaged to provide a score for each subscale. These six subscale scores were then summed to create an overall empowerment score ranging from 6 to 30, with higher scores (between 23 and 30) representing higher perceptions of empowerment whereas scores between 14 and 22 were considered moderate levels, and scores between 6 and 13 were considered low levels (Laschinger, 2001b). The construct validity of the CWEQ-II was substantiated through a confirmatory factor analysis that revealed a good fit of the hypothesized factor structure ( $\chi^2 = 279$ ,  $df = 129$ ,  $CFI = .992$ ,  $IFI = .992$ ,  $RMSEA = .054$ ; Laschinger et al., 2001). Additionally, the primary items in the CWEQ-II also correlated highly with the two items on global empowerment ( $r = 0.56$ ), providing additional evidence of the tool's construct validity.

### **Collaboration**

Perceived collaboration within the consortia was evaluated using the Assessment of Interprofessional Team Collaboration Scale for Educators (AITCS-E) a modified version of the (AITCS; Orchard et al., 2012). This measure consisted of 11-items rated on a scale from 1 = Never to 5 = Always, and was comprised of three subscales including: partnership (3 items), cooperation (6 items), and coordination (2 items). Items on each of the three subscales were summed and then averaged to provide a score for each subscale. These three subscale scores were then summed to create an overall collaboration score ranging from 3 to 15, where higher scores indicated greater perceptions of collaboration. An exploratory factor analysis of this

measure revealed that three-factors explained a total variance of 79%. Factor 1 (partnership) accounted for 61% of the variance, whereas factor 2 (cooperation) accounted for 6.0% of the variance and factor 3 (coordination) accounted for 4% of the variance. The construct validity of the AITCS-E was substantiated through a confirmatory factor analysis that revealed a good fit of the hypothesized factor structure ( $\chi^2 = 42.5$ ,  $df = 31$ ,  $CFI = .99$ ,  $RMSEA = .02$ ,  $TLI = .995$ , &  $SRMR = 0.04$ ) (Powell, Orchard, Finegan, & Laschinger, 2016). Moreover, the AITCS for Educators was found to be internally consistent ( $\alpha = .9$ ) with subscale Cronbach  $\alpha$  values ranging from 0.80 to 0.95 (Powell, Orchard, Finegan, & Laschinger, 2018). Thus, this measure of collaboration was considered to be a theoretically and statistically valid and reliable assessment of the three dimensions underlying collaboration.

### **Program Features**

A short survey was also used to collect data related to program structures and characteristics for the collaborative program. This data assessed workplace demographics associated with practices across the collaborative partnerships related to admissions, curricula, decision making, model of program delivery etc. Table 4.2 provides a complete list of the program feature questions implemented in this study.

Table 4.2

#### Program Features Questionnaire

---

1. Whose curriculum is being delivered in your program?
2. Who decided the admission criteria for your collaborative program?
3. With regard to the faculty who teach in your undergraduate collaborative program, what percentage of these faculty hold PhD degrees?  
What percentage hold master's degrees?
4. How are decisions related to the collaborative program approved?
  - a. Each partner site approves independently
  - b. All partner sites approve and send decision to university leader

- c. We do not have a formal process for decision approval
5. Do the students in your collaborative program stay for all 4 years at each partner site?
6. When the students from the collaborative nursing education program graduate, are the partner sites recognized on the degree?

### **Data Analysis**

Both descriptive and inferential statistical techniques were used to address the research questions. All data collected through the on-line survey were downloaded directly into the Statistical Package for the Social Sciences (SPSS) computer program. No paper-based surveys were requested and as such data were not manually entered into the data file. Descriptive statistics (means, standard deviations and ranges) were calculated for all variables with continuous ratings frequencies and percentages for categorical demographic variables. Descriptive statistics of the key constructs in the theorized model were also calculated. These statistics reflected the processes recommended by instrument developers and included means or sums for the subscales, standard deviations, ranges as well as summed total scores for each of the major variables under investigation. Distributions of the continuous variables were examined for missing elements, statistical outliers, multicollinearity, reliability, and normality before primary analyses were conducted (Kline, 2011). Extreme outliers in these distributions were investigated for technical or clerical errors using both Mahalanobis and Cook's distance values. A significance level of .05 was used for all analyses.

Preliminary analyses were conducted to assess the bivariate relationships among the independent and dependent variables, as well as to assess covariates that should be included in the path analysis.

### **Structural Equation Modelling**

Structural equation modelling (SEM) using Analysis of Moment Structures (AMOS) computer program was used to assess the relationships between each of the constructs shown in the path model. Structural equation modelling (SEM) technique was used for specifying and estimating the model as there were linear relationships among both observed and latent variables (MacCallum & Austin, 2000). For the purposes of this study, SEM with latent variables (group identity salience, agreeableness, inter-group conflict, structural empowerment, and collaboration)

was used. Moreover, SEM is considered to be a robust and flexible analysis option, and is able to simultaneously test all relationships in a model (Ullman, 2001). Estimating the model in a path analysis framework simultaneously identified directional effects and variances associated with the variables, which assisted in describing the results and modifying the model (Kline, 2011). Fit indices were estimated to determine how well the model fit. These fit indices (e.g., RMSEA, CFI, TLI, SRMR) offered support for the hypothesized relationships in the model.

This study employed the traditional four-step SEM process including (1) specification of the theoretical model, (2) identification of the model to ensure that it could be estimated with observed data, (3) estimation of the model parameters using AMOS, and (4) evaluation of the overall model fit.

***Specification of the model.*** The path model (Figure 2) guided this analysis. Error terms were assigned to each observed variable (i.e. all the subscale items associated with the latent variables in the model). Specifically, residual terms of the observed variables represented the combined effects of all causes of the variables not examined in the current study. A value of 1 was assigned to the regression weight for the error terms, which permitted the measurement scale and the associated variance coefficients of the error terms to be determined.

***Identification of the model.*** In accordance with Kline (2011), the model fit was identified as it was theoretically possible to calculate a unique estimate of all model parameters. An over-identified model would occur should the difference between observations and estimates result in degrees of freedom (df) greater than zero (Pedhazzer & Schmelkin, 1991). An over-identified model was necessary to estimate fit indices for the model. In the AMOS output, the number of degrees of freedom for the model's chi-square was used to determine identification of the model.

***Estimation of model parameters.*** Next, the strength of the relationships between latent variables was estimated. The free parameters in the proposed model, covariances and regression coefficients between specified variables were predicted and compared to the observed variance-covariance matrix of the data (Kline, 2011). Maximum Likelihood (ML) estimation technique determined probability estimates of observed covariances from a population that were equal to the estimated coefficients. Thus, ML provided estimates with the greatest chance of reproducing the observed data.

***Evaluation of model fit.*** The goodness of fit indicators for the measurement models were evaluated. The independence model was compared to the proposed theoretical default model, to determine overall fit to the data. In paragraphs that follow, the fit indices utilized in this study are outlined.

### **Fit indices**

This study utilized the Chi-Square ( $\chi^2$ ), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) to examine the fit of the estimated measurement model.

***Chi-Square.*** The Chi-square test measured the proposed model's covariance structure against the observed covariance matrix. A non-significant Chi-square indicated that the specified model was not significantly different from the observed data. However, the Chi-square index is highly sensitive to sample size and was interpreted accordingly. Because of this issue, other fit indices were relied upon to determine the fit of the data.

***Comparative Fit Index.*** The CFI was considered an incremental measure of fit and was calculated based on the Chi-Square index for the study's model. Values greater than .90 indicated acceptable model fit and values greater than .95 indicated excellent model fit.

***Root Mean Square Error of Approximation (RMSEA).*** The RMSEA examined the extent to which the model fit the population covariance matrix. Essentially, values greater than .10 indicated that the model had poor fit to the data, whereas values ranging from .05 to .08 indicate that the model had acceptable fit. Values less than .05 indicate that the model had excellent fit to the data (Kline, 2011).

***Standardized Root Mean Square Residual (SRMR).*** The SRMS is essentially an absolute measure of model fit. The SRMS as calculated as the standardized difference between the observed and predicted correlation. Given this is a measure of absolute fit, a value of zero indicates a perfect model. According to Hu and Bentler, (1999) a value of less than 0.08 is considered good fit.

## Testing Moderation in Structural Equation Modelling

The model in this study examined the hypotheses that *agreeableness* moderates the relationship between *group identity salience* and *intergroup conflict*, and that *structural empowerment* moderates the relationship between *intergroup conflict* and *collaboration*. To test these hypotheses, the latent variables were centred and became *ZGroupSalience*, *ZAgreeableness*, *ZIntergroupConflict*, *ZStructuralEmpowerment*, and *ZCollaboration*. This process was completed in order to reduce multicollinearity and its errors (Baron & Kenny, 1986). Next, interaction terms were created by multiplying the corresponding centred independent variables with proposed moderator variables (i.e.,  $ZGroupSalience * ZAgreeableness$  and  $ZIntergroupConflict * ZStructuralEmpowerment$ ) to examine for moderation effect.

Once these interaction variables were created, and the regression paths added into the original measurement model, the overall fit of the model was examined using AMOS 24.0. Modification indices were examined and the model was modified to ensure it accurately represented the variance-covariance matrix. This was accomplished by making changes to the model based on modification indices to improve fit. Additionally, non-significant covariance and regression paths were examined to determine their appropriateness in the model. A good model fit was established and the main effects, covariances, and interaction effects were interpreted. The unstandardized estimates and p. values were analysed to interpret relationships between the independent variables, moderator variables, and dependent variables.

In summary the structural equation model consisted of observed and latent variables. The model consisted of five latent variables (*group identity salience*, *agreeableness*, *group identity salience by agreeableness interaction*, *structural empowerment*, *intergroup conflict by structural empowerment interaction*). Moreover, the model consisted of two endogenous variables (*intergroup conflict*, *collaboration*).

SEM estimated relationships among exogenous and endogenous variables that were specified in the model. For example, the current study proposed that *group identity salience* predicted *intergroup conflict*, so that relationship was estimated using SEM. The outcomes were a specification of the model based on the above analyses.



## Limitations

This research study has several sources of limitations, one of which was respondent bias (Pedhazer & Schmelkin, 1991). University and CAAT educators may have exaggerated their responses to certain items in the survey. The use of an on-line survey permitted respondents to complete the survey away from their place of employment and potential influences of their colleagues or structural environment. However, time of day and the prevailing mood of the respondents when completing the survey may have been a limitation. Social desirability may have also been a limitation even though it was minimized by assuring confidentiality of the on-line survey. Further, the non-experimental survey designs did not allow for causal interpretations of the data (Polit & Beck, 2004).

Moreover, given the self-report nature of survey designs, as well as the fact that independent and dependent measures were obtained from the same individual at approximately the same time period, there was an inherent risk of common method variance (Spector, 2006). Common method variance often occurs when self-reports are used to measure both the independent and dependent variables, which can inflate the magnitude of the observed relationship between variables (Spector, 2006; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). The use of a self-report survey was the most straightforward method of assessing the concepts under investigation in this study, such as employees' perceptions of their environments and workplace conditions (Spector, 2006; Podsakoff & Organ, 1986). Additionally, survey respondents may have tried to maintain consistency in their responses, and may have answered in accordance to their a-priori thoughts on what the relationships between the variables under study ought to be. Further, respondents may have tried to present themselves favourably, and may have answered in accordance with the format of the items, rather than the content and as such, created untoward bias/variance (Podsakoff et al., 2003).

In this study, precautions were taken to decrease the impact of common method variance and measurement bias by:

- 1) use of a monomethod approach with self-report survey tools asking for the participant's perceptions to provide the necessary data to test the theoretical model.

2) all of the measures used in this study have undergone previous exploratory or confirmatory factor analysis, and all demonstrated strong validity and reliability during their development and in subsequent studies (Appendix BB).

3) the use of different scale endpoints and formats for the predictor and criterion measures (Appendix AA) which reduced method biases caused by commonalities in scale endpoints and anchoring effects.

4) ensuring confidentiality will reduce the likelihood that respondents would edit their responses to be more socially desirable, lenient, or consistent with how they think the researcher wants them to answer (Podsakoff et al., 2003).

Finally, due to the nature of the population, sample, and work environments, there is the potential for clustered data. Specifically, respondents from within the same collaborative nursing program may have some degree of interdependence, and as such may violate the assumption of an absence of pairing, dependence, correlation, or any other association. As such, results may be inflated, and the results should be interpreted accordingly.

### **Ethical Approval**

Prior to implementing this study, ethical approval was obtained from the Western University Research Ethics Board (WU REB). Further ethics approval was obtained from university and colleges whose faculty participated in this research study.

### **Summary**

Collaborative nursing education programs have been operating in Ontario for over 17 years and to date, there was no empirical research studies investigating factors that contribute to collaboration between faculty groups in these programs. This article presented a detailed methodology for testing a theoretically derived model linking selected antecedent contributory variables to collaboration. Specifically, through a comprehensive review of the literature, a theoretical model linking Group Identity Salience, Intergroup Conflict, Structural Empowerment, and Agreeableness was developed. This article presented a robust and complete methodology and method for implementing an empirical research study investigating the effects of predictor

variables (group identity salience, agreeableness, inter-group conflict, and structural empowerment) on collaboration within collaborative nursing programs in Ontario.

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## **APPENDIX AA**

### **SURVEY TOOL**

#### LETTER OF APPROACH TO DEAN/DIRECTOR/PROGRAM HEAD OF NURSING AT COLLABORATIVE EDUCATION PROGRAMS IN ONTARIO

Dear \_\_\_\_\_,

My name is Jason Powell. In collaboration with the University of Western Ontario, I am conducting a research study on collaborative nursing programs in Ontario. I would like to invite your institution to participate in this study, which will shed light on faculty members' perceptions of collaboration between educators from Colleges of Applied Arts and Technology (CAAT) and educators from universities.

Legislation changes created opportunities for college and university partnerships. Further, this legislation was implemented to satisfy nurses' entry-to-practice requirements in Ontario. To date, there have been only anecdotal accounts of success within collaborative partnerships in Ontario. According to these accounts, collaborative nursing education programs in BC, Alberta, and Saskatchewan have achieved varied levels of success and have continued to increase the number of partnering colleges. Thus, I will be conducting an empirical study to explore the factors associated with fruitful collaboration between CAAT and university groups in nursing programs. This research will scientifically assess the accuracy of anecdotal evidence in favour of collaborative nursing education programs.

All full-time faculty involved in nursing education are invited to participate. Participants will be asked to complete an on-line survey lasting approximately 45 minutes. I will follow up in two weeks with a telephone call in order to answer any questions you or your team might have.

If you have questions for me before that time, I am happy to speak with you over the phone or through e-mail. My phone number is 416-435-1179 and my e-mail address is [jpowel2@uwo.ca](mailto:jpowel2@uwo.ca).

If you are interested in participating in this study, please distribute the attached information sheet and instructions (via email) to *all* full-time faculty members within your organization who teach in the collaborative nursing education program. After I have been informed of their distribution, I will arrange for a reminder email to be sent to your faculty in order to optimize participation. If any of your faculty members would be more comfortable completing a paper-based survey, I am happy to provide paper copies to ensure that all interested faculty members have the opportunity to participate. I believe that this timely empirical study will offer insight into the factors that can enhance collaboration between CAAT and university faculty in order to ensure the best possible education for our nation's future nurses. Please do not hesitate to contact me with questions, comments, or concerns. I truly hope that you will consider agreeing to facilitate and promote this study.

Sincerely,

Jason Powell RN., BScN., MScN.

(416) 435-1179

[jpowel2@uwo.ca](mailto:jpowel2@uwo.ca)



**Program Features Questionnaire**

1. Are you currently employed in a Collaborative Nursing Education Program?

Yes       No

With which Collaborative Nursing Education Program are you employed?

\_\_\_\_\_

2. Are you employed full-time with this institution?

Yes       No

3. How long have you been employed in this job?

\_\_\_ Years

4. How long have you been involved in the Collaborative Nursing Education Program?

\_\_\_ Years

5. What is your highest level of education?

RN       BScN       MScN       PhD       Other (please specify)

6. Are you employed by the University partner or College partner in this Collaborative Nursing Education Program?

University       College

7. Whose curriculum is being delivered in your program?

University       College       Combination

8. Who decided the admission criteria for your collaborative program?

\_\_\_ University                      \_\_\_ College                      \_\_\_ Combination

9. With regard to the faculty who teach in your undergraduate collaborative program, what percentage of these faculty hold PhD degrees? \_\_\_\_\_

What percentage hold master's degrees? \_\_\_\_\_

10. How are decisions related to the collaborative program approved?

\_\_\_ Each partner site approves independently

\_\_\_ All partner sites approve and send decision to university leader

\_\_\_ We do not have a formal process for decision approval

\_\_\_ Other - Please explain \_\_\_\_\_.

11. Do the students in your collaborative program stay for all 4 years at each partner site?

YES/NO

**If No, at what year of the program do they move?    1   2   3   4**

12. When the students from the collaborative nursing education program graduate, are the partner sites recognized on the degree?                      YES/NO

If yes, how? \_\_\_\_\_.

**Group Identification Scale (Cameron, 2004)**

CAAT FACULTY

Listed below is a series of statements that represent feelings that individuals might have about a group to which they belong. With respect to your own feelings about the group that you are working with (College Nurse Educators - CAAT), please indicate how much you agree or disagree with each statement below.

	Strongly Disagree						Strongly Agree
<b>Centrality</b>							
1) I often think about being a CAAT nursing educator.	1	2	3	4	5	6	7
2) Being a CAAT educator has little to do with how I feel about myself in general.	1	2	3	4	5	6	7
3) Being a CAAT educator is an important part of my self-image.	1	2	3	4	5	6	7
4) The fact I am a CAAT educator rarely enters my mind.	1	2	3	4	5	6	7
<b>In-group affect</b>							
5) In general, I'm glad to be a CAAT educator.	1	2	3	4	5	6	7
6) I often regret being a CAAT educator.	1	2	3	4	5	6	7
7) Generally, I feel good about myself when I think about being a CAAT Educator.	1	2	3	4	5	6	7
8) I don't feel good about being a CAAT educator.	1	2	3	4	5	6	7
<b>In-group ties</b>							
9) I have a lot in common with other CAAT educators.	1	2	3	4	5	6	7
10) I feel strong ties to other CAAT educators.	1	2	3	4	5	6	7
11) I find it difficult to form a bond with other CAAT educators.	1	2	3	4	5	6	7
12) I don't feel a strong sense of being connected to CAAT educators.	1	2	3	4	5	6	7

**Group Identification Scale (Cameron, 2004)**

UNIVERSITY FACULTY

Listed below is a series of statements that represent feelings that individuals might have about a group to which they belong. With respect to your own feelings about the group that you are working with (University Educators), please indicate how much you agree or disagree with each statement below.

	Strongly Disagree	Strongly Agree
Centrality		
1) I often think about being a University Educator.	1	7
2) Being a University Educator has little to do with how I feel about myself in general.	1	7
3) Being a University Educator is an important part of my self-image.	1	7
4) The fact I am a University Educator rarely enters my mind.	1	7
In-group affect		
5) In general, I'm glad to be a University Educator.	1	7
6) I often regret being a University Educator.	1	7
7) Generally, I feel good about myself when I think about being a University Educator.	1	7
8) I don't feel good about being a University Educator.	1	7
In-group ties		
9) I have a lot in common with other University Educators.	1	7
10) I feel strong ties to other University Educators.	1	7
11) I find it difficult to form a bond with other University Educators.	1	7
12) I don't feel a strong sense of being connected to University Educators.	1	7

**Intergroup Conflict Scale (Cox, 2008)**

This scale is designed to measure conflict within your collaborative nursing education program partnership. When you consider your collaborative unit, think of it as the smallest unit of the organization to which you are assigned and for which there is an administrative head (e.g.: Associated Dean, Dean, Chair, or Program Head).

In this scale, parties refer to members of your **partnering** organization (College and University educator groups). Carefully read each statement below. Select the response that best reflects your opinion about the disagreement, interference, negative emotion, and intensity and frequency of conflict in your collaborative consortia. Select the answer that indicates how much you agree or disagree with each statement.

		Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree
	Factor I: Interference: Task (7 Items)					
1	Parties attempt to thwart another's work-related goals.					
2	Some parties attempt to sabotage the work-related efforts of others.					
3	Attempts to block the work-related efforts of another are intense.					
4	Parties engage in intense efforts to interfere with the work-related success of others.					

5	One party blocks the work-related efforts of another.					
6	One party undermines another over work-related issues.					
7	Plotting over work-related issues takes place behind the scenes.					
	Factor 2: Negative Emotion: Task (6 Items)					
8	Parties become irritated over work-related issues.					
9	There are negative feelings between parties over work related issues.					
10	There are angry feelings between parties over the work.					
11	Parties become frustrated with one another over the work.					
12	There is work-related tension between parties.					
13	Negative feelings over work-related issues are intense.					
	Factor 3: Negative Emotion & Interference R/T Interpersonal Incompatibilities (6 Items)					
14	Parties become enraged over issues unrelated to work.					

15	There is irritation between parties over personal values and views unrelated to work.					
16	Parties become annoyed with one another over personal values and views.					
17	There are negative emotions related to interpersonal incompatibilities.					
18	Parties oppose one another over personal values and view unrelated to work.					
19	There is backbiting (slander) related to interpersonal incompatibilities.					
	Factor 4: Disagreement: Task Process (5 items)					
20	Parties have differences of opinion about how the work should be done.					
21	There are differences of opinion about work assignments.					
22	Parties have differences of opinion about responsibilities related to work.					
23	Parties have differences of opinion about equitable workloads.					
24	There are differences of opinion about who should do what.					
	Factor 5: Disagreements: Task (4 Items)					

25	Parties agree about the work to be done.					
26	Parties agree on the nature of work.					
27	Parties agree on the essential elements of work.					
28	Parties agree on the fundamental task.					
	Factor 6: Disagreement: Interpersonal Incompatibility					
29	Parties are of the same mind on personal values and views that are unrelated to work.					
30	Parties share similar personal values and views.					



**Big Five Inventory Scale (John, Donahue, & Kentle, 1991)**

How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree Strongly
---------------------------	---------------------------	------------------------------------	------------------------	------------------------

I am someone who...

\_\_\_\_\_ Is talkative

\_\_\_\_\_ Tends to find fault with others

\_\_\_\_\_ Does a thorough job

\_\_\_\_\_ Is depressed, blue

\_\_\_\_\_ Is original, comes up with new ideas

\_\_\_\_\_ Is reserved

\_\_\_\_\_ Is helpful and unselfish with others

\_\_\_\_\_ Can be somewhat careless

\_\_\_\_\_ Is relaxed, handles stress well.

\_\_\_\_\_ Is curious about many different things

\_\_\_\_\_ Is full of energy

\_\_\_\_\_ Starts quarrels with others

\_\_\_\_\_ Is a reliable worker

- \_\_\_\_\_ Can be tense
- \_\_\_\_\_ Is ingenious, a deep thinker
- \_\_\_\_\_ Generates a lot of enthusiasm
- \_\_\_\_\_ Has a forgiving nature
- \_\_\_\_\_ Tends to be disorganized
- \_\_\_\_\_ Worries a lot
- \_\_\_\_\_ Has an active imagination
- \_\_\_\_\_ Tends to be quiet
- \_\_\_\_\_ Is generally trusting
- \_\_\_\_\_ Tends to be lazy
- \_\_\_\_\_ Is emotionally stable, not easily upset
- \_\_\_\_\_ Is inventive
- \_\_\_\_\_ Has an assertive personality
- \_\_\_\_\_ Can be cold and aloof
- \_\_\_\_\_ Perseveres until the task is finished
- \_\_\_\_\_ Can be moody
- \_\_\_\_\_ Values artistic, aesthetic experiences
- \_\_\_\_\_ Is sometimes shy, inhibited

\_\_\_\_\_ Is considerate and kind to almost everyone

\_\_\_\_\_ Does things efficiently

\_\_\_\_\_ Remains calm in tense situations

\_\_\_\_\_ Prefers work that is routine

\_\_\_\_\_ Is outgoing, sociable

\_\_\_\_\_ Is sometimes rude to others

\_\_\_\_\_ Makes plans and follows through with them

\_\_\_\_\_ Gets nervous easily

\_\_\_\_\_ Likes to reflect, play with ideas

\_\_\_\_\_ Has few artistic interests

\_\_\_\_\_ Likes to cooperate with others

\_\_\_\_\_ Is easily distracted

\_\_\_\_\_ Is sophisticated in art, music, or literature

**Conditions of Work Effectiveness Questionnaire II (Laschinger, 2001)**

HOW MUCH OF EACH KIND OF OPPORTUNITY DO YOU HAVE IN YOUR JOB?

	None	Some	A Lot
1. Challenging work.	1	2	3 4 5
2. The chance to gain new skills and knowledge on the job.	1	2	3 4 5
3. Tasks that use all of your own skills and knowledge.	1	2	3 4 5

HOW MUCH ACCESS TO INFORMATION DO YOU HAVE IN YOUR PRESENT JOB?

	None	Some	A Lot
1. Information about the current state of the collaborative program.	1	2	3 4 5
2. Information regarding the values of top management.	1	2	3 4 5
3. Information regarding the goals of top management.	1	2	3 4 5

HOW MUCH ACCESS TO SUPPORT DO YOU HAVE IN YOUR PRESENT JOB?

	None	Some	A Lot
1. Specific information about things you do well.	1	2	3 4 5
2. Specific comments about things you could improve.	1	2	3 4 5
3. Helpful hints or problem solving advice.	1	2	3 4 5

HOW MUCH ACCESS TO RESOURCES DO YOU HAVE IN YOUR PRESENT JOB?

	None	Some	A Lot
1. Time available to do necessary paperwork.	1	2	3 4 5
2. Time available to accomplish job requirements.	1	2	3 4 5
3. Acquiring temporary help when needed.	1	2	3 4 5

IN MY WORK SETTING/JOB:

	None	Some	A Lot
1. Rewards for innovation on the job	1	2	3 4 5
2. the amount of flexibility in my job is	1	2	3 4 5
3. the amount of visibility of my work-related activities within the collaborative program is	1	2	3 4 5

HOW MUCH OPPORTUNITY DO YOU HAVE FOR THESE ACTIVITIES IN YOUR PRESENT JOB?

	None			A Lot	
1. Collaborating on curriculum development with team members	1	2	3	4	5
2. Being sought out by peers for help with problems	1	2	3	4	5
3. Being sought out by managers for help with problems	1	2	3	4	5
4. Collaborating with other educators from partner sites	1	2	3	4	5

	Strongly Disagree			Strongly Agree	
1. Overall, my current work environment empowers me to accomplish my work in an effective manner.	1	2	3	4	5
2. Overall, I consider my workplace to be an empowering environment.	1	2	3	4	5

**Assessment of Team Collaboration Scale (AITCS; Orchard, King, & Khalili, 2012)**

5 = always; 4 = most of the time; 3 = some of the time; 2 = occasionally, and 1 = never

Please read over each statement and **circle the value** that best reflects how you currently feel your collaborative team and you, as a member of the team, work or act within the team.

1	2	3	4	5
Never	Occasionally	Some of the time	Most of the time	Always

**Section 1: PARTNERSHIP/SHARED DECISION MAKING**

When we are working as a team all of my team members...

1	establish agreements on how the goals for the curriculum are enacted in the program delivery.	1	2	3	4	5
2.	are committed to the goals set out by the teaching team.	1	2	3	4	5
3	include learners (students) in setting goals for their courses.	1	2	3	4	5
4	listen to the wishes of learners when determining the process of learning chosen by the team.	1	2	3	4	5
5.	meet and discuss learners' progress on a regular basis.	1	2	3	4	5
6.	would agree that there is support from the organization for their work.	1	2	3	4	5
7.	coordinate all aspects of the program (e.g., theory courses, practice courses, lab courses, scheduling, practice placements, policies/procedures) based upon learning needs of those in the program.	1	2	3	4	5
8.	use a variety of communication means (e.g., written messages, email, intranets, reports, phone, informal discussion).	1	2	3	4	5

9.	use consistent communication with program team members to discuss learning needs of learners.	1	2	3	4	5
10.	are involved in setting learning activities for each course.	1	2	3	4	5
11.	listen to and consider other program colleagues' voices and opinions/views in regard to deciding on individual teaching/learning planning processes.	1	2	3	4	5
12.	would agree when teaching/learning decisions are made, the course leader strives to obtain consensus on planned processes from all parties.	1	2	3	4	5
13.	feel a sense of belonging to the group.	1	2	3	4	5
14.	establish deadlines for steps and outcome markers in regards to course delivery.	1	2	3	4	5
15.	jointly agree to communicate plans for courses.	1	2	3	4	5
16.	consider alternative approaches to achieve shared course implementation.	1	2	3	4	5
17.	encourage each other and learners and practitioners in agencies to use the knowledge and skills that each of us can bring in developing professional practice of learners in the program.	1	2	3	4	5
18.	focus of our teamwork is consistently the learner.	1	2	3	4	5
19.	work with colleagues in adjusting teaching/learning plans.	1	2	3	4	5

## Section 2: COOPERATION

When we are working as a team all of my team members.....

20.	share power with each other.	1	2	3	4	5
21.	help and support each other.	1	2	3	4	5
22.	respect and trust each other.	1	2	3	4	5
23.	are open and honest with each other.	1	2	3	4	5
24.	make changes to their teaching team functioning based on reflective reviews.	1	2	3	4	5

25.	strive to achieve mutually satisfying resolution for differences of opinions.	1	2	3	4	5
26.	understand the boundaries of what each other can do.	1	2	3	4	5
27.	understand that there are shared knowledge and skills between each member on the team.	1	2	3	4	5
28.	exhibit a high priority for gaining insight from learners about their needs.	1	2	3	4	5
29.	create a cooperative atmosphere among the members when addressing program implementation situations, interventions and goals.	1	2	3	4	5
30.	establish a sense of trust among the team members.	1	2	3	4	5

### Section 3: COORDINATION

When we are working as a team all of my team members....

31.	apply a unique definition of collaborative practice to the program setting.	1	2	3	4	5
32.	equally divide agreed upon goals amongst the team.	1	2	3	4	5
33.	encourage and support open communication, including the colleagues and learners during team meetings.	1	2	3	4	5
34.	use an agreed upon process to resolve conflicts.	1	2	3	4	5
35.	support the leader (course/year coordinator) for the team and varying depending on the needs of our work.	1	2	3	4	5
36.	together select the leader for our team.	1	2	3	4	5
37.	openly support inclusion of learners in our team meetings.	1	2	3	4	5

Revised version December 12<sup>th</sup>, 2011  
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**APPENDIX BB****Detailed Description of Measures**

Variable	Instrument	Items	Scale	Psychometrics
Group Identity Saliency	Group Identification Scale (Cameron, 2004) Multidimensional measure of group identity saliency 3 dimensions of group identity (Centrality, In-group Affect, & In-group Ties)	12	1 (Strongly Disagree) to 7 (Strongly Agree)	$\alpha = .83$ to $.91$ CFA demonstrated validity (Obst, & White, 2005)
Intergroup Conflict	Intergroup Conflict Scale (Cox, 2008) Measures conflict and perceptions of affective states and behaviour in the core process of conflict. Higher scores indicate more perceptions of intergroup conflict.	30	1 (Strongly Disagree) to 5 (Strongly Agree)	$\alpha = .79$ to $.95$ (Cox, 2008)
Agreeableness	Big Five Inventory (John, Donahue, & Kentle, 1991) Measures an individual's personality trait profile on Neuroticism, Extraversion, Agreeableness, Openness, and Conscientiousness. Only "agreeableness" will be used.	44	1 (Disagree Strongly) to 5 (Agree Strongly)	$\alpha = .75$ to $.90$ (Benet-Martinez & John, 1998)
Structural Empowerment	Conditions of Work Effectiveness –II (Laschinger et al., 2001) Consists of six subscales of structural empowerment (opportunity, information, support, resources, formal and informal power). A two-item global empowerment scale is also included for construct validation purposes.	19	1 (None) to 5 (A Lot)	$\alpha = .78$ -.94 (Laschinger et al., 2001) CFA demonstrated validity (Laschinger et al., 2001b)
Collaboration	Assessment of Team Collaboration Scale (Orchard, King, & Khalili, 2011) Measures three subscales of Collaboration (Shared Decision Making, Coordination, and Cooperation).	37	1 (Never) to 5 (Always)	Overall $\alpha = .98$ Subscale $\alpha = .80$ to $.97$

## **Chapter 5**

### **Explaining Collaboration Between University and CAAT Faculty Within Collaborative Nursing Education Programs in Ontario**

## Abstract

Collaborative nursing education programs to prepare nurses for entry-to-practice at the baccalaureate level were formed in Ontario as a result of 2000 legislation changes. These legislative changes required Colleges of Applied Arts and Technology (CAATs) to find university partners to enter into collaborative arrangements in order to continue delivering nursing education. CAATs previously were unable to independently confer university baccalaureate degrees. Subsequently, 21 CAATs in Ontario merged with 13 university nursing programs and entered into an education partnership in order for their graduates to meet an entry-to-practice requirement of a university baccalaureate degree. These newly formed collaborative nursing education programs varied in delivery formats and structures. After more than 15 years of program collaboration, perceptions of intergroup collaboration within these education partnerships, as well as best practices for maintaining collaboration, have not been fully studied. The purpose of this study was to examine the utility of a theoretically derived model, linking contributory factors to collaboration within collaborative nursing education programs amongst full-time CAATs and university faculty groups. The research question for this study was: **What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?** This study examined the relationships between faculty members' perceived group identity salience, agreeableness, intergroup conflict, and structural empowerment on their perceptions of faculty group collaboration. The results revealed a statistically significant inverse relationship between intergroup conflict and collaboration, as well as structural empowerment and collaboration. However, group identity salience was not related to intergroup conflict. Finally, agreeableness and structural empowerment did not have significant moderating effects in the model.

*Keywords:* Model testing, Structural Equation Model, collaboration, nursing education, educators

## Introduction

In 2000, the Ontario government enacted legislation changes requiring baccalaureate education for all registered nursing program graduates. To achieve the outcome associated with this legislation, Colleges of Applied Arts and Technology (CAATs) were required to find a collaborating university partner in order to continue delivering nursing education. Previously they were unable to confer university baccalaureate degrees independently.

Within a short time-span, CAATs and universities in Ontario were required to shift from being competitors with varied cultures, capacities, and structural formations to being collaborators working in partnerships to deliver nursing education. This seemingly straightforward concept has resulted in successes, challenges, transitions, and dissolutions of some collaborative nursing programs in Ontario with a reported financial and human resources impact (Miller, 2011).

Collaborative practice has long been touted as an effective means of establishing cooperative and coordinated partnerships in which members from different groups contribute to a common good (Orchard, Curran, & Kabene, 2005; Bronstein, 2003; Almost & Laschinger, 2002). However, there is a paucity of research around the antecedent variables that contribute to successful collaboration (Orchard et al., 2005). This is true in regard to the literature centered on Ontario collaborative nursing education programs, which are well-established but lack systematic research associated with their faculty members' collaboration within their collaborative nursing programs (CNPs). Thus, there is a need to focus on the faculty members' collaboration in their work, which lends to the unique nature of the current study.

The purposes of this study are to explore and describe contributory antecedent, and moderator variables to successful and meaningful collaboration between faculty members in collaborative nursing education programs. To accomplish this, the current study tested and refined a theoretically derived model linking selected antecedent contributory variables (group social identity salience, intergroup conflict, agreeableness and structural empowerment) to collaboration among faculty members in Ontario nursing education programs. This research study proposed that an individual's perceived group social identity salience, or feeling of '*oneness*' with their nursing faculty employee group would predict perceptions of intergroup

conflict, which then predicts perceptions of collaboration between faculty members within nursing education programs. Further, an individual's agreeableness (dispositional characteristic) was theorized to moderate the relationship between group social identity salience and intergroup conflict. Finally, perceived structural empowerment within collaborating organizations was theorized to moderate the relationship between perceived intergroup conflict and collaboration.

## **Literature Review**

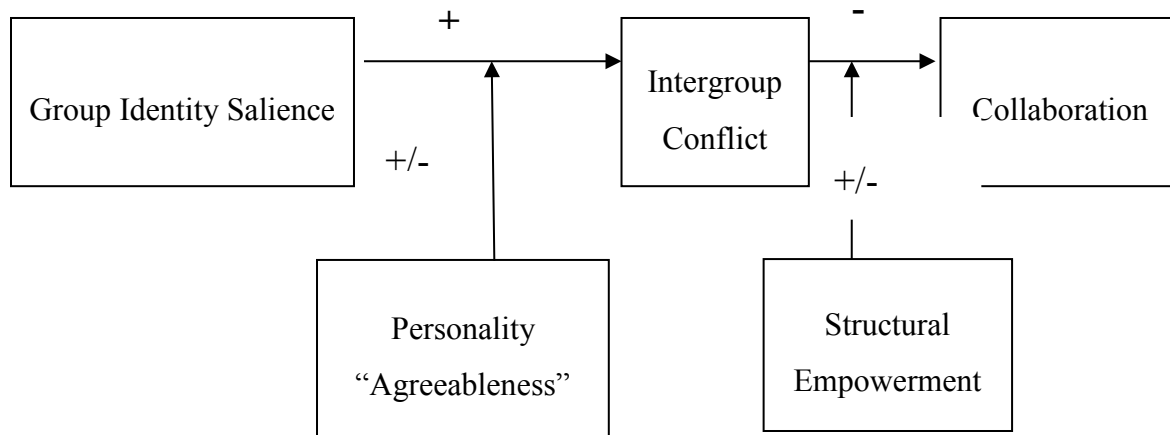
Although collaborative nursing education programs have been operating in Ontario for over 15 years, there is a paucity of research describing the factors contributing to collaborative success in these programs. According to the literature, identification with one's in-group (i.e., group identity salience) may lead to in-group favouritism and out-group bias (VanKippenberg, VanKippenberg, & de Lima, 2002). This bias may contribute to strained relationships and intergroup conflict arising from relational issues among, within, and across group members (Miller, 2000; Janssen, De Jonge, & Bakker, 1999). However, the effect of group identity salience on intergroup conflict between groups may be mitigated by the agreeableness of individual group members. Specifically, individuals who are high in agreeableness may have reduced feelings of in-group favouritism and out-group bias, which may reduce intergroup conflict. Conflicts between groups have been shown to stifle collaboration (Jehn, 1995). The effects of intergroup conflict on collaboration may further be impacted by structural factors that influence an individual's perceived level of empowerment (Almost & Laschinger, 2002). Specifically, structural empowerment may mitigate the effect of intergroup conflict on collaboration by providing requisite features that support collaborative practice (i.e., access to information, opportunity, support, and resources, as well as formal and informal power).

## **Theoretical Model**

The theoretical model used in the study (see Figure 5.1) has its underpinnings in Social Identity Theory (Tajfel, 1982). Tajfel posited that the degree to which group members perceive their membership to a particular group predicts certain behaviors to occur should that group become threatened or invaded by another group or individual deemed not to be a part of that original group. Tajfel contended that *group identity salience*, or the extent to which group ties

are centralized, can often become fractured due to various *intergroup conflicts*, which can lead to a breakdown in *structural empowerment* and hinder *collaboration*.

Figure 5.1 Theoretical Model.



### Research Question

The overall research question for this study was: What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs? Specifically, the hypotheses tested in this study were:

- Hypothesis 1: educators’ perceptions of their *group identity salience* will be positively related to their perceptions of *intergroup conflict*.
- Hypothesis 2: educators’ *agreeableness* will moderate their relationship between perceived *group identity salience* and perceived *intergroup conflict*.
- Hypothesis 3: educators’ perceptions of *intergroup conflict* will be negatively related to perceptions of *collaboration* within the nursing program consortia. And,
- Hypothesis 4: *structural empowerment* will moderate the relationship between perceived *intergroup conflict* and perceptions of *collaboration*.

## Methodology

### Design

A non-experimental cross-sectional survey design was used to confirm that the hypothesized factors contributed to faculty collaboration within Ontario Collaborative Nursing Education

Programs. Specifically, the proposed model linking interpersonal (*group identity salience* and *intergroup conflict*), dispositional (*agreeableness*) and organizational (*structural empowerment*) constructs with the selected outcome (*collaboration*) was tested.

### **Sample and Sampling Frame**

The sample comprised Ontario, Canada CAATs and university nursing faculty members from collaborative baccalaureate nursing education programs. The total size of the target population was unclear as there were no accurate and readily available database. Instead, efforts were made to obtain the number of full-time nurse educators from heads of these programs. Based on these communications it is estimated that the target population was approximately 1400 educators across the college and university systems. Only full-time nurse educators who identified as belonging to either a CAAT or university within a collaborative nursing education program in Ontario were eligible for the study. Full time educators were selected to ensure responses on group identification were based on a specific CAAT or university faculty group, and not either across both CAAT and university groups or another secondary employer.

### **Recruitment**

A list of eligible nursing education program delivery sites (inclusive of college and university locations) in Ontario (n=34) was prepared from online resources describing accredited collaborations within the Canadian Association of Schools of Nursing (CASN) website (<http://www.casn.ca/en/>). Ethical Approval to conduct the study was obtained from Western University (Appendix A) and from each partner site in the collaborative nursing program (university and college locations). The Collaborative Nursing Program heads (Dean, Director, Chair, or Associate Dean) at the 13 university and 21 CAAT sites involved in Collaborative Education Programs were approached about assisting with recruitment of their faculty to participate in the study. They were asked to disseminate an information sheet and study description to potential faculty participants in their respective programs. The information sheet contained a link to an online survey hosted on PsychData (<https://www.psychdata.com>). Those faculty who agreed to participate in the study were directed to a set of instruments to complete on the online site. The survey comprised demographic questions and a set of questions to gain an appreciation of unique features of their programs that were believed to have an impact on

collaboration. In addition a set of instruments to assess the theorized model for the study were provided. These instruments, included measures of group identity salience (The Social Identity Scale [Cameron, 2004]), intergroup conflict (Intergroup Conflict Scale [Cox, 2008]), agreeableness (Big Five Inventory Scale [John, Nauman, & Soto, 2008; John, Donahue & Kentle, 1991]), structural empowerment (Condition of Work Empowerment Scale II [CWEQ-II; Laschinger et al., 2001]), and collaboration (Assessment of Interprofessional Team Collaboration Scale for Educators [AITCS-II-E; Powell, Orchard, Finnegan, & Laschinger, 2018]).

## **Instrumentation**

***Group Identity Salience.*** The Social Identity Scale (Cameron, 2004) was used to measure faculty perceptions of their group identity salience. It measures three key factors of social identity salience (i.e., centrality, in-group affect, in-group ties) and consists of 12-items rated on a seven-point scale (from 1 = strongly disagree) to 7 = strongly agree). Three items on each of the three subscales (centrality, in-group affect, in-group ties) were summed and averaged to provide a score for each subscale and then each subscale was summed to create the overall group social identity salience score.

***Intergroup Conflict.*** The Intergroup Conflict Scale (Cox, 2008) was used to measure intergroup conflict. It consists of 30-items rated on a five-point scale (from 1 = strongly disagree to 5 = strongly agree). The measure assesses six types of intergroup conflict, including: Interference – Task (7 items); Negative Emotion – Task (6 items); Negative Emotion and Interference related to Interpersonal Incompatibilities (6 items); Disagreement – Task Process (5 items); Disagreements – Task (4 items); and Disagreement – Interpersonal Incompatibility (2 items). Items on the six subscales were averaged to provide a score for each subscale and then each sub-scale was summed to create a total intergroup conflict score.

***Collaboration.*** Perceived collaboration within the consortia was evaluated using the Assessment of Interprofessional Team Collaboration Scale for educators (AITCS-E), a modified version of the AITCS (Orchard et al., 2012). This measure consisted of 11-items rated on a scale from 1= Never to 5 = Always and comprised three subscales including partnership (3 items), cooperation (6 items), and coordination (2 items). Items on each of the three subscales were summed and then averaged to provide a score for each subscale. These three subscale scores were then



summed to create an overall collaboration score ranging from 3 to 15, where higher scores indicate greater perceptions of collaboration.

***Agreeableness.*** Individuals' agreeableness was measured with the Big Five Inventory Scale (BFI) (John, Nauman, & Soto, 2008; John, Donahue & Kentle, 1991). Although this study only utilized agreeableness from this measure, the full BFI was included in the survey in order to avoid positive response bias among respondents. This measure consists of 44-items rated on a five-point scale (from 1 = disagree strongly to 5 =agree strongly). The five personality constructs measured include extraversion (8 items), agreeableness (9 items), conscientiousness (9 items), neuroticism (8 items), and openness (10 items). For the purposes of this study, individuals' ratings on the nine items assessing agreeableness were averaged to determine an overall agreeableness score for each participant.

***Structural Empowerment.*** Structural Empowerment was evaluated using the Conditions of Work Empowerment Scale II (CWEQ-II) (Laschinger et al., 2001). This survey consists of 19-items measuring structural empowerment. The measure consists of six primary subscales including opportunity (3 items), information (3 items), support (3 items), resources (3 items), formal power (3 items), and informal power (4 items). Responses are rated using a five-point scale (from 1= None to 5 =A lot). A mean score for each subscale was calculated and then each subscale value was summed together to create an overall empowerment score ranging from 6 to 30. Higher scores represent higher perceptions of empowerment.

Prior to implementing this study, ethical approval was obtained from the Western University Research Board (Appendix A) and also from the ethics boards of each of the participating CAATs and university programs in Ontario.

## **Data Analysis**

Data were analyzed using Version 25.0 of the Statistical Package for Social Sciences (2017). Initially a descriptive analysis of the data set was performed, followed by correlational analyses. The initial raw data set contained 161 cases. Item by item frequencies and descriptive analyses were generated. Fourteen cases that did not fulfill the inclusion criteria, (were not employed in a

collaborative nursing education program on a full-time basis) were subsequently excluded listwise from further analysis.

A case-by-case missing values analysis for all survey scales was conducted to identify cases with large missing values. On examination, twenty-two respondents did not answer any of the items on the major study variables, were deemed *person-level missing data* and were removed from further analysis (Newman, 2014). Next anomaly index, boxplot, and standard deviation analyses was conducted on the remaining 125 cases to identify univariate outliers (e.g., anomaly index value greater than 3 and standard deviation scores  $\pm 3$ ). Significance testing of Mahalanobis distance for all survey variables was conducted to identify multivariate outliers (e.g., cases with significant Mahalanobis ratings), and no cases were identified as having a  $p < .001$ . Descriptive analyses and Kolmogorov-Smirnov test of normality including skew and kurtosis were conducted for each variable to assess for violations of normality assumptions. Each of the scale and subscales demonstrated a normal distribution. Thus, no further deletion of respondent data sets were required and the full data set of  $n=125$  was used for further analyses.

### **Missing Values**

A missing values analysis was conducted on the entire remaining data set ( $n=125$ ) to assess the extent, nature, and pattern of the missing data. The results revealed that each respondent had at least one missing item however, there were no *construct level missingness* identified (Newman, 2014). Visual review of missing cases patterns, and Little's MCAR test conducted on the entire data set indicated that the missing data were missing completely at random (e.g., significant Little's MCAR tests) with no systemic pattern. Accordingly, imputation was selected as the most appropriate method of dealing with the missing data in this data set.

### **Imputation**

Random regression imputation was used for scale variables, which involves replacing the missing values in a variable with its mean value, and adding the prediction error (Tabachnick & Fidell, 2013; Gelman & Hill, 2007). A total of 128 missing values were replaced for the observed variables in intergroup conflict. A total of 95 missing values were replaced for the observed variables in agreeableness. A total of 205 missing values were replaced for the

observed variables in structural empowerment. A total of 180 missing values were replaced for the observed variables in collaboration. Finally, a total of seven missing values were replaced for the observed variables in group identity salience.

## Results

### Demographics of the Respondents

Table 5.1 presents the results of the demographic and program feature data for survey respondents. Of the final sample of 125 participants, most had been employed for 6-10 years ( $n = 40, 32\%$ ), at a college and ( $n = 87, 70\%$ ) at a university. Forty-two percent of the respondents had been involved with their Collaborative Nursing Education Program for 6-10 years as well ( $n = 52$ ). The majority of participants held a Master's degree or equivalent ( $n = 84, 67\%$ ) with ( $n = 30, 37\%$ ) holding the terminal PhD credential.

### Program Features

Almost three-quarters of the participants reported that the University ( $n = 89, 71\%$ ) provided the curriculum for their program, while only one-half reported that the admission criteria for their collaborative program was decided by a combination of College and University administrators ( $n = 63, 50\%$ ). College program leads initially send their faculty members' collaborative program decisions to the university leader ( $n = 65, 52\%$ ). Thus, decisions related to the collaborative program were most often approved by all partner sites. Almost three-quarters of participants indicated that students in their collaborative program stay for all 4 years at each partner site ( $n = 89, 71\%$ ). Of the minority of the programs where students did not remain in a single site, most stated that students typically move at Year 3 to the university site ( $n = 27, 22\%$ ). Only slightly more than one-half of participants reported that their partner sites are not recognized on the degree certificate of graduating students ( $n = 66, 53\%$ ). Not quite one-half of those respondents reported that partner sites were recognized on the graduating degree certificate ( $n = 28, 22\%$ ). All frequencies and percentages are presented in Table 5.1.

Table 5.1

*Descriptive analysis of respondents' perception of their collaborative program features*

Variable	<i>n</i>	%
<b>Employment Period with institution</b>		
5 years or less	30	24
6-10 years	40	32
11-15 years	39	31
More than 15 years	15	12
Missing	1	1
<b>Involvement Period in Collaborative Program</b>		
5 years or less	25	20
6-10 years	52	42
More than 10 years	48	38
<b>Highest levels of Education</b>		
Baccalaureate	1	1
Master or Equivalent	84	67
PhD or Equivalent	37	30
Missing	3	2
<b>Curriculum</b>		
College or Combination	33	26
University	89	71
Missing	3	2
<b>Decision Admission Criteria</b>		
College or Combination	63	50
University	59	47
Missing	3	2
<b>Decision Process</b>		
Each partner site approves independently	43	34

Variable	<i>n</i>	%
All partner sites approve and send decision to university leader	65	52
We do not have a formal process for decision approval	9	7
Employer		
College	87	70
University	38	30

### Descriptive analysis of instruments

Descriptive statistics for the concept and subscale scores of each instrument are presented in Table 5.2. Faculty reported overall perceptions of group identity salience as moderate ( $n = 125$ ,  $M = 16.21$ ,  $SD = 1.10$ ). Faculty involved in collaborative nursing programs reported a high level of intergroup conflict ( $n = 125$ ,  $M = 24.76$ ,  $SD = 1.27$ ). In particular, faculty reported high levels of interference with task process ( $n = 125$ ,  $M = 5.02$ ,  $SD = 1.45$ ), negative emotions related to the group work required ( $n = 125$ ,  $M = 4.68$ ,  $SD = 1.73$ ), and interpersonal incompatibilities ( $n = 125$ ,  $M = 4.19$ ,  $SD = 1.17$ ). The faculty respondents reported high levels of agreeableness ( $n = 125$ ,  $M = 4.31$ ,  $SD = 0.49$ ). Faculty reported overall perceptions of structural empowerment as moderate ( $n = 125$ ,  $M = 18.75$ ,  $SD = 0.66$ ). Faculty reported the highest degree of access to opportunity ( $n = 125$ ,  $M = 4.81$ ,  $SD = 0.86$ ), whereas access to resources ( $n = 125$ ,  $M = 2.60$ ,  $SD = 0.82$ ) was perceived by the faculty as being present at a low level. Faculty reported a moderate degree of team collaboration within the CNP. Team cooperation ( $n = 125$ ,  $M = 3.15$ ,  $SD = 0.98$ ) was perceived to be the most collaborative element of their collaborative work team. The least collaborative aspect of being a faculty within the CNP was coordination ( $n = 125$ ,  $M = 2.65$ ,  $SD = 0.94$ ).

Table 5.2

*Descriptive Statistics for Concept and Subscale Scores (n=125)*

Variable	Minimum	Maximum	Mean	$\alpha$	Std. Deviation
<b>Group identity salience</b>	<b>3.00</b>	<b>21.00</b>	<b>16.21</b>	<b>0.92</b>	<b>1.10</b>
Centrality	1.00	7.00	4.80	0.87	1.47
In-group affect	1.00	7.00	6.04	0.88	1.06
In-group ties	1.00	7.00	5.37	0.92	1.40
<b>Intergroup conflict</b>	<b>6.00</b>	<b>30.00</b>	<b>24.76</b>	<b>0.97</b>	<b>1.27</b>
Interference	1.00	7.00	3.76	0.96	1.70
Negative emotion	1.00	7.00	4.68	0.96	1.73
Negative emotion and interference	1.00	7.00	3.32	0.94	1.62
Disagreement: task process	1.00	7.00	5.02	0.93	1.45
Disagreement: task	1.00	7.00	3.79	0.94	1.66
Disagreement: interpersonal incompatibility	1.00	7.00	4.19	0.78	1.17
<b>Structural empowerment</b>	<b>6.00</b>	<b>30.00</b>	<b>18.75</b>	<b>0.88</b>	<b>0.66</b>
Opportunity	1.00	5.00	4.01	0.80	0.86
Information	1.00	5.00	3.22	0.89	1.03
Support	1.00	5.00	3.06	0.70	1.13
Resources	1.00	5.00	2.60	0.78	0.82
Formal power	1.00	5.00	2.82	0.68	0.88
Informal power	1.00	5.00	3.04	0.86	1.03
<b>Collaboration</b>	<b>3.00</b>	<b>15.00</b>	<b>8.83</b>	<b>0.93</b>	<b>0.90</b>
Partnership	1.00	5.00	3.03	0.94	0.98
Cooperation	1.00	5.00	3.15	0.80	0.98
Coordination	1.00	5.00	2.65	0.97	0.94
<b>Agreeableness</b>	<b>1.00</b>	<b>5.00</b>	<b>4.31</b>	<b>0.77</b>	<b>0.49</b>

## Inferential Statistics

Further analyses were carried out to determine if there were differences between CAATs and university faculty members on the theorized constructs. Specifically, each of the major study variables and their subscales were analyzed to assess for differences between group means.

**Group Identity Salience.** A preliminary Levene's test for equality of variances indicated that the variances of the two groups were significantly different. A two-sample t-test was performed and found a significant difference ( $t(86.27) = 3.35, p = 0.01$ ) between University faculty members who had a much stronger group identification as compared to their CAATs counterparts. There were also similar significant differences in in-group centrality ( $t(123) = 3.35, p = 0.01$ ) and in-group affect ( $t(98.11) = 3.58, p = 0.01$ ). However, no statistical difference was observed in their in-group ties between College and University educator groups (Table 5.3).

**Structural Empowerment.** A statistical significance was found for both university faculty members empowerment and College of Applied Arts and Technology counterparts, ( $t(123) = 2.14, p = 0.03$ ), and in their in-formal power ( $t(123) = 2.01, p = 0.04$ ). However, there were no statistical differences observed between college and university educator groups in relation to access to opportunity ( $t(123) = 1.80, p = 0.08$ ), resources ( $t(123) = .31, p = 0.76$ ), information ( $t(123) = 0.96, p = 0.34$ ), support ( $t(123) = 1.40, p = 0.17$ ) or formal power structures ( $t(123) = 1.57, p = 0.12$ ) (Table 5.3).

For the remaining study variables (agreeableness [ $t(123) = 1.91, p = 0.58$ ], intergroup conflict [ $t(123) = 1.07, p = 0.29$ ], and collaboration [ $t(123) = 0.57, p = 0.57$ ]) there were no statistical difference between University and College educator groups. Table 5.3 presents the data for groups comparison for major study variables.

Table 5.3

## Mean Comparison Between College and University Faculty Groups

Variable	<i>n</i>	<i>M</i>	SD	T	<i>p</i>	CI low	CI Upper
<b>Structural Empowerment</b>				<b>1.57</b>	<b>0.03*</b>	<b>0.2</b>	<b>0.52</b>
College	87	18.26	0.62				
University	38	19.88	0.66				
<b>Opportunity</b>				<b>1.79</b>	<b>0.08</b>	<b>-.03</b>	<b>.063</b>
College	87	3.91	0.91				
University	38	4.22	0.71				
<b>Information</b>				<b>0.96</b>	<b>0.34</b>	<b>-.20</b>	<b>.60</b>
College	87	3.16	1.06				
University	38	3.36	0.95				
<b>Support</b>				<b>1.40</b>	<b>0.17</b>	<b>-.13</b>	<b>.74</b>
College	87	2.96	1.11				
University	38	3.27	1.13				
<b>Resources</b>				<b>0.31</b>	<b>0.76</b>	<b>-.37</b>	<b>.27</b>
College	87	2.65	0.87				
University	38	2.60	0.70				
<b>Formal Power</b>				<b>1.52</b>	<b>0.12</b>	<b>-.07</b>	<b>.61</b>
College	87	2.78	0.88				
University	38	3.05	0.88				
<b>Informal Power</b>				<b>2.00</b>	<b>0.04*</b>	<b>.01</b>	<b>.79</b>
College	87	2.93	1.04				
University	38	3.32	0.94				
<b>Collaboration</b>				<b>.571</b>	<b>.57</b>	<b>-.25</b>	<b>.45</b>
College	87	2.95	.93				
University	38	3.04	.82				
<b>Partnership</b>				<b>1.08</b>	<b>.28</b>	<b>-.16</b>	<b>.54</b>
College	87	2.98	1.04				
University	38	3.17	.84				
<b>Cooperation</b>				<b>.78</b>	<b>.44</b>	<b>-.23</b>	<b>.52</b>
College	87	3.11	.87				
University	38	3.30	1.02				



Variable	<i>n</i>	<i>M</i>	SD	T	<i>p</i>	CI low	CI Upper
<b>Coordination</b>				<b>.71</b>	<b>.48</b>	<b>-.24</b>	<b>.52</b>
College	87	2.61	1.00				
University	38	2.73	.77				
<b>Agreeableness</b>				<b>1.91</b>	<b>0.58</b>	<b>-.36</b>	<b>.00</b>
College	87	4.37	.51				
University	38	4.19	.43				
<b>Group Identity Saliency</b>				<b>3.35</b>	<b>.001*</b>	<b>.23</b>	<b>1.02</b>
College	87	15.64	1.12				
University	38	17.55	.91				
<b>Centrality</b>				<b>3.35</b>	<b>.001*</b>	<b>.38</b>	<b>1.46</b>
College	87	4.52	1.48				
University	38	5.44	1.23				
<b>In-Group Affect</b>				<b>3.60</b>	<b>.001*</b>	<b>.23</b>	<b>1.02</b>
College	87	5.85	1.11				
University	38	6.48	.78				
<b>In-Group Ties</b>				<b>1.37</b>	<b>.172</b>	<b>-.16</b>	<b>.90</b>
College	87	5.26	1.37				
University	38	5.63	1.40				
<b>Inter-Group Conflict</b>				<b>1.07</b>	<b>.289</b>	<b>-.22</b>	<b>.75</b>
College	87	4.03	1.29				
University	38	4.30	1.20				
<b>Interference</b>				<b>.94</b>	<b>.350</b>	<b>-.34</b>	<b>.96</b>
College	87	3.66	1.69				
University	38	3.97	1.70				
<b>Negative Emotion</b>				<b>1.55</b>	<b>.123</b>	<b>-.14</b>	<b>1.18</b>
College	87	4.53	1.80				
University	38	5.04	1.60				
<b>Negative Emotion &amp; Interference</b>				<b>1.39</b>	<b>.166</b>	<b>-.18</b>	<b>1.05</b>
College	87	3.19	1.60				

Variable	<i>n</i>	<i>M</i>	SD	T	<i>p</i>	CI low	CI Upper
University	38	3.63	1.62				
<b>Disagree Task Process</b>				<b>1.37</b>	<b>.173</b>	<b>-.17</b>	<b>.94</b>
College	87	4.90	1.46				
University	38	5.29	1.40				
<b>Disagreement Task</b>				<b>.54</b>	<b>.590</b>	<b>-.82</b>	<b>.47</b>
College	87	3.85	1.69				
University	38	3.67	1.60				
<b>Disagreement Interpersonal Incompatibility</b>				<b>.003</b>	<b>1.00</b>	<b>-.45</b>	<b>.45</b>
College	87	4.19	1.15				
University	38	4.19	1.22				

### Confirmatory Factor Analysis

Prior to parametric testing of the data, a Confirmatory Factor Analysis (CFA) was conducted on each of the measures of the major study variables to assess validity within this study population. Specifically, a CFA was conducted on the Group Identity Salience Scale, Inter-group Conflict Scale, BFI (agreeableness items), Conditions of Workplace Effectiveness Questionnaire, and the Assessment of Interprofessional Team Collaboration for Educators Scale. The initial CFA data were analyzed for each measure independently, and the modification indices were examined in order to assess for any alterations that could be made to achieve the best model fit. In each instance where error terms within a similar subscale were determined to be greater than ten, covariance between the two observed variables was applied. The final results of each CFA indicated that all of the models were minimally acceptable to reasonably specified according to recommendations by Kline (2011). Specifically, good model fit was defined as having a CFI value greater than .90, an SRMR value less than .08, and an RMSEA value less than .08 (Kline, 2011; Hu & Bentler, 1999). The results of the CFAs are presented in Table 5.4.

Table 5.4

## Confirmatory Factor Analysis Fit Indices for Major Study Variables

Measure	$\chi^2$	<i>df</i>	<i>p</i>	<i>CFI</i>	<i>SRMR</i>	<i>RMSEA</i>
<b>Group Identity Saliency</b>	89.196	49	< .001	.96	.05	.04
<b>Inter-Group Conflict</b>	790.688	385	< .001	.95	.07	.08
<b>Agreeableness</b>	39.39	27	.058	.93	.06	.06
<b>Structural Empowerment</b>	226.37	135	< .001	.91	.08	.07
<b>Collaboration</b>	49.79	40	.138	.99	.04	.04

**Structural Equation Model**

Once the best fitting models were achieved through the CFAs and modification indices analyses, structural equation modeling (SEM) using the Analysis of Moment Structures (AMOS Version 25.0) computer program was used to analyze relationships among the major study variables. An acceptable model fit was achieved for the first SEM (without moderator variables inserted), and the factor correlations, composite reliability, and regression estimates were evaluated. Next, interaction terms (group identity saliency x agreeableness + intergroup conflict x structural empowerment) were created in order to assess the moderating effects of agreeableness on group identity saliency and intergroup conflict and structural empowerment on intergroup conflict and collaboration. To address the aim of this study, a second SEM was conducted using the latent variables of group identity saliency, intergroup conflict, and collaboration, with the moderating factors of agreeableness and structural empowerment. These five latent variables were created using the composite scores of the observed variables from the CFAs. The proposed model is depicted in Figure 5.2.

**Model Specification.** The initial results of the model showed good model fit ( $\chi^2(129) = 205.74, p < .001, CFI = .93, SRMR = .11, RMSEA = .07$ ). In order to improve the model fit, modification indices were examined to determine which parameter constraints were significantly limiting the model fit of the observed covariance structure (Kline, 2011). The modification indices suggested allowing the error terms of the observed variables for informal power (e17-e15, e17-e19) to co-vary. The revised model showed a slightly improved fit, ( $\chi^2(127) = 192.26, p < .001, CFI = .94, SRMR = .11, RMSEA = .06$ ). The fit statistics show that the model was reasonably specified. A summary of the models with and without modification indices is provided in Table 5.5.

Table 5.5

Model Fit Statistics for the Proposed Model

SEM	$\chi^2$	<i>df</i>	<i>p</i>	<i>CFI</i>	<i>SRMR</i>	<i>RMSEA</i>
No Modification Indices	205.74	129	< .001	.93	.11	.07
Modification Indices	192.26	127	< .001	.94	.11	.06

**Factor Correlations.** Factor correlations were calculated between the five factors of the proposed model (Table 5.6). Group identity salience had weak positive relationships with agreeableness ( $r = .22$ ), structural empowerment ( $r = .30$ ), and collaboration ( $r = .18$ ), but a weak negative relationship with intergroup conflict ( $r = -.10$ ). Agreeableness had weak positive relationships with structural empowerment ( $r = .15$ ), and collaboration ( $r = .17$ ), but had weak negative relationships with intergroup conflict ( $r = -.18$ ). Structural empowerment had a weak negative relationship with intergroup conflict ( $r = -.04$ ), but a moderate positive relationship with collaboration ( $r = .41$ ). Finally, intergroup conflict had a strong negative relationship with collaboration ( $r = -.65$ ).

Table 5.6

*Factor Correlations for the Proposed Model*

Construct	GIS	AGR	SE	IGC	CLB
GIS	-				
AGR	0.22*	-			
SE	0.30**	0.15	-		
IGC	0.10	-0.18*	-0.04	-	
CLB	0.18*	0.17*	0.41**	-0.65**	-

Notes. \* $p < .05$ . \*\* $p < .01$ . GIS = Group Identity Saliency, AGR = Agreeableness, SE = Structural Empowerment, IGC = Intergroup Conflict, CLB = Collaboration.

**Explained Variance.** Squared Multiple Correlations (SMC) is a useful statistic that is independent of all units of measurement and represents the proportion of variance explained by predictor variables. SMC is identified as the ‘r Squared’ value in the output section of AMOS. Additionally, in the AMOS software program, the  $r^2$  value is only calculated for endogenous variables, with the  $r^2$  representing the proportion of variance in that variable that is explained by its predictors. In the measurement model, 5% of intergroup conflict was explained by group identity salience ( $r^2 = .05$ ). Moreover, 58% ( $r^2 = .58$ ) of collaboration was explained by intergroup conflict and group identity salience.

**Composite Reliability.** Composite reliability was assessed to determine how well each indicator loaded onto the respective constructs of group identity salience (centrality, affect, and in group ties), intergroup conflict (interference, negative emotion, negative emotion and interference R/T interpersonal incompatibilities, [disagreement: task process, and disagreement: task], structural empowerment (opportunity, information, support, resources, formal power, and informal power), and collaboration (partnership, cooperation, and coordination). The coefficients

were evaluated using the guidelines suggested by George and Mallery (2016), where values 0.90 or greater indicate excellent reliability, values ranging from 0.80 to 0.89 indicate good reliability, values ranging from 0.70 to 0.79 indicate acceptable reliability, values ranging from 0.60 to 0.69 indicate questionable reliability, values ranging from 0.50 to 0.59 indicate poor reliability, and values less than 0.50 indicate unacceptable reliability. Intergroup conflict had excellent composite reliability (CR = 0.90), and group identity salience (CR = 0.80) and collaboration (CR = 0.86) both had good composite reliability. Finally, structural empowerment had acceptable composite reliability (CR = 0.78).

**Regression Estimates.** Regression paths were included in the model between each of the independent and dependent latent constructs, as well as the moderator constructs. The standardized regression path for intergroup conflict on group identity salience showed no statistical significance ( $\beta = -0.06, p = .547$ ) indicating no relationship between intergroup conflict and group identity salience. The standardized regression path for intergroup conflict on agreeableness also showed no statistical significance ( $\beta = -0.17, p = .074$ ) indicating no relationship between agreeableness and intergroup conflict. The standardized regression path for collaboration on intergroup conflict showed moderate significance ( $\beta = -0.68, p < .001$ ) indicating a one standard deviation increase in intergroup conflict would result in a 0.68 standard deviation decrease in collaboration. The standardized regression path for collaboration on structural empowerment showed moderate significance ( $\beta = 0.30, p = .013$ ) indicating a one standard deviation increase in collaboration would result in a 0.30 standard deviation increase in structural empowerment. A summary of the regression results is outlined in Table 5.7. A path diagram with the results of the model is shown in Figure 5.2.

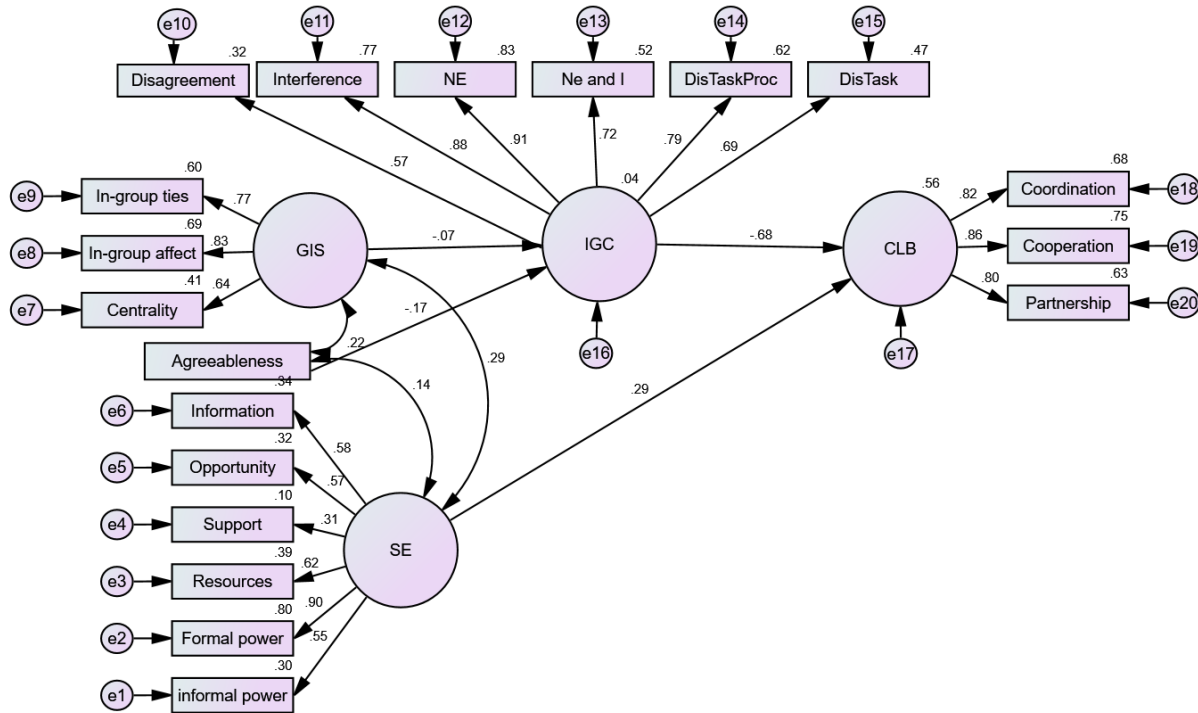
Table 5.7  
Standardized Regression Paths for the Proposed Model (No Interaction Terms Included)

<b>Regression</b>	<b><math>\beta</math></b>	<b>SE</b>	<b>Z</b>	<b>p</b>
<b>GIS ~ IGC</b>	<b>-0.06</b>	<b>0.13</b>	<b>-0.68</b>	<b>.497</b>
Centrality ~ GIS	0.64	-	-	-
In-group Affect ~ GIS	0.83	0.15	6.46	< .001
In-group Ties ~ GIS	0.77	0.18	6.50	< .001

<b>Regression</b>	<b><math>\beta</math></b>	<b><i>SE</i></b>	<b><i>Z</i></b>	<b><i>p</i></b>
<b>AGR ~ IGC</b>	<b>-0.17</b>	<b>0.22</b>	<b>-1.80</b>	<b>.072</b>
Interference ~ IGC	0.88	0.13	9.62	< .001
Negative Emotion ~ IGC	0.91	0.14	9.91	< .001
Negative Emotion & Interference ~ IGC	0.72	-	-	-
Disagreement: Task Process ~ IGC	0.79	0.11	8.57	< .001
Disagreement: Task ~ IGC	0.69	0.131	7.45	< .001
Disagreement: Incompatibility ~ IGC	0.57			
<b>IGC ~ CLB</b>	<b>-0.6</b>	<b>0.06</b>	<b>-6.60</b>	<b>&lt; .001</b>
Partnership ~ CLB	0.80	0.11	9.70	< .001
Cooperation ~ CLB	0.86	0.10	10.60	< .001
Coordination ~ CLB	0.82	-	-	-
<b>SE ~ CLB</b>	<b>0.3</b>	<b>0.24</b>	<b>2.50</b>	<b>.013</b>
Opportunity ~ SE	0.57	0.46	3.07	.002
Information ~ SE	0.58	0.55	3.08	.002
Support ~ SE	0.31	-	-	-
Resources ~ SE	0.62	0.46	3.13	.002
Formal Power ~ SE	0.90	0.68	3.30	< .001
Informal Power ~ SE	0.55	0.52	3.04	.002

*Note.* Items with a “-“ were restrained to 1. GIS = Group Identity Saliency, IGC = Intergroup Conflict, AGR = Agreeableness, CLB = Collaboration, SE = Structural Empowerment.

Figure 5.2. Structural Equation Model Path Diagram with Standardized Loadings



**Moderation.** The theorized model in this study hypothesizes that *agreeableness* moderates the relationship between *group identity salience* and *intergroup conflict*, and that *structural empowerment* moderates the relationship between *intergroup conflict* and *collaboration*. To achieve the moderation analysis, the latent variables of structural empowerment, group identity salience, and intergroup conflict had to be shown as an observed variable. To do this, the scores on the items corresponding to group identity salience (centrality, affect, and in group ties), intergroup conflict (interference, negative emotion, negative emotion and interference R/T interpersonal incompatibilities, disagreement: task process, and disagreement: task), structural empowerment (opportunity, information, support, resources, formal power, and informal power), and collaboration (partnership/shared decision making, cooperation, and coordination) were averaged and saved as standardized scores. Next, interaction terms were then created by multiplying the standardized scores of group identity salience and agreeableness for one interaction term and intergroup conflict with structural empowerment for the second interaction term. After creating these interaction terms, they were added to the existing SEM model. This



new model included two moderating effects, and the model fit was reassessed. Examination of the fit statistics indicated that the model was reasonably specified, ( $\chi^2(155) = 237.38, p < .001, CFI = 0.92, SRMR = 0.10, RMSEA = .07$ ). To improve the model fit, modification indices were examined. However, there were no modification indices within reason that could be utilized to improve the model fit. The moderation model fit statistics without modification indices are displayed in Table 5.8.

Table 5.8

*Structural Equation Model Fit Indices for Agreeableness and Structural Empowerment Moderation Model*

SEM	$\chi^2$	<i>df</i>	<i>p</i>	<i>CFI</i>	<i>SRMR</i>	<i>RMSEA</i>
No	237.38	155	< .001	0.92	0.10	.07
Modification Indices						

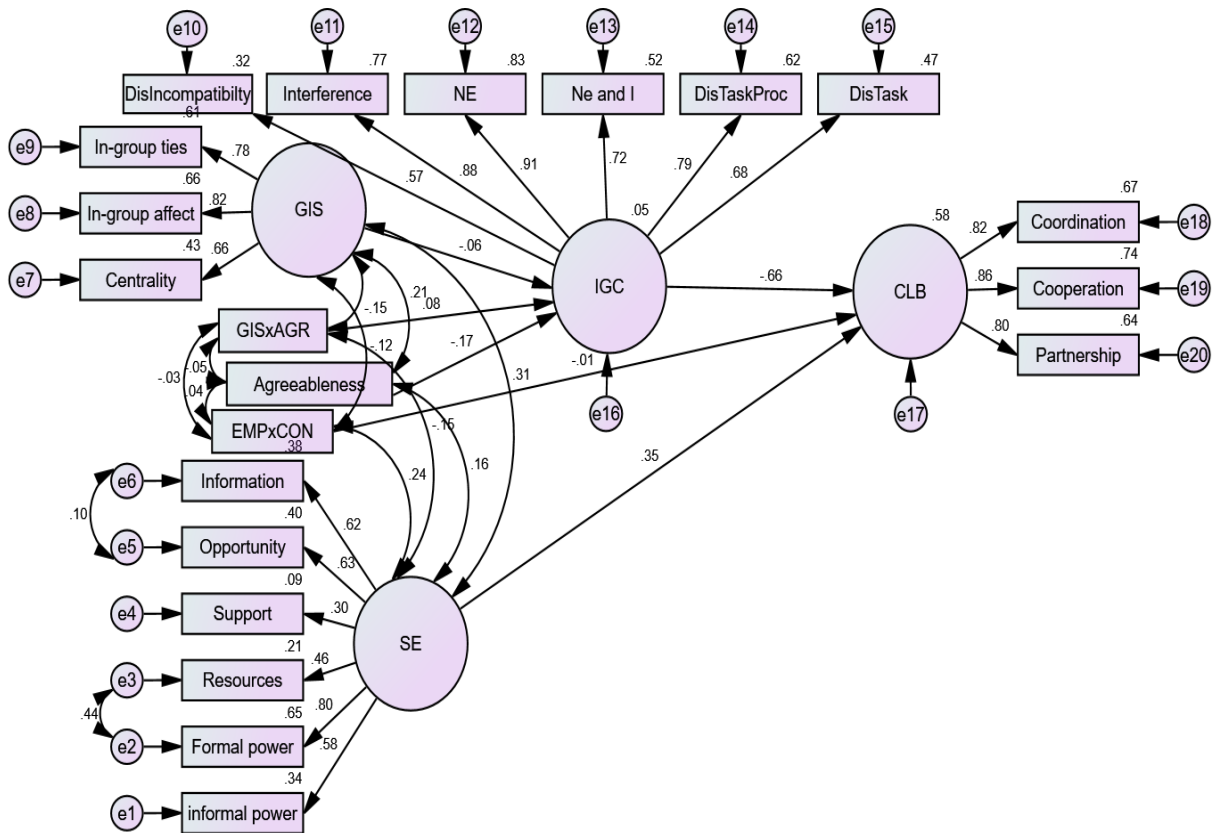
The CFI, SRMR, and RMSEA were all sufficiently close to the required parameters to indicate that the model could not be further improved. Based on this result, the specific paths for each interaction term were examined. Neither findings for the group identity salience by agreeableness interaction were statistically significant ( $p = .417$ ) nor was intergroup conflict by structural empowerment interaction ( $p = .899$ ). This means that the theorized moderation by agreeableness on group identity salience and intergroup conflict and intergroup conflict and empowerment were not found. Regression estimates for each moderation interaction are presented in Table 5.9. Standardized regression weights of the model with the moderation interactions are presented in Figure 5.3.

Table 5.9

Regression Estimates for Moderator Effects of Agreeableness and Structural Empowerment

Moderator	$\beta$	SE	z	p
Agreeableness	0.08	0.11	0.85	.417
Structural Empowerment	-0.01	0.05	-0.10	.899

Figure 5.3. Final SEM with moderating interactions.



## Summary of the Results

Data from this study revealed that each of the Group Identity Scale subscale scores were over the mid-point score range, suggesting that faculty had a moderate level of a sense of belongingness to their employment group. Each of the intergroup conflict subscale scores related to faculty perceptions of work team conflict was well over the mid-point score range, suggesting that faculty believed they had high levels of intergroup conflict in their collaborative nursing program. Each of the CWEQ-II subscale scores related to access to empowering structures were over the mid-point score range, suggesting that faculty believed they had a moderate level of access to such structures in their collaborative nursing program. Each subscale of the AITCS-E subscales scores related to team collaboration was over the mid-point score range, suggesting that faculty believed they had a moderate level of collaboration in their collaborative nursing program.

Next, a Structural Equation Model (SEM) was created to test the theoretically derived model, and address the aims of the study. The SEM initially showed a good model fit, but was slightly improved by addressing the modification indices. Once a reasonably specified model fit was found for the SEM, the factor correlations, composite reliability, and regression estimates were assessed. The factor correlations showed moderate to weak relationships between the latent variables. Composite reliability ranged from acceptable to excellent for the latent variables in the model.

It was theorized that educators' perceptions of their group identity salience will be positively related to their perceptions of intergroup conflict. The regression estimates showed that group identity salience was not related to intergroup conflict. The standardized regression path for intergroup conflict on group identity salience showed no statistical significance ( $\beta = -0.06$ ,  $p = .547$ ) indicating no relationship between intergroup conflict and group identity salience. Therefore, Hypothesis 1 was not supported.

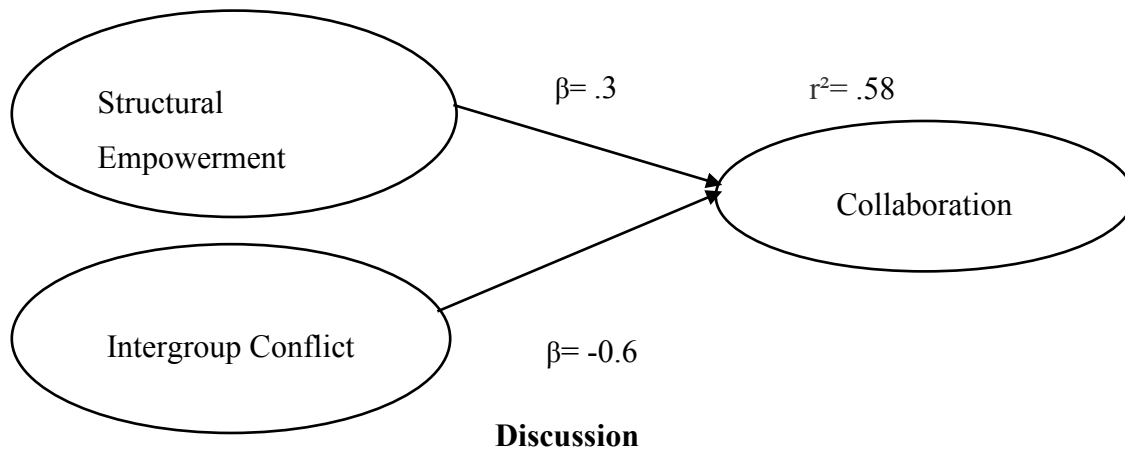
It was further theorized that educators agreeableness would moderate the relationship between perceived group identity salience and perceived intergroup conflict. The interaction term for agreeableness showed that there was no significant moderating effect. Specifically, the group identity salience by agreeableness interaction was not statistically significant ( $p = .417$ ) Therefore, Hypothesis 2 was not supported.

It was also believed that educators' perceptions of intergroup conflict will be negatively related to perceptions of collaboration within the post-merger consortia. The regression estimates showed a significant relationship between intergroup conflict and collaboration. The standardized regression path for collaboration on intergroup conflict showed moderate significance ( $\beta = -0.6, p < .001$ ) indicating a one standard deviation increase in intergroup conflict would result in a 0.6 standard deviation decrease in collaboration. Therefore, Hypothesis 3 was supported.

Finally, it was theorized that structural empowerment will moderate the relationship between perceived intergroup conflict and perceptions of collaboration. The interaction term for structural empowerment showed that there was no significant moderating effect. Specifically, the intergroup conflict by structural empowerment interaction ( $p=.899$ ). Therefore, Hypothesis 4 was not supported.

Although the theoretically derived model tested in this research study was not supported by the data collected, there was an interesting finding not originally predicted in the model. Specifically, the data revealed a direct relationship between structural empowerment and collaboration. In light of the overall research question (What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?), the findings of these analyses demonstrate that intergroup conflict and structural empowerment are factors that significantly contribute to faculty collaboration. Specifically, on average a one standard deviation increase in intergroup conflict will result in a .6 standard deviation decrease in collaboration. Moreover, on average a one standard deviation increase in collaboration will result in a .3 standard deviation increase in structural empowerment. Essentially, based on the results of the data collected, an inverse linear relationship between inter-group conflict and collaboration, and structural empowerment and collaboration was discovered. The final path model is located below (Figure 5.4).

Figure 5.4: Final Path Model Explaining Collaboration in CNPs in Ontario



Nurse educators have an essential role in preparing students to meet the entry-to-practice requirements of the nursing profession, and the ever-changing demands of health care system. To gain a better understanding of collaborative nursing education programs, participants were asked to opine on their decision-making capacity regarding program admissions. Half of the participants indicated their decision admission criteria was college or combination and a slight majority of participants indicated that the decision process was “all partner sites approve and send decision to university leader.” The teaching in the programs across the four-year baccalaureate studies varied. A majority of participants indicated that students in the program stay for all four years at each partner site, but Year 3 was the most common year that students moved if they did not stay for all four years. A further interesting feature was the recognition of all partners on the degree certificates. Half of participants indicated that partner sites were not recognized on the degree, but the most common form of recognition was of the college on the certificate. Thus, these programmatic features may also have an impact on the findings from this survey.

The nature of the study enabled the author to examine and explore the antecedent variables that are involved in collaborative relationship building, maintenance, and implementation in the academic setting between two very distinct faculty groups. In this study, intergroup conflict predicted perceived collaboration between Ontario nursing education program college and

university faculty groups. Moreover, structural empowerment was also a significant predictor of collaboration. This is a new finding in nursing education research. Further, the impact of group conflict in collaborative education programs on faculty members in collaborative nursing education programs substantively contributes to the current body of knowledge of collaborative nursing education programs. The findings from this study illuminate the need for administrators to make use of elements in the work environment that can reduce group conflict and enhance educators' structural empowerment. The strategies educators may use to reduce group conflict, and enhance structural empowerment deserves further attention through research and faculty development initiatives. Finally, it is essential to remember that students enrolled in collaborative nursing education programs are the ultimate beneficiary of the quality of the education experience in these collaborative nursing programs. It is therefore essential to the quality of the product to have an optimized level of collaboration between college and university faculty in the collaborative nursing programs.

### **Limitations**

The following limitations were present within the study. The first limitation is that there may have been respondent bias, which relates to the personal motivations and intentions of the respondents. University and CAAT educators may have exaggerated their responses to certain items in the survey. This was rectified through the use of an online survey, which permitted respondents to complete the survey away from potential influences of their colleagues or structural environment. The second potential limitation was that of the prevailing mood of the respondents when completing the survey. At the time of the survey there was concern amongst faculty in the collaborative programs because of rumors related to action that the provincial government might take related to these collaborative programs. This may have influenced how individual respondents completed the survey. Social desirability may have also been a limitation, the use of confidentiality for the online survey is hoped to have reduced this issue. Further, the non-experimental survey design precludes causal interpretations of the data. Another limitation of the study was that of the potential for common method variance, which occurs when self-reports are used to measure both the independent and dependent variables. This can inflate the magnitude of the observed relationship between variables. The sample size achieved within this research study may limit the generalizability of the findings, and as such, larger studies within

the educator populations are required to confirm the results. Finally, due to the nature of the population, sample, and work environments, there is the potential for respondents participating within the same collaborative programs across both the colleges and universities to cluster their data which may cause some variations in findings. If this clustering occurred it may violate the assumption of an absence of pairing, dependence, correlation, or any other association. As such, results may be inflated and the results should be interpreted accordingly.

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# Appendix AAA

## Ethics Approval



Research Ethics

Western University Health Science Research Ethics Board  
HSREB Delegated Initial Approval Notice

**Principal Investigator:** Dr. Carole Orchard  
**Department & Institution:** Health Sciences/Nursing, Western University

**HSREB File Number:** 105646  
**Study Title:** Explaining Collaboration between University and CAAT Faculty within Collaborative Nursing Education Programs in Ontario  
**Sponsor:**

**HSREB Initial Approval Date:** October 14, 2014  
**HSREB Expiry Date:** September 30, 2017

**Documents Approved and/or Received for Information:**

Document Name	Comments	Version Date
Recruitment Items	Recruitment item-Letter of Approach	2014/08/06
Instruments	Proposed Theory Model Path Analysis	2014/08/06
Instruments	Proposed Theory Model	2014/08/06
Recruitment Items	Recruitment reminder e-mails	2014/08/06
Instruments	Survey instrument	2014/08/06
Recruitment Items	A list of sampling institutions	2014/08/06
Western University Protocol		2014/09/11
Revised Letter of Information & Consent	Revised LOI(clean copy)	2014/10/07

The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the above named study, as of the HSREB Initial Approval Date noted above.

HSREB approval for this study remains valid until the HSREB Expiry Date noted above, conditional to timely submission and acceptance of HSREB Continuing Ethics Review. If an Updated Approval Notice is required prior to the HSREB Expiry Date, the Principal Investigator is responsible for completing and submitting an HSREB Updated Approval Form in a timely fashion.

The Western University HSREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Guideline for Good Clinical Practice Practices (ICH E6 R1), the Ontario Personal Health Information Protection Act (PHIPA, 2004), Part 4 of the Natural Health Product Regulations, Health Canada Medical Device Regulations and Part C, Division 5, of the Food and Drug Regulations of Health Canada.

Members of the HSREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

Department of Health & Human Services under the IRB registration number IRB 00000940.

**Ethics Officer to Contact for Further Information**

 Grace Kelly grace.kelly@uwo.ca	Mina Mekhail mmekhail@uwo.ca	Vikki Tran vikki.tran@uwo.ca
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## **Chapter Six**

### **Study Summary and Its Implications**

## Abstract

Collaborative nursing education programs (CNPs) were formed in Ontario in 2001 as a result of legislative changes to prepare nurses for entry-to-practice at the baccalaureate level. Essentially, legislative changes required Colleges of Applied Arts and Technology (CAATs) to partner with universities and enter into collaborative arrangements so they could continue delivering nursing education. The CNPs were required as the CAATs were unable to independently confer university baccalaureate degrees. As a result, 21 CAATs in Ontario merged with 13 university nursing programs and formed an education partnership for their graduates to meet an entry-to-practice requirement of the university baccalaureate degree. These newly formed collaborative nursing education programs varied in delivery formats and structures. After more than 15 years of program collaboration, perceptions of intergroup collaboration within these education partnerships, as well as best practices for maintaining collaboration, have not been fully studied. As a result, a theoretically derived model linking select antecedent variables was tested. The research question for the study was: **What are the factors that contribute to faculty collaboration within Collaborative Nursing Education Programs?** The study examined the relationships between faculty members' perceived group identity salience, agreeableness, intergroup conflict, and structural empowerment on their perceptions of faculty group collaboration. The results revealed a statistically significant inverse relationship between intergroup conflict and collaboration, as well as structural empowerment and collaboration. However, group identity salience was not related to intergroup conflict. Finally, agreeableness and structural empowerment did not have significant moderating effects in the model. The purpose of this article is to present an overview of the study, the findings, and the implications of the results for nursing education, collaborative nursing education programs, policy, and future research.

## Background

Legislation changes in Ontario created the conditions to require Colleges and Universities to deliver Collaborative Nursing Education Programs (CNPs). Specifically, legislation required the university baccalaureate degree for entry to practice for all Registered Nurses. As such, Colleges, since they could not confer the university baccalaureate degree, were obliged to (a) enter into agreements with collaborating university partners or (b) cease offering Registered Nurse education programs. Subsequently, 21 Colleges of Applied Arts and Technology (CAATs) in Ontario merged with 13 university nursing programs and these organizations entered into education partnership agreements in order for their graduates to meet a non-exemptible entry-to-practice requirement of a university baccalaureate degree. These newly formed collaborative nursing education programs varied in delivery formats and structures meaning no two are alike. After more than 17 years of program collaboration within the Ontario CNPs, perceptions of intergroup collaboration within these education partnerships, as well as the best practices for maintaining collaboration, have not been fully studied. While the model of collaborative nursing education is well established across most Canadian provinces there is scant literature available about this innovative and novel concept of university/college collaboratives. There is a fairly robust body of literature that exists within the interprofessional collaborative practice domain about teams of different professional health workers collaborating in order to deliver health care (Brandt, Lutfiyya, King, & Chioreso, 2010 & Orchard, Curran, & Kabene, 2005). The above literature provides valuable insights into the complex construct of team collaboration within the healthcare sector, however limitations for its use in academia is scant. First, current evidence comes mainly from acute care hospitals or other large organizations that deliver healthcare to human patients (Reeves, Abramovich, Rice, & Goldman, 2010; Orchard, Curran & Kabene, 2005) and as such, may not be generalizable to educator groups employed by colleges and universities to deliver collaborative education to undergraduate nursing students.

In Ontario, a gap exists in robust empirical analyses about the variables that contribute to collaboration between college and university educators. In addition, there is a lack of reliable and valid measurements that assess perceived collaboration among university and college educator groups delivering collaborative undergraduate programming in nursing. Second, the

nursing education and organizational behavior literature lacks research that extensively examines the antecedent variables which contribute to faculty perceptions of collaboration in the academic setting. To address these gaps, this study was conducted with two primary aims: a) to test a theoretically derived model of select antecedent variables which explains faculty perceptions of collaboration and, b) to advance measurement of the collaboration construct by assessing the psychometric properties of a modified version of the Assessment of Interprofessional Team Collaboration Scale for Educators (AITCS-E).

### **Conceptual Model**

The conceptual model underlying this study was based on the Social Identity Theory (SIT) (Tajfel, 1982). SIT is a theoretical framework that positions intergroup relations as a complex process that develops within the contexts of an individual's self-concept and leads to various positive or negative outcomes. SIT posits that an individual's self-concept depends largely on the importance and relevance placed on group membership to which the individual perceives as salient to their existence. Thus social identity is a component of group dynamics and a significant predictor of group relations. The level of group relations can result in tensions associated with group integration (Tajfel, 1982). Hence, the salience of an individuals' group identification following group integration has been found to be a strong predictor of outcomes (Turner, 1984). Thus, the SIT framework helps to understand the perceived importance of membership by its members in a group (group identity salience) and contributes to both intragroup favouritism and intergroup discrimination. When group identity salience is higher there will be more intergroup discrimination and bias. This discrimination can cause group members to allocate more resources to their own in-group members and fewer resources to those deemed outside as out-group members (Tajfel et al., 1971). Essentially, SIT is based on the assumption that humans are inherently motivated to maintain and preserve a positive group self-image at an out-group's expense. Thus, group membership creates in-group self-categorization that favors the in-group members at the expense of those in the out-group. Accordingly, the in-group members view themselves more favourably than out-group members which can result in negative intergroup bias. For purposes of this study, the in-group refers to the original membership group (i.e., CAATs group for CAAT educators and university group for university educators). The major concepts within the SIT are centrality, in-group affect, and in-group ties.

Based on SIT, the successful integration of college and university faculty working groups is largely dependent on individual group members' perceptions of their belongingness to their employer group. In the case of college educators, their employee group is the college nursing faculty, and in the case of university faculty members their employee group is the university nursing faculty. The perception of individual's identification, or group belongingness could have significant and indirect effects on the outcomes of nursing education program implementation and curriculum delivery. As such SIT is a useful framework to underpin an examination of the collaboration occurring in CNPs in Ontario. A conceptual model underpinned by SIT was constructed to test the relationships among the faculty members perceptions of group identity salience, intergroup conflict, and collaboration among educators in the Ontario CNPs. The conceptual model also theorized potential moderating effects of the faculty personality trait (agreeableness) and structural empowerment. Thus, the model hypothesized:

- Hypothesis 1: educators' perceptions of their *group identity salience* will be positively related to their perceptions of *intergroup conflict*.
- Hypothesis 2: educators' *agreeableness* will moderate the relationship between perceived *group identity salience* and perceived *intergroup conflict*.
- Hypothesis 3: educators' perceptions of *intergroup conflict* will be negatively related to perceptions of *collaboration* within the post-merger consortia. And,
- Hypothesis 4: *structural empowerment* will moderate the relationship between perceived *intergroup conflict* and perceptions of *collaboration*.

## Method

This study involved three distinct phases. In phase one (conceptual model identification), a comprehensive literature review informed choices of antecedent contributory variables associated with group collaboration. As a result, a theoretically derived conceptual framework and model was identified for subsequent empirical analysis. In phase two (psychometric analysis) the validity and reliability of a modified version of the Assessment of Interprofessional Team Collaboration Scale for Educators (AITCS-E) was assessed in a convenience sample of 125 nurse educators involved in Ontario collaborative nursing education. Data were analyzed for both validity and reliability. Validity was carried out initially using basic item analysis to assess total-item correlations, degree of inter-item



correlation, and correlations among subscales. This was followed by an Exploratory Factor Analysis. Initially the 37 item AITCS for Educators revealed a three factor model which was consistent with the original author's results (Orchard, King, Khalili, & Bezzina, 2012). Further, the results found that several items loaded across multiple factors. During several steps a total of 26 items were eliminated from further analysis as a result of having primary factor load of 0.4 or above without cross loading of 0.3 or above. Next, Confirmatory Factor Analysis (CFA) was conducted to identify the model fit to be utilized in the main study with empirical model testing. The initial results of the CFA showed a good model fit ( $\chi^2(41) = 50.33, p = .151, CFI = .99, SRMR = .04, RMSEA = .04$ ). In order to improve model fit, modification indices were examined to determine which parameter constraints were significantly limiting the model fit of the observed covariance structure. The modification indices showed that the error terms (e9 and e10) of the observed variables for cooperation could be covaried. The results of the CFA with the above covariations showed an improved fit, ( $\chi^2(31) = 42.59, p = .360, CFI = .99, SRMR = .04, RMSEA = .02$ ). The fit statistics show that the CFA was reasonably specified. Reliability of the AITCS-E was then carried out using Cronbach's  $\alpha$  to assess the scales' internal consistency and reliability. Specifically, internal consistency for each of the sub-scales was examined using Cronbach alpha and ranged from .80 to .95 Partnership .95 (3 items), Cooperation .95 (6 items), and Coordination .84 (2 items).

In phase three (theorized model testing), a convenience sample of nurse educators from universities and colleges in Ontario who are involved in collaborative nursing education were recruited from 21 colleges and 13 universities with selection based on full time employment at only one site and direct teaching in the baccalaureate nursing program. Data were collected through completion of an on-line administered survey tool hosted through psychdata.com. Cronbach's  $\alpha$  reliability was estimated for all instruments to determine the internal consistency of all measures among college and university faculty respondents. The reliability and validity of all survey tools was conducted using both EFA, and CFA to assess the factor structure of each scale.

Structural equation modeling (SEM) was used to simultaneously test the theoretically derived model. The model was analyzed twice, whereby the first model was the predicted

model (Model 1) and the second model was tested as a result of the examination of fit indices (Model 2). Last, the model was analyzed for effects of the identified moderator variables.

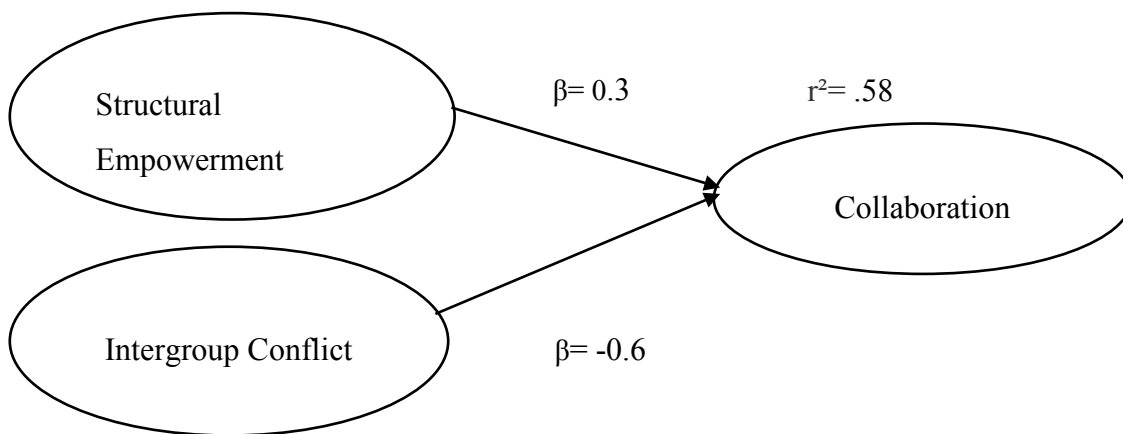
## Results

This study produced a number of novel findings that contribute to the literature on Collaborative Nursing Education Programs. First, a good fit was found between the data and the hypothesized models:  $\chi^2(129) = 205.74, p < .001, CFI = .93, SRMR = .11, RMSEA = .07$  (Model 1) and  $\chi^2(127) = 192.26, p < .001, CFI = .94, SRMR = .11, RMSEA = .06$  (Model 2). Regression paths were included in the model between each of the independent and dependent latent constructs, as well as the moderator constructs. While the standardized regression path for intergroup conflict regressed on group identity salience it showed no statistical significance ( $\beta = -0.06, p = .547$ ). This indicates that there is no relationship between intergroup conflict and group identity salience. A similar finding occurred when intergroup conflict was regressed on agreeableness ( $\beta = -0.17, p = .074$ ). This indicates that there is no relationship between agreeableness and intergroup conflict. In contrast the standardized regression path for collaboration regressed on intergroup conflict and showed moderate significance ( $\beta = -0.68, p < .001$ ). This indicates that a one standard deviation increase in intergroup conflict within the collaborative groups will result in a 0.68 standard deviation decrease in their overall collaboration on average. A further statistical significance was found for collaboration when regressed on structural empowerment ( $\beta = 0.30, p = .01$ ). This indicates that a one standard deviation increase in group collaboration will result in a 0.30 standard deviation increase in their structural empowerment on average.

Next, the latent variables of structural empowerment, group identity salience, and intergroup conflict were added as observed variable in a path model using AMOS. To do this, the scores on the observed variables corresponding to group identity salience (centrality, affect, and in group ties), intergroup conflict (interference, negative emotion, negative emotion and interference R/T interpersonal incompatibilities, disagreement: task process, and disagreement: task), structural empowerment (opportunity, information, support, resources, formal power, and informal power), and collaboration (partnership, cooperation, and coordination) were averaged and saved as standardized scores. Interaction terms were then created by multiplying the

standardized scores of group identity salience and agreeableness for one interaction term and intergroup conflict with structural empowerment for the second interaction term and added to the existing SEM model. This new model included two moderating effects. The model fit was examined and a reasonably specified model was found ( $\chi^2(155) = 237.38, p < .001, CFI = 0.92, SRMR = 0.10, RMSEA = .07$ ). To improve the model fit, modification indices were examined. However, there were no modification indices within reason that could be utilized to improve the model fit. Based on this result, the specific paths for each interaction term were examined. Findings for the group identity salience by agreeableness interaction were not statistically significant ( $p = .417$ ). This means there was no moderating effect of agreeableness on the relationship between group identity salience and intergroup conflict. Similarly, findings for intergroup conflict by structural empowerment interaction were also not statistically significant ( $p = .899$ ). This means that there was no moderating effect of structural empowerment on the relationship between intergroup conflict and collaboration. Thus, the theorized model was redrawn (Figure 6.1).

Figure 6.1: Final Model Explaining Collaboration in CNPs in Ontario



## Discussion

The study findings shed light on the importance of intergroup conflict and structural empowerment as contributory antecedent variables to faculty perceptions of collaboration in college and university programs where their faculty members collaboratively deliver nursing

education. Since the study did not support the moderator effects of agreeableness it suggests that different variables may underlie the direct and indirect impacts of group identity theory and intergroup conflict.

Additionally, the process of adapting the AITCS for use in an academic setting was successful in that a reliable and valid scale is now available to be applied in academic settings where college and university educators are delivering collaborative programming. Further testing of this instrument is still required however since the EFA and CFA were carried out on the same data set. This contribution has the potential to significantly enhance the conduct of research in academic settings where university and college faculty are collaboratively delivering post-secondary education.

### **Implications of the Findings**

Faculty group collaboration and the contributory antecedent variables associated with group collaboration are complex issues that need to be addressed through collaboration among higher education institutions' academic leadership groups, bipartisan faculty groups, and academic policy makers. This study underscores the direct links between organizational structural variables and perceptions of collaboration. In addition, perceived group conflict was directly associated with less perceived collaboration between university and college educators. Thus, study findings have implications for the post-secondary education sector, collaborative nursing programs, future research, and policy.

### **Implications for the Post-Secondary Education Sector**

Throughout Ontario, there is an increasing demand for college/university collaborations within the post-secondary sector (Boggs and Trick, 2009). It is almost certain that within Ontario, college/university partnerships will evolve and become more widely implemented across disciplines (Trick, 2013). The study finding reinforces the complex interrelationships of group conflict, structural empowerment, and collaboration, and, therefore, reinforces the importance of leadership groups within post-secondary institutions understanding the importance of the workplace environments where groups from different cultures are placed into shared groups to deliver a common program. Specifically, administrators must recognize the

importance of addressing group dynamic issues among faculty members forced into such collaborative arrangements. Specific attention is required towards group conflict, access to sufficient resources, information, supports, opportunities, and how formal and informal power is shared. It is these predictors of levels of perceived collaboration within university/college educator groups found in this study. Hence, efforts in development and attention to organizational structural components is essential when creating university/college collaborative programs are important to their success. For example, how will faculty have access to timely information, sufficient resources, opportunities to grow and develop, sufficient supports to complete their job, and formal and informal mentors in order to optimize the collaboration between university and college faculty. Finally, leadership groups in post-secondary institutions contemplating implementation of collaborative programs should ensure structures and procedures are in place to monitor the ongoing intergroup conflict occurring within teams of college and university educators.

### **Collaborative Nursing Education Programs**

While the empirical research evidence, and comprehensive evaluations of the collaborative nursing education programs in Ontario remains scant, the findings of this study could be utilized to inform current collaborative nursing education programs as well as future offerings by raising awareness about the importance of including and attending to structural components within the educational units at the university and college partnering sites. As the ultimate goal for CNPs is to have optimal university/college educator group collaboration, this study sheds light on the importance of addressing group conflict, and the structural components of the organizations. Importantly, CNP decision makers may consider these findings while developing and implementing policies, procedures, along with mentoring supports to faculty that enhance CNP workplaces perceived as supporting faculty collaboration.

### **Implications for Future Research**

Findings of this study, as well as the absence of some findings support a number of opportunities for future nursing education research. More research is required to refine, replicate, and further study these findings. Additional studies are required to assess the contribution of other theoretically derived antecedent contributory variables in order to further

identify areas whereby senior leaders in the educational institutions offering collaborative programs could attend to in order to optimize collaboration and thereby optimize their program delivery. Developing and implementing shared evidence based educational models across both the college and university faculty groups that reflect the three constructs of collaboration namely partnership, cooperation, and coordination is important for the post-secondary education system.

Another area of study worth further examination is testing the final theorized model with larger samples of educators in both nursing and non-nursing faculty roles. Researchers should consider adding theoretically derived constructs to these models that are known to foster enhanced group collaboration in order to better understand the impacts of additional antecedent contributory variables within academic settings. A further area relates to collaborations between academic education institutions and health system setting where students gain their practice-based learning from front-line nurses.

### **Implications for Policy**

The study findings have implications for government policy reform or development of new policies that inform the structures of collaborative education ventures, new, and existing in Ontario. Policy makers urgently need to appreciate the social dynamics within those delivering the learning and their complexity of university/college educator integration and subsequent collaboration. Government policy related to the organizational structures of existing and future university/college collaborations and the funding provided to support collaboration costs may ensure that proper attention is given to faculty access to information, resources, opportunity, support and mentorship.

### **Conclusion**

This was the first study of its kind to examine antecedent contributory variables and their relationship with the collaboration construct in post-secondary education settings. Findings from this study indicate that organizational structures, which lead to empowered faculty, directly contribute to perceptions of collaboration between university and college faculty. Moreover, the findings highlight the important role group conflict has on faculty collaboration.

The study also provides evidence of the reliability and validity of a modified AITCS for Educators. Results of this study have relevant implication for collaborative nursing education programs, future contemplations of college/university post-secondary collaborative initiatives, as well as future research and policy.

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Trick, D. (2013) *College-to-University Transfer Arrangements and Undergraduate Education: Ontario in a National and International Context*. Toronto: Higher Education Quality Council of Ontario.

Turner, J. C. (1984). Social identification and psychological group formation. In H. Tajfel (Ed.), *The social dimension: European developments in social psychology*, 2, pp. 518-538. Cambridge, England: Cambridge University Press.  
doi:10.1017/CBO9780511759154.008

## Curriculum Vitae

### EDUCATION

#### **PhD – Nursing Leadership in Nursing Education.**

The University of Western Ontario, London, Ontario.

**2018**

Dissertation advisement from Dr. Carole Orchard (Chair), Dr. Heather Laschinger (Nursing), and Dr. Joan Finegan (Psychology).

**\*\*Dissertation Successfully Defended Oct 15, 2018.**

#### **MScN - Masters of Science (Nursing)**

D'Youville College, Buffalo, N.Y., 2002-2005.

Clinical Focus – Adult Acute Care.

Obtained the designation of – **Adult Acute Care Clinical Nurse Specialist (CNS).**

Thesis - “*Does time spent in the Emergency Department by critically ill medical patients affect outcomes?*” available via the World Wide Web (proquest.umi.com).

#### **BScN - Bachelor of Science (Nursing)**

Ryerson Polytechnic University, Toronto, Ontario,

**1997-2000.**

Major focus - Adult Trauma Nursing.

Minor focus - Occupational Health Nursing.

#### **R.N. - Registered Nurse Diploma**

Humber College of Applied Arts and Technology, Etobicoke, Ontario, **1994-1997.**

Awarded honors status for academics.

### EMPLOYMENT HISTORY

#### **Dean, School of Health Sciences**

Humber College Institute of Technology and Advanced Learning,

**2011- Present**

- Responsible for the academic leadership within the School of Health Sciences of the Humber College Institute of Technology and Advanced Learning.
- Responsible for human resources, financial management, strategic planning, program development and implementation, & quality management and assurance.

#### **Chair, Nursing Programs**

Conestoga College Institute of Technology and Advanced Learning,

**2008- 2011**

- Responsible for the academic leadership in the collaborative (McMaster University) BScN, RPN Diploma to BScN, & Practical Nursing Diploma Programs, and PSW Certificate Program (**effective April 2011**).
- Responsible for human resources and financial management, strategic planning, program development and implementation, & quality management and assurance.
- Participation on several internal and external strategic committees.

**Program Coordinator – Practical Nursing Diploma Program.**

Humber Institute of Technology and Advanced Learning, **January, 2005 – 2008.**

- Responsible for the coordination of all day to day activities associated with the Full – Time Practical Nursing Diploma Program;
- Plan and operationalize all course offerings and student timetables;
- Co-responsible (with the PN faculty) for all curriculum revisions to ensure accuracy, currency, and relevancy;
- Chair of the Nursing Practice Advancement Committee (NPAC);
- Enrollment includes 500 Full – Time students (200 each academic year + Interrupted).

**Professor of Nursing – (Sessional, Part-Time, Full-Time).**

Humber Institute of Technology and Advanced Learning, **1999-2008.**

- **Sessional Faculty 1999-2003 & Full Time Faculty Dec, 2003.**
- CE Instructor (honored for - 10 Consecutive Semesters).
- Responsible for the education of nursing students enrolled in the Humber College RPN diploma program and the University of New Brunswick/Humber Institute of Technology and Advanced Learning collaborative BN program.
- Faculty Advisor for 10 first year baccalaureate students.

**Courses taught:**

- 1) **Advanced Health Assessment (BN & PN classroom & lab components).**
- 2) **Nursing Theory (PN – Year 1 & 2).**
- 3) **Pathophysiology (PN Diploma).**
- 4) **Clinical Semester 2,3,4 & 5 (PN Diploma and BN Program).**
- 5) **Theoretical Foundations (3<sup>rd</sup> Year BN - Nursing Theories).**
- 6) **Complex Health Challenges (4th year BN Program).**
- 7) **Coronary Care (Post Diploma- on-line and in class).**
- 8) **Medical Emergencies (Post Diploma – Continuing Education).**
- 9) **Pharmacotherapeutics (PN – Year 1 & 2)**
- 10) **Leadership**
- 11) **CPNRE Examination Prep Course**

**Medical – Legal Consulting** –Provision of Expert Nursing Opinions, **1999 – Present.**

- Expert Nursing Opinion - Critical examination and review of the Provision of Care against the acceptable Standards of Nursing Practice in the province of Ontario for medical malpractice proceedings.
- Area of Expert Nursing Practice: Medicine, Surgery, Emergency, Critical Care, Long Term Care, & Rehabilitation Nursing.

**Relief Staff Nurse** - Emergency Department & Trauma Team. **2002 – 2009.**

St. Michaels Hospital, 2002-2009. (2002-2004 Agency Staff and 2005 Hired as Staff RN)

- Responsible for the assessment, planning, implementation and evaluation of acutely ill trauma/emergency patients.
- Multidisciplinary team approach to the management of acutely ill patients;

**Occupational Health Nurse**

Toronto Star Newspaper Corporation, 1999-June, 2006 (Occupational Health Unit Closed).

- Relief employment in the occupational health center.
- Responsible for independent assessment, diagnosis & treatment of clients in an industrial occupational health setting, in keeping with outlined medical directives.

**Staff Nurse-** Emergency/Trauma Team & Interventional Radiology.

Sunnybrook & Woman’s College Health Sciences Center,

**1998-2009.**

- Responsible for the assessment, planning, implementation and evaluation of acutely ill trauma/emergency patients.
- Responsible for the maintenance of surgical asepsis during vascular and neurovascular interventional radiology cases.

**Staff Nurse** – Emergency Department & Hospital Wide Float Pool.

**Oakville Trafalgar Memorial Hospital,**

**1997-2002.**

- Permanent Part-Time- Emergency Department, Oakville Campus.
- Relief Nurse- Hospital Wide Float Pool 1998-1999.
- Responsible for assistance in all areas of a community hospital ie: paediatrics, recovery room, nursery, psychiatry etc, as required.

**PROFESSIONAL LICENSES and CERTIFICATES**

**COLLEGE of NURSES of ONTARIO-** Competency certificate # 97-1723 2

**NEW YORK STATE BOARD of NURSING-** Competency certificate # 496208

**EMERGENCY NURSE CERTIFIED in CANADA-**27/3/99, ENC(C), recertification: 03/2003.

**CERTIFIED EMERGENCY NURSE, USA-**10/5/99, recertification: 05/2003, CEN.

**Certificates/Other Continuing Education:**

- Higher Education Teaching Program, Humber ITAL, 05/12/2005.
- Coronary Care I, Humber College, 05/05/97.
- 12 Lead ECG interpretation certificate, Canadian Health Educators, 20/04/98.

- Basic Trauma Life Support-(BTLS), Hamilton General, 23/05/98.
- Advanced Cardiac Life Support Provider Course, Sunnybrook, 08/06/97 & 13/06/98.
- Paediatric Advanced Life Support Provider Course, McMaster University, 10/06/98.
- Neonatal Advanced Life Support Provider Course, Sunnybrook, 26/11/98.
- Trauma Nursing Core Course, Sunnybrook, 13-14/2/99.
- Emergency Nursing Pediatric Course, Sunnybrook, 18-19/09/99.
- Continuing Education Teaching Certificate, Humber College, 06/2002.

## **PROFESSIONAL ASSOCIATIONS**

Canadian Association of Practical Nurse Educators (CAPNE)

- Active member, planning committee for the 2006, national conference.
- Provincial Heads of Nursing

Registered Nurses Association of Ontario (RNAO)

- Halton Chapter – Member in good standing

Emergency Nurses Association of Ontario (ENAO)

- Provincial Emergency Nurses Association – member in good standing

Sigma Theta Tau International Honor Society of Nursing

- Zeta Nu Chapter, Buffalo, NY, USA.

## **PROFESSIONAL DEVELOPMENT & ACTIVITIES**

- Queen's School of Business – Transformational Leadership, De. Julian Barling PhD. – October, 2011;
- External Program Reviewer – Nursing Programs: The University of Technology, Kingston, Jamaica – April, 2010 – Present;
- External Program Reviewer – Nursing Diploma Program: Sheridan College, Brampton, Ontario – December 2010 – Present
- The Chair Academy – Clifton Strengthsfinder Resource Program – March, 2009;
- Dorothy Wylie Nursing Leadership Institute – May, 2007;
- Medical - Legal Nursing Consultant – Assessment, review, critique, and opinion involving medical-legal cases pertaining to the multi-disciplinary health team. Specific focus pertains to the standards of care in Ontario by nurses.
- Insights Team Building Seminar – September, 2005.
- Canadian Emergency Department Triage and Acuity Scale Instructor – October, 1999.
- Level I Coaching Certificate – April, 2005.

## COMPETITIVE GRANTS

- May (2013) Human Resources and Skills Development Canada. Project Grant Application for “ELEVATOR M BUILDING – HUMBER COLLEGE”. Award \$50,000.00.  
**COLLABORATIVE SUBMISSION (Spencer Wood & Scott Valens).**
- April (2013)** Ontario Council on Articulation and Transfer (ONCAT). Project Lead “*Paramedic College – College Transfer Project*”. Award = **\$65,000.00**
- July (2010)** The Ministry of Health and Long Term Care (MOHLTC) – Wave III funding – Nurse Practitioner-Led Clinic. One Year Capitol (Start-up) and Three Year Operating Grant = est. **\$4.5 Million Dollars. Collaborative submission with Lang’s Farm (B. Davidson).**
- Nov (2008)** The Ministry of Citizenship and Immigration (CIC) – Labor Market Integration Unit – Pilot Funding (3Years). **Implemented -*Bridge to Practical Nursing for Internationally Trained Health Professionals***. Three Year Funding = **\$386,993 Dollars.**

## PEER REVIEWED JOURNAL PUBLICATIONS

- Powell, J.** (2009). In Response to: Chapman, L., & Kirby, D. (2008). A Critical Analysis of the Benefits and Limitations of an Applied Degree in Undergraduate Nursing. *Canadian Journal of Nursing Leadership*, 22(1), 7-10.
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- Powell, J.** (2005). *Does time spent in the Emergency Department by critically ill medical patients affect outcomes?* Unpublished master’s thesis, D’Youville College, Buffalo, New-York, USA.
- Powell, J., & Wilkens-Schertzer, E.** (1999). *Medical Directives*. Toronto Newspaper Corporation.

## PROFESSIONAL PRESENTATIONS & INVITATIONS

**Powell, J. (2013, June).** *Leadership Through Transitions*. Breakout Presentation: The Ontario College Administrative Staff Association (OCASA), King City, Ontario.

**Powell, J. & Richards, J. (2011).** *Innovative Bridging Programs for Internationally Educated Health Professionals*. Breakout Presentation: The Chair Academy's 20<sup>th</sup> Annual International Leadership Conference, Dallas, Texas, U.S.A.

**Powell, J. (2009, May 14).** *Re-branding, Re-packaging, and Rescheduling Long Term Care*. Invited speaker. LTC VISION 2009: CHANGING PERSPECTIVES.

**Powell, J. (2009, May 12).** *Collaborative Nursing Education: Partnerships*. Invited speaker. The Ontario Learning Resource for Nursing Stakeholder Event.

Lacroix, H., **Powell, J.**, Kirwan, K., Spevakow, D., & DeCicco, J. (2007, Oct 3). *Excellence in Student Placement: A partnership in innovative community sector opportunities*. Paper presentation for the CAPNE Conference: "Connecting from Ocean to Ocean". St. John's, Newfoundland, Canada.

Miller, C., Martin, D., Chapman, L., & **Powell, J.** (2007, Oct 3). Paper presentation for the CAPNE Conference: "Connecting from Ocean to Ocean". St. John's, Newfoundland, Canada.

**Powell, J. (2007, July 13).** *Teaching Undergraduate Nursing Students to Evaluate and Critique Clinically Relevant Medical/Nursing Literature: The Role of a 'Journal Club'*. Paper Presentation for the 18<sup>th</sup> International Nursing Research Congress Focusing on Evidence-Based Practice. Vienna, Austria.

Miron, J., & **Powell, J.** (2007, June 13-15). *An Innovative Strategy to implement Intraprofessional Consultative – Collaborative Practice*. Paper presentation for the ARCASN Conference: "Nursing Scholarship: Visions for Today and Tomorrow". New Brunswick, Canada.

**Powell, J. (2007, April 28).** *The Role of Leadership Qualities in Enhancing Team Building and Functioning*. Invited Speaker. The Registered Practical Nurses Association of Ontario- 49<sup>th</sup> Annual Conference and General Meeting.

Filice, S. & **Powell, J.** (2007, February 4 ). *Strengthening Nursing Leadership in an Education Setting Through the Development of a Team Charter*. Poster presentation for the '2007 Nursing Leadership Conference', Ottawa Congress Centre (OCC).

**Powell, J. (2006, October 27).** *Alternative teaching and learning approaches in nursing education: The potential role of clinical simulation*. Invited **Keynote** Speaker – Registered Nurses Association of Ontario (RNAO) – Embracing the Future: Educating Tomorrow's Nurses 2006.

Cheung, E., **Powell, J.**, Morris-Rice, S. (2006, October 25-26). *Global Health Nursing- An Innovative Certificate Program*. Poster presentation for the 'Practice to Policy Global Perspectives on Nursing Conference', Hamilton, ON.

**Powell, J.** (2006, April 26). *The multigenerational cohort: Issues for teaching and learning*. Invited speaker - Registered Practical Nurses Association of Ontario- 48<sup>th</sup> Annual Conference and General Meeting, Mississauga, ON.

**Powell, J.** (2005, July). *Teaching undergraduate nursing students to critically evaluate and critique clinically relevant nursing/medical literature in an evidence-based environment*. Poster presentation for the Sigma Theta Tau International Evidence-Based Nursing Conference, Kona, Hawaii.

**Powell, J.** (2005, June). *Generation X-Y-Z in the classroom*. Paper presented at the Registered Practical Nurses Association of Ontario- Annual Educators Conference, Etobicoke, Ontario.

**Powell, J.** (2005, May). *Enhancing Student Learning: Interventional Radiology Clinical Rotation*. Poster acceptance for the University of Arkansas Medical School, College of Nursing, Educator Conference, Little Rock, Arkansas.

**Powell, J.** (2004, October). *Teaching undergraduate nursing students to critically evaluate and critique clinically relevant nursing/medical literature in an evidence-based environment*. Paper presented at the Memorial University Annual Research Day, St. John, NFLD.

## COMMITTEE INVOLVEMENT

2017 (June) College of Early Childhood Educators – Registration Appeals Committee;  
2016 (June) College of Early Childhood Educators – Disciplines Committee;  
2016 (June) College of Early Childhood Educators – Fitness to Practise Committee;  
2015 (June) **College of Early Childhood Educators** - Governor General in Council  
Public Appointed Member;  
2015 (June) to **College of Early Childhood Educators – Standards of Practice June 2017  
Committee;**  
**2014 – Present Board of Governors (Vice President) – Canadian International Medical  
Relief Organization (CIMRO.ca)**  
2012 (Sept) Canadian Medical Association Media Awards for Health Reporting – Judge  
2012. **Tripartite Nursing Committee** – Colleges Ontario Representative.  
2012(Aug)-  
2014  
2011- Present Etobicoke General Hospital – Community Partners Task Force.  
2010, Dec- **Board of Directors** – Waterloo Region Nurse Practitioner-Led Clinic.  
June, 2011



2010, March	<b>Chair</b> , Elections & Appointments – College of Nurses of Ontario
2009, June	Disciplines & Hearings – College of Nurses of Ontario
2009, May - June 2011	College of Nurses of Ontario Governing Council: <b><u>Elected Member</u></b> .
2008, Nov	CAATS Coordinators and Provincial Heads of Nursing liaison for the College of Nurses of Ontario
2008, April	<b>Co-Chair</b> : CAATS Provincial Coordinator Collaboration Group
2007, Nov	Television selection committee-CNA and CMA 2007 Media Awards for Excellence in Health Reporting.
2007, April	Canadian Nurses Association – Program Planning Committee, 2008 Biennial Convention.
2006, Nov	<b>Chair</b> : Television selection committee-CNA and CMA 2006 Media Awards for Excellence in Health Reporting.
2006-2009	<b>Inaugural Chair</b> : College of Nurses of Ontario – Practical Nurse Program Approval Committee.
09/2006- 01/2007	<b>Co-Chair</b> : Humber ITAL. Community of Nursing Faculty Committee.
2006- 2008	Registered Practical Nurses Association of Ontario - Human Resources & Strategic Directions Committee.
2006-2009	Nursing Education Initiative Advisory Committee – RPNAO/RNAO/ MOHLTC.
2005 – 2009	Humber Institute of Technology and Advanced Learning Advisory Committee.
2004 – 2008	Provincial Heads of Nursing Task Force on Collaborative Nursing Education.
2004 – 2005	Canadian Association of Schools of Nursing (CAUSN) accreditation committee @ Humber – UNB Collaborative BN Program review.
2004 – 2005	Canadian Association of Practical Nurse Educators Conference Planning Committee.
2004-2005	Registered Nurses Association of Ontario – Developmental Panel “ <i>Educator’s Resource: Integration of Best Practice Guidelines</i> ”.
2004-2005	College of Nurses of Ontario Think tank on Out of Country Licensure.

## AWARDS

- Powell, J. (2007) Registered Practical Nurses Association of Ontario – *The President’s Award*. Awarded for outstanding commitment to furthering the recognition and utilization of RPNs and the nursing profession in Ontario.
- Powell, J. (2006) **Humber College ITAL - Ten Semester (CE Nursing) Recognition Service Award**.
- Powell, J. (2005) Nominee- *Florence Nightingale- Nurse of the Year Award*.
- Powell, J. (1996) Dean’s Honor List – Academic Achievements.

## REFERENCES

References provided upon request.

Nov, 2018