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FACULTY PERCEPTIONS OF SELF EFFICACY IN INTERPROFESSIONAL

HEALTHCARE EDUCATION

by

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ABSTRACT

Interprofessional team-based care is of the utmost importance to maximize health outcomes. These mixed discipline teams work together to complement skills and support each other for patient-centered care delivery. To prepare future healthcare clinicians, effective and efficient interprofessional healthcare education is needed. Students must learn to reflect on their abilities and demonstrate confidence in their skillsets to work effectively within this type of group. Reflective ability and development of self-efficacy are the foundation for learning how to function in an interprofessional team. Faculty within undergraduate and graduate healthcare programs have been tasked with facilitating activities to teach teamwork, roles, responsibilities, communication, critical reflection, patient-centered care, and ethical practice.

The purpose of this interpretive phenomenological study was to highlight the faculty perceptions of self-efficacy as it relates to their experiences with interprofessional education (IPE). Successes and barriers were identified in the implementation of activities, facilitation of collaboration, and student growth assessment. While there was no specific consensus on the assessment measures utilized, most faculty agreed that more assessment and follow-up was imperative to improve all IPE experiences at the site university. Teaching students to evaluate their efficacy, reflect on the experience, seek opportunities, and develop their learning path is

essential. These skills will prepare healthcare students to work together to build an improved, safer, inclusive health system.

University of New England

Doctor of Education
Educational Leadership

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CHAPTER ONE: INTRODUCTION TO STUDY

In an ever-changing healthcare world, the need for continued improvements is essential to maximize patient outcomes and improve clinical care (Rosen et al., 2018). With the dynamic needs in healthcare increasing, there is a push towards more interprofessional team-based care. Interprofessional healthcare teams are collaborative groups that include multiple clinicians from an array of health care professions. These professions include medical, nursing, radiologic sciences, social science, and allied health fields (Interprofessional Education Collaborative, 2011). These teams work together to complement and support each other and maximize the best outcomes for patient-centered care delivery. The diverse healthcare teams work in all areas of patient care, coordinating each case's needs, including intensive care providing life-saving procedures, acute rehab settings returning to function, and community-based care environments supporting everyday wellness. The influence of interprofessional healthcare teams on patient outcomes has been widely studied; however, the link between education, training, and the actual clinical world is unclear and requires further evaluation and assessment (Earnest & Brandt, 2014). Many healthcare programs require evidence of interprofessional education (IPE) integration within all coursework for accreditation; however, there is no standard for the most effective application and assessment methods to be utilized within those requirements (Ricketts & Fraher, 2013).

Interprofessional education in healthcare has been widely studied since the Institute of Medicine's "Conference on the Interrelationships of Educational Programs for Health Professionals" in 1972. This conference highlighted significant issues that impact healthcare teams and resultant patient outcomes. Six main domains of competency were highlighted as part

of the Framework for Action on Interprofessional Education and Collaborative Practice (2011), including teamwork, roles, responsibilities, interprofessional communication, learning, critical reflection, collaborative patient-centered care, and ethical practice (WHO, 2010). While these main educational focus areas remain relatively consistent within the literature, the actual application, pedagogy, and assessment are varied (Fox et al., 2018). Each university and health-related department utilizes this framework differently based on the needs outlined in the individual outcome measures as delineated by their discipline-specific accreditation criteria (Thistlewaite, 2012). With this variability across health discipline programming, there is a vast array of assessments utilized, but all follow general themes in assessment qualities, including self-efficacy, clinical competency, and team communication dynamics (Williams et al., 2017).

Statement of Problem

The Interprofessional Core Competencies for Collaborative Practice (IPEC) was created in response to the changing healthcare environment to guide educational experiences for best collaborative patient-centered practice (IPEC, 2011). The transformation envisioned by IPEC would enable healthcare professional students to engage in interactive learning with those outside their profession as a routine part of their education. This education would include undergraduate, graduate, and clinical affiliation experiences both woven within curricular activities and support large-group simulation events (Barr, 2002). The interprofessional learning goal is to prepare healthcare students to work together to build an improved, safer, inclusive health system (IPEC, 2011).

The interprofessional framework comprises multiple learning domains, including teamwork, roles and responsibilities, communication, learning, critical reflection, relationship with and recognizing the patient's needs, and ethical practice. While these concepts behind IPE

are the essential framework, there is limited research into how putting different groups of students together during different parts of their curriculums supports the healthcare student's overall learning needs (Brown & McIlroy, 2011). Activities to support the development of student self-efficacy embedded within IPE experiential learning activity and program curricula will improve both academic and clinical knowledge. A consensus of effective methods to enhance healthcare student perceptions of self-efficacy would further support the student's ability to reflect on their abilities and encourage faculty development to enhance clinical performance working in healthcare teams (Williams et al., 2017). The student's readiness and understanding of "self" as part of the overall team, however, needs to be evaluated to determine how all other framework concepts will be utilized and molded to suit healthcare students' learning needs. These team skills and students' perceptions of their competence in communication and conflict resolution are essential to support overall development and optimal health outcomes (Sexton & Orchard, 2016). The problem studied here is the faculty perception of student self-efficacy and assessment as an essential building block for team participation.

Purpose of the Study

The evaluation of interprofessional education, roles, and connectedness is essential for all higher education (Mann et al., 2009). General recommendations for the focus of IPE experiences and coursework, including professionalism, roles and responsibilities, teamwork, communication, ethics, and collaborative practice, are supported within the competencies presented within IPEC (IPEC, 2011). These topics are commonly utilized when built upon in a continued learning sequence with increased experiential exposure to improve patient care quality and safety; however, there is no standardization on how this should be applied (Frenk et al., 2010).

Many behavioral theories have been linked within the IPE assessment to determine this sequential learning process, including the models of self-efficacy and the importance of reflection within the education process (Sexton & Orchard, 2016). To foster student development and collaboration, the team members must feel a sense of significance and belonging within a group, especially within the health care team (Kumarasamy & Sanfilippo, 2015). This behavioral aspect has led to the use of the self-efficacy model as rooted in social learning. Self-efficacy or the student's own belief in their ability to complete tasks, accomplish goals, and impact overall team performance is essential in conflict resolution in teams to support overall patient outcomes (Sexton & Orchard, 2016). The tasks associated with student activities can vary between applying clinical skills and communication with other professions but are only as valid as the team's relationships. As the student moves higher into self-efficacy, the student can work into higher leadership roles to facilitate team outcomes (Cino et al., 2018). Therefore, this study aimed to examine the faculty perception of self-efficacy in health science students participating in interprofessional education and experiential learning activities.

Research Questions

The need to integrate interprofessional education within the curriculum is a rising concern within the accreditation bodies and drives the need for internal support for improvements and integration within current health care programming across undergraduate and graduate course work (Ricketts & Fraher, 2013). The application of improved interprofessional preparation will address the need for more collaborative clinical work in interprofessional health care teams to maximize patient outcomes and overall clinical care (Schmitt et al., 2015). The current research limitations note that more information is needed to determine the application and efficacy of assessment measures with the didactic healthcare curriculum. The assessment of

self-efficacy, including reflection of one's role within a larger interprofessional team, is essential in tailoring a growth plan for health care students as they continue to build upon their knowledge and skills within interprofessional events throughout their undergraduate and graduate curriculum. The research questions provided a framework for data collection regarding faculty perceptions of the application and assessment of self-inquiry within interprofessional education.

- How do health science faculty facilitate inquiry and reflection techniques to build self-efficacy when working in team-based activities in undergraduate and graduate curricula?
- How do health science faculty describe best practice evaluation of interprofessional critical thinking skills and self-efficacy?

Conceptual Framework

Since the 1972 Institute of Medicine's "Conference on the Interrelationships of Educational Programs for Health Professionals", the urgent call for interprofessional education has continued (IPEC, 2011). Working in a cohesive healthcare team has demonstrated improvements in patient outcomes, further highlighting the importance of these principles' inclusion. Personal and situational factors, including communication, leadership, and cooperation, influence the interprofessional (IP) healthcare team's success. The presentation of IP values within educational modules will directly impact work behaviors and attitudes, patient outcomes, and organizational outcomes (Reeves, 2016). The inclusion of values such as understanding roles, interdependence, exchange of knowledge, and collective ownership of goals has sparked a wide array of IPE models and educational components to be created and utilized across various healthcare programs (Bridges et al. 2011). With the creation of IPE components, many barriers have been identified, including lack of knowledge and appreciation of the roles, financial and regulatory constraints, legal concerns about scope of practice and liability, and

stereotypical hierarchical structures (Reeves, 2016). These problems led to the further development of frameworks to support behavioral and clinical integration growth. The theoretical frameworks applied in interprofessional educational programming, as noted within the literature review, include the Knowledge-Based Model (Barr, 1998), Attitude Based Model, Self-Efficacy Model, and most recently, the Competency-Based Model. However, many interprofessional education programs lack guidance by specific theoretical or conceptual frameworks leading to difficulty in comparing outcomes and determining appropriate IPE (Abu-Rish et al., 2012).

Assumptions

Many assumptions cloud the application of IPE within various curricula. Previously the application of just putting groups of students together from across multiple health care disciplines would serve to create a team-like atmosphere to reflect the clinical culture; however, much like the evolution in changing healthcare needs, the frameworks utilized to describe teaching practice and education of health students have also evolved (IPEC, 2011). Traditional learning paradigms have been "siloed" and discipline-specific, with only brief instruction about other roles (Kumarasamy & Sanfilippo, 2015). This transformation to meet current healthcare needs incorporates more integrated collaborative didactic and clinical learning experiences with multidisciplinary groups.

Team-based research across all areas has been tied to interprofessional education literature. Team effectiveness, attitudes on leadership, and self-efficacy looking at the impact of individual sense of importance and belonging have been aligned within the literature's assessment measures (Cino et al., 2018). However, with increasing specificity of roles and expansion within different clinical fields, the preferred interprofessional education model has

shifted towards a Competency-Based Model, as presented by Barr. This model identifies relevant interprofessional practice standards needed to establish frameworks and expectations for performance based on common, complementary, and collaborative skills (Barr et al., 2016). The Canadian Interprofessional Health Collaborative, for example, has worked to create a guide to support the development of interprofessional education and encourage more consistent assessment to determine effectiveness and applicability in the healthcare realm. While all the theoretical frameworks presented in the literature provide a different analysis of how interprofessional education can be applied, there is no universal consensus on what represents best practice or most appropriate assessment measures (CHIC, 2010).

It is assumed that the faculty interviewees engaged honestly and openly of their own free will while providing descriptions of their own IPE experience. It is also assumed that the study may show that while the target site utilizes many different forms of IPE strategies and learning components within the curricula, there is no standardization between disciplines, adherence to a theoretical framework, or sequential assessment measures to build self-efficacy in healthcare students.

Limitations

The research limitations include the limited transparency of IPE application specifics and continuity of assessment measures across programs nationally. While there is a specific trend in assessment measure usage and application in simulation or problem-based learning, the reporting of these factors is not always highlighted (Lapkin et al., 2013). Additional limitations include a relatively small number of participants and the need to use video conferencing technologies, rather than in-person interviewing in a natural setting. Interviewing was focused on a historical perspective of IPE experience, rather than current application and engagement in IP activities

due to restrictions associated with COVID-19. The scope is limited to a small private university with health science programming throughout the undergraduate and graduate curriculum. While trends in the data may be similar to other institutions, they cannot be completely generalizable to larger universities or different programming frameworks. The study focuses directly on the faculty's perspectives within those programs that work on IPE with their students. It did not include student perceptions at this time due to COVID-19 precautions.

Scope

This study identified current practices with IPE through the use of interviews and analysis. The summarized analysis supports further reflection on practices and improvements to develop self-efficacy in students. The researcher looked at the specific target university to bring to light current use, application, and assessment of IPE in undergraduate and graduate students. The analysis provides further insight into opportunities for the development of programming directly for the site being studied and may provide insights to similar-sized institutions.

Rationale and Significance

Integration and establishment of high fidelity interprofessional education in healthcare curricula stands at the forefront of what is needed to influence health care students' future careers. This change in framework challenges the process of existing curricular structures, inspires a shared vision and demonstrates the need to prepare better clinicians, and enable other faculty to act and engage with each other for best outcomes (Kouzes & Posner, 2003). Faculty responsible for implementing IPE activities need to lead the way for implementation and innovation; however, there is limited information on barriers and successes that will guide that path (Robinson-Dooley & Nichols, 2016). The results of this study provide insight into the challenges, opportunities, and recommendations for developing and supporting self-efficacy for

healthcare students through interprofessional education. The study provides findings about faculty perceptions in the application and assessment of IPE at the study site. Improved understanding of student self-efficacy and readiness will provide guidance for faculty and administration development opportunities to support the overall mission of the university. While the results are directly related to IPE activities at the study site, trends may apply to other colleges and universities for improvement projects. The new knowledge gained from this study can inform the assessment and delivery methods of collaborative learning. While the study protocol was limited by the use of virtual interviews, the themes noted provide a framework for future interviews with students and implementation research on the use of actual assessment measures in practice. The foundation of self-efficacy as an essential skill will support overall leadership and team development for future healthcare students (Allen et al., 2018). This skill, in turn, will provide a better-prepared healthcare team and workforce to optimize patient outcomes (Rosen et al., 2018).

Definition of Terms

Terminology to define IPE is not universal within the literature; however, the generally accepted terminology noted has been adapted from Chamberlain-Salaun et al. "Terminology used to describe health care teams: An integrative review of the literature" (2013), as listed below:

Interprofessional education (IPE) occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes.

Interprofessional learning is learning to arise from the interaction between members (or students) of two or more professions. This interaction may be a product of interprofessional education or happen spontaneously in the workplace or education settings and therefore be serendipitous.

Interprofessional collaboration involves different health and social care professions that regularly come together to negotiate and agree on how to solve complex care problems or provide services.

Discipline refers to a distinct body of knowledge or field of study with a particular content, methodology, or skill set.

Specialty refers to a branch of medicine, nursing, dentistry, etc. in which the professional is specially qualified to practice by having attended an advanced program of study, passed an examination given by an organization of the members of the specialty, or gained experience through extensive training in the specialty.

Roles may refer to the demand, function, responsibilities, or expectations within a professional situation.

Collaboration is an active and ongoing partnership, often involving people from diverse backgrounds who work together to solve problems, provide services, and enhance outcomes, working together cooperatively, including sharing responsibilities for solving problems and making decisions to formulate and carry out plans for patient care.

Collaborative patient-centered practice is a type of arrangement designed to promote patients and their families' participation within the context of collaborative practice.

Conclusion

Working in interdisciplinary teams is a core competency, regardless of the specific discipline, "to cooperate, collaborate, communicate, and integrate care in teams to ensure that care is continuous and reliable" (Institute of Medicine, 2003, p. 4) that needs to be instilled across all healthcare curricula. The literature review uncovers multiple different iterations in the application and assessment across universities worldwide. The analysis and reflection on the

current application and assessment at the target site university provides a clearer lens on interprofessional education implementation to support continued development. Learning from the faculty perceptions of the IPE activities and its implication on student self-efficacy growth provided an overall view of successes and pitfalls. Further evaluation of these successes and pitfalls, along with the standards of practice and procedural modules will help health care researchers evaluate and improve student self-efficacy. Direct translation from IP experiences will support changes in clinical and didactic curriculum and optimize future healthcare clinicians' preparedness (Ricketts & Fraher, 2013).

CHAPTER TWO: LITERATURE REVIEW

The World Health Organization (WHO), the directing and coordinating authority on global health, leads research and creation of evidence-based practice standards to support the health care environment's needs around the world. The organization's research has highlighted inadequacies, limitations, and fragmentation within existing healthcare frameworks (WHO, 2010). These problems are dimensions of a growing crisis in healthcare with increasing costs and a continuing shortage of healthcare clinicians. The organization's findings exemplify the need for preparing clinicians who are ready to collaborate in teams and provide competent care to strengthen health systems as part of its Framework for Action on Interprofessional Education and Collaborative Practice. The framework identifies the need for a change in culture within academia and to modify health policy to spearhead the integration of interprofessional education to support health outcomes (WHO, 2010).

Interprofessional education (IPE) is defined as "occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (Barr, 2002). While this definition provides a generic description of a structure, the application, integration, assessment, and advancement of IPE are multi-dimensional and require further investigation (Cahn et al., 2016). The concept of IPE is not a recent revelation and was initially noted within research in the 1960's primarily out of the United Kingdom and the United States and brought to the forefront by the World Health Organization in the 1980's (Farnsworth et al., 2015). Initially IPE was integrated to clarify roles and responsibilities in health care teams as well as encourage effective teamwork (WHO, 2010). Throughout the following years, multiple collaborative groups have worked to provide definitions and recommendations for educational programs. Within these recommendations, there is a limited consensus on the specific

application, learning activities, and frameworks for what needs to occur and what needs to be assessed in IPE to prepare the students for work in healthcare teams. Recommendations, however, suggest that students should generally participate in a spectrum of activities working and learning from one another (Thistlewaite, 2012). Research on the current iterations of interprofessional education in higher education practices, including the theoretical frameworks, the application within the healthcare curriculum, assessment of objectives, and IPE programming development, continue to be quite varied. Many variations are noted in application and assessment due to limitations in accrediting requirements, faculty knowledge and experience, variation of student cohorts, time and budgetary limitations, as well as lack of leadership leading the charge for change (Barr et al., 2016). The basis of the IP ideals remains the same, regardless of the variations noted across iterations: Interprofessional educators should work to prepare students as members of a healthcare team to optimize future health outcomes (Reeves, 2016). The literature review aims to evaluate and explore the current iterations of interprofessional education in higher education practices today, including the theories, application, assessment, and development of IPE programming. The researcher examined peer-reviewed journal articles, dissertations, existing curricular iterations, framework guides, books, and policies set forth by global organizations to review the full breadth of IPE. Search terms included interprofessional collaboration, interprofessional education, team-based care, faculty development, teamwork, collaboration, enhanced communication, attitudes, multidisciplinary student engagement, team-based framework, multidisciplinary team-based learning, assessment, and core competencies (Chamberlain-Salaun et al., 2013).

Theoretical Framework

Since the 1972 Institute of Medicine report's urgent call for interprofessional education

(IOM, 1972), there has been a wide array of IPE models and educational components utilized

across various healthcare programs (Bridges et al. 2011). Many IPE programs lack specific

theoretical or conceptual frameworks leading to difficulty in comparing outcomes and

determining appropriate IPE (Abu-Rish et al., 2012). Throughout the research, there is limited

transparency in the theoretical models utilized within IPE; however, common themes are present.

The themes: sharing, partnership, power, interdependency and process, and the need to cover all

these areas led the charge for the creations of models to guide this education. The theoretical

frameworks applied in interprofessional educational programming, as noted within the literature

review, include the Knowledge-Based Model (Barr, 1998), Attitude Based Model, Self-Efficacy

Model, and the Competency-Based Model.

The Knowledge-Based Model, developed by educators the 1970s, was deemed applicable

for applying teaching and practice with collaboration between or within different professions.

This model focused on the commonalities within different clinical roles to the detriment of

differences (Barr, 1998). There are limitations in this learning application as students in specific

professions did not fully understand distinct qualities to then call upon another professionals'

support. However, with the increasing specificity of roles and expansion within different clinical

fields, the preferred interprofessional education model has shifted towards a competency-based

model. Barr (1998) defines the competencies from The National Occupational Standards for

Professional Activity in Health Promotion Care Sector Consortium held in 1997. Barr noted that

practitioners need to support knowledge translation and development, work collaboratively,

engage in collaborative efforts, and coordinate care interventions as part of an interdisciplinary

team (Barr, 1998). This model identifies important interprofessional practice standards that served as the foundation of following curricular frameworks to strengthen healthcare education. With the use of clearly defined competencies, healthcare programs can establish a framework and expectations for performance based on common, complementary, and collaborative skills (Barr et al., 2005).

The Canadian Interprofessional Health Collaborative set forth to outline, more specifically, the competencies to build educational modules around a set of core competencies across all disciplines to create a solid platform of collaborative skills (CIHC, 2002). These defined competencies have allowed for the creation of a framework to guide educators in creating IPE. The Interprofessional Team Reasoning Framework (IPTRF) was designed to facilitate teaching and learning case studies with health professions students. The IPTRF was found to be a useful tool to teach skills necessary for case analysis and facilitate collaboration, communication, and investigation of values and ethics (Packard et al., 2012). However, this tool is limited in its ability to look at the interactions of behavior as they relate to the overall team and leadership building skills. The move towards an Attitude-Based Model gave rise to many different assessment measures to have students work together to understand roles and responsibilities, generate mutual trust, and relinquish stereotypes (Barr, 1998). The Model of Team Effectiveness (West et al., 1998) began looking at the variables including leadership, communication, decision-making, and the impact they made on performance, innovation, well-being viability within group effectiveness.

The analytical framework of interdisciplinary collaboration (Guraya & Barr, 2018) also used the group effectiveness framework with the impact of group characteristics in the analysis of the task. While these two theories provide some insight into the group's attitudes, it is missing

essential components of the individual approaches. The structuration model of interprofessional collaboration (D'Amour et al., 2004) conceptualizes the process of partnership according to four dimensions, looks at the impact of individuals, and includes the analysis of a sense of belonging and trust within a group setting. The impact on the individual's sense of importance and belonging within a group, especially within the health care team, is rooted in social learning and leads to the self-efficacy model's use (Cino et al., 2018). The behavioral approach aligns with the social learning theory identified in interprofessional healthcare studies. When seeking to instill leadership within healthcare students, it is essential to assess self-efficacy at the beginning of their curriculum and throughout the continued undergraduate and graduate-level curricula. Self-efficacy is "the extent of one's own belief in their own ability to complete tasks and accomplish goals" (Bandura, 1994). The tasks associated with interprofessional student activities can vary between applying clinical skills and communication with other professions but they are only as effective as the relationships within the team (Burgener, 2017). Self-efficacy, the student's own belief in their ability to complete tasks and accomplish goals concerning the group, is seen to affect the performance overall of the team directly. As the student works through an experience, they are able to reflect, conceptualize, and experiment in future experiences to improve outcomes and grow their individual knowledge base (Fewster-Thuente & Batteson, 2018).

The self-efficacy theory looks explicitly at behavioral theories' task performance as successful or unsuccessful or avoidance of a task. The relationship component describes the level of task involvement from the somatic/emotional state, verbal persuasion, vicarious experience, up to a mastery experience demonstrating the highest level of self-efficacy. As the student moves into higher levels of self-efficacy, the student can work into more senior leadership roles to

facilitate team outcomes (Cino et al., 2018). While all the theoretical frameworks provide a different analysis of how interprofessional education can support improving healthcare outcomes, a consensus on evaluating the impact of partnership and working within a team-based setting is evident (Ward et al., 2017). In healthcare, these teams need to maximize their collaborative efforts to obtain the best outcomes in a dynamic world. The framework evolution has led to the emergence of many guides and resources to assist with the development structure; the application, integration, assessment, and advancement of IPE programming (CIHC 2010; WHO, 2010).

All four frameworks can be applied within the investigation of IPE; however, this study looked specifically at the application of the Self-Efficacy Model, including the development of student self-efficacy and how it is currently assessed. While a high level of knowledge and competency as noted within the assessment characteristics of the knowledge based and competency-based models are the end goal in the development of a skilled clinician, many students continue to struggle with the actual self-reflective skills necessary to gain these competencies and continue to build their own competency base (CIHC 2002). The attitudinal model is also demonstrated in activities, however, it focuses more on the external behavioral changes as compared to the internal behavioral changes needed in the assessment of self-efficacy (Guraya & Barr, 2018).

Conceptual Framework

As healthcare education and associated needs continue to change, healthcare faculty and higher education must continue to support the development, application, and assessment of IPE. An overarching goal of IPE is to instill life-long learning and reflection in the students as they develop into clinicians working together in teams across all healthcare settings (IPEC, 2010).

This reflection process of self-efficacy is aligned specifically with the transformative learning theory and provides insight into developmental growth, advancement, and further development opportunities. Transformative learning theory (TLT), as described by Jack Mezirow, describes how a person develops self-reflection and adapts over time based on experiences allowing them to be more inclusive, emotionally flexible, open, able to change (Mezirow, 2009). This transformational learning process has three main principles, including experiential learning, critical reflection, and individualized development in response to experiences, and directly engages with the principles and application of IPE (Sargeant, 2009). TLT is further supported through Kolb's Experiential Learning theory in the application of clinical based skills, reflection, debriefing of results, and application of knowledge in future activities; however, behavioral growth is needed to move through the cycle of experiential learning (Fewster-Thuente & Batteson, 2018).

This individualized inquiry and reflection process is essential to supporting a healthcare clinician's success and provides the necessary guide through transformational learning (Frenk et al., 2010). Learning and critical reflection related to self-efficacy are essential to acknowledge as the basis for a student's knowledge, confidence, and ability to deal with conflict within a team or stressful situation (Bandura, 1977). Curriculum development that addresses self-efficacy in the healthcare student is essential and should include experiential learning opportunities to support all domains of competencies linked to interprofessional education outcomes (Williams et al., 2017). The researcher chose to look more specifically at self-efficacy as the necessary initial building block to lifelong learning and reflection necessary for healthcare students as they progress through clinical learning and prepare for future careers. The value and importance of reflection needs to be established at the beginning of the learning journey to maximize personal

growth and ownership of leadership skills as students experience working in groups teaching and learning from one another (Cino et al., 2018). Looking at IPE from a behavioral perspective, integrating the model of self-efficacy and the transformational learning theory allows for better understanding of student development and may better highlight areas for improvement in implementation and assessment for faculty (Hall & Zierler, 2015).

The Need for Interprofessional Education

The Canadian Interprofessional Health Collaborative and Consortium defines interprofessional collaboration as developing effective interprofessional working relationships for the best outcomes for patients (CIHC, 2010). Teamwork, as highlighted within the definition of interdisciplinary collaboration, is a key component to treat underserved populations better and communities with limited access to health care (WHO, 2010). This need is further highlighted by Earnest and Brandt (2014), who noted the impact that the fragmented healthcare system has on rising costs and increasing health disparities. Along with the high cost of healthcare and poor alignment with patients' and communities' needs, there is also a significant impact on the quality of care due to the high cost of education (Earnest, 2014). While the need for this change is significant, the current application, assessment, and improvements have been varied and insufficient (Barr, 2016).

Leadership within regional, national, and specialized accreditation bodies oversees student performance measures and maintains standards based on traditional learning paradigms (Zorek & Raehl, 2013) helping to steer some improvements. Improvements in accreditation have included establishing core recognition standards and specific process standards; however, this only applies to the core curriculum in general education. Interprofessional education objectives, including common competencies, complementary competencies, and collaborative competencies,

are seen within the literature and reported to decrease the risk of developing prejudices and negative stereotypes, and preparatory, laying the foundations for subsequent interprofessional learning and practice (Barr, 2016). While these common competencies provide a framework, there are no consistent core guidelines within specialized healthcare programming that define IPE implementation or assessment. While no program can be the same in its iteration across higher education, consistent goal collaboration, use of measurable competencies, and ongoing assessment are essential for the success of IP programming (Lapkin et al., 2013). The lack of consistency within programs limits the academic communities' ability to form a consensus for IPE's best practice, despite the overwhelming positive attitudes for IPE work (Barr, 2016). Integration and establishment of IPE in healthcare curriculum utilizing innovative applications stands at the forefront of the recommendations in best practice; however, there needs to be a comprehensive overhaul of accrediting bodies to meet the healthcare and higher education environments needs and uphold the principles of interprofessional healthcare education.

Evaluation of already present opportunities and the evaluation of the resources the faculty and community bring to IPE is necessary, and those resources can be used to incorporate students into highly productive and integrated experiential learning. Further development of programming needs to occur to allow increased accessibility outside of course work and increased integration within academic responsibilities (Robinson-Dooley & Nichols, 2016). Improved collaboration across health care programming needs to happen to determine areas of crossover and opportunities for continued interaction of different student groups (Schmitt et al., 2011). Further implementation of the standards of practice and procedural modules utilized within graduate and under-graduate curriculums will help educators evaluate and improve student outcomes. Enactment of standards for a comprehensive clinical and didactic curriculum

will optimize future healthcare clinicians' preparedness to work within an interprofessional team upon graduation (Lapkin et al., 2013).

Collaborative competencies noted by Barr (2002) are the hallmark of IPE and include performance tied to describing one's roles and responsibilities clearly to other professions, as well as to recognize constraints within a position, respecting different roles, understanding how to involve roles within a team, working within a team to review service delivery, resolving conflict, and improving standards of care (Barr, 2002; Paradis & Whitehead, 2015). To reach this level of collaborative competence, linking practice and education through sustainable and effective change requires dynamic leaders to lead the charge for significant shifts in policy from the government, higher education, clinical partners, licensing and accrediting agencies. As noted by Kouzes and Posner (2003), the Five Practices of Exemplary leadership are necessary to ignite substantial change and improvement in organizations. This change in framework needs to challenge the process of existing curricular structures, inspire a shared vision and demonstrate the needs to prepare better clinicians, and enable faculty to act and engage with each other for best outcomes (Kouzes & Posner, 2003). Integration and establishment of IPE in healthcare curriculum utilizing innovative applications stands on the forefront of the recommendations in best practice; however, there needs to be a comprehensive overhaul of accrediting bodies to meet the healthcare and higher education environments needs and uphold the principles of interprofessional healthcare education (Guraya & Barr, 2018).

The lack of consistency within programs harms the academic communities' ability to form a consensus for IPE's best practice, despite the overwhelming positive attitudes towards IPE work (Barr, 2016). While the need for interprofessional collaboration is evident, due to its direct tie to aims for safe and efficient care delivery (Abu-Rish et al., 2012; Greiner & Knebel,

2003), many healthcare professionals continue to enter practice without sufficient training in interprofessional care and coordination (Barr, 2002). Many barriers to active and continuous interprofessional learning are noted throughout the literature to include asymmetries in matching compatible students, faculty/ staff time constraints, insufficient funding, and inadequate administration support. Educators from many health care professions must work together to define learning outcomes and match these with learning activities to ensure that IPE demonstrates added value over uni-professional learning (Thistlewaite, 2012).

Accreditation Requirements for IPE

The World Health Organization released the Framework for Action on Interprofessional Education and Collaborative Practice in 2010 as part of a response to the growing healthcare crisis due to increasing costs and the shortage of healthcare clinicians. The framework highlights evidence that supports the application of interprofessional education. The structure created aligns with the theory that IPE leads to active collaborative practice and partnerships that directly support better health outcomes.

The framework, along with previous research, notes the many factors impacting effective IP practice, including support of administration for implementation, identification of community partners, willingness and intention for change within current academic settings, and change within the culture of healthcare with clinicians and governmental bodies (WHO, 2010). Lapkin et al. (2013) noted that to best prepare future health professionals, it is necessary to expand the development of IPE to address collaborative efforts and promote the best outcomes. The integration of these educational opportunities allows for practical cooperation and communication with other professions in practice (Barr et al., 2005). Healthcare faculty must prepare students to participate in interprofessional teams by providing them with opportunities

for collaboration within interprofessional education throughout their undergraduate, graduate, and clinical training.

Many healthcare programs require evidence of IPE integration within all coursework for accreditation (Ricketts, 2013). In a comparative analysis of accreditation standards in the US, Zorek and Raehl (2013) performed a content analysis of accreditation statements for all clinical healthcare education degrees. A review of eighteen keywords within the accreditation standards evaluated across dentistry, medicine, physician assistant, psychology, public health, physical and occupational therapy, speech and language pathology, social work, and pharmacy were all reviewed and analyzed. While similar keywords were present in all statements, there was inconsistency and limited assessment qualifiers associated with the IPE requirements. The study notes that the US healthcare program accrediting bodies do not define a collective mandate for IPE application and assessment, despite the requirements for reporting IPE activities (Zorek & Raehl, 2013). Many benefits to students are reported throughout the literature as well with direct links to improved development of personal relationships, improved education, improved patient care and improved future job satisfaction (Carney et al, 2019; Reeves, 2016). Benefits to faculty are less evident in the research, however there is a consensus that it helps to empower a faculty learning community to drive leadership skills (McMorrow et al., 2017; Weiss et al., 2014). Despite the documented benefits, there is no consistent standard on the assessment or implementation of IPE across curricula. Further investigation of IPE implementation across curricula is necessary to determine effectiveness in teaching students to be better teammates in a dynamic interprofessional healthcare world (Clark, 2009).

Application in Curricula

The curricular application of interprofessional learning activities are varied within the literature and classified within three major areas: the on-campus and hybrid didactic programming, community-based experiences, and interprofessional-simulation experiences (Anderson et al., 2016; Bridges et al., 2011; Cino et al., 2018; Guilding et al., 2018; Hughes, 2004; Lehrer et al., 2015; Mayers et al., 2006). The academic program emphasizes interprofessional team-building skills, knowledge of professions, patient-centered care, service learning, the impact of culture on healthcare delivery, and an interprofessional clinical component. The community-based experience incorporates service to patients within constraints of the environment and available resources. Simulation utilized technology to facilitate participation within clinical team training to develop communication and leadership (Bridges et al., 2011). A significant push towards increasing the use of technologies and online/ hybrid applications to improve learning access to more students. (Cannistraci et al., 2018; Hughes et al., 2004).

Research within these three areas has led towards the consolidation of curricular themes to include: client-centered care, conflict resolution, role definitions, and experiential participation to keep up with healthcare changes as changing practice requires changed learning approaches (Clark, 2009). The focus on deconstructing the disciplinary-specific knowledge and its historical application is a prerequisite in creating new shared activities based on the interprofessional learning competencies. Once past the initial hurdle of current education modules, further evaluation can occur to examine curriculum content and structure, mode of facilitating interprofessional interactions, faculty recruitment and retention, faculty skill-building and institutional leadership, and financial support (Duncan et al. 2006).

Considering the many components essential to IPE success, there has been much expansion across healthcare disciplines to provide additional curricular development resources. The National Center for Interprofessional Practice and Education was created in 2012 to support leadership, evidence, and resources needed to guide interprofessional education and collaborative practice. This collaborative website aims to provide a hub for IP activities, knowledge, and evidence (NCIPE, 2020). Many individual health-related disciplines have also utilized the guiding IPEC framework to provide further resources to faculty and administration specific to their discipline. Resources, much like those presented by the National Interprofessional Education Consortium (NIPEC), were created as a cohort of the American Council of Academic Physical Therapy and focused more specifically on the accreditation requirements associated with physical therapy. NIPEC serves as a collection of resources and provides a forum for faculty involved in interprofessional education efforts. The collection contains many different iterations and presentations of IP activities that can be incorporated within curricula and recommendations for assessment and guidelines (ACAPT, 2020).

It is unclear if specific methods were used to teach the primary function of teamwork and communication within the diverse curricular applications as part of or before IPE. In most studies reviewed, team training before the integration of collaboration within clinical case application was either omitted or not described within the study (Fox et al., 2018; Laughlin et al., 2015). The evidence regarding the recommended mode, frequency, duration, and focus of interprofessional training to teach communication skills and clinical skills is inconclusive due to the high degree of variability in the application (Lapkin et al., 2013).

Abu-Rish et al. (2012) noted that educators are increasingly experimenting with new IPE models and use with the integration of new technologies, like simulation; however, best practices

for translating interprofessional education into interprofessional practice and support for faculty development team-based care are not well defined. Faculty development in interprofessional education has a tremendous impact on the ability to reach desired outcomes and has led to the creation of a competency-based interprofessional facilitator development program with the identification of nine critical competencies for interprofessional teaching. The faculty-specific competencies include a commitment to learning, role modeling of team behaviors, application to clinical use, integration of interactive learning methods, and confidence in the use of IPE.

It is evident that the faculty must understand group dynamics and the components that may cause conflict or require increased attention to support team development (Banfield and Lackie, 2009). Review of faculty experience with IPE by Steinert (2005), identified the largest barriers to application included professional boundaries, academic elitism between disciplines, lack of knowledge, preconceived notions, lack of opportunity within curriculum, time and structural barriers, varied student learning styles, student motivation, and lack of support by administration. The Interprofessional Education Collaborative Expert Panel (2011) further defined the faculty competencies which lead to the application within Hall and Zierler's work (2015) in the creation of a Faculty Practice guide for facilitation. The creation of this panel and subsequent recommendations have aimed to provide guidance for faculty to provide more structure and supportive IP activities that aim directly at the building of knowledge and collective learning in healthcare groups. The guide also recommends the modeling of IP interactions at the faculty level to allow students to observe a true interaction of healthcare providers and understand more fully how that will provide best outcomes for their future patients and clients (IPEC, 2010).

Assessments in Action

One of the most significant challenges identified within the research included inconsistencies and wide variation in assessment measures used to quantify and qualify active learning using IP principles. Many studies developed their scales or utilized open-ended questions for assessment, with some utilizing at least one standardized tool (Lapkin et al., 2013; Schrader et al., 2017; Thistlewaite, 2012). Most of the assessment tools used were via student self-report rather than independent observation and evaluation and were found to primarily measure student attitudes and perceptions with little emphasis on specific teamwork principles (Fox et al., 2018).

Assessments most commonly involved looking at students' attitudes about IPE participation, gains in knowledge (professional roles, collaborative approaches, clinical/patient content, care models, quality improvement, patient safety, and cultural competence), satisfaction with IPE courses, and team skills. Surveys are most commonly utilized, followed by interviews/ debriefs, and knowledge tests. Tools can be classified based on outcome themes to determine use within future studies. These assessment results included reaction or opinion of the learner to an IPE program or activity, defined modification of perceptions or attitudes, acquisition of knowledge based on attainment of IPE competencies, behavioral change, and change in organization practice for proven benefits to patients/ clients (Shrader et al., 2017, Abu-Rish et al., 2012). The most commonly utilized tools in literature, including the Interdisciplinary Education Perception Scale (IEPS), Readiness for Interprofessional Learning Scale (RIPLS), and Attitudes Towards Interprofessional Health Care Teams Scale (ATHTS), appear to address only one to two of the teamwork competencies from the IPE Collaborative. The Interdisciplinary Education Perception Scale (IEPS) is made up of 4 subscales looking specifically at competency

and autonomy, perceived need for cooperation and perception of actual cooperation, and understanding others' roles (McFadyen et al., 2007). The Readiness for Interprofessional Learning Scale (RIPLS) by Parsell and Bligh in 1999 and further modified in 2008 by Curran et al., focus on teamwork and collaboration, negative and positive professional identity, and roles and responsibilities and aims to measure the attitudinal change in the student participants (Curran et al., 2008). The Attitudes Toward Health Care Teams scale (ATHCT) looks at perceptions of the quality of care and the quality of teamwork and attitudes toward physicians' authority (Curran et al., 2010). A tool for the specific measurement of self-efficacy as related to IPE was developed in 2017. The Interprofessional Education Collaborative Competency Self-Efficacy Tool (IPECC-SET) is formulated from the four IPEC competency domains, including values/ ethics, roles/responsibilities, interprofessional communication, and teams/teamwork (Kottorp et al., 2019). The analysis provides guided self-assessment within the four competency areas, as well as participants' previous exposure to different professions, understanding of the role of each profession in the health care system, and demographic questions (Hasnain et al., 2017).

While this inclusion of a self-efficacy specific tool may provide more insight into behaviors associate with IPE, it is not widely utilized or accepted within the recurrent assessment. No single comprehensive tool exists to fulfill all the assessment needs of IPE, and the significant lack of detail with the majority of assessment measures impairs the drawing of conclusions for best practice (Guraya & Barr, 2018). Despite the lack of a singular tool utilized within the research for assessment; the common thread supporting the need for self-efficacy development in health care student learning is evident (Allen et al., 2018; Chiocchio, et al., 2016; Kottorp & Peterson, 2018; Williams et al., 2017; Zamani-Alavijeh et al., 2019).

The Need for Faculty Development

The main change broker in the delivery and assessment of interprofessional education is the faculty cohort creating, utilizing, and assessing healthcare programming. The change and improvements in student performance are only as effective as the faculty member's deliverance of activities (Hall & Zierler, 2015). Main strategies for driving change in faculty development include leadership training to embody the role of an interprofessional ambassador, full adoption of a framework across a university, and creating strong partnerships between academia and clinical partners to maintain the representation of team roles and supporting current healthcare needs within IPE (Bass & Bass, 2018; Grymonpre, 2016). Faculty are expected to develop, implement, and facilitate IPE activities, however, may have never engaged in this type of activity before for themselves within their academic and clinical experiences. Faculty may also lack the tools or resources necessary to prepare, facilitate and assess activities with healthcare students to be successful (McMorrow et al., 2017). Models involving co-teaching, faculty simulations, administrative support and training, and continued evaluation of effectiveness are found within the recommendations for faculty, however these faculty members must embody the role of the change broker (Ratka et al., 2017).

The drive for change requires these faculty ambassadors to champion the change efforts by working together and encourage full engagement by other faculty and students. Previous research shows that while students report positive experiences and benefits to IPE in student learning, there is also noted faculty reluctance or disengagement when charged to participate in IPE activities and implementation (Lash et al., 2014). Barriers to faculty participation include attitudes and expectations, logistics of scheduling varied programs, time and budgetary constraints, lack of training, and lack of formal leadership. (Lash et al., 2014, Watkins, 2016). To

support IPE's ongoing enthusiasm, faculty voices need to be heard to further understand their current IPE experience and their ideal best practice application (Reeves, 2016).

Conclusion

The literature surrounding interprofessional education is robust, overarching, and multifaceted. As interprofessional education is applied in many different facets throughout curricula and educational models utilizing on-campus and hybrid didactic programming, community-based experiences, and interprofessional-simulation experiences; there is limited consistency in the reporting of results for comparisons of specific applications to determine best practice. The literature review reveals a strong historical background, identifying the need for IPE and its growth within programming and introducing IPE application with the use of new technologies to increase student access to all areas.

Weakness noted within the literature is due to the inconsistency in reporting of results, including a focus on reaction, perceptions or attitudes, behavioral change, and change in organization practice for proven benefits to patients/ clients, incomplete knowledge of the full application of IPE principles within an event, and limited consistency in the oversight, monitoring, and review of assessments related to IPE (Guraya & Barr, 2018). There is a missing link connecting the suggested framework for education and the assessments utilized to assess learning within the student or future application within clinical outcomes (Shrader et al., 2017, Abu-Rish et al., 2012). Further investigation in the application and assessment of self-efficacy within programming will identify areas to support a student in conflict resolution, team dynamics, and professional leadership to improve overall health outcomes (Chiocchio et al., 2016; Kottorp & Peterson, 2018; Williams et al., 2017).

CHAPTER THREE: METHODOLOGY

There is a significant need for interprofessional practice within the healthcare world to maximize better patient outcomes and improve clinical care (IPEC, 2010). The premise of team care imbedded in IPE supports the main initiatives of the Triple Aims tasked by the Institute for Healthcare Improvement in 2007. These aims include improving the care experience of care, improving population health outcomes, and reducing health care costs (Berwick et al., 2008). With that focus, professional training, including didactic course work and hands-on clinical fieldwork experiences, needs to be updated to facilitate dynamic learning experiences (O'Neil & the Pew Health Professions Commission, 1998). Healthcare students must participate in interprofessional teams and provide collaborative education opportunities throughout their undergraduate, graduate, and clinical education (IPEC, 2011). Interprofessional education (IPE) is defined as occasions when two or more professions learn with, from, and about each other to improve collaboration and the quality of care (Barr et al., 2005). The integration of these educational opportunities allows for practical cooperation and communication with other professions in practice (IPEC, 2011). Many healthcare programs now require evidence of IPE integration within all accreditation bodies; however, there is no standard on how it should be done or the most effective application and assessment methods. Along with the actual experiential participation, learning requires reflection, adding increased investigation on how we will teach our students to be better teammates in a dynamic interprofessional healthcare world (Clark, 2009).

Purpose of the Study

This study focused on a small, private co-ed university in the northeast. Student success at this university is explicitly measured as student achievement relating to graduation rates rather

than student engagement. Achievement statistics alone do not demonstrate the quality and depth of the education and the integration the students have with the curriculum, or if the healthcare programming is graduating the best possible health care clinicians possible (Lapkin et al., 2013). Colleges and universities need to be able to demonstrate that their programming and faculty are the best-suited to prepare competent future health care clinicians. To best demonstrate these abilities, they must validate the graduating students' readiness to participate in interprofessional teams' highest capacity.

While the focus university has a good foundation for IPE with the establishment of the Center for Interprofessional Healthcare Education (CIHE), there are more opportunities to best prepare students for their future roles as health care professionals within dynamic interprofessional team environments. The study aimed to assess collaboration across health care programming needs and how assessment measures are utilized to build leadership and team development skills within healthcare students. This analysis will allow for further development of programming for increased accessibility within all curricula and further evaluate the self-efficacy model's aspects as rooted in social learning. The assessment of self-efficacy and growth supported by experiential learning directly impacts leadership roles' development to facilitate team outcomes (Cino et al., 2018; Nørgaard et al., 2013).

An interpretive phenomenological analysis approach to this study was taken to assess faculty member's previous experiences participating in or facilitating IPE experiences. An improved understanding of experience and faculty perceptions further defined the culture of IPE activities within the study university and led to concluding recommendations for improvements and development of support structures to enhance IP learning experiences and faculty development.

Research Questions and Design

The need for integration of interprofessional education within undergraduate and graduate healthcare curriculum continues to be a rising concern with the accreditation bodies and drives the need for support internally for improvements and integration within current health care programming across undergraduate and graduate course work. The improved interprofessional preparation will work to support the need for more collaborative clinical work in IP health care teams to maximize patient outcomes and overall clinical care (IPEC, 2011). The current research limitations note that more information is needed to determine the application and efficacy of assessment measures with the didactic healthcare curriculum. The focus of this study further investigated the Self-Efficacy Model in an aim to unpack the anthropomorphic approach assessing the use of self-efficacy as a whole rather than specific outlined competencies to maximize team outcomes. The assessment of self-efficacy, including reflection of one's role within a larger interprofessional team, is essential in tailoring a growth plan for health care students as they continue to build upon their knowledge and skills throughout their curriculum (Cino et al., 2018). This inquiry was answered through the following research questions:

- How do health science faculty facilitate inquiry and reflection techniques to build self-efficacy when working in team-based activities in undergraduate and graduate curricula?
- How do health science faculty describe best practice evaluation of interprofessional critical thinking skills and self-efficacy?

The design took a phenomenological look at the experiences of faculty in their application of IPE and assessment methods. The focus on the phenomenon of self-efficacy and what factors may support the development of self-efficacy was derived within the interview process. This

understanding of self-efficacy and the experiences highlighted the behaviors, success and pitfalls that faculty encounter when engaged in interprofessional education and assessment.

Site Information and Participants

When evaluating the academic site, the researcher examined the multi-dimensional roles within the colleges and graduate programming and the link to undergraduate programming that facilitates health care education. There is a limited investigation into the impact of existing interprofessional programming and how improvement projects are supported. General recommendations for the focus of IPE experiences and coursework can include introducing professionalism, roles and responsibilities, teamwork, communication, ethics, and collaborative practice (Barr et al., 2016). These are best utilized when built upon in a continued learning sequence with increased experiential exposure to improve the quality and safety of patient care; however, there is no standardization on how this should be applied (Lapkin et al., 2013).

The target site university values high-quality programming with focus on student environment, and commitment to community partnerships. With these core values and the need for increase IPE, the Center for Interprofessional Healthcare Education (CIHE) was established in 2012. The mission is to offer innovative opportunities for students in the Schools of Health Sciences, Medicine, and Nursing to learn and practice together, identify effective and efficient delivery options, and understand and enhance each other's clinical skills. This establishment provided an answer to many of the gaps within the interprofessional curriculum. Many opportunities that have been offered include team learning with mannequins and standardized patients, the student ethics committee, interdisciplinary grand rounds, clinical rotations, and a student-run, pro-bono clinic. These opportunities, however, are limited and not extended to students within their undergraduate coursework. The CIHE is limited in faculty involvement and

advancement within actual curricula changes because they are not inspired by the leadership to change.

As the center has evolved, leadership has adopted the Interprofessional Core Competencies for Collaborative Practice (IPEC, 2011) to guide the building of experiences. The IPEC collaboration sees a continual transformation of education to support interactive learning and support "deliberatively working together with the common goal of building a safer and better patient-centered and community/population-oriented US health care system" (IPEC, 2011, p. 3). While the concepts behind this are essential, there is limited research into how putting different groups of students together within different parts of their curriculums, what the best types of programming are, and how this assesses and enhances the progression towards this common goal best.

There are currently 1,891 undergraduate students enrolled across 11 programs and 720 graduate students across 11 programs as a part of the School of Health Sciences. Full-time faculty, administration, part-time adjunct faculty, and graduate assistants support these programs across two campus locations (National Center for Educational Statistics, 2020). However, the challenges are ever-present in the competing accreditation bodies, other university curriculum standards, and high-intensity clinical integration requirements across the varied programs (Zorek & Raehl, 2013). Further development of programming needs to occur to allow for increased accessibility outside of course work and increased integration within didactic responsibilities. Increased collaboration across health care programming needs to occur to determine crossover areas and opportunities for continued interaction of different student groups (Schmitt et al., 2011).

With the critical need for healthcare advancement, instilling interprofessional collaborative principles early within a student's college journey is imperative. Leadership within the CHIE need to hold all health care faculty members accountable to demonstrate application and assessment of IPE throughout all coursework and encourage program development for increased experiential and learning service activities. This change in framework needs to challenge the process of existing curricular frameworks, inspire a shared vision and demonstrate the needs to prepare better clinicians, and enable other faculty to act and engage with each other for best outcomes (Kouzes & Posner, 2003). The integration and establishment of IPE in the undergraduate curriculum stands at the forefront of what is needed to make the best impact in the future careers of our health care students (Earnest & Brandt 2014).

Sampling Method

Faculty members across all programs were contacted regarding study activities to those currently involved in IPE creation and implementation in partnership with the CIHE and own curricula. Invitations for qualitative interviews were transmitted via email to fifty faculty members. Interviews were scheduled with a criterion sampling method to derive data from key faculty stakeholders in all major healthcare programs across graduate and undergraduate campuses. This inclusive view provided information on the breadth and depth of how IPE is implemented at the study site.

Instrumentation and Data Collection Procedures

Qualitative interviews with faculty members were completed with ten participants; this number was determined to be sufficient to provide multiple perspective representation from all departments involved in IPE within the target university and allow for generalization across the departmental curriculum. Interviews were one-on-one, semi-structured live interactions

completed via an established interview protocol utilizing virtual video conferencing technologies. Interview protocol noted in Appendix A. Interviews were completed in a single round lasting less than 45 minutes and recorded to allow for transcription and coding.

Consent was obtained from interviewees before the scheduled interview. Qualitative interviews provided holistic account of faculty perception of IP activities and their impact on student development. The interview process allowed participants to provide historical information about past IP teaching and experiential learning opportunities and perceptions of best practice applications. The semi-structured set-up of the interview allowed for a first-person description of experiences and for flexibility in the use of questioning probes as needed to provide in-depth and personal discussion. Interviews were completed over Zoom videoconferencing platform and recorded with the use of embedded recording and transcription features. Interview transcriptions were presented to individual interviewees to allow for member checking for any further clarification. Transcribed interviews were then cleaned and reviewed by the researcher to ensure any identifying information is not present. All audio files and transcriptions were stored on a password protected computer and only accessible by the primary researcher. Transcriptions, notes, and recordings will be deleted within 90 days of collection. Data saturation was determined to have been met following the ten interviews when there is enough data to ensure the research questions and the ability to obtain additional new information has been maximized (Bowen, 2008).

Data Analysis

Data analysis followed a structured process presented by Smith et al. (2009) to address three main components: searching for themes, connecting identified themes, and analyzing themes across cases. Interview transcriptions were read and re-read to make an initial notation of

themes. The emerging themes were identified and isolated as codes. Codes were then grouped based on setting, perspective, processes, activities, strategies, and relationships to allow for a complete review and exploratory emergence of themes. Groupings were edited for redundancy and analyzed to determine results and conclusions. Connections across thematic codes were investigated and process was repeated with each interview. Once initial coding was completed within all interviews; patterns were analyzed for further connectivity. The analysis of the phenomenon and culture surrounding IP experiences within the target study site included self-efficacy assessment and relevance. Standards for qualitative validity and reliability were maintained throughout all data retrieval and analysis to maintain anonymity and decrease bias with standard interview protocol. Member checking was performed to review the accuracy of findings in interview themes and generalized phenomenological analysis in a follow-up interview with participants (Candela, 2019). The data's interpretation was then summarized, looking at generalized perceptions, noting limitations, and providing recommendations for future research (Smith et al., 2009).

Limitations of the Research Design

Limitations impacting the application and assessment of interprofessional health care education noted at the target university site were consistent with the findings within the literature review including lack of consensus in assessment and variable faculty participation. The application of interview-based investigation was challenging in its ability to generalize to the wider populations but provided insight to the target university as a needs assessment and guidance for further development of IPE. The sample size is another limitation within this research incorporating responses from direct interviews from faculty involved in IPE activities. This smaller sampling will impact the ability to generalize the results based on the target

university's whole and how it impacts curricula throughout the entire academic year. The key stakeholders interviewed within the process demonstrate a small subset in faculty participants, but portrayed representatives from across all major healthcare programs. An additional potential limitation may have been the interviewees' willingness to be fully open about their experiences with IPE, however from the data generated, the faculty members had clear opinions on the need for self-efficacy assessment and recommendations for IPE best practice. A standard interview protocol was utilized to maintain consistency within the testing period and encouraged unbiases questioning. Data collection sources other than interviews will be limited due to the current global climate and may negatively impact overall credibility. Multiple methods may not be compared to provide the most comprehensive picture of the phenomenon associated with IP learning activities. This limitation in credibility will also have a direct translation to the limited transferability to other universities and colleges and future IP activities at the target study site. These limitations, however, will provide insight into future areas of research.

Ethical Issues in the Proposed Study

All interview participants were provided with an informed consent form and invitation to participate in the primary research. Invitations to participate in the interviews included information regarding the study's purpose, primary research questions, procedures, and confidentiality statements, along with the contact information for the lead investigator to provide any further information as needed before agreeing to participate. Confidentiality was maintained with the use of a single primary investigator to collect and analyze the data. All data was anonymized by the primary investigator prior to coding to maintain confidentiality. With the use of coding and sanitizing data for confidentiality, the risk of participation for subjects was minimized. The information was generalized within the undergraduate and graduate level of IPE

application to minimize the identification of respondents and provide further benefits and insights on how best to provide future improvement and assessment of educational modules for the variable student programming. Issues regarding a personal connection to participants were minimized using informed consent, standardized protocols, and data collection techniques.

Conclusion

There are many expectations for faculty to uphold the highest standard of education, meet accreditation requirements and challenge students to better themselves for their future careers. To understand the changes needed in clinical training, the faculty at the target university must reflect on the application and efficacy of the interprofessional healthcare education in current use (O'Neil & the Pew Health Professions Commission, 1998). This reflection on the current application will provide a better understanding of how IPE is integrated across the undergraduate and graduate curricula. Through the use of qualitative interviews, the researcher aimed to gain a more inclusive view of IPE and answer the research questions inquiring about self-efficacy, assessment, and best practice.

CHAPTER FOUR: RESULTS

This study aimed to understand the current iterations of IPE and how it encourages

student self-efficacy development. The assessment of self-efficacy, including reflection of one's

role within a larger interprofessional team, is essential in tailoring a growth plan for health care

students as they continue to build their knowledge and skills throughout their education (Cino et

al., 2018). As faculty members across the undergraduate and graduate healthcare curricula are

charged with developing these behaviors in students, the researcher determined the faculty would

be the focus of the interviews and analysis. The interpretive phenomenological analysis was

determined to be the most appropriate study design to capture the faculty members' lived

experiences and perceptions of creating, facilitating, and assessing IP experiences at the target

university (Smith et al., 2009). Invitations for interviews were sent via email to 50 faculty

members who are currently engaged or were previously engaged in interprofessional activities at

the university (see appendix A). Email responses from interested faculty were received by the

researcher and reviewed. The researcher ensured purposeful sampling by selecting the final

interviews from a convenience sample noted through interested faculty grouping. Ten qualitative

interviews were completed representing faculty from across all major undergraduate and

graduate healthcare programs at the study site.

Analysis Method

The interview questions were based on the two primary research questions and were

designed to help the researcher better understand the experiences of the faculty members in these

roles.

- How do health science faculty facilitate inquiry and reflection techniques to build self-
  efficacy when working in team-based activities in undergraduate and graduate curricula?

- How do health science faculty describe best practice evaluation of interprofessional critical thinking skills and self-efficacy?

The initial research question looked at the application and facilitation of self-efficacy in IPE activities. The second research question sought to inquire about assessment activities to give further insight into student self-efficacy development. These questions led to the further development of interview questions inquiring on the unique background, engagement with IPE, institutional perspective, departmental and programmatic perspectives, and assessment measures. Before the interviewing process, all willing participants were provided an informed consent form to review and return before scheduling (see appendix B). A standardized interview protocol was utilized (see appendix C). All interviews were conducted online, recorded, and transcribed using Zoom web-conferencing software. The researcher reviewed transcripts, and each interviewee was provided with a copy of the transcription for review to provide any further clarification within the member checking process before analysis of data (Bloomberg and Volpe, 2016).

Participants

Ten qualitative interviews were performed with faculty members across both undergraduate and graduate programming. They included representatives from general health sciences, physical therapy, occupational therapy, nursing, pre-medicine, and physician assistant programs. All interview participants agreed to participate and engage in open discussion, have the interview recorded, and provided consent at the interview was scheduled. Each participant is described below in Table 1, identifying their departmental association, clinical background, and level of involvement in IP activities while maintaining anonymity. The interviewed faculty members were chosen from a grouping of those currently involved in IPE creation and implementation at the study site. The criterion sampling method was performed to derive data

from key faculty stakeholders in all major healthcare programs across graduate and

undergraduate campuses. Review of programmatic and departmental backgrounds was reviewed

and taken into account when confirming and scheduling interviews to ensure representation from

the key programs to provide the breadth and depth of IPE involvement needed at the study site.

Table 1

Participant Descriptions

Participant	Department Association	Clinical Background	Years in Academia	Engagement in IPE
1	Graduate OT	Occupational Therapist	14	• pre-clinical coursework • large-scale IP events
2	Undergraduate Health Science	Physical Therapist	12	• interprofessional capstone research course • research with undergraduate students.
3	Undergraduate Pre-Med	Ophthalmologist	19	• interprofessional capstone research course
4	Graduate and Undergraduate Nursing	Nurse Practitioner	12	• pre-clinical coursework • large-scale IP events
5	Graduate PA	Physician's Assistant	5	• interprofessional capstone course • research with undergraduate students.
6	Undergraduate OT	Occupational Therapist	6	• large-scale IP events with CIHE • research with undergraduate students.
7	Graduate PT	Physical Therapist	11	• pre-clinical coursework • large-scale IP events with CIHE • research work graduate students
8	Undergraduate Health Science	Radiologist	21	• interprofessional capstone research course.
9	Undergraduate Health Science	Respiratory Therapist	7	• interprofessional capstone research course • multiple other health science pre-requisites.

10	Graduate and Undergraduate Nursing	Advanced practice Registered Nurse	11	- pre-clinical coursework - large-scale IP with CIHE - research with undergraduate students

Synthesis of Findings

The completion of the interview process highlighted significant differences between all participants engaged in IPE. While the participants' inclusion criteria required all faculty to have experience with IPE activities, there were substantial variations in faculty level of involvement, level of experience, and level of IPE's relative importance. The interpretation aligned directly with the expected variation noted in the literature review (Hall & Zierler, 2015). The participants' backgrounds varied in their academic and clinical involvement, limiting the researcher's ability to generalize engagement across departments and programs; however, it highlighted key differences in accreditation requirements and programmatic value. This variation in IPE teaching experience, engagement across campus, and community engagement stemmed from each participant's clinical background and previous work on multidisciplinary healthcare teams, as well as the workload responsibilities.

The participant activities represented an array in IPE application within individual coursework and across departments as part of a more extensive department, programmatic, or university-wide activities. There was no standardization on the types of events, the IP competencies examined, student groups' stratification, or assessments utilized. However, the researcher noted a consensus on the need for more behavioral-based assessment compared to current competency evaluation to further assess student development.

Overall, most faculty reported a strong desire to be more involved and engaged in IP activities. However, obstacles including time, resources, departmental leadership, and

institutional support dampened enthusiasm. Frustration with the lack of overall institutional leadership to reach IPE goals was apparent and hindered faculty advancement into IPE leaders. One participant noted that "there is an expectation put forth by the institution to do these activities, but no one is helping us try to accomplish it or giving insight into how they want it done. It's mostly outside of our workloads, so it does not get as much attention as it deserves" (Participant 8). Many faculty members noted the struggle as they understand IPE's value but feel unsupported in bringing best practice to fruition.

There were significant differences in the value of IPE activities from a programmatic perspective, whether through accreditation requirements or department chairs' expectations. Some faculty noted that they have specific department workgroups assessing the individual course syllabi to look for areas to evaluate and apply IP principles, where other programs do not have these review structures in place. Some faculty reported having IP integration responsibilities built into their general workload, while others noted it was expected but was extra work. In this notion, most faculty participants noted little consideration from their program directors for those who go above and beyond to improve IP activities when looking at annual review and tenure. Many faculty participants reported interest in stepping up into a larger role to promote IPE activities; however, they felt ill-equipped or unmotivated. Participant 7 noted, "I would love to take this on for our department, but I am already spread so thin with my research, committees, and advising". The time and energy spent working on these IP projects did not positively impact career development or support their tenure process.

This frustration carried over to the expectations and use of assessment related to IPE. Participant 1 commented, "We use these assessments in an event, but never hear about how they compare to last events or similar activities, without the comparable data, it just seems like a

waste of time". Significantly few participants noted actual tangible support for the development and training of IPE within their departments. Assessments were described as very important; however, multiple interviewees felt like they did not know what assessments were the most appropriate to use per each event or activity or what other departments were using to have better carryover. Participant 6 noted: "we just need time - time to get together, time to discuss, time to plan, time to analyze, and time to reflect on all that we currently do and need to do – but there is no extra wiggle room or support for this time to be set aside". Interviewees noted that specific professional development could be geared towards assessing, learning about evidence-based methods, and integrating within established coursework or IP activities. The participants discussed additional institutional development opportunities and included a review of assessments and board creation for change processes as essential in developing student self-efficacy, supporting overall IP aims, and best health outcomes.

Discovery of Themes

Following the transcription review, the analysis was performed by re-reading, identifying keywords and phrases that are repeated, categorizing responses, and consolidating categories. A uniform approach was then taken to analyze themes utilizing a template provided by Bloomberg and Volpe (2016). The analysis was derived from the primary research categories identified within the interview questions, including personal background, engagement with IPE, institutional perspective, departmental and programmatic perspectives, and assessment measures (see Table 2). The template provided a statement of a theme, an overview of the meaning or phenomenon, findings associated with the body of evidence, specific participant perspective to support the theme, and the researcher's reflection resulting in concluding statements (Bloomberg and Volpe, 2016). The template provided a foundation for thematic analysis. The keywords

found within the review of transcriptions were aligned at the top of the table, and each interview transcript response was reviewed and aligned below the appropriate category. Each of these categories was then reviewed and re-grouped with related concepts found in the interview responses to identify major thematic threads. The transcripts were then re-reviewed, and each interview response was categorized accordingly based on the themes. Overall, the themes were reviewed, noting similarities in responses, words, and phrases to support themes further and condense coding within the naming process. The researcher decided to present the findings through a qualitative narrative to highlight the faculty member's experiences involved in interprofessional education.

The first research question aimed to evaluate what brought the faculty members to work within IPE and their own experiences on what works best. The interview questions aligned under the initial research question also targeted the faculty level of engagement with IPE activities and the techniques they embedded into the activities to best drive student inquiry and reflection regarding complex health issues and healthcare team connectedness. The second research question and the associated interview topics looked for further insight into the faculty perceptions on best practice. Best practice opinions described how the education could be the most effective, what barriers or supports are available to complete this approach, and the most appropriate assessments needed to demonstrate student growth and engagement with IPE competencies to prepare them for their future healthcare careers. The research questions aligned with the themes and drove the thematic groupings for each category. Quoted responses were grouped within appropriate tables along with themes noted below in Tables 3-7.

Table 2

Breakdown of Research Questions, Categories and Themes

Research Questions	Categories	Themes
How do health science faculty facilitate inquiry and reflection techniques to build self-efficacy when working in team-based activities in undergraduate and graduate curricula?	Individual Background Engagement with IPE	Clinical Team Communication
		Competency vs. Behavioral Focus
		Structural Obstacles
		Instilling Life-long Learning
How do health science faculty describe best practice evaluation of interprofessional critical thinking skills and self-efficacy?	Institutional Perspective	Leadership
		Champion for Change
	Departmental/Programmatic Perspective	Academic Silo
		Role and Responsibilities
	Assessment Measures	Purposeful reflection

Categories and Themes

Individual Background. This category area was identified through the initial interview background questions highlighting the participants' educational and clinical backgrounds. The interview questions inquired about the participant's background at the university and their current workload with academic and clinical responsibilities. The initial probes also highlighted the participants' definition of self-efficacy and interprofessional education. The discussion on the definition of interprofessional education relayed back to each participant's own experience working in the clinical healthcare arena. These clinical experiences were reportedly the foundation of their involvement in IPE activities and provided real-life experiences and reflections to share with the students. One of the initial background questions, "How are you involved in interprofessional education and assessment at the university?" aimed to highlight the variability in participation and activities currently in practice across graduate and undergraduate programming. While academia is the primary role for all the faculty members interviewed, many

noted the importance of their clinical practice and the influence it has on their teaching, "I do a weekly rehab team meeting for my clinical job which, you know, I'm still a small part of in my per-diem role, but I think there's good in that, it is normalized – to have these real-life normal team experiences to share" (Participant 4). Participant 6 noted the inclusion of their own clinical experiences help to decrease the bias and hierarchies that are present in the healthcare environments.

> I remember that feeling coming out of school that my profession may not have the same value as others that I worked with at the hospital, so I want to change that view for my students – I want the occupational therapy students to enter the field knowing how they can contribute into these into professional situations without feeling as though they are at a lower level on the totem pole - it's imperative.

The IP learning activities are chosen to drive a student's understanding of their own role and responsibility in advocating for their future patients. The experiences shared by the faculty provide examples for students regarding patient and team interactions. Many of the interviewees noted that they get positive responses from the students when they share these experiences and are able to model reflective behaviors when describing real-life episodes. Additional examples of participant responses are represented in Table 3 below.

Table 3

Individual Background Category

Theme	Participant Perspective
Clinical Team Communication	1: "It's great to be able to have students out of the classroom and in the clinical areas to observe and see the faculty model behaviors needed to work in teams, but those opportunities are limited." 2: "I think there is good buy in from those who are still working in the clinical fields, but maybe not as much as with the non-clinical faculty." 7: "I always look at it from my own clinical experience. I've always been a part of an interdisciplinary team. I am always looking at it from a team perspective and I treat the students as if they're actually practicing in their fields." 9: "I feel like it comes within practice, but with IPE I want to help students or therapists work with other health care providers and practitioners on providing clinical care or education to an individual or a population." 10: "I try to have the cases I incorporate tell a story that evokes some emotion, I hope the students hear them and take that to heart and fully understand for important their team is to the success of their patients. I give them real life examples about how I call on my rehab team daily when at the hospital and work to advocate for my patients in rounding with the doctors."

The theme identified from this discussion tied the faculty member's perception of IPE importance directly to their clinical work and participation in team-based activities in the workplace. The majority of interview participants spoke to their work within the clinical healthcare settings to be significantly beneficial to develop teamwork principles in students. These experiences were helpful to weave into case-based discussions and instill the importance of communication to the students. This sharing of clinical experiences provided the opportunity for faculty to model reflection of their own lived experiences. However, multiple respondents noted challenges regarding how to replicate feelings/behaviors associated with this partnership without having the students in the actual clinical healthcare setting. Multiple faculty members reinforced the importance of simulating these experiences in both graduate and undergraduate

programming. The majority of faculty noted that the behaviors they were able to emulate or express through clinical scenarios were essential in laying the groundwork for student behavioral growth through mentoring and modeling.

   Engagement with IPE. This research category includes faculty members' overall IPE engagement, including perspectives on set-up, successes, and pitfalls. The main themes derived from this category focused on the competency or behavioral-based frameworks, systematic and structural obstacles that impact outcomes, and IPE's overall goal in instilling life-long learning. Further discussion following inquiry on the participant's definition of IPE led to discussing how teamwork skills are built and assessed within activities. The participants spanned across the undergraduate and graduate programming and provided similar viewpoints on instilling behaviors to engage students with their learning process. When the researcher asked what types of assessment techniques tell the interviewee the most about the student learning; the descriptions were varied within competency base, theoretical based, and behavioral-based assessments. Participant 2 noted:

   There needs to be both behavioral and competency-based assessments in the framework

   of these activities and really may need to start with behavioral to set a good foundation on

   student awareness in the early years – like students may not know about their own

   behaviors that may impact their eventual competency level due to confidence and

   leadership issues.

The natural development from behavioral-based assessment to competency-based assessments was highlighted by a few members and provided further insight into how assessments can be scaffolded to show growth. One faculty member stated, "Can't really use competency-based right at the beginning, because the students don't know anything – and they have no awareness

of what they don't know, so I think we have to teach them how to inquire and reflect on that"
(Participant 3). A further probe in the interview highlighted the utilization of observation, survey,
guided reflection, and objective testing across the respondents. Competency-based objective
testing was overwhelmingly mentioned as the normative. However, many respondents noted this
approach was less helpful in understanding skills development or where a student may struggle
to build confidence with team-based activities. These comments reflected the perceptions of best
practice related to one of the initial research questions: How do health science faculty describe
best practice evaluation of interprofessional critical thinking skills and self-efficacy? Other
notations on best practice included the need for more comprehensive resource collection of
information on past events, assessments utilized, and review of activity effectiveness to support
further development or optimization as needed.

The interviewees were asked directly about the current application of activities, including
what significant challenges the department faces in attempting to change teaching, learning, and
assessment practices, what significant opportunities are present, ideas on how barriers can be
overcome, and what requirements of your program or accreditation delegate the inclusion of
interprofessional learning within your curriculum. Within these questions, the theme of
systematic and structural barriers was evident. One faculty member stated a common barrier
associated with faculty engagement was "Time always seems to be one of the biggest issues – I
know a lot of other faculty who want to get more involved, but there isn't time built into our days
to really work on these projects" (Participant 10). Time, budget, workload, conflicting schedules,
lack of support, space allotments, and willingness were the most common barriers identified.
Throughout all of the interviews, the discussion of life-long learning was a strong theme.
Participant 4 exemplified this commitment to learning by saying, "Hopefully we teach them that

love of learning, again, it's a continued growth process and they'll use it forever, but they have to put the work in to reflect on their own skills throughout".

The impetus of what drove many interviewees to their current positions and their level of involvement with IPE was an apparent need for continued self-improvement and understanding future healthcare demands. One faculty member described a career in healthcare much like a journey that changes each day, with each experience, and each patient encounter and outlined the faculty role as, "Teaching them self-confidence or the journey to work towards that is part of our role, while not explicitly stated, it is so very important to prepare them to be confident in how they deal with situations" (Participant 8). Many faculty members described their IPE involvement at the university continued to be enhanced with their concurrent clinical work and as they engaged in more extensive group activities with like-minded faculty. Many referred to decreased willingness to add additional responsibilities as a barrier impacting the forward movement of the university's IP mission.

The agreement that healthcare is everchanging and all health professionals must commit to learning and improvement was noted. A consensus on best preparing students to be dynamic learners was illustrated by a statement from Participant 9, "That self-efficacy is so important so they can feel like they can be effective in a changing situation, because every day in healthcare is different". The consensus of the awareness of one's own understanding of self, confidence, and ability, as noted traits of self-efficacy, was described as an essential skill for a student to gain before moving into the role of a healthcare professional. Additional examples of participant responses are represented in Table 4 below.

Table 4

Engagement with IPE Category

Theme	Participant Perspective
Competency vs. Behavioral Focus	1: "I look at self-efficacy as understanding, knowing, having confidence and just getting it." 4: "Theory and behavior before competency. And I suppose behavior then comes first and then I try and water it with theory and then fertilize it you know with the competency. I guess competence comes last for me because they're all smart and I can get them to be skilled in capable." 5: "I think there are mixed views because I think it depends on how it is presented, and if it's really focused on one versus the other. I think when students have more competency specific activities that they have to do. They're really good at going and checking off the boxes and feeling accomplished with that. But then they can translate that across settings or experiences because they don't really know how they did something or how they reflected on it." 7: "That if we tell them where assessing sometimes - they fake it till you make it - that sort of thing, but they don't actually build skills."
Systematic and Structural Obstacles	1: "I think that that's a piece that we need to explore more - like what comes first, do you identify the assessment tools or the programs or do you get by in common time and then work together to develop these programs?" 5: "There is a lot of work with getting students together in the mixed team groups as undergrads in the foundational sciences and capstone classes, but then heading in the individual grad programs they are siloed again." 7: "The set up can be challenging you can set up a meeting with OT, PT speech and pharmacy students to discuss a case – they all score that they attended activity and may give a score to a reflection piece - but what was the quality of the interaction that occurred in that moment versus the doing of the tasks?"
Instilling Life-long Learning	3: "They (the students) don't know what they don't know, and they will have to figure out to tailor their learning path with continuing ed once graduated, so we should start that process now." 5: "The experiential knowledge they get when working together really aids them in their motivation to continue to be open to more learning." 10: "We can't expect students to know what to always do when something goes wrong, but we need to show them how to look back and reflect on the situation to find that answer themselves."

A consensus was provided that most IPE activities in current practice are directed at building and assessing specific competencies rather than instilling behaviors associated with self-reflection. However, many participants noted that instilling the behaviors and teaching students how to inquire and reflect on their performance is imperative and should be a foundational skill. While not explicitly stated in the interviews, the overwhelming majority of participants noted that students need to develop self-efficacy to be useful for a healthcare team. The faculty perceived that self-efficacy is the missing component causing many students to lack the awareness, confidence, and motivation to step into these team roles. Without this level of self-reflection, the students are limited in their ability to translate skills across the dynamic nature of multiple healthcare scenarios and settings.

Many structural obstacles were noted, including time, space, budgetary, and resources. These factors all impact faculty members' ability to get students together to initiate team-based conversations and build upon their skills through experiential learning. While the learning environment is quite different in our current COVID-19 pandemic environment limiting the physical grouping of students adding to a challenge, the overall scheduling and alignment of coursework were noted to be one of the most significant factors in getting students together. One participant noted the opportunity for increased use of technology for getting students together in groups without actually needing them in the same physical space. Alternative possibilities for engagement using these technologies need to be investigated further. A structural advantage included the study site's Center for Interprofessional Healthcare Education (CIHE) as a home base for this type of teaching; however, many opportunities were discussed to encourage increasing faculty participation and engaging in assessment-driven improvement projects. Representatives teaching in undergraduate programming also reported their students having

limited access to larger-scale IP events that have been traditionally focused on students in clinical graduate programs.

All participants noted that understanding self-efficacy is a strong foundation for instilling a passion for life learning and continued professional improvement. Multiple participants noted that teaching this reflective behavior may be challenging in the current IP application. The majority of participants agreed that it is vital to teaching student self-efficacy, confidence, reflection, and leadership skills. There was significant agreement that learning self-efficacy and reflective practices would allow for more preparation, skill consolidation, and applicability in the setting, regardless of the conflicts or external obstacles. It is imperative to embed this personal inquiry journey throughout undergrad and into graduate work to best prepare students to take on future clinical team roles.

Institutional Perspective. The category identifying the institution's impact and role or the study site highlighted themes surrounding the leadership and the change needed to support IPE principles for best health outcomes. Participant 10 described the disconnect by sharing,

I wish more of the university leadership would join and see these student groups in action when we do the IP events, It's so awesome to see the students make genuine connections – teaching and learning from one another. If they saw it in action, there may be more of a push to devote the time needed.

The researcher inquired explicitly about the programmatic and accreditation requirements for each of the major healthcare programs, how the IP activities are lead within each department, and how IP activities are valued at the university as a whole. Further inquiry on how IPE teaching activities are evaluated within each department and how it is valued compared to other faculty duties varied significantly based on programs and departmental leadership. Many

interview respondents noted that interprofessional health education teaching and assessment are
significantly valued across their discipline in the clinical realm. However, that same enthusiasm
and high regard are not translated to the application for students in academic coursework or
experiential learning. One participant described the lack of communication from the
administration, "Our program has been recognized as a leader in IP education with the CIHE. So,
I would say it's definitely highly valued within the university, but it's not really clear how this is
used to support the faculty doing these activities or build on our successes" (Participant 9). Many
other participants also noted that it seemed like there were many good resources available, but
lacking guidance on how to use them and how to use assessment to guide improvement projects.
Additional examples of participant responses are represented in Table 5 below.

Table 5

Institutional Perspective Category

Theme	Participant Perspective
Leadership	1: "There has been some movement overall to really try to have specific days or day where no courses take place so that we can actually have common times to look and explore possibilities across programs, but there is push back on this as well." 7: "That same level of commitment is needed, you definitely need it across all departments to as well as in the higher leadership and administration, which is always a challenge because the higherups don't' really understand how important this is to build future clinicians." 8: "I think if leadership could clearly identify - like 'These are five things must haves in an event', perhaps would help to get people to buy into getting involved."
Champion for Change	6: "But what is benefit to the faculty? What is the benefit to the student? What are they going to get out of it? If it is not clearly identified it's hard to get people on board." 8: "I think there is a lot of hesitance to work on pulling people together to collaborate because they don't know where to start -like what or who to include in the event. What assessment is associated? Is there a rubric for specific skills like this?"

Two of the respondents specifically reported that the university leadership and administration have vocalized understanding the importance of IP activities for student engagement; however, the actual provision of support to design, implement, and assess the events has been limited. While it seems as though these activities are valued by leadership, there is no significant push towards budgeting for increased training or accommodation for time and space needs. Many respondents noted a disconnect with leadership in understanding the amount of work needed to plan and facilitate high-fidelity activities. Many respondents also reported a lack of clarity from the administration on how IP activities should be laid out and how they will be assessed. Multiple interviewees noted the CIHE provides an essential hub, but there are opportunities for improvement. A more transparent mission and vision should be displayed by leadership to support opportunities to collaborate within typical work responsibilities and provide faculty incentives to participate in these activities. While all of the interviewed participants are actively involved in IPE, many noted that their colleagues do not actively engage in activities, lacking the willingness to add additional responsibilities to their current faculty roles. Participant 4 noted, "There is definitely more faculty engagement when there is clear organization and having things - laid out almost like a manual per se and provide more strategies for assessment". This need for organization and support structures was echoed by many other faculty members interviewed.

Departmental and Programmatic Perspective. Analysis of the departmental or discipline-specific programming, additional themes of the academic silo, and faculty roles and responsibilities were revealed. Further probing into the questions regarding the responsibility of IP application within and across programs emphasized the variability between the undergraduate and graduate programming and the faculty role for IPE success. One faculty member identified

the barrier associated with regulatory requirements limiting multidisciplinary integration,

"Everyone's degrees and requirements are so different, especially with accreditation, so one

program may use a specific assessment, but may not be used across other healthcare programs"

(Participant 1). This variability was noted as a deterrent to devoting larger chunks of time to IP

activities as it can interfere with programmatic needs. The researcher used this opportunity to ask

more regarding the participants' opinions on what types of faculty development is needed and

what other supports are required for successful student development. Examples of participant

responses are represented in Table 6 below.

Table 6

Departmental and Programmatic Perspective Category

Theme	Participant Perspective
Academic Silo	2: "It is a challenge to get buy-in from other departments, everyone has their own responsibilities for each program so to add extra stuff on – it gets difficult. It becomes workload issue – need someone to own working on that standard as the IP guru for the department and organize events, create guides, and oversee assessment to support all other faculty to participate." 10: "When in our departments, we are in our one world sometimes, keeping up with accreditation and clinical competency needs that it's hard to know what all the other programs are doing, we need to take a step back sometimes and see that we are covering like topics and it may give new opportunities to collaborate."
Role and Responsibilities	2: "Faculty need to be able to model this confidence and practice of reflection for the students to see. Sometimes I wonder if it is valued speaking with my colleagues, some of the courses there was not a significant investment to focus on the IP activities from the faculty." 4: "There's a lot of programmatic restrictions and what can be done with your own faculty load or other activities. The courses that I teach are clinical based. I think that gives me an advantage as well to talk to the real team experiences, maybe some of our other faculty who are not clinical faculty." 6: "There is always room for faculty development, but there is not always time to actually get it done with other primary responsibilities. From a colleague perspective - there isn't as much support for the value in balancing workload to help organize or facilitate the IP activities, but it's valued from other colleagues across disciplines and interest in you are doing."

The disparity of organic engagement in mixed-discipline groups is very evident between undergraduate and graduate programming. Many faculty members highlighted all the opportunities for getting students to work in interprofessional groups due to undergraduate programming's nature and flexibility. A conflicting factor in the graduate setting is noted in the standards set forth by discipline-specific accrediting bodies. The accreditation requirements have a significant impact on credit hours, time constraints, and faculty workloads. One participant noted, "Each one of the programs have their own accreditation requirements, we have to show where interprofessional education happens within the curricula framework and outcomes tied to it – but that is not necessarily weaved the same in the other programs" (Participant 8). All graduate-level health programs must demonstrate some level of IPE within their curriculum; however, no specific standards on how this should be implemented. There is a lack of clarity in the departmental requirements for what competencies or behaviors to focus on, frequency and duration recommendation of events or activities, recommended feedback mechanisms, or assessment to determine effectiveness. It was noted that

> While it seemed like there was move of a push when the CIHE was developed, there is
> still a lack of integration across all general curriculums. Not sure whether it is faculty
> burnout or fatigue or just sheer numbers that they would be dealing within classes and in
> these larger events. (Participant 5)

While IPE teams aim to bring all disciplines to the table on an even playing field, the bias of historical hierarchal roles within healthcare remains and can impact participation and understanding of value. Many respondents feel that they do not have all the skills needed to facilitate the IP experiences or utilize appropriate assessments as required. Participant 3 stated, "Faculty need the tools to be able to assess this development to be responsive to student's needs.

There are also barriers like time and conflicting responsibilities to work as a faculty team on these skills." There was a consensus from the participants that they had limited knowledge of a specific review available to show change or benefit to carryover between programs. Without detailed summative feedback following current IP activities, many faculty members noted challenges in understanding the value and need for carryover. Those faculty who understand and support IPE's importance still report significant challenges in balancing the development and facilitation activities with existing workload responsibilities. One faculty member noted that they were expected to participate in IP activities; however, it does not explicitly support her tenure and advancement activities, adding increased burden when balancing with other activities.

Assessment Measures. The assessment measure research category investigates the themes associated with current practice frameworks and the application of purposeful reflection following IPE activities. The researcher focused on multiple interview questions regarding the application of assessment measures within IPE. The respondents provided information on how they assess learning in interprofessional healthcare education content during IP events with mixed cohort students and within their discipline-specific coursework. The researcher investigated what assessment techniques are most helpful to see student behavioral growth and if any assessment measures are replicated through the program curricula. Examples of participant responses are represented in Table 7 below.

Table 7

Assessment Measures Category

Theme	Participant Perspective
Purposeful Reflections	1: "We use reflection a lot, however feedback tends to be more informal rather than following a specific rubric." It's much easier to build the assessments within the own course and replicate at beginning and end to show change, but there is such variability across programs it's hard to get all on board to use the same." 2: "Use both summative and formative assessments, I look for specific rubrics like the AACU VALUE rubrics, but none that are behavior specific. Overall feedback from a more summative assessment on behaviors would be great info to be able to publicize for the university as a whole. To show how great our graduates are at understanding their own development, being leaders, and supporting a healthcare team can help as a selling point when students are choosing their programs when they apply." "We have a great opportunity with the CIHE, but we don't always get the feedback from the coordinator on the outcomes of the surveys and overall feedback on the event – that may help us plan better and improve how we facilitate activities." 5: "There is a lot of research to back the use of the AACU VALUE rubrics and while there isn't one doesn't look specifically at self-efficacy - it brings in some of those behaviors like critical thinking." 6: "The types of assessments that I use a lot, including the observation, surveys guided reflections work to encapsulate some of that behavior assessment, but there is no one special one that will definitely fit that I have found yet." 8: "We assess a lot that this student can do certain skills, but to really show how well they will work in a high-stakes setting within an interprofessional clinical team - don't yet see that kind of quality assessment being done. It takes a lot more work in terms of dedicated teaching and time. It's not going to be a scantron measure. It takes hours and hours to read to the writings, stay focused and give individual attention that the students really need to learn about how to reflect and build their own development path from this." 9: "But, it's one of those things where, like, you know, does the kid have it, you know - what is "that" – it' s really - do they have confidence, and motivation to seek out the answer and can contribute to the team, but how can we measure that somehow and use it to build an environment to foster those behaviors? I do think there's, there needs to be some universal changes in the University of how we approach teaching and maybe how we assess it."

Multiple respondents noted a lack of clarity provided by the leadership of the CIHE on methods for best practice. Participant 10 shared, "I think we do a lot of assessment, but maybe not use the results as effectively as we could be. We don't always get the summative feedback from the CIHE on how the larger events go and we definitely don't do specific behavior assessments there, even if we are seeing real-time behavior changes." A lack of a unifying mission to engage the framework impacts faculty participation in larger-scale events and curricular activities. Specific landmarks need to be identified within both undergraduate and graduate curricula with a thorough assessment tied to each touchpoint. One faculty member shared how the programming structure at the university provides additional areas for assessment,

> We have a lot of programming that leads direct undergrad to graduate and it would be good to have some assessment follow them thru this journey – we have them at the university for so long that we are doing them a disservice buy nor helping them lay the groundwork to be reflective practitioners. I don't know what the other professors are doing for assessments. Having that discussion would help to determine the benefits of one versus another and how we can look at the efficacy overall (Participant 4).

One respondent noted that it might be beneficial to use the student academic advisors to assess and facilitate self-efficacy throughout the entire college experience. Multiple interviewees reported that there needs to be a transparent review process of assessments and findings from IPE activities to support the university's outcomes as a whole to determine the effectiveness.

Summary

The ten faculty members provided their perceptions of educational activities, experience with the development of self-efficacy, and thoughts on best practices related to interprofessional education. The four research categories highlighted the faculty's clinical backgrounds,

engagement at the institutional level, individual departmental roles and responsibilities, and the use of assessment measures. These categories provided a spotlight on the themes noted throughout all responses, including clinical team communication, competency or behavioral focus, structural barriers, instilling life-long learning, institutional leadership, being a champion for change, breaking out of academic silos, faculty role and responsibility, and purposeful reflection for best practice.

Reflecting on the initial research questions, faculty reported much variability in how inquiry and reflection techniques are facilitated in IPE. There was no single activity or assessment utilized by all the interviewees; however, trends including a reflective writing prompt, journaling, and peer assessment were noted. Activities included reviewing case studies, engaging in role-play, and observing real-life interactions as an IPE student team. When looking specifically at the research question investigating best practice evaluation of interprofessional critical thinking skills and self-efficacy, strong themes of standardized assessments were noted. Assessments such as rubrics and observational analysis were both discussed as essential tools that should be utilized to demonstrate growth., but they are not always applied or reviewed as effectively as needed. Needing an assessment to follow a student through undergraduate and graduate curricula was an agreed-upon notion that would help support the development and analysis of IPE activities' effectiveness.

One of the main concepts noted was the variability in faculty involvement due to many factors, including structural, time constraints, competing responsibilities, lack of encouragement from leadership, and lack of confidence. Also of note was the concern for a limited understanding of how assessment information will guide activities and practice. Another widely agreed-upon concept was the need to look more closely at instilling behavioral growth practices,

including reflection for self-efficacy development. The agreement on the importance of self-efficacy development aligns closely with the transformative learning theory (TLT). TLT describes a learning evolution that allows an individual to be more inclusive, emotionally flexible, open, able to change as imperative behaviors for success in a dynamic healthcare setting for best patient outcomes (Mezirow, 2009). While the faculty are responsible for teaching curricula based on accreditation standards, teaching a student how to be a reflective and dynamic learner should be considered a foundational skill that all other clinical competencies can be built.

CHAPTER FIVE: CONCLUSION

As put forth through the Interprofessional Core Competencies for Collaborative Practice, transformative interprofessional education is necessary to has instill team-based skills for the future healthcare clinician (IPEC, 2011). The acquisition of reflective skills related to self-efficacy is a critical foundational behavior to prepare students to work effectively and learn in team-based settings. This study examined faculty perceptions for facilitating and assessing collaborative experiences for preparing healthcare students to work together for an improved, safer, and inclusive health system.

Interpretation of Findings

The research questions within this study inquired about the facilitation of reflection techniques for self-efficacy and best practices for evaluating skill development. Throughout the qualitative interviews, the faculty reflected upon their own clinical experiences in interprofessional teams, current or historical engagement with IPE activities at the study university, and perception of interprofessional education through the lens of the institution, department, and program application of IPE assessment measures. Multiple themes include

- clinical team communication

- behavioral frameworks

- structural barriers

- instilling life-long learning

- need for institutional leadership

- becoming a change broker

- breaking out of academic silos

- need for purposeful reflection

Three main findings were consistent in the thematic analysis of the interviews. These findings provide insight for the two initial research questions opening questions for best practice for provoking inquiry and assessing growth. The findings can be described through the transformative learning theory (TLT). TLT describes how self-efficacy leads the behaviors needed for the development of a dynamic healthcare team member. Secondly, the commitment to developing reflective behavior within self-efficacy is essential to change outcomes across programs and institutions. The third finding exemplifies the importance of consistent, deliberate, and actionable assessment.

The foundation for strong interprofessional skills was shown to have a strong relationship with the transformative learning theory. Many faculty members described the concepts of self-reflection to create continued inquiry, engagement in the learning process, and flexibility in the face of conflict in a dynamic healthcare environment. While most faculty members did not describe an assessment or assignment specific to self-efficacy, they identified vital factors aligned with the definition of self-efficacy, including confidence, motivation, behavior, and understanding of the role in the social environment. These behaviors create the spark for life-long learning that is essential for the healthcare student and future clinician to continue to support the health system's ever-changing needs.

Championing a change effort across programs and the institution takes strong leadership and dedicated faculty. There needs to be a shared mission, vision, and direction outlined by the administration to direct the cause. Many faculty members interviewed reported engagement and support from the Center for Interprofessional Healthcare Education (CIHE); however, it was noted that the enthusiasm and importance of engagement were not readily transmitted across departmental or university leadership. Without this overall commitment to IP activities, faculty

feel unsupported regarding workload and resources for development. Many faculty members engaged in the facilitation of the IP activities reported feeling underprepared to ensure all appropriate competencies are embedded in the activities or specific assessment measures to be utilized.

All faculty reported the importance of consistent, deliberate, and actionable assessment; however, many discussed that capturing the development of self-efficacy is a challenge. Many also said that they do not utilize a standardized measure but rely on reflections and informal feedback to capture the student's inquiry and self-assessment. Multiple respondents inquired about specific assessment measures for self-efficacy and noted that they did not know what was being utilized across other university programs. A majority of faculty also indicated that they would like to see an assessment following throughout the undergraduate and graduate coursework, validating self-efficacy development through student reflection (Clark, 2009).

Limitations

This researcher examined ten qualitative interviews that were completed with health science faculty teaching at one study site. One limitation is that the sample size was small; however, it demonstrated stratification to represent all significant health science undergraduate and graduate programs. Another limitation was the variability in the language used to describe interprofessional education. Limitations regarding the actual current and past IP activities, objectives, assessments, and past events' results impacted the ability to create a consensus of previous practice compared to best practice recommendations. While all faculty interviewed have some level of involvement in interprofessional activities, the study did not include those not involved that may highlight further barriers or assumptions. The researcher acknowledges her own bias for the importance of interprofessional education. As a clinician and faculty member

working on both sides of the educational framework for health care students, the researcher sees the applicability in action. Strategies to minimize bias included member checking, a broad spectrum of views, and a standardized interview protocol.

Implications

The research supporting the need for interprofessional education is comprehensive and demonstrates specific benefits for patient health outcomes (Bridges et al. 2011, Earnest & Brandt, 2014). With this top priority, universities need to be held accountable for introducing and developing the IP team-based skills in competencies and behaviors to promote leadership. To best do this, the faculty have a common understanding of assessments and facilitation skills. The faculty must assess the student's readiness and self-efficacy to support development. This development of confidence, leadership behaviors, personal inquiry, and reflection is necessary for lifelong learning and effective team engagement. This study's findings highlight areas including assessment, facilitation, and leadership that are lacking and may hinder student development and effectiveness of IP programming. An IPE program's success is directly tied to the transformative learning theory (TLT) and self-efficacy that would allow a student clinician to become a dynamic healthcare team member.

Recommendations for Action

While there is notable agreement on the four main IPEC competencies, including values/ethics, roles /responsibilities, communication, and teamwork, there is a lack of consistency on how these are applied or assessed. Specific faculty development procedures must be put into place to provide faculty the knowledge of the assessment methods appropriate for leading the development of self-efficacy. Consistent leadership and champions for IP in each department are necessary to bridge the gap between IP's ideal implementation and the realistic

applicability within the current curricula. This multi-dimensional support model would maintain enthusiasm and engagement in coursework activities to embed competencies within the existing curriculum better and assess timing and restrictions that may impact more extensive group collaborative activities within all other health departments.

Training for facilitation practice is necessary to further awareness of needs and encourage buy-in with faculty members. This training would allow for a common language to be utilized as a foundation for creating meaningful activities for students. The creation of teaching guides will allow faculty to better model the students' reflective practices throughout an IP experience. Faculty education should include variations in presentation style, use of technologies, and the importance of recognizing change needs with continued use. Additional support for academic advisors would increase individual engagement to direct students to develop their path to self-efficacy. To best support these ideals, motivated faculty members are needed at the table to discuss specific accreditation needs within the departments and engage with administration and leadership to reflect on the importance of IP for future health outcomes. With increased support above the faculty level, there would be improved support for flexible workloads and alternative service models to increase multi-departmental collaboration.

The designation of dedicated administrative support is also essential to allow for appropriate tracking of assessments, prepare activities, and map ongoing needs across the university. Faculty and administration need to work together to support this transformative learning process and openly engage in reflective practice to review outcomes and create best practices. While best practices may vary across all universities, a standard of excellence should be maintained in the mission to develop dynamic and reflective leaders in healthcare teams.

Recommendations for Further Study

Additional study is warranted to investigate quality and process improvement when developing interprofessional learning activities. As noted within the study site, awareness for procedures and assessments in practice needs to be shared to eliminate extra work being done and honestly evaluate IP activity's depth and breadth. Identification of critical areas like this improves the quality of experiences. Further specificity in the research questions, including individual IPE activities, will highlight both the strengths and weaknesses in practice more precisely. The creation, facilitation, and assessment of activities encourage more faculty buy-in due to the process's transparency and the benefits reaped. Investigating more of the specific responsibilities and implications for faculty can help to ignite more participation. The institution of a more formal review process after IPE activities, including faculty debriefing and review of outcomes, should be evaluated to maintain the IPE's vitality.

While no specific self-efficacy standardized assessment was revealed from the research question on assessment best practices, all respondents agreed that assessment needs to be more comprehensive and repeated to show growth. Further assessment of the application of specific behavioral-based measures such as the Self-Efficacy for Interprofessional Experiential Learning (SEIEL) scale is necessary to determine applicability for use and future analysis. Designing specific assessment measures would allow for identifying behaviors that will support the development of inquiry and reflection. This application would allow for replication of assessment throughout undergraduate and graduate work to demonstrate changes based on experiential learning and IP coursework (Mann et al., 2012).

Conclusion

Interprofessional education is necessary to develop healthcare students into versatile, passionate, and confident clinicians ready to take on their role in a team. This collaborative work must teach competency-based skills and imbed the behaviors of inquiry and reflection to develop self-efficacy. This interpretive phenomenological analysis identified the faculty members' experiences, successes, and barriers responsible for facilitating this learning. Challenges exist in implementing activities, faculty confidence, administrative support, and variation on interprofessional education assessment measures. While there was no specific consensus on the assessment measures utilized, the faculty agreed that more assessment and follow-up was imperative to improve all IPE experiences across undergrad and graduate health science programs at the site university. Teaching students to evaluate their efficacy, reflect on opportunities, and develop their learning path is essential. This foundation of self-efficacy allows for the building of competencies that will lead to better patient outcomes.

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Appendix A: Invitation to Participate

Dear fellow faculty member,

　You are being invited to participate in a research study as part of my doctoral dissertation work through the University of New England, School of Education. You have been contacted due to your current involvement in interprofessional education (IPE) within your own department curriculum and/or participation in larger events associated with the Center for Interprofessional Healthcare Education here at the university.

　You are being invited to participate in an interview with myself lasting about 30 minutes to collect data on the breadth and depth of how IPE is implemented. Interviews will one-on-one, semi-structured live interactions to be completed over Zoom. Interviews will be recorded via Zoom technologies to allow for transcription and coding. Full consent document is attached for your review. Interviews will allow you to provide historical information about past interprofessional teaching and experiential learning opportunities, as well as your perceptions of best practice applications.

　If you agree to participate in the interview process, please review consent document, sign, date, return as attachment to this email, along with dates/ times that would be preferable to complete interview via Zoom. Once consent is received, I will reach out to you to confirm date and time. Thank you for your consideration for participation in this research. Please reach out if you have any questions.

　Respectfully,

　Rose DeFeo, PT, DPT, PCS, ATP

Appendix B: Informed Consent

UNIVERSITY OF NEW ENGLAND
CONSENT FOR PARTICIPATION IN RESEARCH

Project Title: Faculty Perceptions of Self Efficacy in Interprofessional Healthcare Education
Principal Investigator(s): Rose M DeFeo

Introduction:
- Please read this form. You may also request that the form is read to you. The purpose of this form is to give you information about this research study, and if you choose to participate, document that choice.
- You are encouraged to ask any questions that you may have about this study, now, during or after the project is complete. You can take as much time as you need to decide whether or not you want to participate. Your participation is voluntary.

Why is this research study being done?
This research is designed to assess the perceptions of self-efficacy for students in interprofessional healthcare education. This will be accomplished through open-ended interviews, to include questions about specific beliefs and practices as they relate to the integration of material from different fields.

Who will be in this study?
Faculty who have experience with interprofessional education and facilitation of learning experiences.

What will I be asked to do?
You will be asked to take part in an interview. Interview will last < 45 minutes and will be completed virtually via Zoom or another video platform. Audio from interviews will be recorded following interview. The current study will gather non-sensitive information about everyday interdisciplinary practices. You may refuse to answer any question for any reason at any time during your interview and do so without penalty.

What are the possible risks of taking part in this study?
The only risk of participating, beyond risks you likely experience as part of everyday life, would be a breach in maintaining confidentiality of your identity. However, I will make all possible efforts to maintain the confidentiality of your identity by using pseudonyms and de-identification of sensitive demographic and personal information. Any publications using the data from the study will not contain your name or any other information that could be used to individually identify you or your institution.

What are the possible benefits of taking part in this study?
Benefits to your participation include having a forum to discuss issues in interdisciplinary practice and being involved in one of a small number of qualitative studies on the subject. The, may also benefit from increased knowledge about collaborating well with other disciplines.

What will it cost me?
There is no cost to participate in the study.

How will my privacy be protected?
Position, tenure status, and departmental relationships will be summarized to protect your privacy. Names will not be associated with the interview data at any point, as a pseudonym will be assigned to each participant. All transcriptions of audio recordings will be performed by me. All notes, email and phone communications, audio recordings, memos, and other research materials will be kept confidential.

How will my data be kept confidential?
Your participation in the research is confidential. Interview data, audio recordings, transcriptions of the interview and other correspondence will be stored and secured at in a locked file cabinet in the primary researcher's home office. Access will be limited to the researcher, the University of the New England faculty advisor associated with the study, and the Institutional Review Board (IRB). All digital data will be encrypted and physical media kept locked when not in active use.

What are my rights as a research participant?
- Your participation is voluntary. Your decision to participate will have no impact on your current or future relations with the University.
- Your decision to participate will not affect your relationship with Rose M. DeFeo.
- You may skip or refuse to answer any question for any reason.
- If you choose not to participate there is no penalty to you and you will not lose any benefits that you are otherwise entitled to receive.
- You are free to withdraw from this research study at any time, for any reason.
    - If you choose to withdraw from the research there will be no penalty to you and you will not lose any benefits that you are otherwise entitled to receive.
- You will be informed of any significant findings developed during the course of the research that may affect your willingness to participate in the research.
- If you sustain an injury while participating in this study, your participation may be ended.

What other options do I have?
- You may choose not to participate.

Whom may I contact with questions?
- The researchers conducting this study are Rose M. DeFeo rflammang@une.edu
- For more information regarding this study, please contact Ella Benson, Ed.D. Lead Research Advisor at 757.450.3628 / ebenson2@une.edu
- If you choose to participate in this research study and believe you may have suffered a research related injury, please contact Mary Bachman DeSilva, Sc.D., Chair of the UNE Institutional Review Board at (207) 221-4567 or irb@une.edu.

- If you have any questions or concerns about your rights as a research subject, you may contact Mary Bachman DeSilva, Sc.D., Chair of the UNE Institutional Review Board at (207) 221-4567 or irb@une.edu.

Will I receive a copy of this consent form?
- You will be given a copy of this consent form.

QU HEC/IRB Approval: *Faculty Perceptions of Self Efficacy in Interprofessional Healthcare Education* **has been assigned Protocol #*07020* and approved under expedited review category 6, collection of data from voice or video recordings for research purposes (45 CFR 46.110).**

UNE IRB Project # & Title: 071620-08; Faculty Perceptions of Self Efficacy in Interprofessional Healthcare Education

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Project Title: Faculty Perceptions of Self Efficacy in Interprofessional Healthcare Education

Principal Investigator(s): Rose M DeFeo

Participant's Statement
I understand the above description of this research and the risks and benefits associated with my participation as a research subject. I agree to take part in the research and do so voluntarily.

Participant's signature or	Date
Legally authorized representative	

Printed name

Researcher's Statement
The participant named above had sufficient time to consider the information, had an opportunity to ask questions, and voluntarily agreed to be in this study.

Researcher's signature	Date

Printed name

Appendix C: Interview Protocol

Procedural Intro

      To facilitate my coding and analysis, I would like to record our conversations through the Zoom application. I have received your signed release and IRB agreement form that I sent via email. Thank you for your agreeing to participate.

Interview Introduction

      You have been selected to be interviewed today because you have been identified as someone who has experience with interprofessional education and facilitation of learning experiences. My research project is looking at the assessment of self-efficacy for students and how that can be modeled in use of interprofessional activities. I am particularly interested in how this is presented within the comprehensive IP events hosted on campus as well as how it is weaved within the curricular mapping across (PT, OT, pre-med, nursing….) "your program". My study does not aim to evaluate your techniques or teaching, but rather learn from experience on successes, pitfalls, and application of assessment and practices that help improve student learning on campus.

Interviewee Background

1. How long have you been …

    a. _____ in your present position?

    b. _____ at this institution?

2. What is field of study and highest degree?

3. Briefly describe your current teaching/administrative/clinical role?

4. What is your definition of interprofessional education?

5. What is your definition of self-efficacy?

6. How are you involved in interprofessional education and assessment at the university?

Program and Institutional Perspective

1. What requirements of your program/ accreditation delegate the inclusion of interprofessional learning within your curriculum?

2. Based on your opinion - What is the strategy in your program for incorporating more interprofessional education and assessment?

   a. Probes: Is it working – why or why not?

Department and Discipline

1. What are some of the major challenges your department faces in attempting to change teaching, learning, and assessment practices? What are the major opportunities?

   a. Probe: How can barriers be overcome?

   b. Probe: How can opportunities be maximized? What types of faculty development opportunities are needed?

2. To what extent are teaching-related activities involving IPE evaluated within your department? How is this valued as compared to other faculty duties?

3. To what extent is inclusion of interprofessional health education teaching and assessment valued within your discipline as a whole?

Assessment Measures

1. How do you go about assessing learning within interprofessional healthcare education content:

   a. Within an IP events?

   b. In integrated coursework in your program?

2. What kinds of assessment techniques tell you the most about how students are learning about participating in interprofessional healthcare teams?

   a. Probe: Would you describe them as competency based, theoretical, behavioral based assessments?

   b. Probe: Do you utilize observation, survey, guided reflection, testing to assess learning outcomes?

3. Are any of these assessment measures replicated through the program curricula to demonstrate overall growth in relation to IPE?

4. How are the IPE assessment results utilized to improve teaching/learning in your department? …. across other departments/campus?

Post Interview Comments and/or Observations:

Appendix D: Participant List

Participant	Departmental Association	Clinical Background	Years in Academia	Engagement in IPE
1	Graduate OT	Occupational Therapist	14	- pre-clinical coursework - large-scale IP events hosted through the Center for Interprofessional Healthcare Education (CIHE)
2	Undergraduate Health Science	Physical Therapist	12	- interprofessional capstone research course - service-trip research work with undergraduate students.
3	Undergraduate Pre-Med/ Health Science	Ophthalmologist	19	interprofessional capstone research course
4	Graduate and Undergraduate Nursing	Nurse Practitioner	12	- pre-clinical coursework - large-scale IP events hosted through the CIHE.
5	Graduate PA	Physician's Assistant	5	- interprofessional capstone research course - service-trip based research work with undergraduate students.
6	Undergraduate OT	Occupational Therapist	6	- large-scale IP events with CIHE - service-trip based research work with undergraduate students.
7	Graduate PT	Physical Therapist	11	- pre-clinical coursework - large-scale IP events with CIHE - service-trip based research work with graduate and undergraduate students.
8	Undergraduate Health Science	Radiologist	21	interprofessional capstone research course.
9	Undergraduate Health Science	Respiratory Therapist	7	- interprofessional capstone research course - multiple other health science pre-requisites.
10	Graduate and Undergraduate Nursing			- pre-clinical coursework - large-scale IP with CIHE - service-trip based research work with undergraduate students