

**The Power of Prepositions: Learning With, From, and About Others in
Interprofessional Health Education.**

by

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DEDICATION

This project demonstrating excellence is dedicated to my wonderful life partner Gillian Hobbs. Without her immense love and infinite support

I could not have completed this journey.

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ABSTRACT

This study was completed to address a gap in interprofessional health education (IPHE). IPHE, as a way of training collaborative practitioners, is developing into an important component of health professional education because of issues related primarily to patient safety and health human resource shortages. This study was grounded in social and educational theory. A mixed methods approach to the research was used comprising focus groups (qualitative method) and a web-based survey (quantitative). Participants in the study represented students who had completed an IPHE course at the University of British Columbia (UBC) and faculty members in the health and human service programs at UBC. Focus group data were transcribed verbatim and analyzed using a thematic network approach. Survey data were treated as interval data and were analyzed using ANOVA to examine differences among respondent groups related to key concepts that emerged from the qualitative findings and to confirm, or not, focus group findings. From the triangulation of qualitative and quantitative findings and the literature, a set of meanings emerged that begins to explain learning with, from, and about others and that strengthens the commonly applied definition of IPHE offered in 2002 by the Centre for the Advancement of Interprofessional Education (CAIPE). In addition, the study results confirm and consolidate key characteristics of IPHE that, when matched with the meaning of with, from, and about, allow more informed IPHE curricula to be developed and evaluated. The proposed taxonomy may serve to inform emerging applications for IPHE in the context of education, service delivery, and policy. Further research can expand the emerging new meaning of the CAIPE definition and examine its application in curriculum design and evaluation in both academic and practice settings. The

importance of the research lies in its contribution to an emerging understanding of IPHE that will pave the way for more robust competency development, sound curriculum design, continuing professional development, and evaluation of the impact of IPHE and collaboration on health outcomes. IPHE represents an exciting field of study and future research will contribute to a solid understanding of this critical form of education for health professionals.

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CHAPTER ONE

CONTEXT AND STATEMENT OF THE PROBLEM

This research study examines a commonly accepted definition of Interprofessional Health Education (IPHE) to understand how it influences, or could influence, the education and preparation of future health care professionals in the area of collaborative practice. The Centre for the Advancement of Interprofessional Education (CAIPE) definition suggested that IPHE occurs “when two or more professions learn with, from and about each other to improve collaboration and quality of care” (Barr, 2002, p. 17). The research questions for this study ask: What does learning with, from, and about other health professions mean in interprofessional health education, and how is it articulated and operationalized in the context of curriculum design? To answer these questions a mixed methods research approach was used. Within this report, the terms *with, from, and about* are always in relation to working with other health professions. Interprofessional health education is variously referred to as IPE and IPHE, but for the purposes of this paper it will be referred to as IPHE.

This chapter provides an introduction to the research focus and question. Chapter two illustrates how IPHE is constructed in the literature and discusses the various theoretical influences on IPHE, from a number of social/behavioral, as well as educational, theorists. The literature is used to anchor the concept of IPHE and to provide a strong platform upon which this research rests. The methodological approaches considered for the study as well as the data collection process are presented in chapter three. A rationale is provided for the selection of a mixed methods study and the choice of focus groups and a survey is discussed. Data collection during the focus groups and the

survey is described in detail. In chapter four, the analysis of the qualitative data are described ending with the final set of integrated global themes. The findings from the qualitative data are presented in chapter five using verbatim quotes from the transcripts of the focus groups to illustrate the findings. Chapter six discusses the findings from the survey, and integrates those findings with the qualitative findings in an attempt to find common meanings and to discover new meaning where differences in the data findings occur. The final chapter, chapter seven, discusses the main messages from the research and situates them in the current literature. In the conclusion, the application of the findings globally is addressed along with limitations, assumptions and directions for further study.

Rationale for the Research Study

Over the past several decades, health professional education has evolved from an apprenticeship model based on existing patterns of practice with little or no connection to theory, evidence, or best practice, to a model that is evidence-informed, grounded in theory, and based on sound clinical decision-making principles. During this educational evolution, as health professions other than medicine and nursing burgeoned in the 20th century, strong disciplinary boundaries began to form, reinforcing the perceived need for discipline-specific curriculum content. Globally, education of health professionals has typically occurred in discipline-specific silos. However, as a means of improving quality of patient care, there is now a rapidly emerging trend toward more collaborative models of education and practice.

Over forty years ago, Dr. George Szaz (1968) introduced interprofessional health education (IPHE) at the University of British Columbia (UBC). In the mid-1960s, a

Committee on Interprofessional Education in the Health Sciences was created at UBC and was mandated to examine IPHE based on “the assumption that if the health professionals are to work together, they also must learn together” (Szaz, 1968, p. 3). Progress in interprofessional education languished over the following decades, however, during a time when professional turf appeared to be critical for the survival of specific health professions. In recent years, the concept of IPHE, or education that involves two or more health professions, has rapidly re-gained momentum in post-secondary educational institutions, health service organizations, and provincial and federal governments. Publications related to interdisciplinary or interprofessional education can be found in the literature as early as 1950. Yet, the uptake of teaching models that cross professional boundaries has been slow until the past decade.

One of the complications adversely influencing effective IPHE is describing precisely what is meant by the term IPHE. Throughout the literature there are few specific definitions of IPHE. Those that do exist exhibit similar characteristics, such as (a) a way to develop collaborative practice among health professionals (Freeth, Hammick, Koppel, Reeves, & Barr, 2002); (b) structured opportunities for students from different professions to engage in shared learning (Horsburgh, Lamdin, & Williamson, 2001); (c) enabling “health care staff to know about, work with, substitute for and enable movement between the different health care professions” (Morison, Boohan, Jenkins, & Moutray, 2003, p. 93); and (d) increasing skills for teamwork and collaboration (Parsell, Spalding, & Bligh, 1998). As far back as 1988, the World Health Organization defined interprofessional (multiprofessional) education as:

A process by which a group of students from the health-related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to collaborate in providing promotive, preventive, curative, rehabilitative and other health-related services. (pp. 6–7)

Again, the definition suggested characteristics that relate to learning together for the purposes of collaboration. Increasingly, though, the most globally accepted definition of IPHE is that provided by the Centre for the Advancement of Interprofessional Education (CAIPE) located in the United Kingdom (UK), one of the most widely recognized sources of information about IPHE.

[CAIPE] acts on the belief, corroborated by a growing body of evidence, that well planned [IPHE] can cultivate closer collaboration not only between professions but also between organisations and with service users and their carers; collaboration which, in turn, can improve care and quality of life for individuals, families and communities. (Centre for the Advancement of Interprofessional Education [CAIPE], n.d., ¶ 2)

CAIPE's ability to focus entirely on interprofessional education, supported by the National Health Service, has produced occasional papers, publications, and other resources that have heavily influenced interprofessional education in the UK and, latterly, internationally. CAIPE has defined interprofessional education as: "Occasions when two or more professions come together to learn with, from and about each other to improve collaboration and the quality of care" (Barr, 2002, p. 17).

IPHE principles articulated by CAIPE (2001) are based upon emerging literature and are intended to promote collaboration among all sectors of health service delivery and education. CAIPE's (2001) principles include the following:

Works to improve the Quality of Care: No one profession, working in isolation, has the expertise to respond adequately and effectively to the complexity of many service users' needs and so to ensure that care is safe, seamless and holistic to the highest possible standard.

Focuses on the needs of service users and carers: IPHE puts the interests of service users and carers at the centre of learning and practice.

Involves service users and carers: More than that, it invites service users and carers to be active participants in planning, delivering, assessing and evaluating IPHE, participation that helps to ensure that services meet the needs of those for whom they are designed.

Encourages professions to learn with, from, and about each other: IPHE is more than common learning, valuable though that is to introduce shared concepts, skills, language and perspectives that establish common ground for interprofessional practice. It is also comparative, collaborative and interactive, a test-bed for interprofessional practice, taking into account respective roles and responsibilities, skills and knowledge, powers and duties, value systems and codes of conduct, opportunities and constraints. This cultivates mutual trust and respect, acknowledging differences, dispelling prejudice and rivalry and confronting misconceptions and stereotypes.

Respects the integrity and contribution of each profession: IPHE is grounded in mutual respect. Participants, whatever the differences in their status in the workplace, are equal as learners. They celebrate and utilise the distinctive experience and expertise that participants bring from their respective professional fields.

Enhances practice within professions; Each profession gains a deeper understanding of its own practice and how it can complement and reinforce that of others. This is endorsed where the IPHE carries credit towards professional awards and counts towards career progression.

Increases professional satisfaction: IPHE cultivates collaborative practice where mutual support eases occupational stress, either by setting limits on the demands made on any one profession or by ensuring that cross-professional support and guidance are provided if and when added responsibilities are shouldered. (¶ 5–11)

One reason why the CAIPE (2002) definition (Barr, 2002) and the associated principles appeal to scholars and practitioners in the field is that it provides an effective anchor for research projects and practice initiatives that attempt to demonstrate the value

of IPHE. However, learning *with, from, and about* each other, as articulated in the definition and even in the principles, has not to date been conceptualized and described fully enough to effectively inform curriculum development and evaluation of interprofessional learning. The definition itself does not allow for the generation of descriptive components that are detailed and rich enough to capture the complexity of IPHE and collaborative practice.

As mentioned earlier, there are few alternative definitions in the literature. Most of the research papers tend to assume a prior knowledge of IPHE and, therefore, the simple elements of the process of IPHE are reinforced with little, if any, attention to the deeper contextual characteristics of IPHE that are necessary to understand its complexity and create effective IPHE curricula.

Despite evidence that issues, such as patient safety, integrated human resource planning, recruitment and retention, and quality of care, can be addressed in part by IPHE, barriers to this approach to pre-licensure education create challenges that must be confronted. Increasing the ability of professionals in all of the health disciplines to work effectively and collaboratively within coordinated teams is an imperative of health professional education today. As is evidenced in the subsequent literature review, the challenge of interprofessional education emerges as a far more complex construct than it might seem. The theses examined through the literature demonstrate the full extent of this complexity.

Research Focus

CAIPE (1997) originally defined IPHE as learning that takes place on “occasions when two or more professionals learn together with the object of cultivating collaborative

practice” (p. 19). The more recent definition described interprofessional education as “occasions when two or more professions learn with, from and about each other to improve collaboration and improve quality of care” (Barr, 2002, p. 17). The latter version of the CAIPE definition embraces the concept of quality of care, which—although beyond the scope of this study—opens new and interesting areas for future application of IPHE. The CAIPE (2002) definition (Barr, 2002) for interprofessional education is the definition that forms the basis for this research, and is most commonly used to explain IPHE. This definition has yet to be interpreted in a complex, contextual manner. This deeper and more complex description is critical in order for the definition to provide an adequate framework for discussing IPHE, and for interpreting how it is different from education aimed at one profession as well as why it is important to patient-centered care, health and human service delivery and, ultimately, health outcomes. This more contextual interpretation will assist in improving our understanding and application of IPHE, rather than merely agreeing that it exists.

The literature has suggested that lack of knowledge about other professions is one of the main barriers to true interprofessional collaboration (Fagin, 1992; Mariano, 1999) and that learners and practitioners of one profession know little about other professions (Institute of Medicine, 2003; San Martin-Rodriguez, Beaulieu, D’Amour, & Ferrada-Videla, 2005). However, the CAIPE (2002) definition (Barr, 2002) implies that knowing about each other is only one aspect of interprofessional education and, de facto, interprofessional collaboration. It, therefore, seems imperative to gain a more comprehensive understanding of IPHE so that educators focus on much more than ensuring that health and human service students know about other roles, practice patterns,

and clinical reasoning philosophies. On the surface this shift sounds logical and simple, but there are hidden complexities related to the hidden dimensions of learning with, from, and about each other. The CAIPE (2002) definition (Barr, 2002) provides a useful anchor for examining with, from, and about to unravel the complexity, assign meaning to the actual words, and apply IPHE more discriminately in health professional education and practice.

This research project focuses on describing more explicitly the process of IPHE through which collaborative practitioners are created. This research examines existing theories that attempt to explain components of interprofessional education. Focus groups were used to explore the lived experience of interprofessional education and curriculum development in the health professions. A survey examined the extent to which the lived experience captured the complex array of characteristics that comprise interprofessional education. The definition of “with, from and about” (Barr, 2002, p. 17) was used as a starting point from which to examine the many layers of interprofessional education so that the resultant comprehensive description of IPHE can be used to inform curriculum development. It is hoped that the findings from this research will help to generate more effective learning strategies for application in health and human service education programs.

The research question to be answered is: What does learning with, from, and about other health professions mean in interprofessional health education, and how is it articulated and operationalized in the context of curriculum design?

For this area of exploration, the research was situated in students’ experience of interprofessional education and educators’ experience of interprofessional curriculum. I

examined the theoretical frameworks that inform IPHE, grounding the research in preceding and important contributions to the field. Methods deriving from both qualitative and quantitative research paradigms were examined for their potential contributions to the research.

Social Relevance

Interprofessional education and collaborative practice provide the key to future health care quality and the ability of society to meet health care demands.

Interprofessional education and collaborative practice will help to achieve safer health care practices and enable patients to engage in meaningful activity more effectively through improved health outcomes. Society values a safe and effective health care system. Those who work in it value a functional workplace, and society demands that we explore better ways to deliver the services that are essential to maintaining the optimal health of the population.

Patient safety and positive health outcomes are critical social imperatives. There is increasing stress on the system that can put people at risk and mitigate health outcomes through errors in, or lack of, communication as well as insufficient support. People undergoing procedures that once required a protracted stay in hospital are now discharged in a fraction of the time. The increasing stress on the health care system manifests itself through heavy workloads due to increasingly acute clients who require intensive attention while in hospital and the concomitant discharge of increasingly acute clients to the community where they require additional supports. In addition, cutbacks in human resources and shortages of health care professionals translate into major tensions in the system related to lack of time. These stresses within the health care system are creating

challenges for communication among health care providers and these challenges place clients and communities at risk. Emerging research has suggested that improved collaboration among health care providers can mitigate risks to clients and that one of the key factors in improved collaboration is improved communication among different health care professions. Understanding and respecting different professional approaches and roles, a common language for communication, applied knowledge about shared competencies, and appropriate referrals among professions are but a few of the characteristics of collaboration among professions that may improve patient safety and health outcomes. More than ever, it is imperative that we seek ways to work closely together in interprofessional teams that include clients and their families. IPHE is one key to improved communication and collaboration among health care providers, and it behooves us to discover how to describe IPHE deeply and broadly enough to inform curriculum and evaluation of interprofessional learning.

Interdisciplinarity

Union Institute and University emphasizes the interdisciplinary nature of research. In health education and practice, the term *interprofessional* is increasingly used to describe different professions working together and learning together. The term interprofessional includes the concept of interdisciplinarity in that there is recognition of the distinct knowledge and traditions that each profession brings to patient care. However, the concept of interprofessional goes a step further to embrace the complexities that arise when these knowledge bases and traditions come together, sometimes colliding, in the workplace. Traditional hierarchies of decision-making, as well as regulatory and legislative changes to scope of practice, are creating some of the barriers to

interprofessional collaborative practice. In order to ameliorate these barriers, a deep understanding of the educational process through which professions learn to respect, value, and trust each other's approach is critical. New decision-making frameworks, collaborative action, and trusting interprofessional relationships can be developed once the complex process of learning to work together in a different way can be explained and applied clearly.

To understand IPHE and collaborative practice one could examine a single profession's role, language, tradition and how it applies in an interprofessional context. However, it is by examining IPHE across professions that we are more likely to gain a rich understanding of its complexity. Through an exploration of perspectives from a number of different health professions and/or scientific disciplines in relation to students' and practitioners' learning styles and curriculum content we can develop a description of IPHE that is interprofessional and interdisciplinary in nature. In practice, interprofessional collaboration requires (a) an understanding of the roles and skills of other health care professionals, (b) a respect for a diversity of approaches to health care and (c) solid interpersonal communication and conflict resolution skills, and (d) a description of IPHE as the process by which we develop these skills and attitudes. These skills and tools will forward the IPHE movement considerably.

To understand interdisciplinarity as it relates to this research project, it is necessary to explore several theoretical backgrounds. The theories that underscore IPHE come from education, behavioral sciences, and psychology. Transformative learning and learning styles are two areas within educational theory that were used to inform this study. Asking health care practitioners, including learners, to change the way they

practice from individual silos to collaborative interprofessional teams requires an understanding of the theories of organizational change, in particular the area of change management. At an organizational level, health care systems must also begin to understand the value of collaborative practice and to encourage practitioners to learn how to work effectively in interprofessional teams. This requires further understanding of organizational behavior and the theories that inform this discipline. Theories that emerge from the field of psychology, such as the social constructivist model, and educational theory, such as perspective transformation, help to inform the research in this study.

The subjects in this research study—students and faculty members—spanned a number of health professions. Analysis of the data required the expertise of consultants in qualitative and quantitative research as the mixed methods approach is one that has evolved in response to the unique bodies of knowledge that support distinct disciplines. As well, the doctoral committee overseeing this program of study was composed of experts in nursing, linguistics, organizational behavior, interdisciplinary research in communities, and interprofessional education. The combination of supporting theories, distinct and unique disciplinary knowledge bases, and diverse committee expertise significantly enhances this research project through strong interdisciplinary linkages. Through the lens of such variations, a clear, rich, and complex description of IPHE creates significant opportunities for curriculum development, evaluation of learning, and further research.

Summary

This research project has contributed to the field of IPHE as it related to both the education of future team members and to the practice of interprofessional collaboration

and teamwork. The knowledge that has been gained by bringing operational clarity to the description of IPHE from the perspective of those who are intimately engaged in IPHE, both as learners and as faculty members, provides a base upon which IPHE can be strengthened and by which effective curriculum, relevant evaluation, and improved health outcomes can be achieved.

CHAPTER TWO

LITERATURE REVIEW—THE INTELLECTUAL CONTEXT

The literature review presented here considers several aspects of interprofessional health education (IPHE). It considers why IPHE is important and why it is so critical to address it now. It also examines the emerging role of IPHE, and the confusion surrounding the terminology used in the context of IPHE. It then provides a research perspective of IPHE, discusses the major theories that have contributed to the development and growth of IPHE, and describes the most prominent issues facing IPHE, as well as controversies that arise in the literature. The literature review links the relevant research and theory to specific aspects of IPHE that will help to inform the research question.

Along the continuum from entry-level student to experienced practitioner in the health and human services, there are many factors that influence collaborative practice. Some of these are at the organizational level rather than the individual level. Although this research study examines IPHE predominantly for the entry-level learner and given that the organizational theory that impacts the ability to practice collaboratively is beyond the scope of this literature review, it is still important to recognize that the individual learner or practitioner comprises only a part of the larger context of IPHE and collaborative practice. Chaordic and complex adaptive theories, as well as integral and social constructivist theories, are just a few of the lenses through which the ability of practitioners to actually practice collaboratively can be examined (van Eijnatten, 2004; van Eijnatten & Putnik, 2004; Shaw, 1995; Stacey, 2007; Stacey & Griffin, 2006; Uhl-Bien, 2006; Volckmann, 2005). The organizational environment in which

interprofessional collaborative practice is emerging as a way of improving patient safety and health outcomes signals the complexity of the health service delivery context. At the entry-level education stage and on into practice, IPHE is situated in this complex environment, underscoring the need to be very clear about what IPHE is and how it informs the education of health professionals.

Primary Drivers

The current and rapidly escalating acceptance of interprofessional education as a critical approach to the training of future health care professionals is predicated on three major drivers: patient safety, recruitment and retention of staff, and health human resource planning approaches. Two specific reports, the Institute of Medicine's *To Err is Human* (Kohn, Corrigan, & Donaldson, 2000) and the *Canadian Adverse Events Study* (Baker et al., 2004), suggested strongly that patient safety is at risk if health care providers do not communicate effectively with each other and work collaboratively. In addition, new attention to human factors through dedicated research related to patient safety is proving useful in identifying strategies to improve patient safety in acute care settings, many of these relating to interprofessional communication and teamwork.

In *To Err is Human*, Kohn et al. (2000) suggested that organizations should “establish interdisciplinary team training programs, such as simulation, that incorporate proven methods of team management” (p. 156) as one of three key recommendations for improving patient safety. Kohn et al. concluded, “Excellence might focus on particular types of errors (e.g., medication-related errors), errors in particular settings or clinical specialties (e.g., intensive care), or types of interventions or strategies that might be applied across many areas and settings (e.g., interdisciplinary teams)” (p. 30).

Throughout the examples cited in *To Err is Human*, team management, communication, team training, and interdisciplinary issues are consistent themes highlighting the imperative to view interprofessional education and collaborative practice—including interdisciplinary communication—as essential to improved patient safety.

In the *Canadian Adverse Events Study*, Baker et al. (2004) defined adverse events as “unintended injuries or complications that are caused by health care management, rather than by the patient’s underlying disease, and that lead to death, disability at the time of discharge or prolonged hospital stays” (p. 1). One of four key factors identified in the causality of adverse events is described as “the complexity of care in teaching hospitals means that patients may receive care from several different providers, which may increase the risk of [adverse events] related to miscommunication and coordination of care” (Baker et al., 2004, p. 1684). While the recommendations from the *Canadian Adverse Events Study* are not as specific as those from *To Err is Human* (Kohn et al., 2000) system change is highlighted including attention to communication across professions in the provision of patient care. Interpretations of the report (Hospital News, 2004) suggested that interprofessional collaboration is even more critical when introducing new technologies as new language (e.g., abbreviations and acronyms), which can create misunderstandings and causes potentially fatal errors. The importance of interprofessional communication is also highlighted in the context of discharge planning and follow-up care in the home and the community, areas often neglected in studies of acute care patient safety.

Human factors research is an emerging area of study that focuses on workplace issues such as industrial safety and, more recently, patient safety. Lynch and Cole (2006)

suggested that increasing pressures and complexities in the health care system, as well as changing roles through advanced practice models, demand attention to improved communication, effective interprofessional teamwork, conflict resolution, and leadership. A human factors study of medical errors in intensive care units (Donchin et al., 1995) found that dangerous errors occurred and were closely linked to lack of communication between physicians and nurses. In another human factors study of perinatal units, units with low incidence of medical errors tended to be “built on a solid foundation of timely communication and collegial teamwork to maintain patient safety as a top priority” (McFerran, Nunes, Pucci, & Zuniga, 2005, p. 37). In McFerran et al.’s study, teamwork and collegiality were high priorities, and an interesting organizational culture statement was adopted that aimed to “promote open communication within the multidisciplinary ... team and between the many disciplines participating in perinatal care” (p. 6). Other studies in the human factors domain also support patient safety as a critical driver for IPHE for collaborative patient care (Molloy & O’Boyle, 2005; Streitenberger, Breen-Reid, & Harris, 2006).

The second major driver of interprofessional education is recruitment and retention of health care professionals. McCauley and Irwin (2006) suggested,

Transforming our work environments is not negotiable if we are to achieve the following three interconnected and essential goals: 1. Retention and, indirectly through improved public perception, recruitment of nurses at a time of pervasive and lingering nursing shortages; 2. Improved job satisfaction among all members of the health-care team; and, perhaps most importantly, 3. Improved outcomes for patients and patients’ families. (p. 1572)

McCauley and Irwin also suggested that competence in collaboration saves lives and improves patient outcomes and that, in a human resource crisis, creating work environments that support and encourage interprofessional collaboration is an essential health human resource strategy. The interprofessional collaboration approach is increasingly used in rural communities where recruitment and retention of health care providers is critical to the overall health of the community. These compelling arguments, along with a belief that improved quality of care is achieved through collaborative practice, have fuelled a large increase in IPHE at both pre-licensure and entry-to-practice levels as well as in the context of continuing professional development.

The third trend impacting the uptake of IPHE is the changing focus of health human resource planning processes. Typically, numbers of specific professionals have been the sole guide in planning for future health care needs, rather than integrated or inclusive approaches. In the World Health Organization report, *Integrating Workforce Planning, Human Resources, and Service Planning*, O'Brien-Pallas, Birch, Baumann, and Murphy (2000) suggested that integrated workforce planning should incorporate discussions related to multidisciplinary or multiprofessional approaches to workforce design. With the burgeoning legislation for advanced practitioners such as nurse practitioners, midwives, and physical therapy practitioners, there is a rationale for introducing more integration into planning ways to meet current and future health needs of individuals and communities. These emerging practice trends provide fertile ground for integrated health human resource planning that would only be strengthened by a focus on interprofessional education and collaborative practice. If we can conceptualize working together differently in collaborative practice patterns and interprofessional

teams, health care can be provided more efficiently and effectively. This may be the only way to ensure that the older adults of the next 30 years will have their health care needs met.

In addition, there is an increasing complexity associated with patients of today and tomorrow. Houle (1972) is best known for his extensive writings about the emergence of adult education as an increasingly evidence-informed process, engaging the early work of Dewey (1938). In particular he focused on the design of the process of education. However, in 1987, Houle, Cyphert, and Boggs examined professional education in the context of IPHE. Houle et al. (1987) analytically compared IPHE and practice to those of singular professional training and practice. Houle et al. described the escalating attention to IPHE as a way of embracing the complex needs of clients and families. Houle et al. described IPHE as a “bridge-building enterprise designed to ensure that all significant aspects of complex client problems are accounted for when conditions are analyzed and treatments are determined and delivered” (p. 92). As it becomes increasingly difficult to compartmentalize the increasingly complex needs of people, IPHE is seen as a way of avoiding fragmented care and ensuring that all aspects of a person’s life are attended to. Recognizing the limitations of one’s own profession and understanding and valuing the contributions of other professions, can provide the best and most effective care. Houle et al. (1987) suggested clearly that “there is no interprofessional person; only a professional ministering in interprofessional ways” (p. 92): The driving force for IPHE being the increasing complexity of care needs.

In addition to recruitment and retention issues, there is a growing body of evidence to suggest that effective collaborative practice is critical to ensuring our health

care system will be accessible, effective, and sustainable (Borrill et al., 2002; Canadian Health Services Research Foundation, 2006a, 2006b; Mickan & Rodger, 2005). Since key features of interprofessional collaborative practice include creating environments and practices through which professionals can use the full scope of their practice and increase their ability to influence clinical decisions in a patient-centered model of care, staff satisfaction and retention is thought to be enhanced through interprofessional collaboration (Borrill et al., 2002). Concern about the ongoing availability of adequate health human resources is growing and the links between IPHE, recruitment and retention, and access to the right health and human services at the right time are prime areas for critical research. This study focuses on IPHE as the precursor to collaboration in the workplace.

Role of Interprofessional Health Education

IPHE is increasingly used to educate health professionals in areas of curriculum and practice that do not require specialized knowledge or skills. Issues such as ethical practice, professionalism, legal aspects of health care, social determinants of health, communication skills, conflict resolution, end of life issues, and healthy communities are but a few of the areas of curriculum content that lend themselves well to IPHE. Rich dialogue and engagement in learning across professional cultures and approaches can break down professional barriers to communication and collaboration in these key-learning areas.

The role of IPHE is situated in the development of health and human service providers through novice (student) to expert (practitioner) levels of learning. D'Amour and Oandasan (2004) articulated an evolving framework for interprofessional education

for collaborative patient-centred practice or IECPCP (Health Canada, 2004). D’Amour and Oandasan’s IECPCP framework clearly illustrates IPHE as the educational half of IECPCP, linked to, but interdependent of interprofessional collaborative practice. By synergistically linking the learner domain with the patient domain, D’Amour and Oandasan’s IECPCP framework presented a continuum of inter-related system factors leading from IPHE to collaborative practice (see Figure 1).

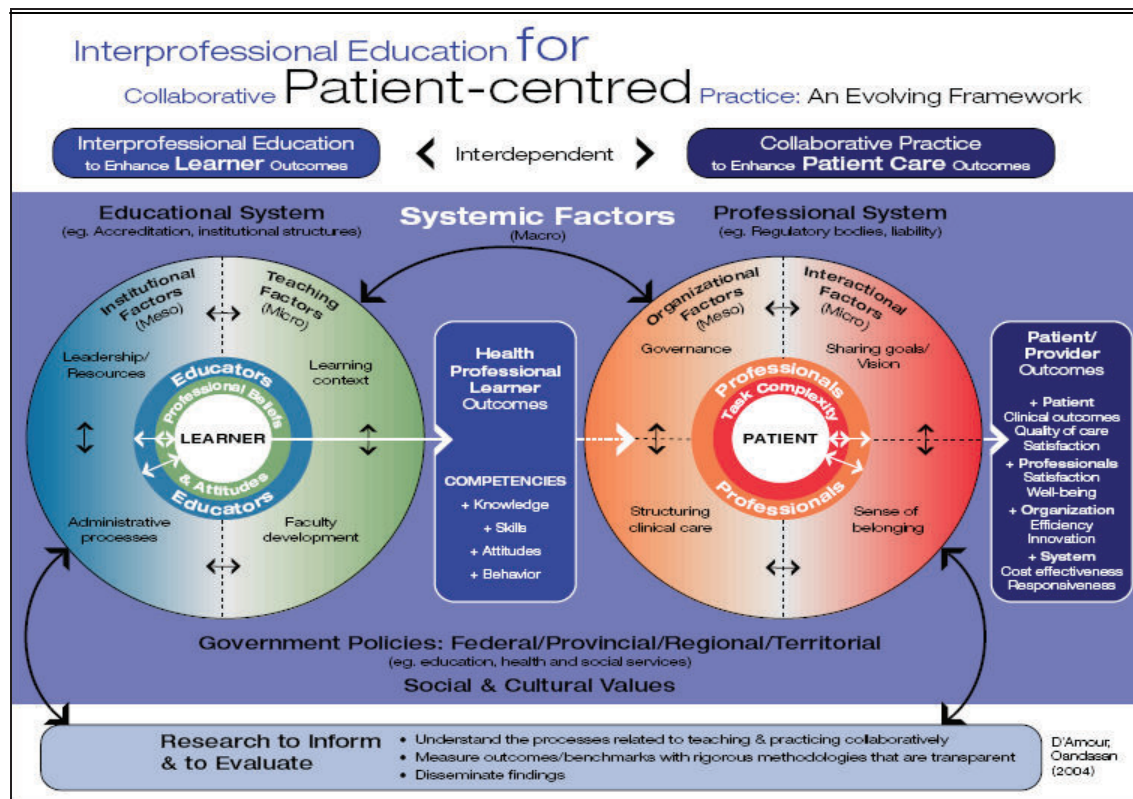


Figure 1. Interprofessional education for collaborative patient-centred practice.

Note. From “Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept,” by D. D’Amour and I. Oandasan, 2005, *Journal of Interprofessional Care*, Supp 1, 19, pp 8 – 20. Copyright Taylor & Francis Ltd. Reprinted with permission.

Current Terminology Related to Interprofessional Health Education

In the literature related to IPHE, several terms are used, often synonymously. In order to situate interprofessional language clearly into the body of knowledge that

supports IPHE, the other terms must be clarified. The terms most often used in the context of IPHE are interdisciplinary, multidisciplinary, multiprofessional, and transdisciplinary. Interdisciplinary education implies education among different disciplines within the same professional domain; interdisciplinary education, while still challenging, is grounded in a common professional history and based on a common professional theory of practice. Hall et al. (2006) found that interdisciplinary language worked well in the context of research. Bringing together the research expertise of several different disciplines to focus on a common problem added to the potential for research depth and was enhanced by interaction among the researchers. While some research questions are best addressed by a number of different professions, it is the disciplinary expertise that matters in interdisciplinary research. The interaction is important in the interdisciplinary context, but the distinction between profession and discipline is not key to the success of interdisciplinary research. This is in contrast to the IPHE context, in which the interaction is also important and the engagement of learners across professions is equally important.

The choice of terminology has been debated interminably and in most of the publications that relate to multidisciplinary, interdisciplinary, multiprofessional or interprofessional, few descriptions are provided. Pirrie (1999) suggested that the debate over terminology leads one in circles and in the end one must choose a term that works for a specific context, even when the choice is predicated upon ambiguity. For the purposes of this research, the term interprofessional is specifically used in the context of learning with, from, and about each other.

Research in Interprofessional Health Education

In reviewing the publications related to both interdisciplinary education and interprofessional education, it is clear that there has been a rapid acceleration in interest over the past two decades. In Table 1, I have represented the unfiltered number of publications that emerge when searching EBSCO host and OVID data bases from 1950 to the present using the key words interprofessional education and interdisciplinary education. The search was completed by decade and does not apply any evaluative criteria to the publications cited; it merely identifies the amplification in publications in this area and, in turn, underscores its current and steadily increasing profile in the literature.

Table 1. *Unfiltered Number of Publications that Emerge When Searching EBSCOhost and Ovid Data Bases From 1950 to the Present*

Years	Inter-Professional Education	Inter-Disciplinary Education
1950 (Jan)–1959 (Dec)	0	3
1960 (Jan)–1969 (Dec)	192	43
1970 (Jan)–1979 (Dec)	717	1434
1980 (Jan)–1989 (Dec)	1323	5250
1990 (Jan)–1999 (Dec)	2332	7638
2000 (Jan)–2008 (Feb)*	4931	7862

Note. The numbers in the table are aggregated for convenience, and may, therefore, contain some duplicates. *8-years span.

Note. The numbers are provided to emphasize the rapid expansion of publication in this area. All searches were performed on the following data bases: Academic Premier, CINAHL Select, ERIC, and Medline.

However, despite this impressive volume of work, the body of literature contains little research that demonstrates empirically that patient outcomes are influenced by interprofessional education (Wood, 2001). Zwarenstein et al. (1999) suggested that there are few studies that meet the standards of the Cochrane Collaboration in the context of health outcomes. Barrett, Greenwood, and Ross (2003) reiterated the lack of research into the effectiveness and impact of interprofessional education. Barr, Freeth, Hammick, Koppel, and Reeves (1999) suggested that interprofessional education demonstrates improvements in student learning in several domains including attitudinal shifts and changes in practice that reflect collaboration; but few, if any studies, have pushed the research into health outcomes. This may in part be due to the multitude of variables that impact health and well being, but until IPHE can be demonstrated to be even partly responsible for positive changes in health outcomes, there will always be resistance and suspicion among health care providers and clients alike.

Barr, Koppel, Reeves, Hammick, and Freeth (2005) reported on a systematic review of 107 studies related to interprofessional education that were deemed to be of high quality. The analysis of the studies was based on the Cochrane Collaboration approaches and all of the reviewers were trained in conducting Cochrane reviews. The results suggested mixed reviews of the effectiveness of IPHE, especially in the area of team development, and most of the studies were situated in work-based, undergraduate, and in-service contexts. The review highlighted some key findings from the studies reviewed. IPHE was mainly grounded in continuing professional development and not pre-licensure education. Half of the IPHE interventions studied were longer than seven days in duration, and physicians and nurses were the most frequent participants. Given

the volume of nursing staff and the prominence of physicians in the system, as well as the required close working relationship between these two key professions, this finding is not unexpected. However, when the incremental complexity that accrues each time another profession with its own history and model of practice is added to the mix, IPHE requires the kind of attention that can break down and address the complex interactions involved. Barr et al.'s (2005) systematic review suggested inconclusive and mixed results from studies that have attempted to evaluate the effect of IPHE.

The most recent review of the IPHE evidence was published in *Medical Teacher* (Hammick, Freeth, Koppel, Reeves, & Barr, 2007). According to Hammick et al., even now, the evidence in support of the effectiveness of IPHE is limited. In their systematic review, 21 international studies were examined all of which were predicated on the CAIPE definition Barr's (2002) of IPHE, making the review particularly relevant to this study. All of the studies involved interactive experiences and attempted to offer explanations for questions related to the types of learning experiences, mechanisms for change, and effectiveness of IPHE in today's rapidly changing health care system. The 21 studies examined were published between 1997 and 2005 and involved a diverse set of clinical contexts, and both pre- and post-licensure stages of learning. Overall, Hammick et al. observed an increasing amount of new material relating to IPHE with respect to the effectiveness of IPHE curriculum design, content, and delivery. Hammick et al. also suggested that there is a need for more rigorous research on impact and outcomes for patients and learners.

There are, therefore, strong indications that there are many research questions still to be answered about IPHE. There is a need to better explicate the complex nature of

IPHE in future development of improved measures and methods for evaluating the effectiveness of approaches to IPHE. To do this, a clear and comprehensive description of IPHE that presents the complexities of this educational approach to developing collaborative practitioners is essential. In the context of a highly complicated and stressed health care system as well as an often uni-professional education or training system, a rich and contextual description or interpretation of IPHE is necessary. We need to move beyond a definition alone to better understand the components, interactions, and key elements that comprise IPHE. This literature review provides support for a new and more complex description and situates this study in the theoretical background of IPHE, better illuminating the issues as well as controversies that continue to haunt this area of study.

Future research will need to sort out the extent to which improved patient safety and health outcomes can be directly attributed to IPHE amongst all of the many complex factors that influence health care and education. This link between IPHE and patient safety and health outcomes may be an important link, but it may always be an indirect link given the complexity and multifaceted nature of positive health outcomes. In addition, measurement of this link will not be easy and creative approaches will have to be used to examine the extensiveness and nature of the influence of IPHE on health outcomes at both individual and population health levels.

That said, the emerging importance of IPHE and the rapid and extensive growth of published literature in this area signals two things: (a) an intuitive sense that collaborative practice does and will improve patient outcomes and create a more satisfying work environment, and (b) there is some evidence about the effectiveness of some IPHE strategies and approaches. A contextual description of IPHE that is grounded

in an accepted definition and which interprets learning with, from, and about each other will enable research in each of these areas. To determine an effective interpretation of IPHE, it is important to look to a variety of social and learning theories to examine how we learn to become collaborative practitioners.

Major Theories

The theories that support IPHE can help us to understand the foundations upon which we are building IPHE. Jones (as cited in Colyer, Helme, & Jones, 2005) posed the question: is it reasonable to continue to borrow from existing theory or do we need a new theory that informs IPHE directly? Colyer et al. suggested that while we answer this question, it is reasonable to continue to base IPHE on multiple theories. The complexity of IPHE and the concomitant collaborative practice that results from IPHE seem to demand a multi-faceted reliance on existing theories, even in the face of potential new theories. Colyer et al. suggested that a network of theories may serve the IPHE development more effectively. This intuitively makes sense in order to create an iterative cycle between theory and practice and to enable IPHE to become firmly grounded in theories from multiple fields in a way that makes philosophical and practical sense.

It is clear then that the link between theory and practice is still emerging in the field of interprofessional education in health and human services. While promoting interprofessional teamwork as the new strategy for health service delivery, the theoretical underpinning of the collaborative approach has been largely ignored. Recent publications (Barnes, Carpenter & Dickenson, 2000; Barr, 2002; Colyer et al., 2005) have tried to start linking a variety of theoretical perspectives to interprofessional education. These theories appear, to date, to be derived primarily from the fields of behavioral and social sciences.

There is little evidence to date that theories from the field of education have been taken up frequently in the literature. Those from the field of education appear to be, not completely but largely, ignored or perceived as irrelevant.

The complexity of IPHE suggests that the field must draw on a wide array of theoretical underpinnings to seek theoretical explanations for the approach, but the strong bias to the behavioral and social sciences leaves theoretical gaps when it comes to how learners change the way they think about other professions and their engagement in collaborative practice. Pragmatism is indeed necessary when designing IPHE programs, but the theories that support adult learning are important when attempting to understand how we make the transition from a singular profession to collaborative practice. The next section of this chapter attempts to extract from theories that have been linked to IPHE a sense of their application to the field, and in particular to any interpretation of learning with, from, and about each other.

Theory from the Field of Behavioral and Social Sciences

Contact theory has been examined as a social psychology theory that may partly explain why working collaboratively across professions facilitates attitudinal changes. This theory is used extensively in the literature on professional stereotyping and its primary platform is the actual contact among members of different groups and the effect that this contact has on behavior. Dickinson and Carpenter (2005) provided a useful overview of contact theory and its application in IPHE. As early as 1954, Allport (as cited in Dickinson & Carpenter, 2005) examined contact theory or the consequences of bringing together people from different backgrounds. It became clear that just being together made no difference to attitudes or behaviors and that more attention needed to be

paid to the actual interactions between and among people (McMichael & Gilloran, 1984). For example, Carpenter and Hewstone (1996) suggested that positive attitude changes occur when members of different groups find that they have similar interests. Conversely, Brown, Condor, Matthews, and Wade (1986) found that where members of different groups in contact have different attitudes, negative reactions could occur. In addition, Pettigrew (1998) determined that there are four characteristics of group interaction that can influence positive attitude change. It should be noted that in much of the literature related to contact and stereotyping, the terms *in-group* and *out-group* are used. Although perhaps intuitive, the meaning of these terms suggested members of a group from one profession would be considered members of an in-group and those from other professions would be considered as members of out-groups.

Pettigrew's (1998) characteristics included: (a) learning about out-groups can happen when groups are brought together and this can, in turn, improve attitudes; (b) cognitive dissonance, or the discomfort that arises when we experience two different mind sets that are inconsistent, will cause people to seek consonance in order to reduce anxiety, and this may in turn cause revision of previous attitudes and behaviors; (c) emotions can play a role in attitude change both negative and positive; and (d) contact among different groups can help us to see ourselves as others see us allowing us to reconsider our own group in a more positive light. All of these characteristics, predicated upon aspects of contact theory, can shed light on IPHE. Although beyond the scope of this literature review, there is an emerging body of knowledge related to emotional learning (Brown, 2004), which may help to extend Pettigrew's observations. The results of an evaluation of an interprofessional rural placement program demonstrated major

changes in attitudes when students in rural communities live together (Charles, Bainbridge, Copeman-Stewart, Tiffin, & Kassan, 2006).

The social identity theory (Tajfel, 1981; Tajfel & Turner, 1986) has also been proposed as a way to explain components of interprofessional education and collaborative practice. Social identity, as described by Tajfel and colleagues, has suggested that we tend to reinforce positive perceptions of our own group and less positive perceptions of out-groups, making it necessary to seek ways of reducing the negative perceptions of other groups. By focusing on the positive dimensions of difference between two groups, tolerance for diversity arises and the differences become positively recognized by the groups concerned and others external to the groups thus strengthening role security (Barnes, Carpenter, & Dickinson, 2000). However, identity with a profession's history, practices, theories, attitudes, and behaviors is strongly rooted in explicit and hidden traditions of education and practice making change challenging.

As complementary theories, social identity theory and self-categorization theory attempt to reconcile the role of identity of an individual as a person with values, beliefs, knowledge, and skills that help to define who they are. No matter whether one examines collaborative practice from the individual or the group perspective, the common denominator is self in the sense that the individual is a conscious, thinking being whose sense of self in personal and professional terms impacts their social and professional interactions with others.

Ways of ameliorating the implications of social identity theory for IPHE are summarized by Dickinson and Carpenter (2005). There are three potential models that can be applied. Brewer and Miller (1984) recommended socialization of members of

different groups so that each person is known by name rather than profession, whereas Gaertner, Dovidio, Anastasio, Bachman, and Rust (1993) proposed creating a combined larger group to which members of different in-groups belong, creating a focused common interest for all members of the larger group and minimizing in-group bias. In practice, program management models in the health service delivery system were created primarily to sustain a common focus on the patient group for whom the program provided care. This management model could have been used to foster collaborative practice along the lines of the Gaertner et al. model. Unfortunately, leadership models, staff development, and resource allocation have not kept pace with the potential for improved collaborative practice through organizations innovations, such as program management. Attempts to reconcile perceived polarities between professional identity and collaboration have been made. Hewstone and Brown (1986) suggested that maximizing the understanding of a group as a whole, and not focusing on the individual or personal characteristics, makes it easier for an in-group to relate to any other out-group. This was reinforced by van Oudenhoven, Groenewoud, and Hewstone (1986), and Brown, Vivian, and Hewstone (1999) who found that positive perceptions of another profession were more likely to occur if the individual with whom they had contact was seen as belonging to their professional group and is viewed as typical of that group rather than atypical. These pragmatic examples of applying theory may or may not improve collaborative practice. Positive interactions at group and individual levels will most often reinforce positive perceptions and improve collaboration potential. Negative interactions will, likewise, increase the chances of anxiety, conflict, and tension and reduce the chances of collaborative practice. It is clear, however, that we are not asking individuals to reject

their professional identity. We are asking them to use that identity and its concomitant unique set of skills to complement those of other out-groups in order to provide the most comprehensive and effective patient care.

Theory from the Field of Education

Adult learning theories (Elias & Merriam, 1980; Houle, 1980; Knowles, 1975; Kolb, 1984) and transformative learning (Mezirow, 1991, 2000, 2003) in particular may also be relevant to the link between theory and practice in interprofessional education. Health and human service learners are adult learners and one could reasonably assume the use of adult learning theory to inform educational strategies. In the interprofessional context, the relevance of the learning, for example, must be apparent to all professions engaged in learning with, from, and about each other.

In examining adult learning theory from the perspective of Knowles (1980), the father of andragogy, the concept of self-direction is key, with teachers or facilitators of learning providing a resource role, there to guide discovery, but not to impose knowledge. In the context of IPHE, problem- or case-based learning is emerging as an effective way of engaging students from different professions in joint learning (D'Eon, 2005; Hall & Weaver, 2001) However, as suggested in the stereotyping literature, negative role models or resource people can adversely affect the learning process (Carpenter, 1995) meaning that learning guides have a responsibility in IPHE to avoid advertently, or inadvertently, reinforcing negative attitudes of one group toward another in shared learning experiences. In Knowles's work, personal development and the ability of adult learners to link learning to their own experiences may be important in addressing the best timing for IPHE, when learners are new and malleable or when they have had

some experience and are more comfortable with their professional identity. By focusing on what happens inside the learner, the self-directed approach to IPHE could inform how learners in the health and human service professions respond to working with a diverse group of professionals as well as patients, families, and other community members.

There are four pillars to Knowles's (1980) seminal educational theory: (a) a new purpose for education, (b) a redirected focus on learning, (c) the concept of lifelong learning, and (d) new ways of delivering education. All four pillars have potential meaning for IPHE. If "the purpose for education is to produce competent people" (p. 19) then the concept of competency-based education supports the emerging competencies for collaborative practice. The goals of IPHE are then congruent with the emergence of a competent practitioner.

As described above, the changing focus to teacher as facilitator can inform promising practices in IPHE, guiding learners to use their own experiences in their learning journey toward collaborative practice and enabling teachers to rethink the contexts and manner in which their students learn. As we begin to understand the need for IPHE in pre- and post-licensure stages of health professional development, the concept of lifelong learning enables us to refit experienced professionals in a rapidly changing health care delivery system. Tailoring the learning experiences and expectations for those who have been in practice for some time will allow IPHE to resonate and be valued as relevant throughout a person's career. If, for example, we focus continuing professional development in IPHE clearly on clinical issues, enabling professionals with diverse backgrounds to bring their expertise to the learning experience, their lifelong learning as a collaborative practitioner becomes highly valued. Finally, the way in which

we deliver IPHE can benefit from Knowles's conceptualizations of multimedia learning systems, community education, learning communities, and learning networks to name a few. Making IPHE flexible in both academic and practice settings, reinforcing patient/client-centered and family-focused care, and looking to innovative learning methods and environments in order to create collaborative practitioners will be essential. While Knowles is one of the fathers of educational theory, and his seminal work is somewhat dated, he remains an anchor for current and emerging educational development (Barker, Bosco, & Oandasan, 2005; Freeth & Reeves, 2004; Parsell & Bligh, 1999; Parsell et al., 1998; Steinert, 2005).

Transformative learning (Mezirow, 1978, 1989, 1991, 2000, 2003) represented a strong theoretical base for IPHE. Students and practitioners are being asked to change their traditional practices and undergo a type of transformation. The principles of transformative learning theory may contribute to the links between theory and practice in the context of interprofessional education. Adult education has, to a large extent, been immersed in the traditional model of needs assessment followed by learning objectives designed to guide behaviors that must be learned and observed in relation to tasks that must be accomplished. In health professional education, this model is prevalent and, to some extent, understandable given the volume of specific tasks that health care professionals must learn to be safe and effective.

As we turn our attention to interprofessional collaboration, however, Mezirow's (1978, 1989, 1991, 2000, 2003) work has suggested that we need to delve deeper into two additional areas: social interaction that includes the educational process, and perspective transformation. Mezirow (1981) used Habermas's (1984) critical theory related to adult

education as his anchor. Habermas specified three areas of education interest: the technical, the practical, and the emancipatory. It is this area of emancipatory cognitive interest that Mezirow examined more closely. Mezirow (1981) described this area as “an interest in self-knowledge, that is the knowledge of self-reflection, including interest in the way one’s history and biography has expressed itself in the way one sees oneself, one’s roles and social expectations” (p. 5). In the context of the health and human service professions, professional history has contributed heavily to the development of an ideology specific to any one professional group. Mezirow (1981) described ideology as “a belief system and attendant attitudes held as true and valid which shape a group’s interpretation of reality and behavior and are used to justify and legitimate actions” (pp. 5–6). If we are to enable IPHE we are, in a sense, asking health and human service professionals to examine their ideology through a process of self-reflection, and to understand the assumptions we hold about ourselves, and our relationships to others. This emancipatory process requires individuals to go through a process of understanding self and others in such a way that they can act upon these new understandings in order to create more inclusive relationships. This process is, according to Mezirow, perspective transformation and the basis for transformative learning. As we delve more deeply into IPHE, this process of transformative learning may be critical to a better understanding of its complexity and the educational models that will allow for truly collaborative practice.

There are two primary activities that underpin perspective transformation: reification, and critical reflectivity. Reification is the process of attributing concrete characteristics to a concept, as if the concept must be true and beyond human intervention. According to Mezirow (1981), “Reification may involve a whole

institutional order, specific practices, roles or one's very identity, as when a person totally identifies with his or her social roles" (p. 10). In IPHE, we are asking individuals to rethink their roles and position within the domain of health and social service delivery. In order to move from discipline-specific truth to shared truth, the creation of clear and shared conceptual goals may positively influence IPHE. Transformative learning may provide answers as we try to use IPHE as the process for examining practices, roles, and identities in order to determine new roles and shared competencies. Critical reflectivity asks us to examine why we believe in our own professional realities, realities that, according to Mezirow (1981), may be "misconstrued out of the uncritically assimilated half-truths of conventional wisdom and power relationships assumed as fixed" (p. 11). Critical reflectivity may be one of the most important elements of IPHE, leading to perspective transformation as a stage of adult development and best suited to the adult learner.

Traditionally, adult education has been focused on behavioral change, which, in and of itself, has not been effective. If we are to effect deep and sustainable change in the way health and human service providers work together, we may need to attend to social interaction and perspective transformation. Mezirow (1981) suggested that, in order to focus on social interaction from an educational perspective, we need to help learners:

Interpret the ways they and others with whom they are involved construct meanings, ways they typify and label others and what they do and say as we interact with them. Our task is to help learners enhance their understanding of, and sensitivity to, the way others anticipate, perceive, think and feel while involved with the learner in common endeavors. (p. 18)

In light of the interactions required for interprofessional collaboration, this expanded view of adult education holds promise for educational practices grounded in educational theory. In addition, perspective transformation requires us to assist learners to gain alternative meanings for reified power relationships, for example, that are rooted in historical ideologies. By helping health and human service professionals to understand the reasons for their deep-rooted beliefs, transformation can occur.

Mezirow's (1978) theory of transformative learning is not without its critics. Taylor (2001) suggested that neurobiology research has shown that rationality and emotion must both be considered for transformation, and that transformative learning relies too heavily on critical reflection. However, Mezirow's theory of transformative learning may still strongly inform our understanding of how we move from competencies and learning outcomes to learning activities and contexts that promote social interaction and perspective transformation.

The definition of IPHE that lies at the root of this research study uses the words learning with, from, and about as its central theme. These words must have meaning from which education strategies can be derived to appropriately lead to transformation. The theoretical frameworks that support adult education can provide many approaches that may help to strengthen IPHE. Self-directed learning, performance or competency based education, and perspective transformation can all inform a better understanding of the types of learning experiences that will enable future health and human service providers to work collaboratively in an emerging new workforce.

Other Possible Theories

While IPHE can draw from a wide range of theories borrowed from various disciplines, there seems no singular theoretical perspective that is sufficiently comprehensive to do justice to its complexity. In addition to those already discussed, two further theories may be worth consideration as we attempt to better understand the theoretical options available. Complex adaptive theory has been applied in many contexts, including organisational behavior, and may also be applicable to IPHE. Cooper, Braye, and Geyer (2004), though, have attempted to apply complex adaptive systems theory to IPHE. Cooper et al. suggested complex adaptive systems provide a coherent theoretical foundation for interprofessional learning that may help to explain practice changes in a more flexible way, especially given renewed attention to the structural changes in service delivery organizations required to support interprofessional collaboration. In addition, a significant component of health professional education occurs within the practice, or health service delivery, setting. The system in the United Kingdom, for example, has championed IPHE by calling for:

The development of new common foundation programmes for health care professionals, which will enable students and staff to switch careers and training paths more easily, will promote teamwork, partnership and collaboration, skill mix and flexible working, and will lead to the development of new types of workers. (Cooper et al., 2004, p. 180)

This purposeful linking of IPHE along the continuum of learning, in both academic and practice settings, underscores a connection between IPHE and complexity theory as it applies to learning and to organizational behavior. Complexity theory emerged from the

fields of natural science, including physics, as new discoveries suggested that the world was not linear, predictable, and orderly and that where human interaction is concerned there are orderly and disorderly as well as complex and non-linear phenomena. Cooper et al. (2004) suggested that learning, as discussed in the context of educational theory, is non-linear and complex. They grounded their emerging research in Tosey's (2002a) four principles for linking complexity theory and IPHE: (a) self-organization supports constructed learning as an effective type of learning, (b) paradox moves traditional linear learning away from the notion of education as a product and more to a de-limiting focus on student's learning experiences; (c) emergence starts to focus on the influence of the relationship between student and educator; and (d) the edge of chaos finds a balance between turbulence and rigidity. Together, these principles lead in the direction of inquiry-based teaching, self-awareness, and reflection. When combined with policy directions and organizational mandates, the approach to learning, which is supported by complexity theory, may be one way of addressing the continuum of IPHE from pre-licensure education into the practice setting.

In addition, social learning theory may benefit our understanding of IPHE. Wenger's (1998) and Wenger, McDermott, and Synder's (2002) use of social learning theory in the context of Communities of Practice may be useful in the development of IPHE. Wenger attempted to understand connections among knowledge, learning, and identity. Wenger's descriptions of communities of practice may be interesting to examine in light of the stereotyping literature. Wenger focuses on two main processes: reification, and participation. Reification, as discussed earlier, enables individuals and communities to "learn what they need to learn to take actions and make decisions that fully engage

their own knowledgeability” (Wenger, 1998, p. 10). Participation, on the other hand, moves the individual beyond reification to translating the reified concept into something meaningful. Wenger suggested that neither reification nor participation could be considered in isolation if learning is to lead to meaningful change. Bandura (1977), best known for his work on self-efficacy, emphasizes the importance of modeling the behaviors, emotional reactions, and attitudes of others in the context of social learning.

Bandura stated:

Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do.

Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (p. 22)

Bandura has applied social learning theory in several behavioral contexts, including aggression and behavior modification, and has associated social learning theory with behavior modeling that is so common in training programs. The notion of behavior modeling may be of particular interest in light of the stereotyping that emerges inadvertently in hidden curricula based upon old patterns of interaction with other professions.

The field of theories that could help to inform our understanding of IPHE is wide and deep. This brief overview of some theoretical connections helps to situate IPHE firmly in amongst behavioral theories. Some theorists place educational theory in the same domain as behavioral theory, but for the purposes of this study it has been relegated

to a category of its own. Notwithstanding the theoretical bases of IPHE, there are issues that must also be understood if IPHE is to be effective.

Issues and Controversies

The road to collaborative practice is not an easy one. Several issues facing this major shift in education and practice in the health and human services are articulated in the literature and have still to be fully resolved. Colyer et al. (2005) suggested that IPHE is a paradigm shift influencing education, practice, policy, individuals, and organizations. While this is likely to be true, there remains a tension between the need for strong unique bodies of knowledge and practice and the need for shared competencies; a clear understanding of the strengths and limitations of any one profession, and co-operation/communication/co-ordination as the primary elements of collaboration. These tensions are perhaps most evident in the phenomenon called stereotyping.

The Persistence of Stereotyping and its Contribution to the Barriers to Interprofessional Health Education

Stereotyping can be defined as “social categorical judgment(s) ... of people in terms of their group memberships” (Turner, 1999, p. 26) and according to Hean, MacLeod, Adams, and Humphries (2006), “it is seen as innately socially undesirable to hold stereotypes of the members of social groups other than one’s own ... [but it is] ... a natural human process” (p. 163). In examining the impact of stereotyping on interprofessional education and practice, we are working from three theses: (a) that stereotyping does influence education and practice, (b) that stereotyping gets in the way of collaboration, and (c) that in the roots of stereotyping we may find the parts of our professional heritages that we need to preserve in order to move forward with

collaborative practice. It is difficult to know another profession intimately, and in the absence of this knowledge we make assumptions based upon what we believe others do in their professional practice. Based often upon the media's representation of health care professionals, misunderstanding is widespread. These stereotypical assumptions are hard to change. Barnes, Carpenter, and Dickinson (2000) found that negative attitudes toward other health professionals during interprofessional education encounters did not change over two years of shared learning. Barnes et al. suggested that this might be attributed to strong stereotypes that are reinforced in day-to-day contact, or that the environment is not conducive to deconstructing stereotypical attitudes. Hewstone and Brown (1986) studied in-group and out-group behaviors and suggested that members of the out-group, or the other professions, have to be seen as typical for change in attitudes to occur. If the students from the out-group are perceived to be self-selected, and somehow different than the norm within that profession, change will not happen. Based on social contact theory, Barnes suggested that two changes to interprofessional education (IPHE) might need to be made to change stereotypical behaviors. One, that students should be given encouragement to talk about differences, as well as similarities; and two, that students should be encouraged to come to the discussions wearing their home profession so that others can observe them in action and judge them according to their observations, not according to the stereotypical image. Barnes's approach supported the hypothesis that a strong connection to the home profession, including its historical roots, is essential for strong collaborative practice.

If the perceptions of one group about another group are positive, it seems reasonable to expect that collaboration is more successful. In a UK study, relationships

between stereotypes, professional identity, and readiness for professional learning were examined (Parsell & Bligh, 1999). If students are feeling positive about their own profession as they enter their training, then enabling students across professions to learn together early in their training programs may help to capitalize on these positive perceptions.

Power differentials and perceived status within the health and human service delivery system can negatively impact collaboration. Skevington (1980) studied low and high status groups, and found that those in a perceived high status group tried to differentiate themselves from the low status group; whereas, the low status groups tried to express similarities to the high status group. A study by Knippenberg and Oers (1984) found that groups that felt superior tried to articulate differences between their group and perceived low status groups, often exaggerating their skills in order to retain that sense of superiority.

Carpenter (1995) also discovered that stereotypes are not always negative. When positive stereotypes are found they can be used to enhance collaboration. Carpenter defined different types of stereotyping: (a) those views held by students of their own group (autostereotypes), (b) views held of the other group (heterostereotypes), and (c) how a group felt the other group perceived them (perceived heterostereotypes). In a further study, overall attitudes toward other groups improved through IPHE and the students' ability to work together also improved (Carpenter & Hewstone, 1996).

Despite a lack of research into stereotypes and health and human service professions, there are some interesting studies. As discussed previously, Carpenter (1995) demonstrated that negative stereotypes among health professions do exist, and Ryan and

McKenna (1994) suggested that these negative stereotypes diminish professional performance in areas such as communication. Katz, Titiloye, and Balogun (2001) found that physical therapy and occupational therapy students, who engaged in IPHE, were more positive about the other profession. Parker and Chan (1986) used the Health Team Stereotype Scale, originally developed by Parker and Reisch (1981), to examine stereotypes between physical therapy and occupational therapy students, and found that each profession viewed itself more positively than the other profession. Davidson and Lucas (1995) suggested that perceptions of other professions change according to the education received, not whether that education was interprofessional, leading to an examination of how the professional culture that is rooted in history is transferred to students, often by way of a hidden curriculum. Indeed, Hafferty (as cited by McNair, 2005b) suggested, “Professional stereotypes are reinforced for students through a powerful hidden curriculum, delivered by senior colleagues who can role model negative attitudes and behaviors towards other disciplines” (p. 3).

Conditions for positive attitudes change are articulated by Hewstone and Brown (1986). For example, members of an out-group must be typical and not exceptions to the stereotype. If experiences with one member of a specific profession are negative, and this interaction is generalized to the whole profession, a negative attitude may prevail when interacting with others from the same profession with no rationale other than one previous experience. It is still unclear in the literature whether education can minimize stereotyping. According to Carpenter (1995) and Parsell et al. (1998), the sustainability of attitude change is questionable and short term interventions may, in fact, increase negative stereotyping.

As stereotyping is one of the major issues facing IPHE, it is clear that the research related to stereotyping can help us to examine some of the complexities of bias, behavior, and professional change. Ensuring that we understand fully what characterizes successful IPHE and how we can change learning and practice in a positive way, rather than reinforcing stereotypes or out-dated ways of practicing, will be essential for future generations of educators and practitioners.

The Timing of Interprofessional Health Education and Associated Challenges

The eternal quest for the right timing of interprofessional education in the health and human services has been debated from two perspectives. A sound professional identity is supported by many who believe that it is not possible to participate fully in collaborative practice if the student is not confident in his or her own skills (Funnell, 1995; Mazur, Beeston, & Yerxa, 1979). If the student is not confident, unwillingness to share and inflexibility about roles can create conflict. However, Parsell et al. (1998) found that students believed early introduction of IPHE was helpful, obviously well before solid professional identities had been formed. The impetus for developing the Readiness for Interprofessional Learning Survey by Parsell and Bligh (1999) was grounded in the tensions that arise between discipline-specific needs and the need to share in an interprofessional context. Several researchers supported an early introduction to IPHE in order to develop positive attitudes towards other professions, including the theory and practice of teamwork, and to avoid stereotyping as a barrier to IPHE (Areskog, 1995; Leaviss, 2000; Mackay, Scorr, & Smith, 1995; Parsell et al., 1998).

Hind et al. (2003) provided one example of a study that exemplified the uncertainty about the timing of effective IPHE. Findings in this study indicated that first-

year health and human service students are both excited by their chosen profession and willing to share and collaborate. Hind et al. suggested that this may be true because they have had little exposure to their home profession and are still able to see themselves as a part of a greater whole. Future studies, aimed at identifying factors that sustain attitude change in support of interprofessional collaboration, are needed. In Hind et al.'s study, a negative relationship between professional identity and readiness for interprofessional learning was well supported, but the relationship between stereotypes and readiness for interprofessional learning is not clearly established. A positive relationship between in-group stereotyping and professional identity seems clear. However, out-group stereotyping may lead to a decreased willingness to commit to shared learning and practice. Overall, Hind et al.'s study suggested that interprofessional teachers might wish to use the early introduction of IPHE as a strategy, given the enhanced sense of group belonging evident in first year health and human service students. Hind et al. also suggested that discovering predictors of attitude changes toward other professions may help to link students' social, and other, interactions in the early years of their study to sustainable changes that improve collaboration and, therefore, patient care. However, overall, the literature suggested that there is no consensus on the best timing for IPHE (Barker et al., 2005; Carlisle, Cooper, & Watkins, 2004; Russell, Nyhof-Young, Abosh, & Robinson, 2006).

Stereotyping involves preconceived opinions and perceptions of other professions that may be negative or positive, either of which can be reinforced through interprofessional education (Mandy, Milton, & Mandy, 2004). Unless the timing of interprofessional education is examined carefully, the stereotyping that may ensue from

interprofessional learning encounters could hinder, rather than promote, collaborative practice.

Additional Issues for Interprofessional Health Education

There are multiple logistical barriers to interprofessional education. Clark (2004) highlighted the institutional challenges to providing students the opportunity to learn with, from, and about each other. Clark suggested that educational institutions required an external force, such as accreditation or grant funding, in order to embrace the change to interprofessional learning, rather than resisting it. Financial stresses or inadequate human resources will cause an institution to revert to old habits, namely silos of health professional education.

The resistance to interprofessional education and collaborative practice may be captured in professional identification and role blurring. Barr (2002) suggested that professional time and energy has been channeled into profession specific development as professions such as medicine expanded in scope and required attention to the relationships among the various medical specialties. The time and energy required for this nurturing growth of the medical profession left little appetite for interprofessional relationship building.

There are also contextual considerations for interprofessional learning and collaborative practice. While it would be difficult to identify an area of health and human services that is not a valid context for collaboration, there are contexts, such as home and community and mental health, in which working closely together amongst professions is imperative, with role blurring and shared competencies common aspects of health service delivery. In contrast, in the operating room, for example, while collaboration does occur,

the surgeon is clearly the team leader and the roles and tasks of each of the team members are clearly defined.

Interprofessional education is also a relatively new feature of continuing professional development. Browning (2001) suggested that mandatory continuing professional development, as required by regulatory authorities in the health and human service professions, changes the nature of continuing professional development. For many health professions, continuing professional development is designed to assure regulators and that competence to practice is maintained. The associated continuing professional development is typically related to discipline-specific skills, and not to collaborative practice skills or even to shared skills that could effectively be learned using an interprofessional education approach. Interprofessional continuing professional development has been tested, and has been found to be effective in increasing commitment to the interprofessional team as well as improving communication with other professionals (Thistlethwaite, 2003), but until these skills are valued by regulators, IPHE and continuing professional development seem to be somewhat disconnected. In addition, we have little understanding of the effect of IPHE interventions over time. Most measures are immediate, and most outcomes are complicated by numerous co-variables making the impact of IPHE in the context of continuing professional development difficult to test. However, as changes in attitudes and practice are examined over time, in particular in the post-licensure context, and extensive conceptualization of interprofessional education develops, both areas could inform future studies in the area of continuing professional development.

Summary

The field of IPHE is emerging as an educational imperative due to a belief that interprofessional collaboration is one factor in improving patient safety and health outcomes. In addition, as staff shortages continue to grow, recruitment and retention of health care providers, as shortages continue to grow, are seen as powerful incentives for training collaborative practitioners who feel valued as members of interprofessional teams. However, while the literature related to IPHE has increased exponentially over the past few decades, there is still little empirical evidence of its ultimate effectiveness in improving health outcomes. Despite some evidence suggesting that patient safety and quality of care has improved through collaborative practice, attributing these improvements to IPHE alone is difficult.

Various authors in the IPHE field have drawn inspiration from a variety of theoretical frameworks, but no one theoretical perspective has emerged as sufficient to address its inherent complexity. Social sciences theory and educational theory appear to be the most relevant and supportive. The concept of transformative learning, or perspective transformation, provides an understanding of the shift we are asking learners to make as we introduce concepts, such as (a) shared competencies, (b) non-hierarchical organization of the work force, and (c) truly interprofessional collaboration that transcend professional boundaries. Social contact theory illuminated the need for active engagement as part of the IPHE process, and complexity theory has begun to link IPHE and organizational behavior so that the continuum of IPHE from the academic to the practice setting can be examined.

In the literature, IPHE is most commonly defined as learning “with, from and about” (Barr, 2002, p. 17) each other. The CAIPE definition has captured the attention of those in the field of IPHE. What is missing to date is a way of understanding the concept of working with, from, and about each other in order to apply them fully to the complex activities required for effective IPHE. One of the basic gaps in the literature relates to the need for a deeper level of description than that provided by the current definition of IPHE. While the CAIPE definition (Barr, 2002) has clearly provided an increasingly global reference point, there is a compelling need to conceptualize the component parts of the definition more deeply, in order to inform future curricular development and evaluation of interprofessional learning. The complexity of the process by which health care practitioners—present and future—become collaborative has not yet been fully articulated. This complexity requires both students’ and faculty members’ perspectives on the meaning and application of this educational approach. This study moves beyond merely testing an existing definition. It uses the mixed methods of qualitative and quantitative approaches to probe, examine, and ultimately describe IPHE. The following chapter describes the methodological choices and approaches that were best suited to answer the research question.

CHAPTER THREE

METHODS AND DATA COLLECTION

In any research study, the methods by which the inquiry is conducted, the way in which the data are collected, and the approaches to data analysis are the most critical areas for discussion. In this chapter, I describe the ethics approval process, as well as the choice of methods for the research and the data collection.

Ethics: Review Process and Approval

Despite the perceived low risk of the research in this study, the subjects are human subjects and, as such, specific ethical requirements must be met and approved by both the Institutional Review Board for Union Institute and University and, in the case of this research, the Behavioral Research Ethics Board at the University of British Columbia (UBC).

The research assistant and I both successfully completed the on-line tutorials as required by both ethics review boards: The Union Institute and University Institutional Review Board and the UBC Behavioral Research Ethics Board. These included: the Collaborative Institutional Training Initiative Course for the Protection of Human Research Subjects for the Institutional Review Board, and the Tri-Council Policy Statement (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, 1998): Ethical Conduct for Research Involving Humans tutorial for UBC. These on-line courses are designed to ensure an appropriate understanding of the ethical principles and practices associated with research involving human subjects. In addition the Collaborative Institutional Training Initiative Module on web-based surveys, also for

the Institutional Review Board, provided an overview of the special ethical considerations involved when using web-based research instruments.

During the ethics review process for both the Institutional Review Board and the Behavioral Research Ethics Board, the primary concerns related to this research study related to reassurance of participants that there would be no negative impact of choosing either not to participate or to withdraw from the study, and recognition of the potential for the subject area to be perceived as sensitive. In the revised application and in the course of obtaining consent and participating in the focus groups, all of the concerns of the ethics review boards were addressed. The letter of initial contact can be found in Appendix A and the information and recruitment letter in Appendix B. The letter of informed consent is found in Appendix C.

Union Institute and University Institutional Review Board

The Institutional Review Board review process required completion of a standard application template. Following the first application, there were several issues to address. All of the requested changes were addressed, and the second application was approved with the proviso that an amendment would be required for the survey portion of the research once the survey tool was developed. The amended application was submitted once the survey was ready to administer. Few changes were required, mainly editorial in nature. One suggestion was to send a short e-mail to alert potential participants of the forthcoming survey. The amendment was rapidly approved.

The University of British Columbia

UBC's ethics applications must be submitted on-line through the Researcher Information Services System. UBC requires that all ethics applications be submitted on

line using this system. Prior to full approval there was a request to ensure that participants knew that they must actively submit their responses in order for them to be included in the data. It was also necessary to ensure that the participants knew they could withdraw at any time, and that their data would then not be included in the data analysis and in the final report. In addition, a few minor editorial changes for clarification were required.

Methods

For many quantitative studies, the methods chosen can be clearly articulated leading to the application of very specific quantitative research methods, highly quantifiable data, and broadly generalizable conclusions. As is apparent from the literature, interprofessional health education (IPHE) is multidimensional and complex. There is no one methodological approach that could provide the rich data needed to provide answers to the research question: What does learning with, from, and about other professions mean in interprofessional health education, and how is it articulated and operationalized in the context of curriculum design?

Because of the complexity of IPHE and its situation in the increasingly complex contexts of higher education and healthcare delivery, a mixed methods approach appeared to be the best strategy for examining the research question. In order to demonstrate the appropriateness of the methodological approach chosen, the following chapter describes qualitative and quantitative tools that can effectively probe the question and potential answers. Careful consideration of appropriate tools resulted in an informed choice about the most appropriate method for this study (i.e., mixed methods).

For the purposes of this study, there are two perspectives that are central to the research question. In many health sciences programs, students are engaged in learning

experiences that are labeled interprofessional. Their experiences are highly important components of this study. What do students actually experience? What are the structural elements of the interprofessional educational experience from the user's point of view? How should we teach differently when we are teaching in an interprofessional context? Only students who are currently engaged in, or have been engaged in, the learning experience can answer these questions. In addition to the students' perspectives, faculty members who create curricula and learning experiences related to IPHE can offer a unique perspective on the characteristics of IPHE opportunities. What is the best time to introduce IPHE? What do faculty members consider when building IPHE curriculum components? The lessons learned from the development side of IPHE are intended to balance the learners' observations and, hence, the answer to the research question cannot be satisfactorily sought from only one of these two perspectives.

The mixed method approach provided the opportunity to examine the lived experience of IPHE from two different perspectives. It also allowed me to apply a quantitative method, guided by the qualitative data, in order to create more generalizable findings that can then be applied with confidence to curriculum design and, eventually, to evaluation of interprofessional learning.

Mixed Method Approach

Historically, as qualitative research methods started to gain a foothold in the research world, a marked tension existed between the traditional quantitative researchers and those who embraced the new research paradigm. Both types of research gave little or no credit to the merits of the other approach. Quantitative researchers saw no validity or credibility in the qualitative approach. Qualitative researchers felt that the traditional

quantitative approach placed no emphasis on lived experience and context (Taylor, 2005). The traditional and the emerging paradigms remained at odds with each other until the late 1980s (Krueger & Casey, 2000). Using complex problems as the basis for a renewed examination of the relative merits of each research tradition, slowly the concept of an integrated approach, or mixed method, emerged as a credible research design.

Despite the increasing acceptance of mixed methods, there is still confusion about the term itself. In some domains, mixed methods and multi-methods are used interchangeably to denote multiple data collection strategies from the same paradigm, either quantitative or qualitative. In others, the term is used to describe the use of both qualitative and quantitative approaches in a single research study. Data may be collected concurrently or sequentially in this approach. In yet another definition, qualitative and quantitative methods are used in the same data-collection tool, for example, where open-ended and closed questions are used in the same survey (Patton, 2002b). For the purposes of this study, both quantitative and qualitative approaches were used in the same study.

There is an emerging level of support for the mixed methods approach based on a defensible fit with the research question(s) to be explored. In combination, the inductive and deductive aspects of qualitative and quantitative reasoning respectively allow an exploration of the experience to inform the variables to be tested further. Mason (2006) supported two distinct premises for using a mixed methods approach. The first described the lived experience as multidimensional and argued that using one method in isolation impoverishes the research and, ultimately, the findings and application. In the context of the research for this study, that is IPHE, the examination of the meaning of learning “with, from and about” (Barr, 2002, p. 17) each other requires a research approach that

enables a dialogue about interpersonal interaction, active negation of stereotypes learned from childhood, educational environments that facilitate collaboration, and application potential in real world situations that are also multi-dimensional. Mason (2006) ultimately suggested,

To understand how relationships work and are done, what they mean, how and why they endure or not, how they are remembered, emulated or reacted against and in general what matters in and about them, we need a methodology and methods that open our perspective to the multi-dimensionality of lived experience. (p. 11)

Mason also described a second premise upon which mixed methods may rest and that is the concept that lived experience must be captured at both macro and micro levels. Mixed methods research allows for the development of these connections. While these two premises are related in the literature of the social sciences, the link to educational research is also clear. Learning involves an active engagement with, among other things, emotions, environment, people, dialogue, knowledge, and interpersonal communication. It is, therefore, a multidimensional experience and, as such, is best suited to a multi-dimensional research approach such as mixed methods.

Although the terms integrated research design and multi-method design are also used in the literature, for the purposes of this study the term mixed methods will be used. The working definition for this approach is that put forth by Stange, Crabtree, and Miller (2006):

[Mixed methods] research brings together numbers and narratives, description, hypothesis testing, hypothesis generation, and understanding of meaning and

context to provide fuller discernment and greater transportability of the phenomenon under study. (p. 292)

Mason (2006) suggested that a qualitative platform on which to discuss mixed methods “offers enormous potential for generating new ways of understanding the complexities and contexts of social experience” (p. 10). By using a qualitative research paradigm as a starting point, Mason proposed that the qualitative-quantitative tension can be used strategically to develop and embrace multi-dimensional research approaches better designed to address the complexities of lived experience and the social world in which they occur. The success of any mixed methods study is contingent upon the specific qualitative and quantitative approaches selected to collect and analyse data and upon the extent to which the results from the multiple approaches inform interpretation of each other.

Design and Method

The conceptualization of with, from, and about suggests active engagement of students and faculty members with other students and faculty members across education programs. To examine the lived experience of these active components of IPHE, a qualitative approach through the use of focus groups allowed faculty members and students to probe and examine the individual, lived experiences of interprofessional curriculum design and IPHE learning experiences. A subsequent survey was designed to examine characteristics of IPHE and with, from, and about with a larger number of participants, and to examine difference among variables such as professional background, age, and gender. The survey component of the research was designed with no open-ended questions (see Appendix D), and the statistical analyses that were chosen to compare

across variables. By examining the qualitative and quantitative findings, the mixed method approach to research allowed an initial exploration of IPHE to be strengthened with quantitative findings so that broader generalization was possible. The results of the research form an important part of the contextual description of IPHE, including a deeper understanding of with, from, and about. It is hoped that the findings from this study will meaningfully inform curriculum design so that students from a range of health professional programs are fully and meaningfully engaged in learning experiences that lead to interprofessional patient care and collaborative practice.

In the emerging field of mixed methods research, the reporting of the data from two different methods using the results collectively to inform the overall results, interpretation and conclusions can take several forms. In an editorial by Stange (2004), mixed method research was described as “investigation that integrates quantitative methods that isolate a phenomenon from its context, with qualitative methods that emphasize meaning and an acquaintance with the particulars” (p. 2). Stange described mixed method research as a way of marrying scientific objectivity with an understanding of context and as a way of objectifying a phenomenon, while retaining and understanding of local meaning. Stange, Miller, Crabtree, O’Connor, and Zyzanski (1994) noted that once a researcher has decided a mixed methods approach is the most effective way of examining a research question, the researcher is then left with the task of deciding how to integrate the qualitative and quantitative findings in a scientifically sound manner in order to inform the discussion and the interpretation of findings in a meaningful and credible way. In this research study, the qualitative data are dominant and the quantitative data are non-dominant, used instead in service to the qualitative findings.

For the research study outlined in this report, focus groups and survey design were chosen as the preferred methods of data collection. The qualitative component of this research study fit appropriately with a traditional face-to-face focus group method of data collection. The observed interpersonal communication and interaction among participants were keys to the educational research question posed in this study. The choice of focus groups was also predicated upon the sequential nature of the study (i.e., the desire to examine the experience of IPHE, the individual perspective, that will then inform the broader, contextual description of IPHE, the population). Focus groups allow the researcher to dig beneath the surface and to benefit from group interaction, which comprises the thoughts and discussions stimulated among focus group Kreuger (1998a). Focus groups are a defensible qualitative data collection tool, and the space and the recording equipment for this study was easily accessible. The interactive nature of focus group discussion supported the examination of IPHE well.

A web-based survey was chosen for the quantitative data collection because of the ease of administration and collation of data. Today, all students, graduates, and faculty members have access to the Internet and all have e-mail addresses. Appropriate ethical guidelines for the administration of web-based surveys must be followed (Rhodes, Bowie, & Hergenrather, 2003). Web-based surveys are cost-effective. In addition, web-based surveys reduce the time frame for collecting the data. The data collected through a web-based program can be saved to a spreadsheet and uploaded directly into a statistical analysis tool.

Focus Groups

Historically, focus groups have been used in marketing, industry, and in social sciences research (Stewart, Shamdasani, & Rook, 2006). In the marketing context, focus groups were used to gauge consumer satisfaction with products when groups of users were brought together to provide feedback to the manufacturer or dealership. In the social sciences, focus groups were used extensively in the 1950s following World War II, but then faded from use until the 1980s. Since the 1980s, focus groups have been used more and more extensively. In social sciences research, focus groups have been used to examine the limitations of traditional interviews and to develop strategies that allowed the researcher to take a less dominant role and to use non-directive interviews in group settings (Krueger & Casey, 2000). As focus groups re-entered the qualitative research domain, the rigor with which they are implemented, and with which data are collected and analyzed, increased exponentially.

Morgan (1997) suggested three main purposes of focus groups in research. They can be used (a) as the primary source of data; (b) a supplementary source; or, as in mixed methods approaches, (c) one of two or more data gathering strategies where no one method takes precedence. For the purposes of this study, focus groups were one of two methods used in a mixed methods design, and they were conducted in advance of a questionnaire. The data collected during the focus groups informed the overall understanding of the complexity of IPHE, and the analysis of the qualitative data helped to inform the questions asked in the survey.

Traditionally, focus groups in qualitative research methods have been conducted in small groups to allow for a safe and interactive dialogue among participants. The

researcher is present, but does not lead the discussion other than to ensure that all areas of the phenomenon are explored. Discussions are typically audiotaped, and in some instances videotaped, although the ethical considerations when using videotapes are complex and must be thoroughly examined before deciding to use that medium. The advantage of using videotapes is that the interactions can be observed and the identification of the comments and dialogue can be more easily verified. However, the confidentiality issues and the potential for misuse following the study makes using videotapes a less typical means of recording the data. For this study, no videotaping was used.

The development of focus group questions is clearly integral to their effective use in a research context. Krueger and Casey (2000) suggested a methodical approach to developing and implementing focus group questions that is grounded in the purpose of the study. Without this clear purpose in mind, the questions can drift and, at the end of the study, may not provide data that help to meet the primary aims of the research. Krueger and Casey suggested that a maximum of 12 questions is desirable for a two-hour focus group. The group interaction and the encouragement to share thoughts and feelings increases the time allocated for any one question, meaning that too many questions could prolong a focus group discussion beyond a reasonable time limit. It is, however, this triggering of new ideas or old memories through dialogue with others that forms the unique and valuable characteristics of focus groups. For this reason, a smaller number of questions can allow for interactive discussion within a reasonable time frame.

Krueger and Casey (2000) also suggested several characteristics of good focus group questions. A focus group is, in essence, a conversation, so the questions should

sound conversational. Questions should avoid jargon and technical words that would not be understood by the participants, and they should be written so that they are easy for the facilitator to read aloud. Questions should be clear in their meaning so that participants can understand them and not find them ambiguous. Short, open-ended questions allow participants to remember the essence of the question and to consider a longer, more explanatory answer. The questions should avoid multiple concepts, as the participants' interpretations of words may differ from each other and from that of the facilitator. Clear instructions are critical to the success of the focus group.

Not only is the design of the questions important, but the questioning sequence or route is also a key part of the focus group method. Starting with easy questions, such as those related to introductions can be used as ice-breakers (Krueger & Casey, 2000; Morgan, 1997), and then the sequence of questions unfolds from general to specific, while keeping at all times linked to the focus of the group discussion. Krueger and Casey suggested "mile markers" (p. 43) to ensure that there is adequate time for the more difficult questions that will be asked in the later stages of the focus group discussion. The questioning route is most typically used in qualitative research designs in contrast to the topic guide more typically used in market research. It keeps the questions consistent across groups and, therefore, improves the quality of the analysis (Krueger & Casey, 2000).

The types of questions can be categorized as part of the questioning route (Krueger & Casey, 2000). Suggested categories are opening, introductory, transition, key and ending. Opening questions set the stage for easy conversation. They are usually factual questions that do not highlight differences or power differentials. They encourage

everyone to speak in a safe environment, opening the process for each person to contribute throughout the discussions. Introductory questions introduce the topic of the focus group through the use of open-ended questions that encourage everyone to think about their connection to the topic. The following question is an example of an introductory question specific to this research study: “What is the first thing that comes to mind when you hear the words IPHE?” Transition questions link the introductory, positioning questions to the key questions, which form the backbone of the focus group. They situate the participants more fully in the subject of the discussions in preparation for the key questions. Key questions are the central component of the focus group. They require serious thought as part of the preparation and are the questions that will derive the greatest attention during the analysis. Beginning about a third or halfway into the focus group discussion, key questions will require time, probing, and pauses. To bring the focus group to a close, ending questions are also a critical focus for the analysis. Participants will reflect upon the previous discussion and are encouraged to drill down into the critical areas of the dialogue. The following question is an example of an appropriate ending question: If you had to explain to a person new to education what learning with another health professional means, what would you say? After the assistant or the facilitator provides a two- or three-minute summary of the discussion related to the key questions, participants are typically asked to comment on the summary. Examples of summary, ending questions are: Did I miss anything? Does the summary reflect the discussions adequately? The final question leaves time for comment on anything that was left unsaid or glossed over. When subsequent focus groups are planned, the first groups can be asked for suggestions for improvements in the following groups. This overview, derived

primarily from Krueger and Casey (2000), was used to guide the focus group templates for this study. The focus group guides for both faculty member and student groups can be found in Appendix E.

Sample

According to Morgan (1997), participants for focus group design are rarely well selected by random sampling methods. The purposeful sampling strategy creates a more homogeneous group composition and, as such, allows for more free-flowing and meaningful discussion. Selecting participants from a limited number of sources, in the case of this study only two, is only considered to be an issue if the analysis claims to make the findings generalizable. Patton (2002a) supported this approach; Patton suggested that purposeful sampling is a hallmark of qualitative research.

The logic and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, thus the term purposeful sampling. (p. 273)

Two sample groups were needed for this research study. Faculty members who were engaged in curriculum design and students who had participated in, or were participating in, interprofessional elective courses from the health and human service programs at the UBC were invited to participate in the study. Focus groups were conducted at the UBC and a subsequent survey was administered to faculty members and students at the same university. These faculty members and students in the health and human service programs at UBC provided a purposive sample of over 300 from which individuals could volunteer to participate in the focus groups and in the survey.

For the qualitative phase of the research (i.e., focus groups) the purposive sample was composed of 12 faculty members who have been highly involved in interprofessional education, including curriculum development and implementation. The faculty groups, therefore, characterized individuals who are knowledgeable about IPHE as well as curriculum design. Another 12 students who have participated in, or are participating in, formally recognized IPHE courses participated in focus groups, characterizing individuals who are end users of an IPHE curriculum. Student and faculty member groups were each conducted separately to avoid any potential for discomfort, especially for students, if the two sample groups had been mixed.

Survey/Questionnaire

Surveys, or questionnaires, are a common form of quantitative research. In examining survey methodology, there are serious considerations that must be addressed so that the data are credible and reliable. According to Fowler (2002) these include sample frame, question design, and method of distribution.

Sample

Fowler (2002) suggested that there are three primary considerations for sample selection in survey design: (a) the correlation between the population that is the focus of the study and the sample frame, (b) a credible approach to sample selection that ensures that each person in the sample frame has a known chance of selection, and (c) the likelihood that the sample approximates the population characteristics. If the population for this study were to comprise all students in health and human service programs who generally participate in IPHE courses, this would be an impossible group to describe and identify in order to recruit to focus groups or to distribute a survey. Therefore, for the

purposes of this study, the sample comprised all students or new graduates from the health and human service education programs at the UBC who had participated, or were participating, in interprofessional elective courses. This part of the sample allowed for a close correlation between the sample frame and the population that is the focus of the study. Because all students who had participated in interprofessional elective courses were given the opportunity to be listed in a database of students willing to participate in research, each individual in the sample frame had a known chance of being selected. Faculty members were accessed through their department heads by way of program e-mail lists (see Appendix F) and, therefore, each individual in this sample frame also had a known chance of being selected. The sample characteristics are, therefore, representative of all faculty members who engage in the development, implementation, and evaluation of IPHE courses and other learning experiences at this particular institution. The student characteristics are representative of students at UBC who are, or have been, engaged in IPHE.

Question Design

Fowler (2002) spent considerable time discussing the design of good survey questions. In contrast to the conversational nature of focus group questions, survey questions collectively comprise an instrument designed to measure certain variables. The connection between the questions and the purpose of the study must be explicit and evident. According to Fowler, careful design of survey questions requires the following considerations:

1. Consistent measurement demands that each survey respondent is asked the same questions.

2. The questions must mean the same things to each respondent, thus requiring careful consideration of the words and language used.
3. Despite some of the advantages of open-ended questions, closed questions are most suitable for written survey instruments.
4. Asking why questions should be avoided in survey instruments.
5. Terms that may not be clear to any respondents should be defined in the survey.
6. Avoiding multiple questions at once. Ensuring that each question asks for a response to only one thing.
7. Using caution when questions allow respondents to answer with the response, "I do not know".
8. Keeping the number of questions manageable.
9. If possible, avoiding agree-disagree questions as the respondents may find it difficult to choose one over the other. Their views may lie somewhere in between and responses to this type of question are hard to interpret reliably.
10. Ensuring that the tasks required of respondents are clear and simple.
11. Addressing the issue of validity by reducing ambiguity and standardizing presentation; offering more categories for response rather than fewer; and asking multiple questions that measure the same issue in different ways.

Computer-generated surveys, while making some aspects of design easier, also create some potential barriers. For example, there is no interviewer to probe; therefore, the questions must be clear enough on their own to negate the need for probes. Given the newer web-based survey design options, there are no question types that cannot be asked,

but the design and questions chosen must be carefully tested before applying the final survey instrument.

Distribution

Given widespread acceptance of the level of response rate as evidence of an effective research method, there are clearly important factors to consider in achieving the highest response rate possible through questionnaire or survey design. Non-response bias may occur when the return rate is not adequate, leading to potential inaccuracy, as the sample of respondents does not reflect a large enough portion of the respondents or the non-responses are numerous enough to suggest that they may have influenced the conclusions drawn from specific areas of interest (Yu & Cooper, 1983).

In a systematic review of the effects of research design on response rates to questionnaires, Yu and Cooper (1983) used a quantitative approach to examine the literature presented in 93 articles, all of which related to strategies for increasing response rate. Response rate was described as the unit of analysis. Yu and Cooper were cognizant of the multifaceted nature of research design and were hesitant to suggest conclusively that one method is better than another in different circumstances, yet there are some useful findings. Yu and Cooper have described mail surveys as the least effective method of generating a high-response rate when compared to telephone interviews or personal interviews. However, since this study was completed, technology has advanced, and the concept of the on-line survey, or questionnaire, is now a consideration. Couper (2001) examined the use of the web for conducting surveys. Issues such as the use of graphics, screen orientation, number of items per screen, use of radio buttons, spaces for entering open-ended responses, hand-eye co-ordination, and visual alignment were embedded in

three studies aimed at finding correlations between design features, response rate, and accuracy. Additional study factors included software features such as interactivity and access. Couper suggested that, for a student study population, general access to e-mail and Internet is not a cause for concern. Advantages included the speed of return. Return rate was, however, influenced by the automatically generated user identifications and passwords required to access the survey. If the passwords contained ambiguous characters such as the letters *l* (el) and *o* (oh) and the numbers *1* (one) and *0* (zero), participants in the study were significantly less likely to start the survey. The letter of invitation sent in advance provided the participants with the user identification and password to prevent ballot stuffing from happening. Abandonment of the survey did not seem to relate to presence or lack of progress indicators or to specific questions.

However, the graphic elements necessary to provide progress indicators did slow down the download time from many home computers, which may have influenced response rate. Multiple item screens, versus single item screens, appeared to take less time to complete and resulted in fewer non-substantive answers. Finally, radio button entries, versus short or long text boxes, were compared. Generally, missing data occurred more often when entry boxes were used, and the long entry box produced different results than the short entry box, which lead Yu and Cooper to suggest that formatting of the answer boxes could impact the responses received. The implications for questionnaire or survey design related to the web interface require attention to design elements not necessary in a paper questionnaire, but the potential for interactivity and new opportunities make this an option worth investigating.

Given the universal access to computers and the Internet in a university environment, a web-based survey was used for this component of this study. Web-based access made it easy to distribute the survey and the response rate could be tracked over 10 days during which the survey was open. Steps were taken to ensure an adequate response rate, and two reminders were distributed electronically on the sixth day and eighth day of the 10-day survey period. During the testing of the survey, it was determined that 15 minutes was an adequate amount of time to complete the survey, and this was noted for participants. Demographic data were collected so that the appropriate statistical tools could be applied to compare groups. These data included profession, faculty or student, gender, age, and number of years experience in clinical practice.

Data Collection

In order to ensure the required number of faculty member participants, electronic letters of invitation for the focus groups were sent by the research assistant to the program heads for all faculty members involved in health and human service education at the UBC. The research assistant also sent electronic letters of invitation to a subset of all students engaged in IPHE courses in the health and human service programs at UBC. Prior to the start of the study, a clerical staff member sent out a call to all students who either had completed an interprofessional health and human service course at UBC or who were currently enrolled in one. The communication asked them to agree, or to not agree, to allow their names and contact information to reside in a database for the purposes of future research. They were reassured that there were no adverse consequences to refraining from participating and that, if they chose to participate, their names would not be shared with any other research groups. Over 250 current and former

students responded in the affirmative. The research assistant approached these students about participating in focus groups and completing the web-based survey.

The research assistant distributed the web-based survey to the participants. Again, all participants were located at UBC, and included faculty members from the health and human service programs at UBC, and students who were registered in, or who had completed, an inter-professional course at UBC and who had agreed to allow their names to be included in requests for research participants. The research assistant sent an electronic alert to all potential participants two-days before administering the actual survey (see Appendix G).

The research assistant sent messages program heads (see Appendix F), asking them to distribute it to faculty members and requesting that they alert the research assistant to any undeliverable e-mail messages so that the exact number of survey distributed could be calculated. The messages sent to program heads included the consent process and the link to the web-based survey. The research assistant also sent to all potential students in the Interprofessional Health and Human Service database.

Focus Groups

Focus group design is critical in order to generate meaningful and relevant data. Five focus groups were conducted: two faculty member focus groups with a total of 12 faculty members, and three student focus groups with a total of 12 student participants, for a grand total of 24 participants. All focus groups were conducted in Room 414 in the College of Health Disciplines at the UBC. Permission to use the room was granted by the College. The room is a large room with a view across the campus to the mountains and the sea, creating a pleasant environment for the focus group activity. Comfortable seats

were provided around a small table, which was well lit. As the focus groups were held at the end of the day and into early evening to avoid the main teaching periods, there were few people or activities to distract or interrupt the focus group conversations.

Refreshments were available for all participants.

The research assistant was situated at a small table just inside Room 414 with the consent forms, which had been approved by both the Institutional Review Board through Union Institute and University and the UBC's Behavioral Ethics Review Board. All participants had previously received the consent forms but were given the opportunity to read them again and to sign them in the presence of the research assistant. I also signed each form as the researcher. The signed consent forms were stored in a locked filing cabinet in the researcher's office.

A focus group script was used for all groups, and the discussions were taped using a digital recorder to allow for easy transfer of the conversations to CD, as well as a tape recorder as a back up in case of transmission errors or malfunctioning of the digital recorder. The tape recorders were both placed in the center of the table, and sound quality for both instruments were tested prior to each focus group. The research assistant set up the recording devices and operated them for each group. In this study, five focus groups took place over a six-week period. Although the same template for discussion was used for each focus group, some of the issues raised in the first focus groups informed the probing that took place in subsequent groups. For example, the first student focus group raised the issue of the order of with, from and about in the CAIPE definition (Barr, 2002). The concept of the order of these words was purposely raised in subsequent groups if it did not emerge spontaneously. Recording the focus groups also allowed the research

assistant and I to leave the previous discussion behind in order to avoid biasing subsequent focus group discussions while still allowing the ability to use, or not to use, previous discussions as a focus for verification by other focus group participants.

The research assistant observed each focus group in the background, made notes about the interactions and the order in which the participants spoke to allow for easier identification of unique contributions that may not have been distinguishable on the transcripts. The researcher used the focus group guide to re-introduce the study and the purpose of the focus group, and asked each person to introduce themselves and their connection to IPHE. Participants were reassured that, while they used their own names during the focus group discussions, these would be replaced by numbers for the focus group transcripts and for any further reference to the focus groups in the text of the dissertation. The participants in the focus groups were asked to verify the concluding summary of the discussions at the end of the focus group.

Descriptive data were collected for each participant for both the focus groups and the questionnaire. These data included: educational program, professional background, experience in interprofessional education, gender, and age range. The experience in interprofessional education was asked as part of the focus group discussions, rather than as a unique piece of descriptive data, and the results have been included in the focus group transcripts. The following table summarizes the remaining descriptive data for the focus groups. In Table 2, F1 through F5 indicate the five focus groups and S indicates student participants, while F means faculty member participants.

The research assistant transcribed verbatim each focus group from the taped records of the focus group discussions. Identification of each transcript was made through

a coding system to preserve anonymity. All transcripts, along with consent forms, were kept in a locked filing cabinet in my office. Once the research assistant completed each transcript, I transcribed several short sections. The research assistant and I compared the sections, both verbally and in writing, to determine if the research assistant's transcriptions were substantially equivalent to the sections. In all cases, the comparisons signaled no substantive differences.

Table 2. *Focus Group Descriptive Data*

Focus Group Code	Gender	Professions Represented
F1 (S)	1 Male 3 Females	2 Nursing 1 Pharmacy 1 Social Work
F2 (S)	1 Male 3 Females	1 Medicine 1 Nursing 1 Social Work 1 Undetermined
F3 (S)	4 Females	1 Dentistry 2 Nursing 1 Nutrition
F4 (F)	1 Male 5 Females	1 Nursing 1 Nutrition 2 Occupational Therapy 1 Pharmacy 1 Physiotherapy
F5 (F)	1 Male 4 Females	1 Audiology & Speech Language Pathology 1 Medicine 1 Pharmacy 1 Physiotherapy 1 Social Work

The transcripts were burned to two CDs as soon as they were completed. One copy is stored along with the hard copies of the transcripts in the locked filing cabinet in my office at UBC, and one is stored in a locked filing cabinet off campus. Once the

original recordings had been burned to the CDs they were deleted from the hard drive. Ethics approval requires these CDs to be stored for five years and then destroyed.

Survey

A web-based survey was used to collect the quantitative data because of the ease with which a web-based survey can be created and completed. UBC allowed web-based data collection to be used as long as no personal information was collected. All participants were recruited using electronic communication. Access to the Internet is widely available ensuring that access to the web site in order to access the survey was clearly provided for all respondents. The survey was open for 10 days with an electronic reminder as soon as the initial rush of responses diminished and just before the survey closed. As responses are noted electronically through a web-based program the response rate was monitored in case an extension of the survey access time-frame was necessary to accommodate busy schedules and to ensure a valid return rate.

Pursuant to the requirements of the ethics review boards, the introduction to the survey explained the research purpose, the procedures, risks and benefits, confidentiality, termination options, safe withdrawal from the study at any time, and contact information for the researcher and the research assistant. The process for signaling consent was also highlighted. The survey was explained in the context of the whole research project, noting that the survey was the second part of the design. It was important for participants to know that they did not have to create new ideas and issues, but that they were responding to issues and ideas that had emerged during the focus groups. Participants were informed that several themes emerged during the qualitative analysis and that the survey is designed to ask about the wider group of participants' understanding of these

themes and to examine whether they represent the same reality. The reduced emphasis on creating their own themes or self-defining issues created a level of comfort for the participants.

The survey questions (see Appendix B) were created using Fowler's (2002) guide. Based on 11 considerations for good survey design (Fowler, 2000), the same questions were asked of all participants and draft questions were tested by four individuals, two of whom were students and two of whom were faculty members. All of the questions were closed questions, and no why-questions were asked. Unclear or ambiguous terms were clarified following the test, and each question asked for a response to one thing only. The following responses were not included: "Not applicable" and "I do not know". While the number of questions was large, the survey, when tested, was felt to be manageable. While agree-disagree responses may not suit all purposes, it was decided that for this survey agree-disagree responses were appropriate, as the survey was asking for responses to statements from previous focus groups and was not asking for the participants to generate new information or offer new thoughts. Based on the responses from those who tested the survey, the tasks were clarified and kept simple. For example, rather than asking participants to agree or not with the statement that IPHE is a process, the question was framed to say, for example, "Participants in the focus groups suggested that *process* is defined as an active engagement in specific steps in order to achieve a certain goal—does this apply to IPHE?" Agree or disagree options were provided as choices for the answer. And finally, to strengthen validity, the presentation of the questions was consistent, six types of response were offered, and some questions were asked in more than one way.

The questions were designed for response using a six-point Likert scale (Likert, 1932). The even number of options was purposeful to avoid an overuse of the middle option, forcing a choice between agree and disagree (Clason, Dormody, & Scales, 1994). Six points were also used to increase the granularity of the data. To be consistent with the variables chosen for the statistical analysis, participants were also asked to identify: (a) profession; (b) role—faculty member, student, or former student; (c) gender; (d) age; (e) highest level of education; and (f) years of experience in a clinical setting.

Four people tested the draft questions: two people were familiar with IPHE, and two were less familiar. These four people were asked to complete the survey without taking breaks to estimate how long it took them to finish. They were asked to then note questions that were unclear, frustrating, hard to answer, or ambiguous. A follow up telephone call was made to obtain feedback based on the experience of actually completing the questions. Adjustments were made to the questions based on the feedback. The number of questions was determined by estimating that each question would take one minute to complete and limiting completion time to no more than 30 minutes. This was modified following testing based on feedback and it was determined that the survey could be completed in 15 minutes.

On-line survey design tools, purchased by subscription, allow for easy creation of an on-line survey, including a description of the research, the purpose of the study, the questions themselves, and electronic collation of the data. The introduction material for the survey comprised the initial contact e-mail that was distributed to the program heads and students (see Appendices F and H) who had agreed to be contacted for research purposes. The survey itself incorporated attention to the confidentiality issues, consent

process, and reference to the fact that the survey was asking for a response to issues that had been raised in the focus groups and not for new ideas. It was felt that this would be reassuring to the participants who would be more willing to complete a survey asking for responses only, rather than one that asked them to create new ideas.

Once adjustments had been made to the survey, following the testing, the survey was submitted for ethics approval to both the Institutional Review Board through Union Institute and University and the Behavioral Review Ethics Board through the UBC.

Inclusion criteria for faculty members included: (a) full faculty members in tenured or tenure track positions, (b) full faculty members in full-time or part-time positions, (c) full faculty members involved in health and human service programs, (d) full faculty members with a minimum of five years of teaching experience, and (e) clinical or adjunct faculty members who contribute to a minimum of one course in the education program. Inclusion criteria for students included: (a) current students in a health or human service program at UBC, and (b) current or previous students in an interprofessional health and human service course at UBC.

Exclusion criteria for faculty members included: (a) guest lecturers or other episodic instructors, (b) faculty members who had less than five years teaching experience, and (c) anyone who is not a faculty member in the health and human service programs at the UBC. Exclusion criterion for students was: anyone who is not a student or former student in the health and human service programs at the UBC.

The research assistant electronically distributed the survey description and the hyperlink to the survey web site to all of the students who had agreed to be contacted for the purposes of research. Some of these participants were former students who had

completed an interprofessional elective while attending UBC. Program heads were asked to distribute the survey to their lists of faculty members who were primarily employed by UBC as tenured, tenure-track, or contract staff. Program heads were asked to inform the research assistant of the number of people to whom the survey was distributed, and to alert the research assistant to any returned messages so that the final number of people to whom the survey was distributed could be accurately determined. The distribution to the students was straightforward based upon the database of student names. As the communication came directly from the research assistant, she could track any returned e-mail messages and note the total number of surveys received.

Summary

The method chosen for data collection in this study was a mixed method approach comprising focus groups and a web-based survey. This approach seemed to best fit the complex nature of the research questions and the concept of IPHE. The mixed method approach allowed examination of the lived experience of IPHE by students and faculty members. The follow-up survey allowed for a wider group of participants to comment on specific elements of the focus group data, increasing the validity of the findings. Despite the low risk nature of this study, ethical considerations were considered carefully in accordance with the ethics review panels of both UBC and the Institutional Review Board. Chapter four details the analysis of the qualitative data derived from the focus groups.

CHAPTER FOUR

QUALITATIVE DATA ANALYSIS

The process of qualitative analysis is complex. Qualitative analysis needs to be rigorous so that it is intellectually sound and academically credible. Qualitative analysis also needs to be supported by theory, and it needs to be pragmatic so that the analytical approach works for the researcher. This chapter describes the analytic approach chosen for this study and explains the coding process used. It then offers an overview of thematic network analysis and of its application to this research study. In the final sections of the chapter the actual analysis itself is laid out, including the issue of validity.

Grounding the Analysis

In reviewing the literature on qualitative analysis, it is clear that the majority of approaches rely heavily on grounded theory. Miles and Huberman (1984) and Strauss and Glaser (1967) provided well-known examples of generic social sciences approaches to qualitative analysis that included grounded theory. This qualitative analysis for this study used a more generic approach as suggested by Huberman and Miles (2002). Huberman and Miles described six steps in the interpretive process. These steps were used to review the framework for the analysis of the qualitative data in this study, which helped to ground it in established analytical practices:

1. Framing the research question;
2. Deconstructing and critically analyzing prior conceptions of the phenomenon;
3. Capturing the phenomenon, including locating and situating it in the natural world and obtaining multiple instances of it;

4. Bracketing the phenomenon, or reducing it to its essential elements and cutting it loose from the natural world so that its essential structures and features may be uncovered;
5. Constructing the phenomenon, or putting the phenomenon back together in terms of its essential parts, pieces and structures; and
6. Contextualizing the phenomenon, or relocating the phenomenon back in the natural social world. (pp. 349–350)

During examination of the research for this study in the context of Miles and Huberman's (1984) work, the literature review helped to articulate the prior and current conceptions of the phenomenon to be studied. As suggested in the research question, the concept of interprofessional health education (IPHE) is a phenomenon that has been poorly described. Many researchers have explored curriculum development and evaluation of learning as they relate to IPHE, but little extensive description of the phenomenon has emerged beyond the narrow and somewhat limiting definitions found in the literature.

In attempting to understand the phenomenon of IPHE, learning experiences have been framed around existing educational models with little attention paid to the complexity of bringing together learners, whether students or experienced practitioners, from diverse theoretical and practice backgrounds. Territorial silos of education and practice, over many years, have created deep embedded resistance to concepts such as non-hierarchical teams, shared competencies, and shared decision-making. As health and human service professions emerged throughout the 20th Century, nurses sought to establish their place as respected members of the care team. Other, so called, allied health

professions worked to establish themselves as independent, autonomous practices moving out from under the traditional medical dominance. The education and practice contexts became solitary with students and practitioners immersed in learning and practicing their own increasingly specialized skills. Education programs focused more and more on adding more and more content to educational programs to accommodate emerging evidence and new skills and techniques. Service delivery organizations focused on reducing length of stay, cost containment, and shorter wait times. In both education and service delivery sectors, these emerging trends helped to reinforce solitary practice and hierarchical decision-making frameworks. To insert IPHE as a new way of teaching and collaborative practice as a new way of practicing without examining curricular design and organizational policy, for example, dooms it to failure. For this reason, past definitions related to IPHE must be examined and re-constructed to allow for changes in curriculum that will embed IPHE as a way of learning that is not an added subject area, but a way of re-thinking how students in the health and humans services and practitioners in diverse clinical settings learn and change.

The analysis of this research data does reduce IPHE to its essential elements in isolation of either an education or practice context, thereby setting it loose from any pre-existing constraints, while still building upon the real world experiences of students and faculty members. Taking these essential elements and re-constructing them enables a narrow, constrained definition to become a rich, contextual description that will assist in developing and evaluating IPHE learning experiences across the spectrum of education and service delivery. The following sections of this chapter describe the process of

coding and thematic analysis, as well as the analysis of the focus groups, using the literature to support the process where appropriate and applicable.

Qualitative Analysis

I analyzed the focus group data for this research project based on principles described in thematic network analysis (Attride-Stirling, 2001), which “details a method for conducting thematic analyses of textual data, employing established well-known techniques in qualitative analysis” (p. 386). This approach to the analysis fit well with this particular research as thematic network analysis does not attempt to make sense of different definitions of the issue, but rather seeks to understand the issue itself and/or its significance. Thematic network analysis also uses visual diagrams to chart the flow of analysis, providing the reader with the ability to track the logic of the researcher in describing the final global themes upon which the application of the research findings rests. The thematic analysis approach that has been articulated by some authors working in the field of network theory provided some interesting insights generally relevant to qualitative analysis and useful for guiding the practical steps of analysis for this study (Braun & Clarke, 2006; LeCompte & Schensul, 1999).

Kenny and Duckett (2003) studied education for rural nursing practice; they used thematic network analysis to extract global themes from data collected through audiotaped interviews. Kenny and Duckett analyzed the data using reading, rereading, assimilation, interpretation, and understanding. By looking for recurrent regularities of basic themes and organizing themes, finally global themes were identified. The results of this research added to specific areas of knowledge and skill required in undergraduate nursing training in Australia to better prepare nursing graduate for rural practice. Braun

and Clarke (2006) described the use of thematic analysis in the field of psychology. In this context, Braun and Clarke posed thematic analysis as “a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex, account of data” (p. 78). Braun and Clarke suggested that the explicit assumptions and steps of thematic analysis need to be clearly articulated as part of the analysis, lest the method be relegated to the anything goes critique of qualitative analysis. This research analysis has been screened through the requirements articulated by Braun and Clarke to ensure that the method is viewed as rigorous and explicit. For example, the term theme must relate to prevalence, patterns, and meaning. While determining what constitutes a theme is linked to measurable observations, Braun and Clarke suggested using some flexibility in recognizing themes that are important in relation to the research question, but may not be reflected in the most dominant patterns. In this research project, the theme related to actually knowing when an interprofessional learning experience has taken place is not the most heavily populated theme, but its relevance to the research question is high and the findings are intriguing. Defining a theme will differ from project to project, but the main caution here is the need to define themes consistently within the same research project.

The thematic network approach is one way of building upon existing qualitative analysis methods, and the organizing metrics of this approach use tools established over many years of qualitative research. It is, therefore, not a new approach, but one that provided a useful framework for analyzing the focus group data. As the thematic network approach employs accepted qualitative analysis principles, including creating visual representations of the data and the thought processes as they are analyzed, this approach

added a dimension of organization and direction to the general qualitative analysis planned.

Coding

Coding is defined in the literature in several ways. Codes can be numerical or can be words that help to organize like-sections of data. Used for sorting into categories or creating sets of ideas, codes can be “conceptualized as names or symbols that stand for a group of similar ideas, terms of phenomena that are noticed in the data” (LeCompte & Schensul, 1999, p. 55). The labels used to classify items of information as pertinent to a topic are also known as tags or labels for assigning units of meaning (Miles & Huberman, 1994).

Coding can occur via two overlapping sorting and categorizing processes: initial coding, and focused coding. The researcher, using initial or open coding (Strauss & Corbin, 1990), starts the condensation and organization of data into categories that make sense in terms of interests, literature, and/or perspectives. The researcher may inspect transcripts line-by-line and ask of each item:

1. What is this? What does it represent (Strauss & Corbin, 1990)?
2. What is going on? What is the person saying? What do the actions and events take for granted (Charmaz, 2001)?

Codes are generally quite numerous and varied. Focused coding is less open-ended and more directed, selective, and conceptual (Charmaz, 2001). It builds on initial coding by starting when initial coding is well under way. Focused coding uses a selected number of the expanding, or more analytically interesting, codes to knit together chunks of data and uses these expanded chunks as the basis for asking more focused questions:

Of what topic, unit, or aspect is this an instance? What question about a topic does this item of data suggest? What sort of answer to a question about a topic does this item of data suggest (i.e., what proposition is suggested)?

Some of the earlier codes may fall by the wayside, as they are less descriptively and analytically useful, and some of the elaborated codes now become overarching ideas or propositions that will occupy a prominent place in the analysis. In order to re-arrange data, it is useful to look at a way of organizing data such as:

Table 3. *Comparison of Types of Coding Methods.*

Line-by-Line Coding	Field Notes	Focused Coding
Key words and phrases	Useful to keep intact for one or two words Quotes when writing up analysis	One or two words

The coding for this research used numerical coding and color coding to store the data after the transcripts had been typed verbatim, verified by the participants and I, saved to discs, and deleted from the hard drive. The use of computer filing, rather than the manual cut and paste method, enabled quick retrieval, searching, recoding, filing, enumerating coded items, and relating them to one another more consistently.

Analysis

Throughout the analysis, the research assistant and I worked closely, although always under my direction. In this first stage of analysis, the research assistant and I read through the verbatim transcripts and met to determine the units of meaning that pertained to the research question. The research question focused on learning with, from, and about each other and situated these words in the broader context of IPHE. The units of meaning

were, therefore, determined to be those that spoke directly to the individual words and those that described some aspect of the broader IPHE environment.

The research assistant and I individually worked through the verbatim transcripts and assigned a label or code to a concept each time it was noted. Different codes were assigned each time a new concept emerged. Discussion points that did not pertain to the units of meaning were not immediately included in the sorting and coding, but were parked so that one last review could confirm their elimination. Color-coding was used, and each transcript was saved in a specific color that was assigned to one particular focus group. This was especially useful when looking for frequency and extensiveness. The research assistant and I then met to compare codes and methods for sorting.

Internal consistency was achieved during the analysis by ensuring that frequency, extensiveness, and intensity were distinguished as three different factors in the analysis (Krueger, 1998b). How often an idea is expressed is different than how many people actually said it. The same person may have repeated an idea, as opposed to several people speaking about the same idea. The research assistant's additional notes helped to identify the number of different people who expressed the same, or a similar, idea when the transcripts were analyzed. Intensity is difficult, if not impossible, to note from transcripts and, therefore, the digital recordings of the discussions were used to examine intensity where necessary. Specific responses noted in the first person were given more weight in the analysis than non-specific or third person comments. As the themes emerged from the coding and analysis, the verbatim transcripts were used to capture useful quotes to illustrate the emerging themes in the eventual description of the findings.

Applying the Thematic Network Approach

The process involved in thematic network analysis requires an articulation of *basic themes*, which are the very rudimentary and basic ideas represented in the transcript text. Following this stage, there is a middle level that requires merging the basic themes into *organizing themes*. The final stage requires a summing up of the previous organizing themes into a few *global themes*, which become the core of a thematic network and a basis for the articulation of arguments and rationalizations that are the true analysis itself. This model for breaking down the text in no way replaces the active analysis; it merely allows for a visual representation of the narrowing down of a large volume of text to a manageable set of themes that can then be linked to the next phase of the research and, most importantly, to the research question itself. An overview of the model, adapted from Attride-Stirling (2001), can be found in Figure 2.

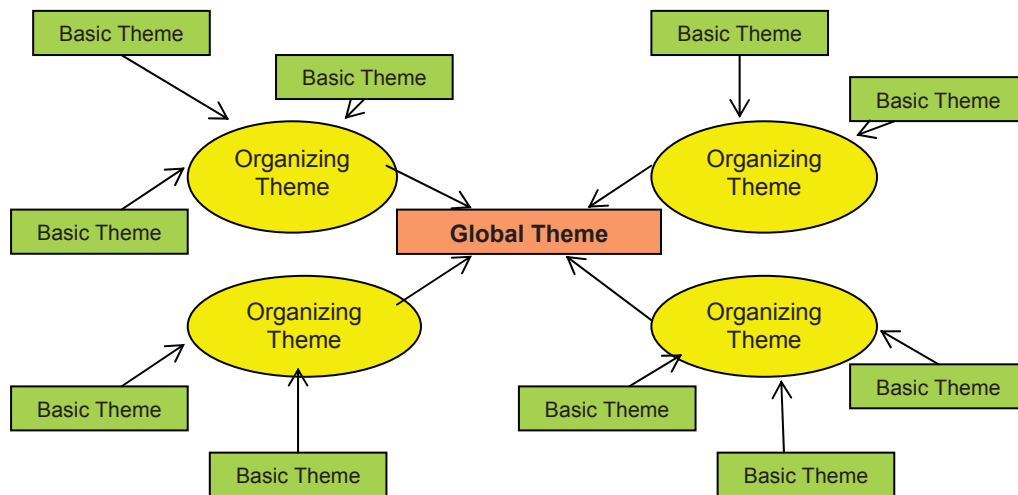


Figure 2. Model for thematic network.

Note. From “Thematic networks: An analytic tool for qualitative research,” by J. Attride-Stirling, 2001, *Qualitative Research*, 1, pp. 385–404. Copyright 2001 SAGE Publications. Reprinted with permission.

Braun and Clarke (2006) also presented a way of proceeding through an informed and rigorous thematic network analysis. Braun and Clarke suggested familiarizing oneself with the data, generating initial codes, searching for themes, reviewing the themes, defining and naming themes, and producing the report. These steps are consistent with Attride-Stirling's work (2001) and represent the approach used in this analysis.

Using the thematic network approach, the flow of analysis travelled from broad to narrow and from student and faculty specific themes to integrated themes. The overview of process analysis flow chart (see Figure 3) is described in detail in the remainder of this chapter.

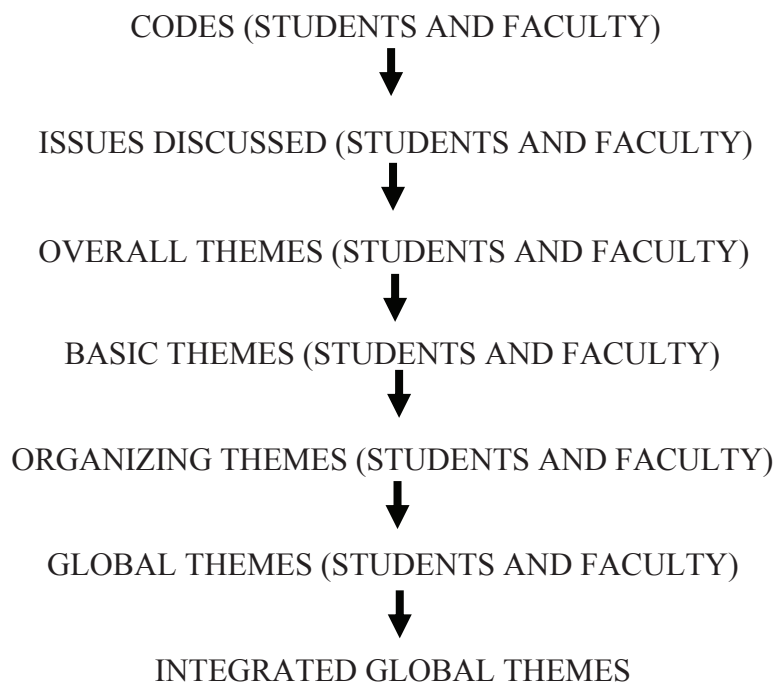


Figure 3. Overview of process of analysis.

Preliminary Analysis

I have extensive experience in health and education, including IPHE. A conscious effort was made to avoid allowing past experience to influence the way the focus group

questions were asked or probe questions inserted. I minimized bias during the data collection by keeping the conversation flowing in the focus groups while allowing the vast majority of the discussion to be undertaken by the focus group participants. During the analysis, field notes were kept during the initial reading of the data as a reminder to avoid paraphrasing the verbatim text into the language when reducing the transcripts to themes. The research assistant's ability to ask questions about the interpretation of the data was also used as a barometer of potential bias. I minimized another level of bias by completing the first phase of the analysis independently and then comparing my analysis with the analysis completed by the research assistant.

In this preliminary stage of analysis, the coding system used was based on a combination of topics that arose from the focus group discussions and key phrases representative of the research question. The location of the words, phrases, or sentences that determined themes were coded according to focus group: FFG being faculty focus groups, and SFG being student focus groups. Both a number and a color code were assigned to each transcript, and the lines in each transcript were numbered to allow easy tracking for quotes or re-examination of sections of text. FFG1 in red text, therefore, referred to the first faculty focus group. The reduction of the transcript text into the themes was divided into faculty member responses and student responses. A key word or two were chosen as codes representing the issues discussed. From these codes and issues, overall themes were identified. These overall themes form the basis for the basic themes, which represent the first level of meaningful text reduction. The overall themes from the initial analysis were framed as basic themes (see Appendices I and J).

Even at this early stage of analysis, there was a constant tension between unbiased interpretation of the text, based on my level of experience, and the desire to accurately reflect the focus group participants' thoughts and ideas. For this reason, the subsequent comparison of my analysis and the research assistant's analysis is a critical component of the data analysis overall. Throughout the analysis there was also a tension between the concept of learning and the concept of practice as interprofessional contexts. In trying to harmonize these two points, interprofessional learning was interpreted as a process that leads to collaborative practice so that the lessons learned from the data could always be linked back to the IPHE context.

Researcher Secondary Analysis

Using the principles of thematic network approach, I then used the basic themes to identify organizing themes and, finally, global themes. From the organizing themes I derived several global themes for both student and faculty data, and organized them into a final list of organizing themes for both students (see Appendix K) and faculty (see Appendix L).

At this stage of identifying the organizing themes, questions began to emerge that not only informed the analysis, but also identified questions that might lead to investigation of the relationships between and among themes. Could we identify the characteristics of a defining moment, or "aha moment", when a student knew they had experienced interprofessional learning or when a faculty member knew that something had changed in the way students communicated with each other? Does reflection have to happen for change to occur as a result of IPHE? What motivates students to seek out IPHE experiences as elective or extra curricular learning? What motivates faculty

members to see value in IPHE? How can we articulate the added value of IPHE and the difference collaboration makes? What is the attraction overall to IPHE? These questions were identified for further exploration in the follow-up survey.

A preliminary examination of one potential theme was used as a way of finding a way to cluster ideas in other areas. Strategies for IPHE learning were dissected into specific activities listed in the transcripts: classroom learning, interdisciplinary rounds, problem based learning, observations of teams in action, case discussions, international experiences, living together (rural), didactic methods, peer learning and teaching, reflective essays, asking questions, shadowing, and clinical experiences. These appeared to fall into four main types of activity: mandatory, extra-curricular, self-directed, and elective. This led to further questions such as: What is the best way to teach in IPHE? Are there different methods that are best suited to learn with, from, and about other professions specifically? Is it true that one size does not fit all? Are there some contexts that are not amenable to IPHE at all? Are there some that could be tailored to make them good IPHE experiences? These questions, or these types of questions, were helpful in pursuing the next level of analysis.

The next stage of the analysis was aimed at identifying global themes. This required serious consideration to ensure that they reflected the organizing themes accurately and that previous data sets could be attributed to the final global themes (see Tables 4 and 5).

Table 4. *Initial Global Themes from Student Data*

Student Global Themes
IPHE is a multifaceted process.
Interactions and relationships are key to IPHE.
Reflection is required
The patient and his/her goals is/are the anchors.
There is added value in IPHE.
Learning requires a sense of equality and respect for others.
Learning means active and meaningful transfer of knowledge.
Learning about is an active process involving the whole person.
The order of the terms with, from, and about is not a consistent order.

Table 5. *Initial Global Themes from Faculty Data*

Faculty Global Themes
IPHE is a multi-faceted process.
IPHE is intentional.
The anchor for IPHE is the patient/client and their goals.
Barriers do exist for IPHE.
Self-reflection is required.
Learning with involves higher-order learning and comes last in the program.
Learning from is predicated upon equality and openness.
Learning about may set the stage for learning with and from.

It was clear that there were many similarities between the faculty and student global themes. These similarities are reflected in a final and integrated list of global themes (see Table 6).

Table 6. *Integrated Set of Global Themes*

Integrated Global Themes
IPHE is a multifaceted process
Patient and family are anchors for IPHE
There are central characteristics of IPHE
Learning with, from, and about is multidimensional
There is added value of IPHE
There is a visible change during IPHE
Barriers are identifiable

The differences between the two data sets are, however, worthy of note. Students placed much more emphasis on the patient and family as the anchor for IPHE. Over and over in the focus group discussions, students, or former students, appeared to be closer to the centrality of the patient and family in interprofessional collaboration. This may be due to their immersion in the clinical setting, either as part of their studies or as new graduates, but the constancy of this theme underscores the need for IPHE to use the patient and family anchor to create relevant learning experiences for students. From the faculty members' perspectives, barriers to IPHE were more central to the discussions. This difference is explainable given that students may not be aware of the logistical barriers faced when developing and implementing IPHE curricula. In addition, preparation of students, preceptors, faculty members, and learning sites was an important factor for

faculty members and not for students. Again, one explanation may be that preparation would not be a consideration for students in their learning role.

Validity

Leedy and Ormond (2005) reinforced the concept of validity of the entire research project, not just the instruments used to collect the data. Internal validity reassures the reader that the conclusions drawn can be directly attributed to the data collected. External validity allows generalizations to be made about contexts beyond the scope of the research itself. In mixed methods research design, the validity of both components must be addressed. In addressing qualitative research, Cho and Trent (2006) examined the concerns over validity and proposed “a recursive, process-oriented view of validity as an alternative framework” (p. 319) to the transactional and transformational validity more commonly described in the qualitative literature. The transactional approach to validity in qualitative research makes use of techniques such as member checking, bracketing, and triangulation. Another more radical approach to validity in qualitative research is transformational validity, which “judges work to be valid only if it signals that validity achieves an eventual ideal” (Cho & Trent, 2006, p. 320). Cho and Trent, while comfortable with the concept of validity as a link between claims and evidence, posed a need to ground validity in qualitative research in one or more of five main purposes: truth seeking, thick description, developmental, personal essay, and praxis or social change. In this research study, no universal truth was sought. The aim was a rich contextual description, not a black and white truth. However, the data did produce thick description that was many layered and, at times, contradictory. These contradictions were of value in the process of analysis as they required the researcher to delve more deeply into possible

meanings of the data. The developmental purpose of the research can be linked to the emergence of meaning from seemingly simple questions and words. Even the three words at the heart of the research question—with, from, and about—were developed into more fulsome concepts through the analysis of the data. While my involvement in the subject area is one aspect of the analysis and participants were not asked to tell a story, their personal experiences formed the fabric of the qualitative analysis. In the context of Cho and Trent's conceptualization of validity in qualitative research, the data analysis for this study is valid.

Miles and Huberman (1984) suggested that it is critical for a researcher to describe how they analyzed the data and how they reached their conclusions in order to represent validity in the research. Specifically, the processes and criteria that the researcher uses to work with the data must be described to give meaning to the findings. Although Miles and Huberman cautioned that these anchors of qualitative analysis are mainly implicit, they do provide a framework for validity in qualitative research. The methods used in this research have been described in detail including the processes and criteria. The attention to these components of the research strengthens the validity of the approach and the findings.

Patton (2002b) suggested the determination of quality and credibility in qualitative research depends upon the criteria for the evaluation, and the criteria may be different depending upon the audience. Overall, Patton (2002a) pragmatically described qualitative analysis as making sense of large amounts of data and that there are no formulae for assessing significance.

No straightforward tests can be applied for reliability and validity. In short, no absolute rules exist except perhaps this: Do your very best with your full intellect to fairly represent the data and communicate what the data reveal given the purpose of the study. (Patton, 2002a, p. 276)

Therefore, Patton (2002a) claimed that the researcher must report their own procedures as clearly as possible and, in doing so, adds to the validity of the final conclusions. In this study I have described the procedures for data collection and analysis in detail, and I have fairly represented the findings.

Summary

A thematic network analysis approach, which is supported by grounded theory, was applied to the focus group data. Themes emerged from both faculty member data and student data, and these were analyzed independently until the final integration of the two sets of global themes into an integrated set of global themes which guided the reporting of the findings and the survey questions.

The integrated global themes focused on both the broad context of IPHE and on the words with, from and about as they are situated in the CAIPE definition (Barr, 2002). One of the primary integrated global themes focused on IPHE as a complex process that included several sub-elements, such as timing, location, intentionality, and context. Further themes represented the patient and family as an anchor for IPHE, its added value to education and practice, its unique characteristics, the moments when IPHE is recognized, and barriers to IPHE. The meaning of the terms with, from, and about are characterized as complex and informative; the order of the words, the meaning of each word individually, and the relationship of the words to interaction and engagement are all

important components of the three prepositions. The findings of the focus group data analysis are reported in chapter five using verbatim quotes from participants to illustrate the findings.

CHAPTER FIVE

QUALITATIVE FINDINGS

The data collection and analysis of the qualitative and quantitative components of this research required multiple levels of interpretation. Through this process, the findings relate to the conceptualization of interprofessional health education (IPHE) by both students and faculty members. There were areas on which students placed more emphasis and those upon which faculty members placed more emphasis, and there were areas that were emphasized by both groups of participants. The integrated, and unique, perspectives of focus group participants and survey respondents are described in the following chapter.

Qualitative Findings

According to Zeibland and McPherson (2006), an important consideration in writing qualitative findings is the need to “identify the story that *can* [italics added] be told with the data—which is not always the same as the story that you would *like* [italics added] to be able to tell” (p. 410). Throughout the qualitative analysis, every effort was made to reveal the story that can be told and to minimize the bias that would lead to the story that we would like to tell. In many ways though, the two stories are highly congruent with each other.

The research questions ask: What does learning with, from, and about other professions mean in interprofessional health education, and how is it articulated and operationalized in the context of curriculum design? In order to answer the question as it relates to learning with, from, and about, the broader context of IPHE had to be examined. The integrated set of global themes (see Table 6) provides the anchor for the

description of the qualitative findings. In addition, those aspects of the data that reflect differences between student and faculty member emphasis are described.

Participants

The cross section of participants in the focus groups was varied in the context of professional background and, as might be expected, predominantly female. For a summary of participant demographics see Table 7.

Table 7. *Focus Group Participant Demographics*

Category	FFG1	FFG2	SFG1	SFG2	SFG3
Male	1	1	0	1	1
Female	4	5	4	3	3
Medicine	1	0	0	1	0
Nursing	0	1	2	1	2
Pharmacy	1	1	0	0	1
Nutrition	0	1	1	0	0
Physical Therapy	1	1	0	0	0
Occupational Therapy	0	2	0	0	0
Social Work	1	0	0	1	1
Other	1	0	1	1	0

Note. FFG refers to faculty focus group; SFG refers to student focus group.

Overview of Findings

Using thematic network analysis, numerous basic themes emerged from examination of students' and faculty members' expression of aspects of IPHE. While the main focus was the key words with, from, and about, a larger picture of what constitutes

IPHE developed. While initially not surprising, the concept of IPHE as a complex process deepened through the analysis into a rich description of the component and important parts of this process. The theme of process was the most emergent, and it captured several of the other organizing themes. Issues such as timing, intention, reflection, and context for learning were highlighted as foundations for interprofessional interaction under the broad umbrella of process.

Students, much more than faculty members, felt strongly that the patient and the family comprised the anchor for IPHE. Working together to find a common goal with patients and their families creates a level playing field and more easily leads to collaborative practice. Conflict occurs when professional boundaries, or a personal need for power, become more important than the patient and their family. If the focus of care is on the patient, and other distractions are minimized, collaboration can be improved.

In the unique characteristics of IPHE, there were surprising elements. The concept of safety was expressed as necessary for effective IPHE. For some participants, this was explicit safety, as in a respectful environment where all were equal players. However, for some, IPHE related to knowing that if you asked a question it would be answered respectfully—knowing that you would not be minimized or undervalued by asking a question of another health care provider. The major unique characteristics were many and varied, which reinforced the complexity of interprofessional learning and collaboration in practice.

For both students and faculty participants, learning with, from, and about others was difficult to describe. Articulating the meaning of the actual words required much discussion, and it was surprising that, in the student focus groups especially, the order of

the words in the definition was debated and putting them in what the participants considered the right order became challenging. Levels of learning also emerged from the words. For example, for some participants learning about other professions was a deeper level of learning, while for other participants, it was more superficial. Both the student and the faculty participants agreed that the words had to reflect an active process of engagement, as some activities could meet the definition of learning with and about other professions, for example, but required no active engagement. A book, or the Internet, could provide the information or answers; however, for IPHE to happen in the context of these three key words, interaction was essential.

It was clear from responses to the question, “How do you know when you have had an interprofessional learning experience?” that something changes, often visibly. That point at which the learner feels, or the faculty member observes, a change in the way the individual speaks, thinks, or acts, signals a visible change as an understanding of interprofessional collaboration dawns on an individual learner or practitioner. Along a continuum of professional learning, there is a point at which something changes and after which the learner cannot go back. This point of change linked to with, from and about, may be one of the most important findings of this research.

Both student and faculty participants believed that there was added value to IPHE. Interestingly, it was the student groups who linked the added value to patient care. Making a difference to patients, changing attitudes, learning about yourself, and understanding more about others’ roles were part of the added value for students. Some of the added value also focused on health human resource issues. An improved workforce, a better workplace, and the increased potential for retention of staff due to a

better work environment were also noted. For patients and families, reducing errors, improving safety, and an ability to use a holistic approach were all seen as added value to IPHE and its ultimate goals: the collaborative practitioner and improved health outcomes.

Barriers represented an important emergent theme, but more for faculty members than for students. This seems logical, as students may not be aware of the logistical challenges in mounting IPHE opportunities. Barriers appeared to be an important consideration in the context of fully understanding IPHE in order to inform curriculum. According to respondents in the focus groups, faculty members saw barriers primarily in the attitudes of their colleagues, the lack of demand for IPHE from students, and organizational apathy to supporting IPHE in both academic and practice settings. For students, the barriers were not an issue unless they were motivated to engage in an IPHE course or placement and their curricular schedule prevented this from happening.

Taken together, the global themes represented a rich contextual interpretation of IPHE that was grounded in a complex process that focused on the patient and created positive change and awareness of the importance of working together collaboratively. There were unique characteristics, as well as barriers, that helped to describe IPHE, and the added value provided another level of meaning. Learning with, from, and about other professions appeared to represent a subset of the process. The remainder of this chapter describes more fully each of the global themes, using quotes from participants to illustrate the findings.

Detailed Findings

The detailed findings from the thematic network analysis are described in the order in which they are presented in the integrated set of global themes.

Interprofessional Health Education is a Multi-Faceted Process

By far, the greatest number of basic and organizing themes converged on the process of IPHE. This is an important part of the data, as it encapsulates many process features that can inform IPHE curriculum development in a way that uses learning with, from, and about as active drivers of IPHE. One participant underscored this concept by stating:

There's something about the process of the interprofessional part that is really important for people to learn. In addition to learning about, and from, and with each other, but to focus on it as a process. 'Cause that's what I think they will take into practice. (FFG2, 1065–1068)

The components of the process that emerged as integral to this concept were: timing, intention, reflection, and context. These subgroups influence the process of IPHE in ways that directly affect the integration of IPHE into health professional curricula. While each subgroup emerged from the data analysis initially as a discrete component of IPHE, on closer examination they all appeared to directly influence the process and are, therefore, reported as part of the process. A process is typically characterized by a starting point and a finishing point, with a series of steps or activities throughout. Therefore, the issue of timing relates to the introduction of IPHE as a step or activity at the beginning, the end, or throughout the process. Likewise, explicitly or intentionally placing IPHE in a curriculum must influence the process of learning by altering learning outcomes or strategies as well as evaluation methods. Reflection is described in active terms and is, therefore, as much a part of the larger process, as is performing a skill-based task or undertaking a systematic review of the literature. Finally, the learning context for

IPHE is the platform upon which the process rests. Issues such as safety then become part of the process in actively creating an enabling environment for IPHE in both academic and practice settings. Timing, reflection, intentionality and context are discussed.

Timing of Interprofessional Health Education

Throughout the data analysis there was no clear message from faculty members or students about the timing of IPHE. With respect to overall timing, there were some faculty participants who felt that early in the curriculum was best so that discipline-specific habits and attitudes were not entrenched by the time IPHE was introduced.

My concern with medicine is the culture and how that drives them or trains them to be the ‘go to guy’ and independent and you are the one that has to make the decision. Um, and that starts at first year, it starts in first year. So if you catch them in first year and expose them to interprofessional learning they seem more open to it. (FFG2, 595–599)

I think it’s better to get them early than late. (FFG2, 616)

There were some participants who felt strongly that later introduction was more effective, so that students would be able to develop some confidence in who they are as a specific health care professional by the time they started interacting in an IPHE context.

They’re not firmly entrenched enough in who they are in their own professional identity. They’re still clawing their way to their silo to make sure they can protect their territory. I think, you know, I know we want it to come now and at this grassroots level, but I think it takes years of wisdom. (FFG1, 276–279)

Students had more of an overall sense that integration throughout the curriculum was the best approach. This concept of a continuum helped to ameliorate the different

perspectives between an early and a late introduction to IPHE from a learner's point of view. By addressing IPHE in a variety of ways, both early and late in the curriculum, students could see integrating different learning experiences throughout their program of study.

I see it as layers and it's sort of a thread that's throughout, um, curriculum. And that you have opportunities in different places and then that needs to feed of course into the practice setting. (SFG2, 1197–1199)

You know you build on through the curriculum then when they get into the practice they can remind themselves, you know, this is what I learnt, this is what I, um, the tools that were given to me. Now how am I going to use them? So, I think it should be layered, definitely. (SFG2, 1207–1210)

Reflection as a Key Component of Interprofessional Health Education

The concept of reflection as a component of IPHE was apparent in the faculty responses and not in the student responses. Reflection, as described by Schön (1979), is part of reflective practice and appears to be a key component of IPHE when developing and structuring IPHE learning experiences.

The one thing that I find, perhaps, and I've never looked at it as a barrier, but probably not an optimal experience, learning experience, and that's more, you know, when students engage in these opportunities but then don't have the time to reflect and create some linkages into, so, "I've had this opportunity, so what does that mean to me as an individual or in that profession, how can I use that?" So then that opportunity doesn't exist. Then I'm not sure how meaningful that

experience has been, cause then it becomes an activity, like maybe so many others. (FFG1, 251–257)

And so, we just ask them to describe their experiences for that day and then what did they take out of that experience and how did they see that experience enhances their practice as pharmacists? We ask just two or three simple questions that they can reflect on. And that offers lots of opportunities for reflection and discussion about who stepped forward and “is that the right thing” and that kind of thing. (FFG1, 697–699)

Intentionally Incorporating Interprofessional Health Education in the Curricula

Throughout the focus group data there were references to the fact that IPHE had to be explicitly attended to. It was not enough to assume that IPHE was a relevant and important element of health professional education, it had to be intentionally included as part of the curriculum and/or the learning experiences in practice. For students, the word intention meant that they had purposely sought out IPHE experiences. Taking the initiative to seek out IPHE was internalized as an action that students intentionally acted upon due to their interest in the area.

Yeah, so I think part of it is taking, like having to take that initiative to seek out knowledge as well when you’re learning from someone. (SFG1, 784–785)

I think kind of in general I’ve really found that I’ve had to seek out, um, opportunities to learn about interprofessionalism in my program ... I found that I’ve really had to kind of, through my electives, through extracurricular activities, be able to find that piece. (SFG1, 218–225)

From the faculty members' perspectives, intention related more to an overt and explicit activity, ensuring that IPHE happens with a clear focus in any curriculum. This notion of intention may be highly important in applying a rich description of IPHE to curriculum design. This concept of intention underscores the need for IPHE to be embedded in curriculum, not added on as an after-thought. Intentionally integrating IPHE along curricular themes would strengthen the relevance and importance of interprofessional collaboration and position it more intentionally within the learning continuum for all health professional students. Marrying a relevant and important clinical area with an IPHE approach to learning may help to intentionally include IPHE as integral to the learning process rather than an added component of learning.

We need to put in a lot of effort to make it happen. It's not an easy thing to do, in terms of like timing, scheduling, um, how to dovetail your curriculum, how to do assignments and everything, how to do the evaluation. (FFG1, 178–180)

I just wanted to add, um, as I was listening to everybody, that from a pharmacy perspective there's been quite an effort made to allow students to take on non-pharmacy electives and sort of, you know, acknowledge those. (FFG1, 223–225)

You could put students into a classroom, and I just have this vision of them still sitting in their little groups with their own disciplines without some sort of structured way of making sure that they do interact. (FFG1, 907–909)

Context of Interprofessional Health Education

Both classroom and practice settings were identified as places for IPHE, but throughout both faculty and student focus groups there was an emphasis on the practice, or clinical, setting as the prime location for IPHE.

I just couldn't believe how much positive learning environments there was, we had. Not only in the class room but when you went on clinical placements and the place you went on clinical placements. (SFG1, 61–62)

And it's kind of the didactic vs. the clinical. You could have a team come up and tell what their role is and talk about it. But until you're working with them in a clinical setting it may not have actually gone on. (FFG1, 925–927)

Yeah, I guess I think practice is probably the best way for people to learn about each other, learn about roles and who does what and referrals and things like that. (FFG1, 888–889)

While types of learning activities were not reflected in the global themes, they were discussed in the focus groups and represent examples of the process part of IPHE. They include: shadowing, rural placements, common cases for team discussion, guest lectures in interdisciplinary courses, team meetings, observation, co-teaching between two or more disciplines, capstone courses in final term that brings students together, monthly research seminars, electives outside home discipline, voluntary experiences, connecting networks of students, case developed for interprofessional learning and used as the basis for a week long module, one week curriculum/case that all health and human service students have to complete, structured courses with teams, cross discipline placements, case rounds, teams teaching to role model interprofessional, reflective essays, active learning (e.g., role play or exercises), and conflict resolution. The list is long, emphasizing the complexity of IPHE. The range of learning activities across student and faculty member perspectives is representative of the need to provide learners with appropriate learning experiences throughout the professional curriculum. The use of the

terms with, from, and about to frame the learning experience may help to ensure that the goal of IPHE (i.e., collaborative practice) is more effectively achieved.

The value of various activities was reflected in participant responses. Experiential learning was seen as the most effective form of learning, and activities that may have been overlooked as valuable IPHE opportunities, such as shadowing, were found by students in particular to be excellent for learning more about what other professions do and how they do it. The opportunity for interaction in shadow shifts created the engagement with other professions missing in didactic learning sessions.

And we shadowed. So, I found that to be really valuable to have that, um being able to, like, kind of witness that real life example. (SFG1, 167–168)

I think what really was the effective thing in the course that I was involved in, was that experiential, the experiential thing itself, the experiential learning and the interaction among the people from different professions, you know ... we did some interviews with students that were taking our course and clearly it was the experiential as opposed to the sort of theoretical. (FFG2, 402–413)

Patient and Families are Anchors for Interprofessional Health Education

Although more strongly represented in the student data than in the faculty member data, the focus on patient and family as the anchor for IPHE resonated across all focus groups. The concept of a common goal suggested that if the group of health care providers were totally focused on the patient and family then issues such as turf, disrespect, and lack of trust could be minimized.

For me, interprofessional means a group of people learning from, with and about each other towards *one common goal* [italics added]. (SFG2, 1122–1123)

People of different professions coming together thinking about, you know, certain, *same goal, the same patient* [italics added], but what are your approaches for this patient. (SFG3, 495–497)

But whenever I thought interprofessional ... *I always thought of it in terms of patient-centered* [italics added]. And actually, that's how I'd define it, it's two or more professions coming together for the purpose of achieving certain outcomes for the patient, but that includes the patient in the picture. (FFG1, 1061–1064)

Learning With, From, and About Other Professions is Multidimensional

The CAIPE definition (Barr, 2002) of IPHE is used widely to explain what IPHE is. Nowhere does it describe clearly what the actual words mean and how they relate to each other. Several insights from the data help us to understand the complexity of with, from, and about. It was very difficult for participants in all of the focus groups to ascribe a meaning for each of the words, with, from, and about, over and above the obvious common meaning in everyday language. Each word seemed to overlap with another, and there was a sense of frustration when trying to articulate a meaning for each word in the context of IPHE. From the data analysis, though, there were some key findings that may help to apply the CAIPE definition effectively in health professional education. The following findings may help to illustrate this more focused use of the words with, from, and about, both individually and collectively.

Learning With Others

The concept of learning with two or more peers is different if it is conceptualized outside the interprofessional learning context. One could learn in a didactic session where one is with others, but is just listening to the lecturer with no interaction with either the

lecturer or the other students. The focus group participants provided several ways of describing learning with others in an interprofessional encounter. The sense of being with others in a learning situation meant being present with others more than just physically. While the word with sounds like physical co-location alone, in practice there must be active engagement with each other in a respectful manner. Thinking together, communicating actively, and even discovering together were described as characteristics of learning with each other.

I guess with needs to be more than just in a lecture hall. Like, with to me is a physical sounding kind of thing. But I think if we're really talking interprofessional education and not just talking about dumping people in a room together. But there has to be interaction. There has to be respect. There has to be, everything people said, common goal. Um, so it's more than just physically or virtually together. There's more to it than that. (FFG1, 771–776)

When I think about this word with, I tend to think about more like logistically being there together, the collaboration piece of it. That actually somehow we kind of communicate, we share the thoughts, we bounce some ideas and so on. (FFG1, 753–755)

Well, learning with would maybe be discovering together. (SFG1, 924)

For students in particular, learning with others meant you were all on a level playing field. Hierarchy or perceived power differential should not be an issue when truly learning with others.

We just need to forget about, like you said, forget about all our perspectives and everything that we can, and we start together and learn if it's about the patient or

if it's about new, um, program you want to implement in a hospital. We all go in on a level playing field. So, we're learning with, I'm learning with another health professional. (SFG2, 860–863)

When I learn with somebody I'm equal in a position.... And we exchange ideas, we respect and ask each other "what do you think?" "This is my opinion, what's your opinion?" As opposed to learning from somebody, I'm already in a lower position and I look up to somebody. (SFG3, 537–540)

Learning with is you're equal and learning from there's a transfer of knowledge. (SFG3, 589–590)

Learning From Others

Learning from others was described as a process in which one had to trust the other person's knowledge and expertise. As described in the last quote above (see SFG3, 589–590), learning from others means a transfer of knowledge, another form of active engagement. The concept of willingness to learn was seen as important as was the need for the interaction to be free of judgment.

I think learning from needs to be non-judgmental, non-hierarchical, really have to do the role release piece but still share your knowledge skills and abilities. But the recipient also must be willing to learn from. (FFG1, 807–809)

Knowing the right questions to ask also seemed to be important. Participants, especially students, felt that they had to either have enough knowledge already so that they could feel comfortable asking questions in order to learn from someone else, or they had to be confident that it was a safe place and time to ask questions. If students did not feel safe, they would not ask questions.

I feel like sometimes learning from, um, you also need to learn how to ask the right questions. Um, and kind of have some sort of fundamental understanding.... Like it was really hard to, there was a huge learning curve I found, because it was, in the beginning I didn't even know the right questions to ask and it made it more challenging to learn 'from' because it was like, it was just so overwhelming.

(SFG1, 778–783)

Because when you're learning from somebody, somebody knows something in great detail. It's being able to say to that person "I don't understand that." "You need to break that down into simple layman terms for me because I don't get it."

(SFG1, 787–790)

The concept of listening, actively listening, was described as a key part of learning from others. The bodies of knowledge attached to different professions were seen as important to share but not in a hierarchical manner. Having more knowledge did not mean having greater or more valued knowledge, it meant having knowledge that was different and could contribute to more comprehensive patient care.

Being able to listen. That's the only way you can learn from somebody and in my mind I would think that we learn from people because we feel that a person has more information.... I think learning from is where you have a bit of somebody else is higher than you. Not necessarily higher, as in hierarchy, they just have more knowledge, and so it's very, very important to, um, be humble and be able to listen and be teachable because you don't have that information and you need to discover it from somebody else. (SFG2, 918–924)

The beginning of learning what the differences are between and among professions was described as learning from others. This implies a need for an intentional and active reflection on the differences as you learn from someone else so that the understanding of differences can inform your practice.

And learning from is where there's that interactive sense of understanding what the differences are. Beginning to understand how it affects you differently from how it might affect that person and that person. (FFG2, 827–829)

In several parts of the discussions about learning with, from, and about, concern was expressed about the potential for learning from others and about others to be passive. The need for interaction was not explicit in these two terms, which raises the question: How do we ensure that the learning experiences for learning from and about others are interactive and engaging?

When you're learning from somebody, it's still a little bit, you know, uni-dimensional. So, if I'm learning from you, you don't have to know that I'm learning from you. I can just sit here and listen, but I don't have to interact with you. (FFG2, 987–989)

Learning About Others

For students and faculty members alike, learning about other professions seemed to form the foundation for learning with and from other professions. In part related to the timing of IPHE in the curriculum, learning about other professions was also viewed as a foundation to other IPHE activity.

What you're saying almost makes it sound like learning about is the foundation and the start. (SFG1, 931–932)

About can occur very early in a curriculum. Like it could be something that, um, you're learning a bit of theory about who does what. Um, it doesn't really need to be a really deep activity in the beginning or even involve tones of interaction.

That's the beginning about about, you know, that I think we forget to do sometimes. And then we wonder why some of these other deeper activities take a while to, sink in, yeah. (FFG1, 840–849)

Learning about others was clearly linked to watching and observing what others do. Learning experiences such as shadowing reflect the importance of witnessing people in action as a way of understanding roles and behaviors.

That's the shadowing you get on the clinical placement days. I mean, I would say that would be my about... I think that's where clinical placement is really, really important. And to make you shadow someone that's not in your profession. (SFG1, 824–834)

I think learning about another health profession is not about the communication so to speak. It's almost sort of just the witnessing and just, even if you're just in the shadows watching them and this is, this is what they're about. You see them in action. This is what they do. This is how they do it. (SFG1, 855–859)

The concept of knowing about people beyond their professional capacity was also described as important. If one knows about someone's interests and lives in general, it appeared to be easier to work collaboratively with them. Not all participants felt comfortable asking people about their lives and worried about stepping across a professional line, but most participants felt that knowing even a little about someone's life helped to ease the way to collaboration.

I think it's not just learning about the other professional and who they are professionally and what their profession is. But it's going a level deeper and finding out who they are, so who they are as a professional and what their roles and responsibilities are. But then also finding out who they are as a person and um, the value in finding out a little bit about what their background is, what they bring with them, um, and um, what they envision their role perhaps in the team. Um, and just finding out some personal information around what they do. (SFG2, 972–979)

Both students and faculty members felt that being open minded was essential for learning about others. According to participants, overcoming preconceived notions and stereotypes is necessary to be able to learn about someone else.

So, I think learning about starts with, you know, you start by learning just a little bit but also by having an open mind. Because if you're prejudging, which is very common, and you assume the worst, and then you don't leave any room to see the positive things. So, I would say just being open minded. (SFG2, 989–992)

Learning about is very important to get rid of prejudices ... I think when you learn about somebody. They all come from different perspectives. So, you learn about them and where they are coming from. (SFG2, 1043–1049)

I think it's about creating awareness and being open minded that somebody actually has something that's valuable to give. And so there is that also mutual respect and trust that's happening from that perspective. And those are essential for about to occur. (FFG1, 833–836)

The specific order of the words with, from, and about was raised in the first focus group and probed in subsequent groups. It was an interpretation that has not been presented in the literature and may have implications for the way in which IPHE is constructed and embedded in health professional education. There was no consensus within each group, but the findings across groups presented interesting insights into the value of a specific order to the words, or not.

Questions arose during the focus groups that precipitated the initial and subsequent discussion about the order. Should the word about come first, followed by the word with, and finally the word from? If the word about can be done without interaction, such as reading about roles or receiving a lecture on roles, does that set the stage for learning with others? If the word with means that people are learning the same things at the same time in the same place, is there an exchange or active engagement that gives more meaning to learning with? If I do not know about you, and I have not learned with you, how can I feel confident and safe learning from you?

I'm thinking for me about would probably come first but with would come second because by learning with someone you develop trust and relationships. And then from, there I think I would feel comfortable learning from that person. So, first, in my mind I'm thinking that would be the order. (FFG1, 1011–1014)

So, then you learn from them because first, as you said, you learn about them and then you learn from. Because by learning about them you are able to learn from them. (SFG2, 1048–1049)

I know it's been just, maybe about can happen earlier, our awareness. And once you have that awareness you can move on to the with and then the from. (FFG1, 941–942)

I think about would come first, then from and then with. Because with is that collaborative piece. (FFG1, 996–997)

For some participants, the order was irrelevant, as the process of IPHE was conceptualized as circular and happening in an iterative fashion.

So think it's a, in some ways I think the with and the from is a false dichotomy, because I think it's a process that's an interactive process all the time, you know. (FFG2, 847–849)

And the thing is, I don't see that any of these can be mutually exclusive. So, for me it's more a question of emphasis. Which why, I mean, I think as you are learning with you probably also are learning from and you also are probably learning about. Um, but that's not the focus, that's not the main point of the particular activity, which is, I mean, all these things are going to play off each other. (FFG2, 750–754)

And for different people in different places in their careers at different times the same activity, I mean it just may just be the whole way that things get put together. At a particular moment in your life when you're doing some activity, you might actually have more of a learning from experience than the person next to you who's having more of a learning with experience, I don't know, I mean. But they're all kinds going on, I don't, they can't possibly be discreet. (FFG2, 914–919)

I would say that, um, learning about would come first and then that knowledge enables you to know where to go to learn from. But I also think that it can also happen at the same time in that, you know, it may be a little bit cyclical, where it goes back around and back and forth, um, to where it can be happening at the same time but you're always learning as well. (SFG3, 758–762)

For one participant, the order was more a function of the sound of the word than any given order. One order was more pleasant to say or listen to than others.

And I really wonder if the people who put this together did it more cause it's catchy, than because they meant first you learn with, then you learn from, then you learn about. I mean, having spent a lot of time focusing on the reason why people say things the way they say them in the poetics of language, that with, from and about, is just way more satisfying. (FFG2, 939–944)

There are Central Characteristics of Interprofessional Health Education

During the focus groups, participants were asked to identify as many key characteristics of IPHE as they could. These were sorted and grouped both within and across faculty member and student data. The intent of the exercise was to see which key words or phrases resonated for each group signaling an important characteristic of IPHE. Most common characteristics identified by both groups were positive characteristics. Some participants noted this and amended their list to include characteristics that are consistent with barriers to IPHE. These key characteristics included: challenging, expensive, hard work, limitations, managing conflicts and disagreements, power differences, scary, complicated, top down, works better in some practice areas than others, and lots of logistical challenges. There was no sense that these more negative

characteristics should get in the way of pursuing IPHE, but there was a feeling that these negative characteristics needed to be considered as limitations and as focal points for action as IPHE develops over time.

From the integrated list of central characteristics, there were characteristics that seemed to resonate as highly necessary to IPHE. These characteristics included: collaboration, common goal or purpose, communication, engaging, knowledge about others, learning, listening, openness, respect, safe, sharing, stimulating, team, trust, understanding, values/valuing, and willingness. In addition, there were other central characteristics that may not be specific to IPHE, but are important to consider in any health professional learning experience. These characteristics included: fun, friendly, honesty, cross-cultural, deep, experiential, kindness, language, non-judgmental, professionally satisfying, transparency, wonder, and curiosity.

There is a Visible Change in the Learner During Interprofessional Health Education

One specific question in the focus group discussions examined how students knew when they had experienced IPHE: how they knew when interprofessional learning had happened. Faculty members were also asked how they recognized when students had experienced IPHE. The question prompted surprising responses that may provide insights into how we measure IPHE and its impact. One explanation for the differences in student and faculty members' responses may be the difference between observing another person from a distance and introspectively analyzing what has changed as a result of your own lived experience. Faculty members described the types of changes they could observe in areas such as comfort level.

And I guess, I would concretely say, in a clinical placement if you start seeing students feeling more comfortable suggesting, um, a referral to other disciplines and understand why. Um, being able to articulate, you know, some of the, um, some sort of understanding that the decisions made by the other disciplines and why, you know their different approaches. I'm not sure I can see it in the course, you know, that connection immediately observe that, you know, but it would be interesting to see that and observe down the road and see how they practice after they finish their training. (FFG2, 681–688)

I think it's just conversation. I notice it in just the discussions around a case often instead of just the single discipline student going to one preceptor. Often you I'll find when the "ah ha moment" happens, then there's an intermediate discussion that students start having and then often there's also a "would you come in and see this patient because I think this is something that you could look and then go and talk to the preceptor together?" And then so it's an open conversation. And then there are questions back and forth about "well how would you look at it?" kind of thing and "that's what I see". (FFG2, 692–700)

Apart from the increased and observable comfort levels among learners, faculty members noted that there was a change in the level of understanding about other roles and contributions. Faculty members also noted an increase in the confidence of the students. This was illustrated by a change in the type of conversations and the level of trust and openness when talking to other professionals.

I think, well, I think things like trust, if you know. Like if, um, a student from one profession is able to challenge somebody from another profession. Like, you

know that thing about conflict. Well, there's inherent conflict in all of these things. But if you're very timid or intimidated you won't do that. But once people start to feel more together then you'll start to say "no, I don't really, I think you're wrong or crazy or whatever". Kind of cross those boundaries and work it out, you know. I think that's evidence that there's been sort of a change. Because I think I sort of see it at the beginning of the course everyone's very kind of polite and they're all very respectful. And by the time it's over, like they're, it's very different. They're much more open I think with each other. (FFG2, 664–673)

From the students' perspective, an increase in comfort level was not noted as an indicator of the change due to IPHE. Student participants did, however, agree that one's level of awareness did change.

So I think when you're teaching interdisciplinary, you realize that it doesn't matter if you can't do all; there's somebody there who can do it better, that area than you can. (SFG1, 542–544)

You can accomplish way more as a team than you can, like you were saying, than being an individual. Um, and so you know, you might mull something over, an issue over in your mind for like a week trying to think "how are we going to solve this?" And then come together and you hear everybody else's perspective and then in the matter of a couple of hours you come out of a meeting and its like "okay, this is what we're going to do now". (SFG1, 617–622)

When you move forward and that plan incorporates so many different aspects in order to solve it. I think that's when you realize that this is, you know, interprofessional approach as well. (SFG1, 625–630)

Well, I think the um, I think people going away with a better awareness and appreciation for the other people's contributions. (SFG2; 772–774)

Students also commented on the increase in their own level of understanding about different perspectives.

They've just come at it from a different angle and it may be due to their training is slightly different and so they're looking at it in a different way, um, that I haven't considered. And then it makes sense or it's logical that I, you know, all of a sudden its like "Why didn't I think of that before?" or "Why didn't I think of that?" Like somebody's come at it from a slightly different angle and it maybe because of their training or whatever. (SFG1, 648–653)

I think, um, just being able to look at something from different perspectives. Like, maybe not have all the answers but just, um, like, when faced with an issue, um, being able to recognize okay that this is how I see it but there's probably other perspectives to it. Um, and I'm not an expert on all those other areas but I know who to go to for help. Um, or just know when I'm working with patients being able to think about "okay maybe some of these other things are coming into play, um, that some other professions might be able to help with". (SFG1, 586–592)

So, for me interprofessional is joining all the pieces. It's like a group of ants working together. And then at the end you see the results impacting the recipient, which is the patient. So, it's just pulling the pieces together. (SFG2, 753–755)

Um, I think I would say that you notice that there are different ways of doing things. Um, and recognizing that it's not just one way is the right way, but there could be many different ways going about to finding a solution. (SFG3, 461–463)

In addition to increased awareness and understanding, student participants clearly noted that their own confidence had increased, as had that of their colleagues.

We were going to do this drama skit. And so, you know, ours was to hydrate or not hydrate a patient who was imminently dying. And so we had our own script made up and um, and it was in our third week of this four-week course and the social work student came one day with a new script. And she had added stuff on her own, cause I guess she had realized, you know, my role isn't really defined in this whole case. And so, we were pleasantly surprised and she had the confidence to come and do this. And from that day on, I think we just, that was a turning point for us, in that we just, we came to realize that we ignored that part of the puzzle. (SFG2, 327–334)

Communication for me, personally was, ah, getting over my nervousness, and saying “really don't know what a social worker does, can you tell me your professional boundaries?” Not being embarrassed. (SFG3, 208–210)

There is Added Value in Interprofessional Health Education

For learners, the sense of making a difference was very important. Learning through IPHE helped learners to know themselves better so that they could understand their role in comparison to someone else's. They could also understand others' roles better and could, therefore, provide better patient care.

I think what you said about making difference. You know, I think we feel like we've made a difference when we've taking these courses. Made a contribution. (SFG1, 513–514)

I found, there was lots of value from learning from the new learners coming into health care. (SFG2, 89–90)

You cannot change people but can certainly change attitudes. And I think that was something that meant a lot to me from the course. And I hope that there will be more people, because we all have our own biases and we.... So, I think that there's, that is my, I always remember that. (SFG2, 420–423)

In the context of the workforce, participants commented on the potential for improvement in the workplace. They believed that future consideration of health human resource issues should include IPHE and collaborative practice as ways to improve recruitment and retention by creating space for people to feel valued and respected.

I think it makes for a better workforce and collaboration once you're working. (SFG1, 240–241)

All these disciplines going back into the work place makes the workplace a better place. (SFG1, 1009)

And, um, how we take care of, um, ourselves as health care professionals, that was beautiful. Nobody told us how to take care of ourselves. So, we learned a lot from each other. It was very helpful. (SFG3, 223–230)

Patient care was one of the primary reasons for the added value of IPHE and collaborative practice.

The overall patient care and overall health that you obtain, I think is so much greater. (SFG1, 1030–1031)

And it was just neat because at the end you had this perfect person that was gonna be doing well because you had all these people working together. (SFG2, 766–768)

[IPHE] prevents things from getting missed. You, um, when you have people from different perspectives, you're able to look at it from a more holistic, um, perspective and work towards carrying that out in a holistic way. (SFG3, 468–470)

Overall, students perceived that participating in IPHE was valuable because of the sense that you gave, you received, and you felt valued.

You put in something and you get ten times more. I really got that feeling then and thought that this is the future. (SFG1, 376)

I think because you're really respectful, each discipline, you realize how important everybody is in the, you know, long term of things and for the client. And you know, we're all necessary. Nobody's bigger than anyone else. And that's what I really like. (SFG1, 1010–1013)

Barriers to Interprofessional Health Education Are Identifiable

Barriers to IPHE have been well documented in the literature, and in the focus groups; both faculty members and students also demonstrated barriers to IPHE. The barriers observed by students were different to those articulated by faculty members, and the findings help to better understand these different perspectives. The differences may be important when integrating IPHE into health professional curricula. Faculty members seemed to focus on colleagues and their attitudes or commitment to IPHE.

And so, there are some real barriers that the people delivering, you know, some core programming aren't necessarily attuned to that environment, it doesn't mean anything to them. (FFG1, 1091–1093)

And I think just a buy-in from all faculty. I'm not sure all faculty actually see the reality or feel that we need to focus on our own discipline specific things first and then master that. (FFG1, 382–384)

Faculty members also worried that students in general were not demanding IPHE. The silo approach was still prevalent, and the potential for bias to develop from even one negative experience with another team member was high.

Students still seem to want to work in silos or work more parallel, um, in learning as opposed to, um, actually learning with. (FFG2, 167–168)

Attitudinal or personality. Like if they've gone out on an [Interprofessional Rural] experience and one of the team members just wasn't a good fit, they then have a negative impression of not just that person but the whole profession, and so that, and again that internal sense of professional identity. I think is tied to values, attitudes and beliefs. (FFG1, 375–378)

It's coming from us at this level and it's not, you know, it's not grassroots. When the students are introduced to it, they're like "oh this is good or why didn't we have this sooner". But they're not coming at us chomping at the bit, "we need more, we need more, why aren't we all in one giant classroom together?" It's coming from us I still think. (FFG1, 598–602)

Again from the faculty members' perspective, the institutional barriers appeared to be the most difficult to overcome. Timing, scheduling, and evaluation appeared to be especially challenging.

We need to put in a lot of effort to make it happen. It's not an easy thing to do, in terms of like timing, scheduling, um, how to dovetail your curriculum, how to do assignments and everything, how to do the evaluation. (FFG1, 178–180)

The issue of a common language was raised, but not described as a major barrier. In the literature on IPHE, a common language was described frequently as a critical component of collaboration and communication, but in these focus groups it was not raised as a large barrier: Many disciplines define interdisciplinary in different ways (FFG1, 209–210).

Limits such as room in the curriculum or the ability to host a very large class were also raised, as was the complexity of organizing interprofessional placements.

We don't really have that much flexibility, for letting students do electives or actually do that much, kind of, interdisciplinary stuff, unless we really put a conscious effort to like mix the two, or like mix other disciplines together. (FFG1, 156–159)

That kind of limited the numbers of students, was largely limited because we had to find these clinical placements, these two-day experiences. So that was really the challenge. (FFG2, 140–142)

Schools decide or programs decide that they want everyone to take this, then you can't accommodate because now you would have class sizes that are so enormous.... So how you tailor the courses to, um, to make them meet the needs

of the individuals when the content really is key, it just becomes across programs, it becomes very challenging. (FFG2, 275–282)

In terms of the program itself and the required courses, it's really limited in terms of being exposed to other disciplines. (SFG1, 222–223)

Funding issues in the clinical setting were raised as barriers. This related not only to lack of funding for preceptors from different professions, but also to the perpetuation of hierarchy, because funding models allow more access to medical professionals.

And then time, so it's just making time because it actually is a functioning clinic. We're trying to see as many patients and trying to provide a service to the campus. That academic structure and funding, um, really limit us within the clinic because, um, it's salaried through the department of family practice. So if I were to find an additional salary it would have to be for a physician. So we're perpetuating a model right now that all of the other disciplines still go to the supervisor, who unless there's another volunteer supervisor there, it's medicine. And that's kind of perpetuating that, what I don't like is the hierarchical thing between professional, which isn't truly interprofessional. (FFG2, 183–204)

Issues of time and resources were discussed as barriers that are extremely hard to overcome.

The time and resources and space is another thing, um, that's hard to come about.... So, finding a time that both groups of students have comparable knowledge and then put them together is hard enough and then how the programs is structured. (FFG2, 210–227)

One of the reasons it hasn't happened is because all those faculties have been at different stages of curricular revision ... but just identifying times and programs

for students who have very different orientations and ways of going about learning and all of that, it's really challenging. (FFG2, 253–256)

The difficulties that came up were mostly based on time limitations. We had to do so much in such little time and misunderstanding or confusion. (SFG3, 377–379)

From the students' comments, it seems that the barriers, while evident at times in the academic setting, were more commonly experienced in the practice setting.

So the same thing I said for reducing hierarchy because I find ... hospitals to be so hierarchical. The doctors are just like, the top and all the people, you know, newcomers like myself who haven't worked there and, you know, nurses and like little people who just take instructions in my experience. (SFG2, 609–611)

I was sat at this meeting and they all looked at me to start the meeting, as a medical student or as a physician. And yet, they had complained about this hierarchy, right. Still in the end they were still waiting for me to start this meeting. (SFG2, 229–231)

But yet, in practice, the physician is still the head of the care of the patient or seen that way. Um, and all the blame seems to go to the physician if anything goes wrong. Yet, all professionals, all the other professions want to work together. So, I still struggle over that. And we had that struggle in our group as well. And we worked through it. (SFG2, 240–244)

Summary

This section has described the qualitative findings for this research study. Those who participated in the focus groups were individuals who had involved themselves as either students or faculty members in IPHE. Their lived experiences, insights, and their

accounts of their own personal perceptions helped to articulate what this phenomenon represents experientially within the context of health professional education—both for those who deliver it and those who receive it. The overall sense of IPHE as a process was consistent throughout the focus group data. Amongst the process descriptions were key process areas such as timing, reflection, intention, and context. Student participants most strongly articulated the patient and their family as an anchor for IPHE. The sense that a visible change occurs when IPHE is finally recognized was consistent among students and faculty members. While not integrated into the global themes, mention of characteristics of IPHE helped to describe the overall IPHE phenomenon in more detail, and the conceptualizations of added value helped to reinforce the importance of IPHE as part of health and human service professional education.

The findings as they relate to the words with, from, and about signal the complexity of these small pronouns. Overall, both students and faculty members related to concepts such as respect, interaction, active engagement, equality, confidence, level of learning, and the order in which the words should or could be applied effectively.

The findings from the focus group data were used to frame the web-based survey administered to a broader sample of faculty members and students. The student group was subdivided into current students and new graduates, as some of the students who had participated in IPHE courses had since graduated. The results of the survey are described in chapter six and are situated in relation to the focus group results to determine where there was both convergence and divergence between the qualitative and quantitative findings.

CHAPTER SIX

QUANTITATIVE ANALYSIS AND TRIANGULATION

“He uses statistics as a drunken man uses lamp-posts—for support rather than illumination” (Andrew Lang, as cited in Encyclopaedia Britannica Online, 2008, ¶ 1).

As described in Chapter Three, a mixed methods research approach, combining qualitative data with quantitative data, was the methodology of choice for this study. Creswell, Fetters, and Ivankova (2004) proposed three models that provided guidance about the analysis and reporting of mixed methods data: (a) the instrument design model, which gives priority to the quantitative data collection and analysis, using the qualitative data analysis to inform the development of an instrument for the quantitative phase of the research; (b) the triangulation design model, which gives equal priority to both qualitative and quantitative phases of the research, using concurrent or simultaneous data collection; and (c) the data transformation design model, which favors qualitative data collection and analysis, integrating them at the data analysis stage. This research study appears to best fit with a modified triangulation design model, which, according to Creswell et al., “integrates the two forms of data to best understand a research problem” (p. 11). In this case, the qualitative data plays a more prominent role, using the quantitative data to support, or not, the focus group data, while using both sources of data and the literature to assist in the interpretation of the findings. Williamson (2005) reviewed the strengths and limitations of triangulation in mixed methods research. Williamson relied heavily on the work of Denzin (1989) to explain the different types of triangulation, including methodological triangulation, which in turn can be used to examine the use of

quantitative and qualitative approaches within one study, as was used in this research. One of the important aspects of Denzin's explanations is the understanding that researchers should not expect to find identical findings. Because the supporting theories and assumptions are different for each of the two types of data collection, this perspective makes sense. Williamson suggested that methodological triangulation allows for a more complete picture than any single research method, without eliminating the limitations of either the quantitative or qualitative method. "This is not to say that there is not a place for single-methods studies, but only that multi-methods work can have considerable advantages in interpretation of findings, and offers the opportunity to transcend paradigmatic separatism" (Williamson, 2005, p. 17).

In this research study, the findings from the focus groups alone would have provided a limited perspective on the overall landscape of IPHE, but in particular on the task of explaining learning with, from, and about. In this chapter, I have reported on the quantitative data analysis and interpreted the findings in the context of the focus group findings (qualitative data). I have then used a modified triangulation approach to situate the interpretation of the research in the broader literature and to articulate a contextual description of IPHE, including possible meanings of learning with, from, and about each other.

The Survey

An electronic survey was administered to faculty members in the Health and Human Service programs at the University of British Columbia (UBC) and to current and former students who had participated in one or more of the interprofessional electives offered at UBC and who had agreed to be contacted for research purposes. The questions

posed in the survey asked participants to respond to key themes and ideas captured in the focus groups. The questions on the electronic survey did not ask the participants to, nor give them the opportunity to, generate new ideas. A time frame of 10 days for completion of the survey was used, and a reminder was sent at 6 days and another at 8 days. The data were saved in SurveyMonkey™ (Finley, 2008) and imported into a spreadsheet, which was used to transfer the data to a statistical analysis software program.

The overall survey response rate was 23% calculated by the total number of invitations sent to students and new graduates divided by the number submitted, added to the number of invitations department heads reported sending out to faculty members minus any electronically returned e-mails which could not be delivered divided by the number submitted. The response rate was affected by the time of year; the survey was distributed to faculty members who were in the midst of writing grant proposals, had various deadlines, and busy teaching loads. The student and new graduate return rate may have been affected by heavy course loads, practicum, and challenging workloads in the community. In addition, the level of interest in the topic may not have been high among certain groups of potential respondents. However, while only a modest return rate, the survey data still informed the research in an important manner.

Analysis

The survey responses were coded on a six-point Likert scale (Likert, 1932): A response of 1 indicated that the respondent strongly disagreed, through to a response of 6, which indicated that the respondent strongly agreed (see Table 8). After eliminating responses that were not formally submitted—the respondent did not indicate in the last question that they wished to submit their answers—and those in which there were

missing responses, the total number of survey responses was 94. A summary of the responses is provided in Appendix M.

Table 8. *Six-Point Likert Scale for Survey Responses*

Likert Scale	Response Options
1	Strongly Disagree
2	Disagree
3	Somewhat Disagree
4	Somewhat Agree
5	Agree
6	Strongly Agree

Statistical analysis was conducted using a statistical software package, which allows for any type of statistical analysis in the sciences, as well as the social sciences and humanities. Respondent characteristics were obtained from the demographic data that were collected on the first page of the survey. These characteristics were captured in the categories of gender, age, program of study or profession, and faculty member, new graduate (within five years of graduation), or student. The profession or program of study was not included in the analysis, as the numbers were too widely spread, from 1 in Audiology to 36 in Nursing.

Analysis of variance (ANOVA) was chosen as the most appropriate statistical test to apply to these data. Although, technically, data from Likert scales are considered ordinal data and as such call for the application of non-parametric statistics, many statisticians now agree that the data can be treated as interval, allowing for the use of

parametric statistics (Stone, 2006). Stone referenced Hair et al., 1998 when supporting the treatment of such data as measures on an interval scale due to the evidence that people perceive the intervals on a Likert scale as being equal. Based on these contemporary interpretations of data from Likert scales, the potential for greater power in detecting findings of statistical significance informed the choice of ANOVA for the analysis of the data from this study. In addition, in parametric statistical analysis, when there are three groups in the data, ANOVA must be used rather than a one sample t-test, which only examines relationships between two group means: the sample mean and the hypothesized value. In addition, the research study is not hypothesis driven; therefore, trying to examine linear, or cause and effect, relationships would be inappropriate. ANOVA looks for differences among groups and not a linear relationship. ANOVA uses variance of the means to derive the significance, or not, of any differences. ANOVA is used when the indirect variables are discrete and categorical and when the direct variables are continuous, ordinal, and dichotomous. Another form of analysis is the consistency of agreement generally within the themes, which demonstrates interesting trends that can be used as a point of reflection on the focus group findings. As the purpose of the mixed methods research approach was to examine whether the focus group data would hold up in the larger group, these trends provide important insights and inform the findings overall. The overall responses were evenly distributed among survey respondents—faculty members, new graduates, and students (see Table 9).

Table 9. *Basic Demographics of Survey Respondents*

Respondent Group	Participation Rate (<i>N</i> = 94)	Gender		Average Age	Average Years in a Practical or Clinical Setting
		Male	Female		
Student	31%	3	26	28.0	3.3
New Graduate	32%	2	28	30.7	3.9
Faculty Member	37%	4	31	47.3	19.4
Total/ Overall Mean	100%	9	85	35.8	9.4

The descriptive data were coded for the purposes of analysis as follows: Students were coded as 1 to signify the least experience; new graduates were coded as 2 to signify more experience than students, but less than faculty members; and faculty members were coded as 3 to signal the most extensive experience. Gender was not a significant issue, as the bias toward females was too large to expect any reasonable and determinable impact on variations in answers between males and females. In addition, the ratio of male to female respondents was consistent among the three groups leading to the assumption that similar findings would be derived from analyzing the three groups within the gender data. Both age and average number of years in a practice or clinical setting are important variables because the differences between student age and faculty member age, and between student years of experience and faculty member years of experience, are large. However, the relative differences among the three groups are very similar no matter the variable (i.e., age or years in practice). For these reasons, the analysis focused on the respondent group variable.

In order to organize analysis of the survey data, the variables were clustered around the integrated qualitative themes. The independent variables—the respondent group of student, faculty member, or new graduate—were examined for each dependent variable to determine if there were significant differences across these groups. This was important, as the description of IPHE needs to speak to both the learner and the facilitator or teacher. Possible explanations or assumptions about the findings and their relationship to the focus group findings paved the way for the discussion and conclusions through which the resultant contextual description of IPHE emerged, along with a strong focus on the concepts of learning with, from, and about each other.

In the rest of this chapter, I report the trends that have resulted from the survey, and whether or not they confirmed the findings from the focus group data. The differences, statistically significant or not, are helpful in determining whether the survey responses were consistent with the key themes derived from the focus group data. In the last section of this chapter, I have used a modified triangulation approach to integrate the qualitative, quantitative, and literature sources of data to describe the broad context of IPHE and the emerging meaning of learning with, from, and about others.

Findings

From the results of the ANOVA analysis, we can see that there are very few significant differences among the respondent groups, and those that are significant are predictable differences. For example, the statistically significant differences among the groups in the cluster related to barriers can be explained by the different foci of students or new graduates and faculty members. Faculty members dealt with logistical barriers at an organizational level, barriers that were not apparent to students. Students and new

graduates noted that barriers are more apparent in the practice setting, and this was likely due to the time spent in the clinical context where interprofessional practice may, or may not, be a strong focus. Also, there was a statistically significant difference among the groups on the question related to the need to include IPHE intentionally in the curriculum. Students did not feel as strongly that intentionality was necessary, which was likely due to the focus of faculty members on curriculum planning as opposed to the students' experiences as learners within the curriculum. Statistical significance is noted in the discussion below, but the primary focus is on the trends noted in the clusters. For this reason, the overall percentage response rates are also included as tables throughout the chapter.

Cluster One: Interprofessional Health Education is a Multifaceted Process

While the concept of IPHE as a process seems inherently logical, the component parts of a process have not been described clearly. There are few consolidated descriptions of the many levels of IPHE that must be attended to in order to provide an environment in which learners and practitioners can learn with, from, and about each other. For example, when asking why is health care ethics taught more effectively using an IPHE approach, the answer was often elusive. If we can describe the process of IPHE, with its complexities and central characteristics, we are better able to embed IPHE into curricular activities and into continuing professional development opportunities, confident that the desired changes enabling collaborative practice will be integrated into health and human service professional education.

The Process of Interprofessional Health Education

In the focus group data, the concept of IPHE as a process emerged during discussions, both discretely and embedded in conversations about other issues such as with, from, and about. There was an inherent assumption during the focus group discussions that IPHE is a process, and this assumption manifested itself in dimensions of the process such as timing, reflection, intention, and context. In probing this further in the survey data, there was agreement among the respondent groups that IPHE is not only a process, but is also a gradual and complex process, although there was more agreement about the gradual nature of IPHE than about the complexity. In general, faculty members agreed more with the issue of complexity than did students or new graduates (see Table 10).

Table 10. *Mean of All Survey Responses for Questions Relating to the Concept of IPHE as a Process*

Respondent Group	Collaborative ^a	Complex ^b	Gradual ^c
Student	5.31	4.66	4.69
New Graduate	5.30	4.55	4.77
Faculty Member	4.94	5.17	5.00
Overall mean	5.17	4.82	4.83
Statistical Significance (ANOVA)	.232	.099	.462

Note. Survey responses were made on a 6-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 6: IPHE is the process by which we train practitioners from different disciplines to practice collaboratively.

^bSurvey question 7: IPHE is a complex process.

^cSurvey question 23: IPHE is a gradual process that takes place over time.

This may reflect the real and perceived complexity of IPHE that arises in scheduling, evaluation, context, and so on—issues that would not necessarily be evident to students. Other examples of complexities that are more likely to be faced by faculty members are: (a) the complexities of balancing profession-specific learning objectives with IPHE learning objectives, (b) the complex behavioral changes involved in training collaborative practitioners, and (c) the challenges of creating relevant and appropriate learning experiences that enable interprofessional collaborative practice. However, the consistency with which all survey respondents agreed with the three dimensions of IPHE—process, gradual, and complex—suggests that these characteristics of IPHE resonate for those involved in IPHE as facilitators or as learners (see Figure 4).

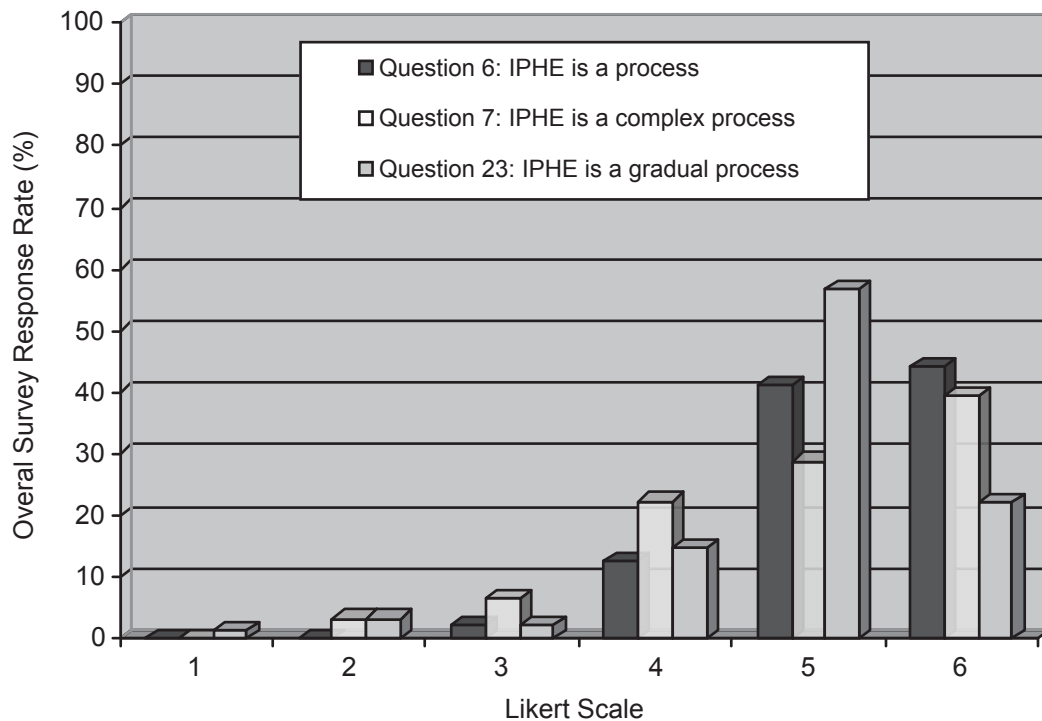


Figure 4. Comparison of three dimensions of IPHE as a process.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Thus, the emerging picture of IPHE as a process that is both complex and gradual is supported by both focus group and survey findings. Interestingly, the concept of IPHE as a gradual process intersects well with the concept of integration throughout a curriculum, and it may be that there are critical points in the gradual process when the concept of interprofessional collaboration become clear.

Intentionality and Interprofessional Health Education

Student responses to survey questions relating to intentionality hovered between somewhat agreeing and somewhat disagreeing that intentionality was important. Whereas, new graduates and more so, faculty members clearly disagreed, thereby suggesting that intentionality was important.

This would be consistent with the different roles of students/new graduates and faculty members. When preparing curriculum to support interprofessional collaborative practice, it is important for faculty members to be explicit about IPHE learning objectives and to ensure that learning activities include time spent interacting with students and practitioners from other professions. From the learners' perspective, integrating IPHE into the curriculum does not need to be obvious or explicit and may, in fact, be more effective if it is not seen as additional learning, but rather an integral way of learning along with profession-specific knowledge and skills. The statistically significant difference here may be explained by the involvement of faculty members in curriculum design, as opposed to the role of students in participating in the curriculum (see Table 11).

Table 11. Mean of All Survey Responses for Questions Relating to the Concept of Intentionally Including IPHE in Curricula

Respondent Group	Non-Intentional ^a	Profession-Specific ^b	Explicitly Stated ^c	Distinct Learning ^d
Student	3.17	4.97	4.69	3.10
New Graduate	2.97	4.90	4.72	3.62
Faculty Member	2.32	4.69	5.18	2.94
Overall Mean	2.80	4.84	4.88	3.20
Statistical Significance (ANOVA)	.026	.431	.099	.113

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 25: IPHE can be included in a curriculum without intentional planning.

^bSurvey question 41: IPHE can be integrated with profession-specific learning.

^cSurvey question 42: Interprofessional learning outcomes must be explicitly stated in health and human service program curricula.

^dSurvey question 43: IPHE needs to be distinct from discipline-specific learning.

The need for IPHE learning outcomes to be explicitly stated in Health and Human Service education reflects a similar trend. Students did not feel as strongly that explicitly stating IPHE objectives was necessary, and faculty members felt somewhat more strongly that it was necessary. Interestingly, this relates to the slight difference between students and faculty members on the issue of integration of IPHE throughout the curriculum. Students generally felt that IPHE can be integrated without articulating strongly explicit IPHE learning outcomes. Faculty members, on the other hand, felt that explicit IPHE objectives were more necessary, even though the insertion of IPHE-specific language decreases the ability to fully and seamlessly integrate IPHE into the curriculum. This

finding was consistent with the focus group findings, in which faculty members articulated that it is important to identify whether the learning outcomes are primarily discipline-specific, content-specific, or IPHE-specific.

Overall, the survey findings suggest that the larger group supports the trends noted in the focus groups. From a curriculum planning perspective, intentional positioning of IPHE into curricula is important, but using explicit learning objectives relating only to IPHE, in and of themselves, may not be as necessary (see Figure 5).

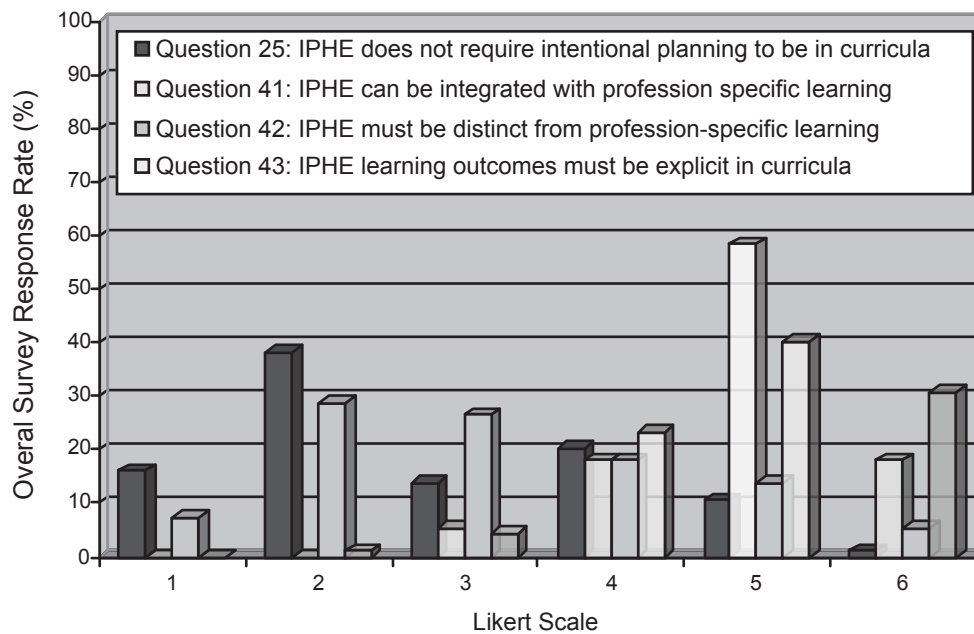


Figure 5. Overall survey responses to intentionally including IPHE in curricula.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Reflection in Interprofessional Health Education

Survey respondents across the three groups were consistent in their agreement that reflection is important in IPHE (see Table 12).

Table 12. Mean of All Survey Responses for Questions Relating to the Concept of Not Considering Reflection as an Important Part of IPHE

Respondent Group	Reflection ^a
Student	1.97
New Graduate	2.27
Faculty Member	1.86
Overall Mean	2.02
Statistical Significance (ANOVA)	.394

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 24: Reflection is not considered an important part of IPHE

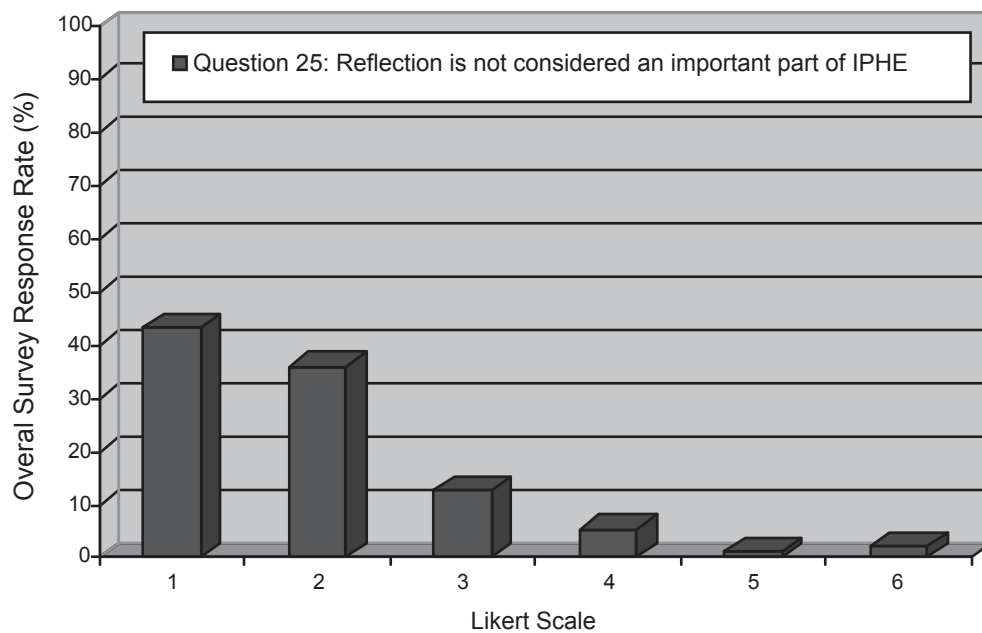


Figure 6. Overall survey responses to intentionally including IPHE in curricula.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

The consistency of agreement among the groups suggests that reflection needs to be emphasized in the description of IPHE in a way that informs curricular design. However, in the focus group data, students did not emphasize reflection, whereas faculty members did. This may reflect different interpretations of the process of reflection, but does not suggest that reflection should not be examined as an important part of IPHE. Clarification of the role and meaning of reflection may be necessary to fully embed it as a meaningful activity for students (see Figure 6).

Timing and Interprofessional Health Education

Survey respondents across the three respondent groups consistently agreed that early introduction of IPHE was important, and consistently disagreed that IPHE should suddenly appear later in the curriculum (see Table 13).

Table 13. *Mean of All Survey Responses for Questions Relating to the Concept of Timing IPHE*

Respondent Group	Introduced Early ^a	Introduced Later ^b	Incorporated Throughout ^c
Student	5.10	2.54	5.17
New Graduate	4.87	2.80	5.13
Faculty Member	4.77	2.71	4.88
Overall Mean	4.90	2.69	5.05
Statistical Significance (ANOVA)	.549	.746	.465

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 20: IPHE should be introduced early in curriculum.

^bSurvey question 21: IPHE should be introduced later in curriculum.

^cSurvey question 22: IPHE should be incorporated throughout the continuum of learning.

There was also consistent and slightly stronger agreement that IPHE needs to be integrated throughout the curriculum. Integration and early introduction support the need to examine the types of learning experiences and the complexity of the learning as part of curriculum development. Survey respondent groups were also consistent in their agreement that IPHE can be integrated with profession-specific learning (see Figure 7). This implies a need to embed IPHE into profession-specific curricula in relevant and meaningful ways along the continuum of professional learning.

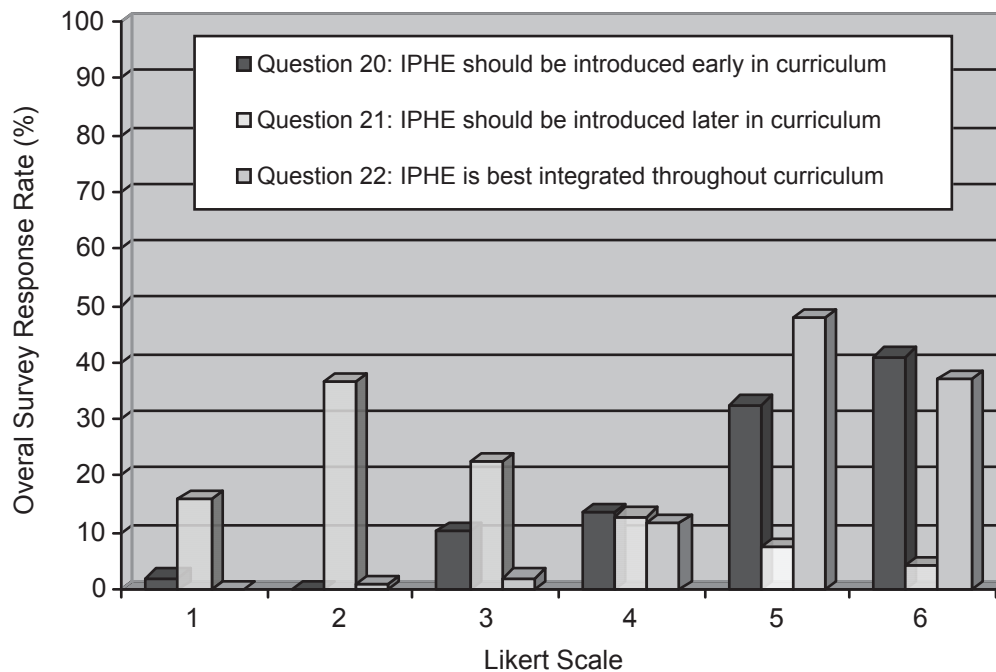


Figure 7. Overall survey response to the timing of IPHE.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Learning Environment or Context

There was a significant difference in opinion among the three survey respondent groups regarding the practice setting. Student respondents did not agree as strongly that IPHE was best served in a clinical environment, which may indicate a lack of security in

their supervised practicum where the classroom offers more familiarity. However, in the focus group data, students often referred to the value of experiencing IPHE in practice. New graduates respondents agreed most strongly that the practice setting was the best place for IPHE to be effective and faculty member respondents not quite so strongly (see Table 14). This may be due to the tendency for faculty members to be somewhat removed from the practice setting.

Table 14. *Mean of All Survey Responses for Questions Relating to the Concept of Learning Environment or Context*

Respondent Group	Practice Setting ^a	Safe Environment ^b
Student	3.86	5.31
New Graduate	4.70	5.33
Faculty Member	4.17	5.34
Total	4.24	5.33
Statistical Significance (ANOVA)	.008	.989

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 9: The best location for IPHE is the practice setting.

^bSurvey question 27: Educators must ensure that the learning environment for IPHE is a safe place.

The issue of safety is not well described in the literature, yet all three groups of respondents consistently agreed that a safe environment is necessary for effective IPHE. The increased comfort level of working with other professions was consistent in agreement, although more strongly agreed with by student respondents (see Figure 8), and may relate to the safety factor. It may also be necessary to ensure that the safe environment exists first, in order to allow for the increased comfort level as contact with

other professions is facilitated. A safe environment may help to minimize the chance of negative learning experiences that could influence students' future ability to collaborate with other professions. A safe environment may also be necessary to focus not only on the positive side of collaboration, but also to use the IPHE environment to constructively tackle conflict resolution and strategies for addressing negative encounters with other health care providers.

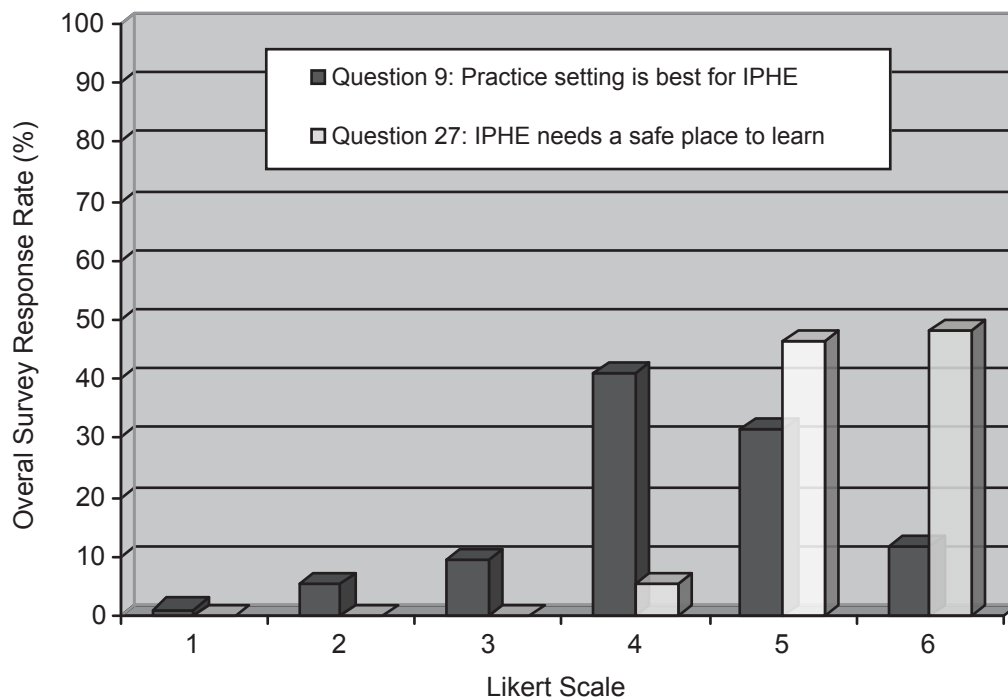


Figure 8. Overall survey responses to the IPHE learning environments.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

In summary, the cluster of variables that focused on IPHE as a process suggests that, for learners, practitioners, and faculty members, IPHE is a gradual process. The issue of complexity appeared to be more important to faculty members than to students and new graduates, but not significantly so. Intentionality is most important to faculty

members, although explicit IPHE learning objectives may not be as necessary. IPHE was consistently felt to require a safe environment for learning and was felt to increase an understanding of other professions. Student, new graduate, and faculty respondent groups were consistent in their agreement about IPHE requiring reflection. Overall, the survey responses support the focus groups finding.

Cluster Two: Patient and Family are Anchors for Interprofessional Health Education

All respondents agreed that these two dimensions of IPHE, the patient/family as the anchor and the common goal, are important. The two dimensions were discussed strongly enough in the focus groups to emerge as a global theme, and the consistency of agreement across the three respondent groups reinforced the position of these two dimensions as key elements of IPHE (see Table 15).

Table 15. *Mean of All Survey Responses for Questions Relating to the Concept of Patient and Family as Anchors and Common Goal*

Respondent Group	Patient/Client ^a	Shared Goal ^b
Student	4.69	4.52
New Graduate	5.03	4.47
Faculty Member	5.03	4.21
Overall Mean	4.93	4.39
Statistical Significance (ANOVA)	.485	.553

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question : The main foundation IPHE is the patient/client.

^bSurvey question: A shared goal for health and human service providers overcomes professional boundaries.

Interestingly, the findings in the qualitative data seemed to suggest that students were more focused on the patient as the center of interprofessional activity than were faculty members. The survey data did not bear that out, showing no significant differences among the respondent groups. This means that in describing IPHE, both learners and teachers agree that patient-centered and family-focused approaches to IPHE may ensure that the collaborative practice competencies strived for through IPHE are more likely to be demonstrated (see Figure 9).

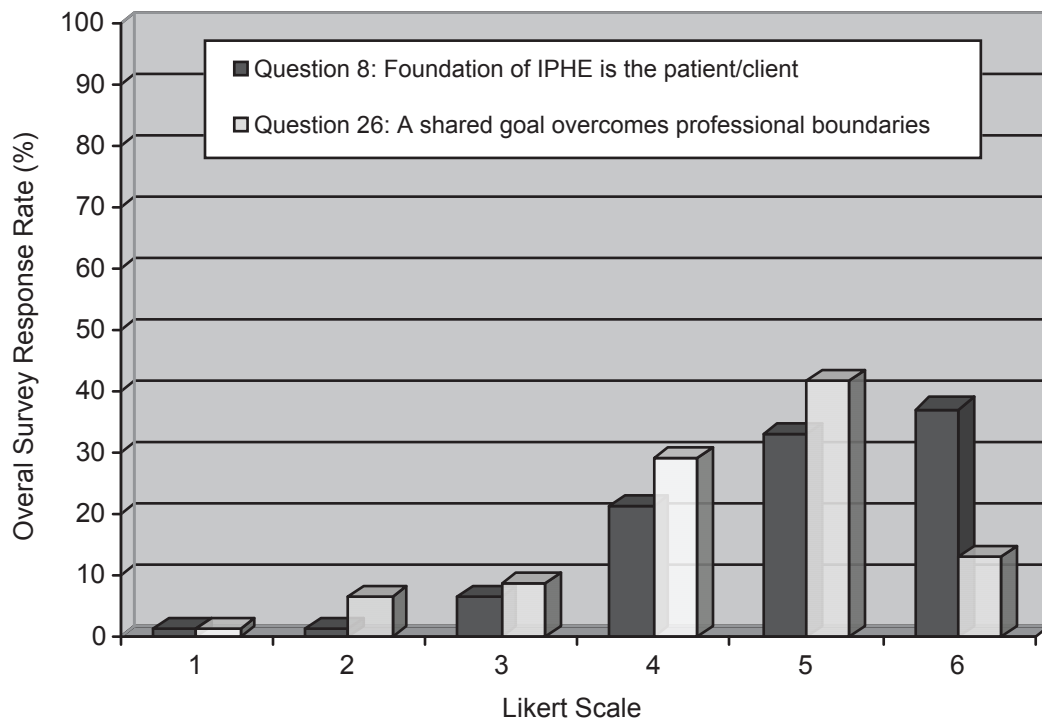


Figure 9. Overall survey responses to the importance of patients as anchor and shared goal to IPHE.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Cluster Three: With, From, and About are Multidimensional

The research question for this study focuses on the common definition of IPHE that embraces “learning with, from and about each other” (Barr, 2002, p. 17). The focus group found it difficult to describe each of the terms with, from, and about. The analysis of the meaning of the terms is complex. In the focus group data, the order of the words with, from, and about in the definition was raised and, when explored with both student and faculty member participants, helped to illuminate potential meanings for the prepositions.

The Order of With, From, and About

There is no sense in the CAIPE literature of whether the order of with, from, and about was purposeful or serendipitous. One faculty member suggested that it could be explained by the concept of poetic language; in other words, it flows more comfortably saying the words with, from, and about. The focus groups discussions illuminated the importance of learning about others before learning with and from others. However, the three respondent groups consistently and marginally disagreed that the order of with, from, and about did not mean anything (see Table 16).

Analysis of respondent group data suggested that there may be some importance to the order of the words, but that was tempered by the fact that the respondent groups consistently, although again marginally, agreed that the words represented an iterative process that required no specific order (see Figure 10). No matter the order, the concept of an iterative process is perhaps the most important. The level of engagement with each other, for example, may increase the level of knowledge about each other incrementally, while the ability to learn with and from others increases concomitantly with greater

knowledge about each other and increasingly complex patient cases. In this way, the order may be somewhat important, but the iterative nature of the learning is the most important.

Table 16. *Mean of All Survey Responses for Questions Relating to the Order of With, From, and About*

Respondent Group	Order not Important ^a	About and With are First ^b	Circular/ Iterative ^c	About First ^d
Student	3.21	3.76	4.55	3.86
New Graduate	3.47	3.87	4.30	4.07
Faculty Member	3.26	3.49	4.37	3.60
Overall Mean	3.31	3.69	4.40	3.83
Statistical Significance (ANOVA)	.685	.340	.695	.318

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 16: In IPHE, the order of learning with, from, and about is not important.

^bSurvey question 28: Learning from others requires that one has learnt about and with other professions before.

^cSurvey question 29: Learning with, from, and about is a circular, iterative process with no one part coming first or last.

^dSurvey question 30: Learning about other health and human service professionals must be done before learning with and from others.

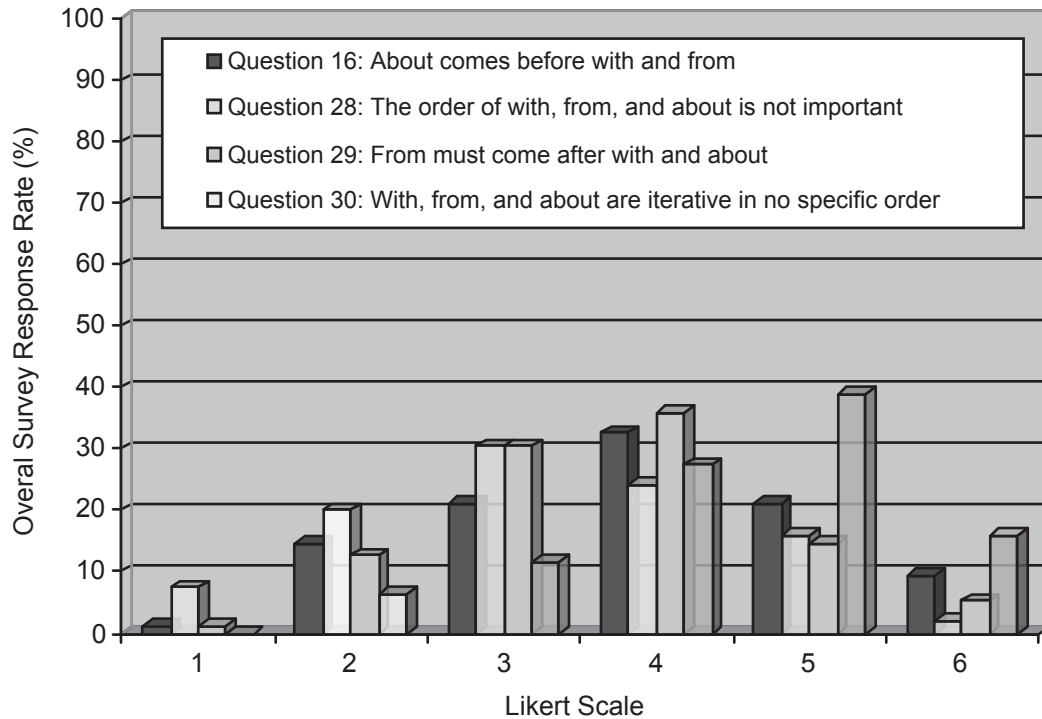


Figure 10. Overall survey responses to the importance of the order of with, from, and about.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Learning With

Although all three respondent groups strongly agreed that learning with means active engagement, the overall level of agreement that learning with means co-location for the learning to be effective was lower. This was consistent across all three respondent groups (see Table 17).

The focus group data suggested that learning with is more than being physically present with one another, and active engagement must also occur. This may suggest that technology, such as on-line and web-based learning or distributed learning using videoconferencing, may be either just as effective in IPHE as face-to-face learning

requiring co-location or could be used in partnership with co-location to actively engage students learning with each other.

Table 17. Mean of All Survey Responses for Questions Relating to the Concept of Learning With Others

Respondent Group	Active Engagement ^a	Same Place & Time ^b	Valued Equally ^c	Communicate ^d	Non-Judgmental ^e
Student	5.14	3.76	5.62	5.07	5.28
New Graduate	5.53	3.57	5.77	5.03	5.10
Faculty Member	5.34	3.51	5.40	4.91	5.03
Overall Mean	5.34	3.61	5.59	5.00	5.13
Statistical Significance (ANOVA)	.287	.697	.290	.772	.615

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 10: Learning with others requires active engagement with each other.

^bSurvey question 11: Learning with others requires all students being in the same place at the same time.

^cSurvey question 12: Learning with others an environment in which all students are valued equally.

^dSurvey question 31: Learning with others means communicating and sharing thoughts.

^eSurvey question 32: Learning with needs to be non-judgmental.

In addition, active engagement is consistent with communication and sharing, both of which are also supported in the qualitative findings, which stressed the importance of much more than learning the same material at the same time. The concept of feeling equally valued during IPHE is also consistent with the concept of IPHE being non-judgmental. Issues of power imbalance and hierarchy were discussed in the focus

groups, although they did not emerge as the main foci of any of the global themes. The concepts of equal value and lack of judgmental attitudes appeared to be supported consistently as important considerations in the IPHE context by students, new graduates, and faculty members alike. Across all student focus groups, a clear message was that you could not learn with others if the playing field was not level (see Figure 11).

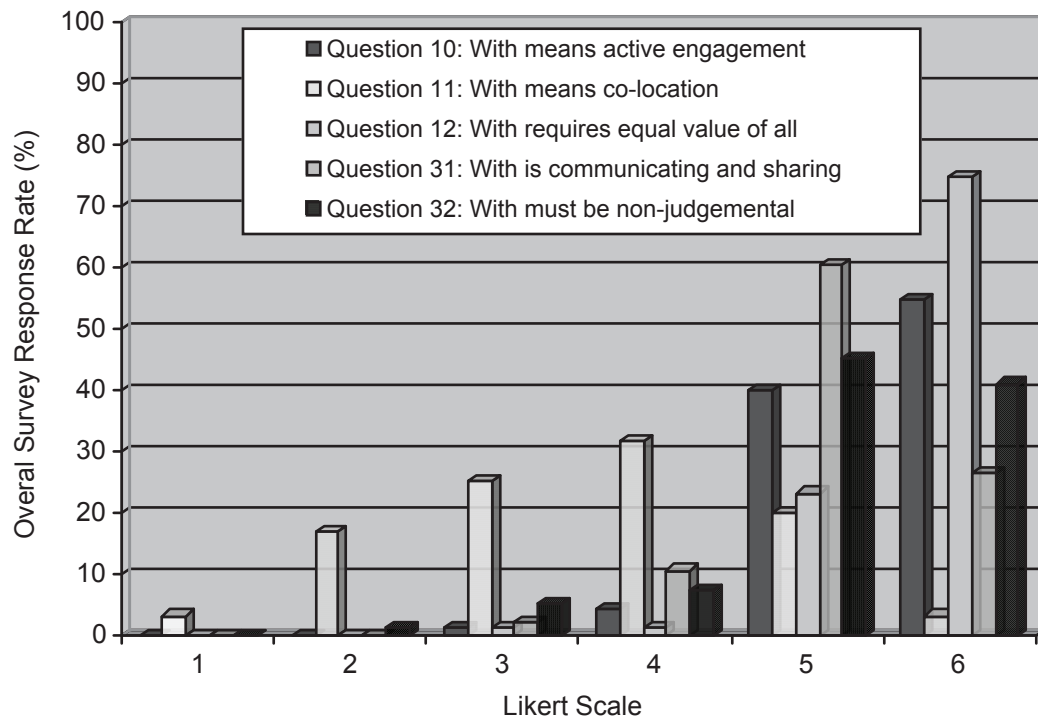


Figure 11. Overall survey responses to the concept of with other professions.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Learning From Other Professions

In the student and faculty focus groups, there was discussion about needing to have confidence in someone else's knowledge and skills in order to truly learn from them. Differences in knowledge and skill levels did not seem to be problematic, but

confidence that others knew what they were talking about or doing was important to learning from.

Table 18. *Mean of All Survey Responses for Questions Relating to the Concept of Learning From Others*

Respondent Type	Confidence ^a	Trust ^b	Respect ^c
Student	5.24	5.31	5.61
New Graduate	5.03	5.13	5.67
Faculty Member	4.94	5.31	5.51
Overall Mean	5.06	5.26	5.59
Statistical Significance (ANOVA)	.560	.745	.757

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 13: Learning from other health and human service professional students requires confidence in others knowledge and skills.

^bSurvey question 14: In order to learn from other health and human service professionals there needs to be a level of trust.

^cSurvey question 15: Learning from other health and human service professionals requires respect.

From the survey data, all three groups of respondents agreed that confidence in the knowledge and skills of others is critical to learning from each other (see Table 18). This may relate to the types of learning experiences and the level of student learning when planning IPHE activities. Junior students may have more confidence in learning from senior students in other professions. Mixing levels of students, therefore, may not be ideal for effective IPHE. Trust and respect were consistent themes in the focus group discussions, and these themes were supported in the survey data. Both trust and respect were consistently agreed with by all three groups of respondents. When coupled with the

findings related to safety, value and a non-judgmental environment, a clear sense of the ideal learning environment for IPHE begins to emerge (see Figure 12).

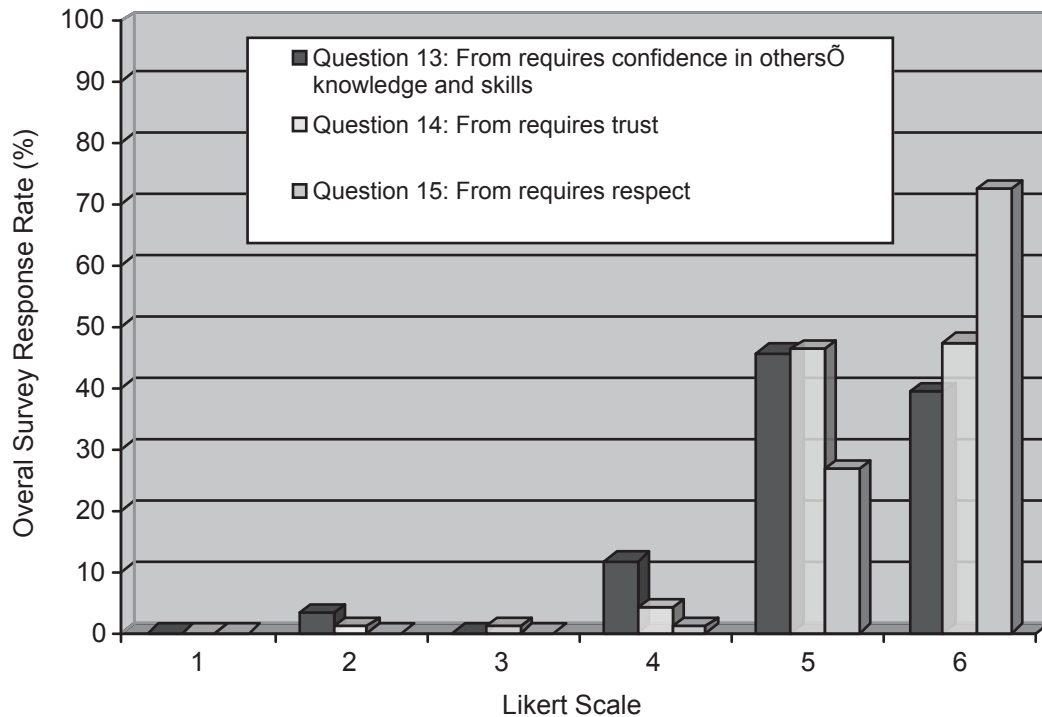


Figure 12. Overall survey responses to the concept of from.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Learning About Other Professions

Focus group participants felt that knowing about someone as a person outside their work environment helped to understand them and to bridge potential professional conflict more easily. The survey data did not support this concept as strongly. All three groups of respondents only somewhat agreed with the statement: “It is important to learn about who a person is outside their professional capacity (e.g., hobbies, family, sports).” Interestingly, students agreed more strongly than faculty members, although not

significantly so (see Table 19). This may be an issue that supports early socialization of students in an interprofessional context.

Table 19. *Mean of All Survey Responses for Questions Relating to the Concept of Learning About Others*

Respondent Type	Who ^a	Stereotypes ^b	Distant Facts ^c	Superficial ^d	Lacks Interaction ^e
Student	4.03	5.24	2.83	2.79	2.48
New Graduate	3.73	5.17	3.17	2.73	2.70
Faculty Member	3.60	4.83	3.03	3.06	2.54
Overall Mean	3.78	5.06	3.01	2.87	2.57
Statistical Significance (ANOVA)	.289	.158	.452	.456	.738

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 17: It is important to learn about who a person is outside their professional capacity (e.g. hobbies, family, sports).

^bSurvey question 18: Learning about other professions helps overcome stereotypes.

^cSurvey question 33: Learning about is learning facts about someone from a distance.

^dSurvey question 34: Learning about other professions is superficial learning.

^eSurvey question 35: Learning about other professions does not require interaction.

Students responded more positively to the concept that learning about other professions helps to overcome stereotypes. Based on the focus group data, both faculty members and students felt that being open-minded is a key feature of learning about each other, which helps to minimize prejudices that are linked to stereotyping. All three respondent groups agreed that learning about requires interaction (see Figure 13), which is consistent with the focus group findings. Focus group participants argued that, if the interactive element is missing, you are learning facts and stereotypes and not about each other.

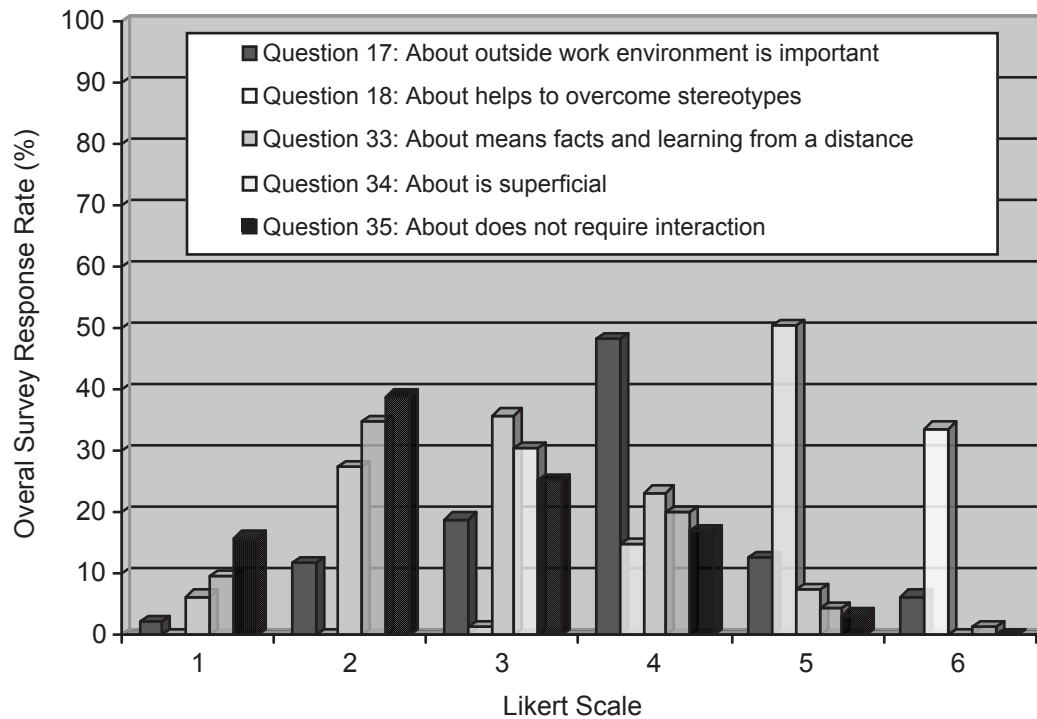


Figure 13. Overall survey responses to the concept of about.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Cluster Four: There is a Visible Change During Interprofessional Health Education

Respondent groups consistently agreed that when engaging in IPHE there is a change and one's way of thinking alters (see Table 20). However, the survey responses also suggest that there is not as much support for the concept of a sudden change as there is for increased understanding, comfort level, and awareness. When married to the earlier concept of IPHE as a gradual process, a more general understanding of change may mean that while the continuum of IPHE learning is gradual, as knowledge and skills in collaborative practice build, the learning becomes sufficient to trigger a variety of insights over time. It may be that in describing IPHE more fully, learning with and from

one another creates a long-term change, either positive or negative, depending on the learning experience itself (see Figure 14).

Table 20. *Mean of All Survey Responses for Questions Relating to the Concept of Visible Change During IPHE*

Respondent Group	Distinct Moment	Comfort ^b	Understanding ^c	Awareness ^d
Student	4.31	5.31	5.34	5.21
New Graduate	4.40	5.27	5.37	5.13
Faculty Member	4.29	4.83	5.03	4.71
Overall Mean	4.33	5.12	5.23	5.00
Statistical Significance (ANOVA)	.899	.060	.195	.090

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 19: There is a distinct moment in the interprofessional learning process when one's way of thinking changes.

^bSurvey question 36: IPHE increases one's comfort level when interacting with other professions.

^cSurvey question 37: IPHE increases one's understanding of other professions.

^dSurvey question 38: IPHE creates an awareness that changes how one interacts with others.

IPHE as the means by which comfort level with each other was improved was agreed with more strongly by students and new graduates than by faculty members. This may reflect the experience of the learner, comfort being more easily experienced than taught. However, this finding contradicted the focus group data, in which it was suggested by faculty members that observing an increase in comfort level among students from different professions was one way of assessing that a change had occurred. In addition, students in the focus groups did not note level of comfort as an indicator of

change. All three groups were consistent in their agreement that IPHE increases the level of understanding about others' roles and contributions. This was another way, as indicated in the faculty focus group data, that faculty members felt that they could assess changes due to IPHE.

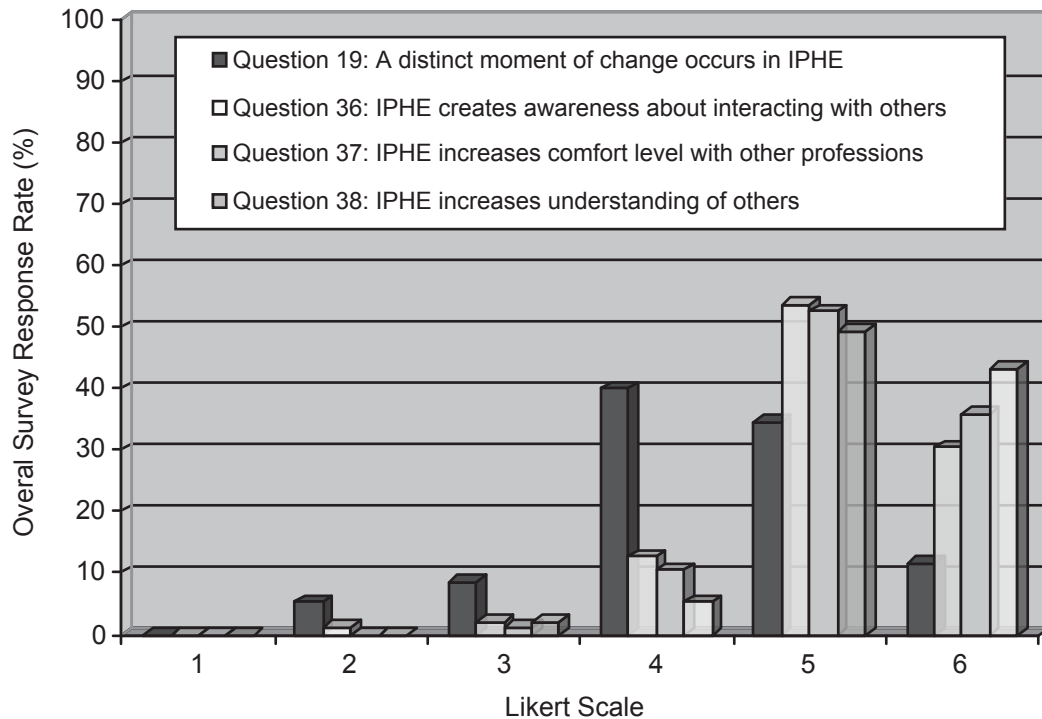


Figure 14. Overall survey responses to the concept of a visible change during IPHE.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Changes in how one interacts with others based on an increase in awareness was agreed upon as a consequence of IPHE by all three respondent groups, although faculty members did not agree as strongly. This is somewhat counter to the focus group data in which faculty members noted increased confidence in the students as another way of noting changes due to IPHE. The survey data, however, did support the students'

perceptions from the focus groups, in which they suggested that one's level of awareness does change through IPHE and that does improve the ability to work together.

Cluster Five: Barriers to Interprofessional Health Education are Identifiable

During the faculty focus groups, barriers were discussed as a major issue in IPHE, yet students spent little time on this topic, finding little to say. This made sense, as faculty members spend time attempting to address the organizational and scheduling barriers, most of which are not apparent to students. This may explain the statistically significant difference in opinions among the respondent groups about the barriers in the survey data, as those encountered within the organization (e.g., funding, scheduling, time, and resources) were cited more frequently as barriers. The survey findings suggest that faculty members do not generally demonstrate negative attitudes to IPHE, and faculty members are open to IPHE if organizational barriers can be minimized (see Table 21).

Table 21. *Mean of All Survey Responses for Questions Relating to IPHE Barriers*

Respondent Group	Biggest Barriers ^a	Practice vs. Academic ^b
Student	3.82	4.18
New Graduate	3.50	4.40
Faculty Member	2.94	3.35
Overall Mean	3.39	3.95
Statistical Significance (ANOVA)	.007	.004

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree).

^aSurvey question 39: The biggest barriers to IPHE are the attitudes of faculty members.

^bSurvey question 40: There are more barriers to IPHE in the practice setting than in the academic setting.

In the focus group data, students commented that barriers were encountered more frequently in the practice setting. The survey data also supported this finding, although there may have been differences among the responses of students and new graduates in this domain that were not identified in the analysis. Students generally agreed more strongly that there are more barriers to IPHE in the practice setting than did faculty members. This would be consistent with the exposure of students to practice settings, which is not always the case for faculty members, especially those who do not continue an active practice while in an academic appointment or in programs in which clinical supervision is provided in the community and not by academic faculty members (See Figure 15).

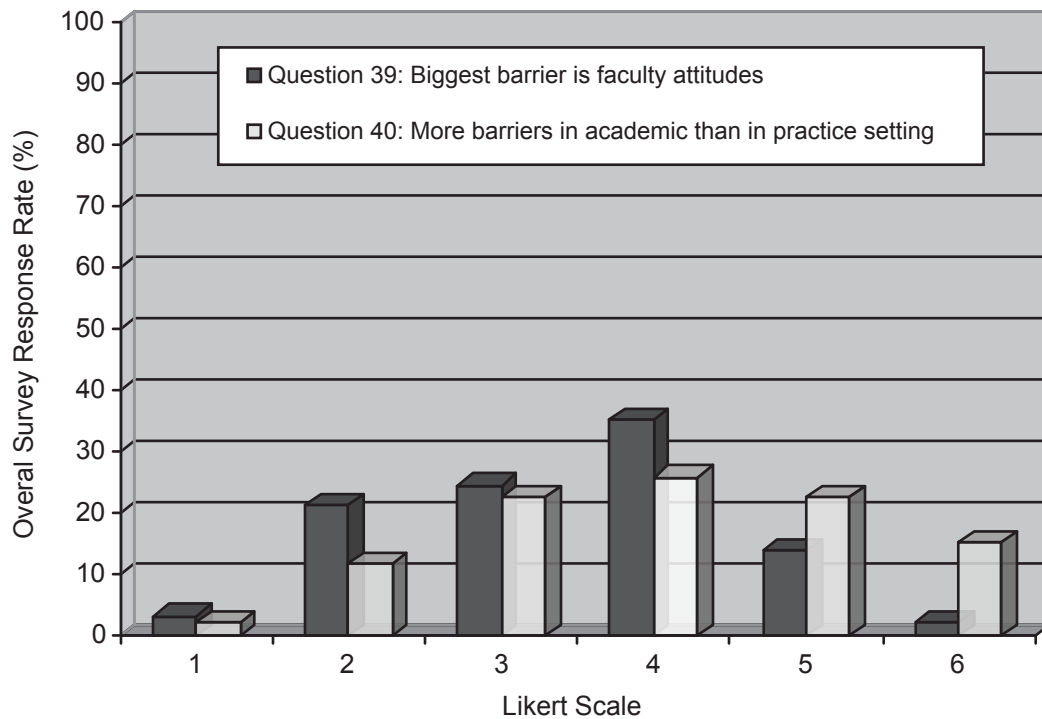


Figure 15. Overall survey responses to the concept of IPHE barriers.

Note. Survey responses were made on a 6-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, 6 = Strongly Agree). $N = 94$.

Interestingly, new graduates agreed most strongly with the survey question suggesting that their experiences after graduation reinforced the notion of barriers to IPHE in their new work environments.

Triangulation

Triangulation is a means by which one can use different data sources, data collection strategies, and theories to cross validate findings (Denzin, 1978). A modified triangulation approach is used here to reflect the primary focus of the qualitative source of data and the use of the quantitative data in service to the qualitative findings. By using focus groups, a web-based survey, and the literature as the key sources informing the research questions, the following discussion connects the findings from both the qualitative and the quantitative sources and places them in the context of the literature that supports IPHE.

Interprofessional Health Education as a Process

As reported throughout the findings of the study, the characteristics of IPHE blend into an emerging picture of a gradual and complex process. Integral to this process are elements such as timing and intentionality, which will be discussed later, and the process itself, which is grounded in elements such as interaction, active engagement, and change. There are elements of the process that alter one's view of self and others in the context of professional behaviors and beliefs that ultimately impact the quality of collaboration and, indeed, health care delivery itself. This gradual and complex process also requires a learning environment that supports IPHE.

The findings suggest that with, from, and about can be described, especially in relation to each other; this situates with, from, and about into the gradual and complex

process of IPHE in a way that can inform curriculum development, From the students' perspective, learning about others must come before all else. This places learning about others squarely in the early stages of IPHE and, therefore, speaks to the timing of IPHE. This finding also speaks to the active engagement or interaction necessary for effective IPHE and the social aspects of learning about, which is described in the learning context as knowing people in ways that are not a part of their professional persona. One of the key characteristics of learning with others was the sense of equality that must be present for IPHE to be effective. Without an environment that fosters an inherent sense of equal value, it may not be possible for IPHE to be effective. To learn from others requires trust in the other person's knowledge base and skill set and also needs to be facilitated in a context of equal value. If the learner perceives that the person who is teaching sees it as a hierarchical activity, the learner feels disempowered and devalued. Finally, learning from others is linked in the findings to safety, which is described in the findings as an important element of the IPHE learning context and fits well with learning from others. All of these characteristics of with, from, and about are connected to the learning environment that best promotes IPHE.

As stated earlier, the gradual and complex nature of the IPHE process requires attention to the timing of the process. The planned and purposeful integration of IPHE into any curriculum is emerging as a trend. Integrating IPHE into curriculum may facilitate more effective learning if it is linked to explicit interprofessional learning outcomes and is positioned in the context of important clinical and/or health related issues, such as patient safety or chronic disease management. The learning activities that support this integration may be developed in a graduated manner so that simple

interprofessional activities could be introduced early in a curriculum, and more complex learning could be positioned later. Indirectly, work by D'Eon (2005) may inform this integration. D'Eon suggested that progressive mastery implies an integrated approach to IPHE that begins early in the curriculum with more simple tasks. As the learner moves through the curriculum, the level of complexity increases, making the later engagement in collaborative practice encounters more effective and grounded in a firm sense of professional identity. Professional stereotyping, professional histories, and the potential for a hidden agenda all conspire to quickly inculcate students into a professionally specific culture. A gradual process of IPHE integration that is consistent throughout a curriculum may prevent or ameliorate stereotypical attitudes and the types of behaviors typically representative of professional silos.

The literature suggested little consensus on the timing of IPHE (Barker et al., 2005; Carlisle et al., 2004; Russell et al., 2006), yet timing of IPHE can be found in many of the publications related to IPHE. Cooper, Spencer-Dawe, and McLean (2005) suggested that IPHE needs to start early before strong professional identities have been formed, yet Russell, Nyhof-Young, Abosh, and Robinson (2006) found that students rated early didactic IPHE as useless. As mentioned previously, gradual introduction of IPHE was supported by D'Eon (2005), who promoted the introduction of basic learning experiences early in the curriculum, building to more complex interactions based on more complex cases later in the education program. Overall, the findings from this study suggest that early introduction of IPHE as part of an integrated approach throughout the length of health professional training programs is more effective; therefore, learning

about others early in a health professional education program may make sense when developing IPHE curricular components.

This gradual nature of change that is fostered by IPHE is also reflective of IPHE as a gradual building of interprofessional learning experiences that reaches a critical mass of understanding resulting from this gradual accumulation of IPHE experiences. Especially among the students in the focus groups, participants could recollect a change in their thinking, and faculty members also articulated a recognition of change in student conversations or behaviors, when interacting with different professions. The transformative learning or perspective transformation literature supported this concept of change (Mezirow, 1978).

In the descriptions of IPHE as a gradual and complex process, the issues of interaction and active engagement were described many times in the focus groups, and were confirmed in the survey, as essential. The concept of active engagement was particularly relevant in the focus group data. Just being together was not enough; something had to happen during the encounter. In the context of learning about each other, for example, there had to be interaction—something had to happen between and among students from different professions to fully understand about each other. D'Eon (2005) spoke to the need for face-to-face encounters with “close, usually synchronous, purposeful activity” (p. 53) as the most effective for IPHE, which implied active engagement. Allport’s (1954) contact theory also spoke strongly about the need for interaction.

Learning about each other related to two primary areas: (a) knowing roles and responsibilities, scopes of practice, and general approaches; as well as (b) who people are

outside their professional mantle. Both of these aspects of learning about others required interaction. With respect to knowing roles and responsibilities, it is clear that there has to be more to this than reading about other professions or listening to descriptions of scope of practice. To truly understand the other professions' roles and scope requires interaction with each other, witnessing each other at work, and placing this new knowledge into the context of one's own profession. Reading a book or watching a video that described roles and responsibilities or spoke to scope of practice would not be enough to fully learn about each other. Simple clinical cases could provide a forum for interactive conversations that would illustrate roles of each of the health and human service professions, as long as the learning environment enabled a process of engagement. From the perspective of the students', shadowing was one of the most effective strategies for learning about each other.

Interaction represents one of the strongest themes in the literature. In Barr et al.'s (2005) systematic review of studies related to IPHE, the concept of interaction was inherent in all of the studies reviewed. The review suggested that IPHE is effective in curriculum design and learning experiences and interactivity was key to all of the findings in the studies reviewed. In addition, in the more recent literature, IPHE as a process is linked to experiential learning. Clark (2006) suggested that IPHE is a process and not a product. Clark anchored his discussions in experiential learning: "The implications of experiential learning theory for [IPHE] relate to the fact that learning is a continuous process grounded in experience, not an outcome" (p. 581). Adding the gradual nature of IPHE to a continuous process raises the issue of intentionality.

The extent to which IPHE is or should be intentional was an interesting component of the findings relating to IPHE as a process. The findings suggest that intentionality is more important to faculty members than to students. This is explained in part by the focus of faculty members on curriculum design, as opposed to participating in existing learning experiences. Intentionality is variously described in the literature. For example, Cooper et al. (2005) highlighted IPHE “as an emergent and constructed process” (p. 494). By interpreting the concept of construction as an intentional part of the process, that Cooper et al. appeared to support intentionality. Intention may also be described as explicit, and a study by Russell et al. (2006) determined that “there was a common lack of explicit formal or informal [interprofessional] education for the students on these units” (p. 38). In addition, Russell et al. found, “There were no reported instances of explicit discussion or training by clinical teachers concerning interprofessional skills, such as group behavior, conflict resolution, etc.” (p. 35). The absence of explicit IPHE was deemed to be detrimental to the students’ ability to focus on collaborative practice skills and abilities.

While the order of with, from, and about, as raised by participants in the focus groups, was an interesting issue, there was no general agreement about a linear relationship among the prepositions, except that learning about each other probably comes first as an IPHE activity. For most participants, learning with, from, and about was an iterative process. For example, learning about others may occur several times within any given curriculum, as may learning with and from others. The more linear component was described as the continuum from simple to complex learning. This speaks to integration throughout the learning process and also supports the concept of a gradual

process. Bjørke and Haavie (2006) found that intermittent IPHE was not effective, which may support the concept of integration of IPHE throughout the curriculum. Hall et al. (2006) suggested, “Meaningful interprofessional education can be introduced effectively to students either prior to or while they are maturing in their professional roles” (p. 51). Both the focus group and survey data support integration of IPHE throughout the curriculum, which also supports the iterative process of with, from, and about. It may be possible to structure the curriculum in such a way that learning about, with, and from are repeated cyclically throughout the curriculum, building upon increasingly complex integrated clinical reasoning that happens among different members of an interprofessional team.

Another essential characteristic of the process of IPHE represented in the research findings is the opportunity to reflect. In this context, reflection may relate to reviewing team interactions, or one’s own engagement with other professionals, or reflecting on one’s own and other’s roles in a specific example of client care. Oandasan and Reeves (2005b) referred to Schön (1987) and the concept of the reflective practitioner as a part of the IPHE process that is particularly useful when addressing “complex issues related to hierarchy, role blurring, leadership, decision-making, communication, respect” (Oandasan & Reeves, 2005a, p. 26). In addition, Clark (2006), again anchoring his insights to experiential learning, suggested that students must reflect on and observe their experiences as individuals and as groups. Students and faculty members alike agreed that time for reflection must be built into IPHE experiences. Group processing is reflecting on the actions—both group and individual—that contribute, or do not contribute, to the effectiveness of the group process and deciding what to do or not do about it. Here

students think about how the group functioned and what might make it work better, perhaps in light of explicit teaching of a social or relational skill. This could include reflecting on the learning and how it was advanced through the actions of the group.

Several researchers have focused on IPHE and reinforced the importance of reflection as a key element of effective IPHE (Barr, Koppel, Reeves, Hammick, & Freeth, 2005; D'Eon, 2005; Parsell & Bligh, 1998; Pirrie, Wilson, Harden, & Elsegood, 1998). Clark (2006) also referred to the seminal work of Schön (1987) whose concept of reflection-in-action described the process by which reflective practitioners reviewed issues they faced in day-to-day practice as an integral part of clinical reasoning and decision-making. Schön (1987) described two interrelated processes, reflection-in-action and reflection-on-action, through which students immersed in practice education or supervised practice (a) used reflection to allow for changes while in a situation; and/or (b) reflect on action after the event to gain a deeper understanding of what happened, good or bad; and (c) identify factors that influenced the situation. For example, in Schön's concept of the reflective practitioner, reflection on one's own clinical reasoning is suggested as a critical component of professional practice. Emerging literature has also supported the concept of reflection as an important element of IPHE (Drinka & Clark, 2000).

Complexity appears to be an underestimated feature of IPHE, and little in the literature focuses specifically on this complexity of IPHE; although, reference to the process itself can be found. Reeves (2000) suggested,

That is easy to neglect the processes of student interaction, despite theoretical work on [IPHE] which has highlighted that a number of complex factors like

power, gender and professional socialisation can all affect these interactive processes (e.g. Funnell, 1995; Loxley, 1997; Graham & Wealthall, 1999). (p. 270)

D'Amour and Oandasan (2005) also suggested that the processes inherent in collaboration, and by extension IPHE, “are complex since they concern human interaction between professionals from different world-views within a complex changing environment” (p. 11). However, overall, the complexity is hidden as most researchers focus on a specific area of IPHE. What the findings from this study suggest is that learning with, from, and about is hard to describe and to operationalize. In addition, the integration of IPHE throughout a curriculum requires making it relevant and important so that it is not viewed as an add-on and is not relegated to an inferior position in comparison to discipline-specific learning. Within the context of (a) crammed curricula, (b) the need for reflection, (c) logistical barriers at both academic and service delivery levels, (d) professional histories, and (e) the impact of the hidden curriculum that tends to reinforce professional identity, it becomes clear that recognizing the complexity of IPHE is critical if future health professional education is to prepare truly collaborative practitioners. Inherent in this complexity is the learning environment into which this gradual and complex process of IPHE must be integrated.

Learning Context and Environment

In the study findings, there are several aspects of the learning context and environment that are important, as they create the space in which IPHE can be most effective. Of particular note are the issues of safety, equality, a non-judgmental attitude, respect, trust, and the opportunities for IPHE in the practice or clinical environment.

Feeling of equal value was stressed in the focus groups, especially in the student groups. In particular, learning with and from was seen as impossible if there was not an equal playing field in the learning environment. Allport's (1954) development of contact theory explicitly articulated one of the essential elements of effective learning in groups: if attitudes are to change, equal status for all individuals involved in the group interaction must be achieved. Hewstone and Brown (1986) also described characteristics of a learning environment in which successful IPHE can occur. These included a supportive environment, a common goal, tolerance for diversity, a feeling of equal value among the students, and an atmosphere of collaboration. Carpenter (1995) also suggested that students need to be immersed in non-judgmental environments in which they feel safe and equal. Overall, the contact theory is used frequently to explain the importance of contact among students from different professions in an environment that fosters IPHE. A safe environment was also embedded in the findings of Drinka and Clark (2000). In establishing characteristics of the learning environment and context, Oandasan and Reeves (2005a) referred to the early work of Knowles (1980), who described the importance of a non-threatening learning environment. Emerson (2004) described competencies for managing the learning environment in collaborative practice models. Valuing the students in the learning environment and taking measures to reduce unsafe conditions, such as harassment or discrimination, fits with the concept of ensuring that students in an IPHE learning environment feel safe in the presence of other health professionals, as well as those from their home profession.

The research findings strongly support the practice environment as the best place in which IPHE can be effective. Students described the opportunity to shadow others

from different professions in their clinical practicum as one of the best learning experiences for learning about one another. In addition, team rounds created a practice environment for learning from and with as incrementally more complex cases are discussed. Several authors support this finding (Finch, 2000; Guest, Smith, Bradshaw, & Hardcastle 2002; Morison et al., 2003; Reeves, Freeth, McCrorie, & Perry, 2002; Wahlstrom, Sanden, & Hammar, 1997). Reeves (2000) promoted community-based IPHE as an innovative and engaging context for learning and one that benefits patients and families. In describing the emerging concept of interprofessionality, D'Amour and Oandasan (2005) also linked practice and education, based on an assumption that if we train more collaborative practitioners, more collaborative practice will happen over time creating more learning opportunities in the practice setting for students. Students may also support the practice environment as a preferred place for IPHE, as they see this as representative of the real world where the learning is relevant. Students are then willing to give it more value in their learning priorities. In his adult learning theory, Knowles (1980) reinforced the concept of relevance and IPHE benefits from learning experiences that are viewed as relevant to future practice by students. If relevance is more easily achieved in the practice setting, this again supports providing IPHE opportunities in the community with patients and families. Maslow's (1943) hierarchy, as part of his theory of self-actualization, suggested that safety needs must be met once the basic physical needs are satisfied. Descriptions of the hierarchy suggested that the level to which an individual feels a part of a predictable and consistent world determines that individual's behavior. If the student's sense of professional self is threatened, and if the quality of

interaction with other health care professionals is unpredictable, threatening, unprofessional, or disrespectful, safety is compromised and IPHE potentially ineffective.

Traditionally the learning environment is viewed as the academic or practice setting in which IPHE occurs. However, students in particular were adamant that it was important to know people outside their professional roles, even if only superficially. This comprises an interesting dimension of learning about one another. Reeves (2000) found that students enjoyed informal social activities and that these activities helped to consolidate their learning and to identify issues related to the emergence of their professional identities. Reeves suggested that incorporating informal social activities into IPHE could enhance learning about each other and applying that new knowledge to future practice could enhance collaboration. Oandasan and Reeves (2005a) also described informal socialization as a way of “creating collaborative teams of learners” (p. 29). Pryce and Reeves (1997) described the importance of socializing outside the formal education program using meals together, car pools, and other purely social interactions as a time for sharing experiences and different aspects of their learning. Pryce and Reeves suggested this type of social activity might be an important part of IPHE that needs to be formally recognized and facilitated. This concept was supported in the literature on rural interprofessional experiences (Charles, Bainbridge, Copeman-Stewart, Tiffin & Kassan, 2006).

Informal socialization is distinct from the professional socialization that underpins stereotyping. It almost forms a third pillar of socialization along side Clark’s (2006) “parallel socialization” (p. 585), comprising socialization to the individual profession and socialization to the interprofessional team. Clark suggested that this “parallel

socialization” (p. 585) may require progressive IPHE, from simple to complex, along the continuum of learning, and the third pillar may fit well in the early stages of the continuum.

Patient and Family as the Anchor for Interprofessional Health Education

Over and above the gradual and complex nature of IPHE as a process and the elements of the process that emerged from the study, the students particularly emphasized the concept of the patient as the center of successful IPHE. As an anchor for discussions, research participants felt it was hard to engage in disrespectful interprofessional encounters when the goal was a common one and the patient and/or family were at the center of discussions. Consistent with the emerging international theme of interprofessional education for collaborative patient-centered practice, the variables associated with the patient or client, as the anchor for IPHE, and shared goals, as a way of addressing professional boundaries, were supported in the literature on IPHE. There was also evidence that failure to focus on patient or family goals inhibits the potential success of interprofessional collaboration and minimizes the effectiveness of interprofessional teams (Guest et al., 2002; Hind et al., 2003; Pollard, 2004; Robson & Kitchen, 2007; Tunstall-Pedoe, Rink, & Hilton, 2003). In the context of IPHE, a focus on patient and family goals as a common goal for interprofessional collaboration provides an ideal milieu, in which the nature and character of interprofessional interactions can be examined and explored. In a study by Robson and Kitchen (2007), which focused on IPHE in the context of critical incident analysis, student participants positively viewed incidents “when they were patient-centred ... when they provide the best possible solution for the patient ... when it was patient-led” (p. 101). In the emerging model of

IPHE and collaborative practice developed by D'Amour and Oandasan (2005), the patient is at the center of the framework. D'Amour and Oandasan suggested that patient outcomes are directly affected by the professionals' ability to practice collaboratively.

Barriers to Interprofessional Health Education

Introduction of the gradual and complex process that we are calling IPHE still faces barriers. Although the students in this study did not focus on institutional barriers, faculty members noted many, and they are reflective of the complexity of organizations in education and health service delivery, as well as those inherent in changing human behavior. The differences between the students and faculty responses were significant and explained in part because of the differences between creating the learning experiences and participating in them. Faculty members described attitudinal barriers by other faculty members as important, but less significant than other system and logistical barriers.

A study by Bjørk and Haavie (2006) confirmed the need to develop an engaged IPHE learning community in health and human service programs to overcome well-established traditions and attitudes. Examples of attitudinal barriers included condescension and defensiveness, a lack of respect, academic elitism, a silo approach to health education, and a lack of information about each other that fosters incorrect and preconceived ideas (Steinert, 2005). Bjørk and Haavie also reinforced the need for a changing role for faculty members, from traditional teachers to tutors, who would be able to focus on student interaction and activity across professions. To make these changes, faculty members require professional development to be able to engage in IPHE effectively; at the very least, if time is at a premium, they need to initially work alongside

an experienced IPHE facilitator (Reeves, 2000; Steinart, 2005). Professional socialization among faculty members also serves to reinforce negative attitudes toward IPHE, including an unwillingness to learn new ways of teaching (Barker et al., 2005; Parsell & Bligh, as cited in Oandasan & Reeves, 2005b).

Faculty members also referred to logistical barriers to IPHE in their programs. Consistently, these related to scheduling, volume of students, geographical barriers, time and resources, including funding (Barker et al., 2005; Curran, Deacan, & Fleet, 2005; Oandasan & Reeves, 2005b, Steinert, 2005). Oandasan and Reeves (2005b) summarized administrative barriers as “numerous administrative or logistical obstacles which need to be overcome” (p. 41). Pirrie et al. (as cited in Oandasan & Reeves, 2005b) illustrated these obstacles with examples, such as “inequalities in the number of students, geographical isolation from one another, differences in curricula which cause timetable clashes [from within the education program, and] ... securing joint validation and accreditation, agreeing on joint financial arrangements” (p. 41) from outside the program. Other examples include problems with schedule/calendar, rigid curriculum, turf battles, and lack of perceived value (Curran et al., 2005); as well as timetabling issues, different funding arrangements, lack of collaborative history, links between and within universities, different academic levels of students, different teacher priorities, and varying assessment methods (McNair, 2005a). The consistency of the barriers described in the study and in the literature suggests that if IPHE is to become an integral part of health professional education, energy and resources must be applied to finding solutions.

In the absence of internal funding and support, Barker et al. (2005) reiterated the need for external support for overcoming institutional barriers through accreditation, the

larger academic community, regulatory bodies, and government. Hall et al. (2006) noted that faculty barriers to IPHE are influenced by professional histories and cultures, as well as a willingness to learn from others. Gelmon, White, Carlson, and Norman (2000) expanded upon the barriers and introduced the concept of identifying community and clinical community improvement projects in which students can participate. Barriers are also based on the fact that (a) IPHE courses are often viewed as an add-on activity for faculty and not recognized as part of the valued workload; (b) the pace of change in clinical settings and educational setting may be different, thereby creating tensions; and (c) bureaucratic rules and regulations may be linked to political agendas and resource limitations. These attitudinal and logistical barriers are difficult to address. On a more positive note, Illingworth and Cheivanayagam (2007) suggested that barriers to IPHE and collaborative practice would be minimized as professionals shared more freely. Barriers create innovation and, in a knowledge-based society, sharing of knowledge will become more valued (Illingworth & Cheivanayagam, 2007).

Students and new graduates who participated in the student focus groups and in the survey found more barriers in the practice setting, despite suggesting that this environment is the best place for effective IPHE. Students, new graduates, and faculty members all agreed that learning about other professions helped to overcome stereotypical ideas, but as Reeves (2000) pointed out, IPHE does not always reduce stereotyping, illustrating the strong impact of professional histories and socialization as another barrier to be overcome. Reeves further suggested that unless professional socialization begins to effectively support interprofessional collaboration among students and practitioners, professional isolation would still dominate health care. Gilbert (2005)

also suggested that stereotyping in both academic and practice settings are major barriers that will need to be addressed. Another interesting barrier that did not emerge in the research study, but which is of interest, is the impact of senior students on junior students. Reeves (2000) discovered that senior medical and dental students influenced junior students, persuading them that IPHE was of lesser importance than subject areas, such as anatomy and pathology. This barrier speaks to the need for IPHE to be integrated, relevant, and valued by faculty members and practice sites, so that students are socialized to believe that interprofessional collaboration is as important as anatomy. Of note is reference to the hidden curriculum that reinforces stereotypical attitudes even before students enter a professional program (McNair, 2005b). Russell et al. (2006) suggested that students have noted barriers in the practice setting related to inconsistency in patient assignments to students, workload preventing participation in rounds, and difficulty in connecting with other professionals. Organizational logistics in the practice environment may present barriers to IPHE and interprofessional collaboration. Russell et al. suggested that the organizational change required to overcome these barriers must be sustainable, irrespective of leadership on the unit.

Summary

Overall, the survey findings were consistent with the qualitative analysis, and the modified triangulation approach included literature support for the overall findings. The survey data were grouped according to faculty members and students, but students in the analysis of the demographic data were further sub-divided into students and new graduates, to reflect those participants who had graduated since participating in an IPHE

course at UBC. The data were analyzed using ANOVA and trends in response rates, assessed through overall percentage responses by question.

Survey results corroborated the description of IPHE as a process that is both complex and gradual. There were several component parts of the process that were further examined. These included integration into curricula that is both planned and explicit, as well as a context that focuses the learning in the practice setting and provides a safe environment for learning. The patient and family, as the anchors for effective IPHE and for interprofessional collaborative practice, were reinforced. The common goal, which is determined in consultation with professional colleagues and the patient and family, also becomes an important anchor for IPHE and collaboration.

The words with, from, and about were confirmed as complex. Words describing learning with each other included: active engagement, co-location, equally valued, communication, sharing, and non-judgmental. Concepts linked to learning about included knowing about people outside their professional role and interaction, not necessarily related solely to facts from a distance, and not superficial. Learning from others was characterized by trust, respect, and confidence in others' knowledge. While learning about others was described as the first part of learning with, from, and about, there were mixed views on whether learning with or from formed the second part of the definition. In addition, the barriers were confirmed as different for faculty members and students, with faculty members viewing faculty attitudes as a major barrier and students describing more barriers in the academic setting than in practice.

Overall, the survey data strengthened the qualitative findings and helped to describe the IPHE process more fully, as well as further illuminated the meaning, or

potential meaning, of learning with, from, and about each other. The literature further supported the findings. The following chapter discusses the interpretation of the findings and provides examples of potential applications of the research, as well as its importance. Chapter seven also suggests limitations of the study and suggests future directions for ongoing research.

CHAPTER SEVEN

DISCUSSION AND CONCLUSION

The main purpose of this research was to describe more explicitly the broad context of IPHE leading to collaborative practice, with a specific focus on the meaning of learning with, from, and about each other as the key concepts in the most widely-used CAIPE definition of IPHE: “occasions when two or more professions learn with, from, and about each other to improve collaboration and quality of care” (Barr, 2002, p. 17). During the study, three focus groups were held with students and new graduates who had participated in interprofessional elective courses at UBC, and two focus groups were held with faculty members in the health and human service education programs, also at UBC. The research questions to be addressed was: What does learning with, from, and about other professions mean in interprofessional health education, and how is it articulated and operationalized in the context of curriculum design?

The research questions for this study were designed to propose meaning for the words with, from, and about in a contextual description of IPHE. The intersection of qualitative and quantitative data, as well as the literature in this research study, has confirmed key descriptors for IPHE, as well as offering a deeper understanding of the common CAIPE definition that uses with, from, and about as its primary foci (Barr, 2002). The findings reinforce the tendency to over simplify IPHE and highlight its complexity; the findings also offer a way of understanding IPHE in order to inform curriculum, policy, and practice. The focus group discussions, supported by the survey data, represent difficult discussions, and often frustrating attempts, to describe meaning for a single word as it applies to IPHE, but they illuminate a variety of interesting

meanings for three small prepositions. The following discussion may help to provide insights into an understanding of IPHE and its complexity that will allow us to make significant progress in the preparation of future health care providers as truly interprofessional collaborative practitioners.

Discussion and Interpretation of Findings

In order to tell the story of the findings and their possible interpretations, the following section of this chapter describes a context for IPHE and provides a potential taxonomy for IPHE to facilitate application of the findings in an organized and transparent manner. The term taxonomy is used extensively in the sciences as a way of classifying ideas, findings, or applications. Most commonly applied to the concepts of genus or phylus, the word taxonomy has come to be used as a way of making order out of data in order to enable comparisons or to apply ideas consistently within the taxonomy. This approach to organization of ideas has been used in the field of education.

When translating the use of a taxonomy to the field of education, Barrows (1986) described a taxonomy of problem-based learning (PBL) methods to help educators to differentiate among the many different ways in which PBL is interpreted. This approach to a taxonomy demonstrates parallels between PBL and IPHE. According to Barrows, the concept of PBL is not a specific educational method, and it can have many meanings. The same is true of IPHE, and the design of the IPHE experience is similar to the design of PBL experiences in that it can depend upon the type of learning activity, the skill of the educator, and the educational objectives to be achieved. Teams of students may be provided with the time and space to come together to discuss common cases and be left alone to find their way in the conversation with each. How much more effective might

the learning experience be if it was organized along the lines of the proposed taxonomy, with intentional learning experiences related to the area of clinical practice embedded in the students' time together?

At UBC we have been developing a model for describing different levels of IPHE (Charles, Bainbridge, & Gilbert, 2008). Using the terms exposure, immersion, and mastery, the hierarchy supports the concept of integration of IPHE throughout a curriculum. The hierarchy also differentiates among low, mid, and higher level learning, based upon levels of knowledge about self as a professional, about others who are part of the service delivery system, and about the system itself. Exposure alerts novice learners to the existence and roles of other health care professionals. Immersion places students in interprofessional learning situations where collaborative clinical reasoning and decision making are part of the learning process, and the emerging understanding of others' roles and their impact on one's own practice starts to shape a collaborative model of care delivery. Mastery signals competence as a collaborative practitioner in areas such as communication, conflict resolution, shared competencies, patient-centered care, and shared care.

Tew, Gell, and Foster (2004) developed a ladder of involvement for involving service users and carers in mental health education. Their levels of involvement complement the idea of a taxonomy by building from no patient or carer involvement, to full partnership along a trajectory that includes limited involvement, growing involvement, and collaboration. This may mirror the increasing levels of complexity involved in IPHE as novice students become more engaged with clients and families in complex and often difficult journeys. Tew et al.'s ladder of involvement is also consistent

with the concept of exposure, immersion, and mastery as an organized approach to planning IPHE that conceptualizes involvement along a continuum of complexity for learners.

Theoretically, then, a taxonomy is a way of ordering and making sense of organisms. A taxonomy is often hierarchical so that one stage—for example, learning—is predicated upon a certain set of skills or body of knowledge. A taxonomy is useful when describing and planning curriculum. It is most effective when the taxonomy is used in a specific context, in this case, IPHE and collaborative, patient-centered care. This chapter uses the findings of this study to propose a foundation upon which learning with, from, and about, if implemented with intention and specificity, can be built. The following review of the basic characteristics of IPHE forms the basis for a proposed taxonomy for IPHE.

Interprofessional Health Education Characteristics as a Foundation

The findings from the study, supported in the literature, suggest that IPHE is a gradual and complex process. The process is multifaceted and focused on patients and families and their goals. IPHE is identified as added value to the education of future health care providers, as it creates change in students and practitioners as they slowly realize their own value while understanding and accepting the value of others. Several broad characteristics of IPHE are important to consider when integrating learning with, from, and about others into a curriculum. Take, for example, the concept of safety or a safe environment. This may mean a safe place to ask questions and know that they will be treated respectfully or a safe place to share knowledge that is valued by others. The concept of a safe environment may also mean a place free of conflict or free of

professional insecurity. A safe environment may mean all or some of these qualities. If we apply the potential meanings of safety to curriculum planning for IPHE, we might need to consider expectations of respect, honesty, and trust explicit in the learning environment, especially in the early stages of a professional health education program. We may also need to consider the complexity of the learning experience and position students so that they feel confident in the learning situation. If we ask very inexperienced students to interact in an IPHE context with students who are more experienced, the learning topic may need to be an area that is new to all students and not just to some. The age of the students does not necessarily correspond directly to the level of personal maturity, but the level of experience in their chosen profession may need to be considered when constructing IPHE experiences.

Additional characteristics of the IPHE learning environment are important to review before introducing a proposed taxonomy. When considering reflection as a key focus for IPHE, learners must apply their experiences in interprofessional learning to their own practice and must reflect upon their own performance in an interprofessional context, in order to make change and to practice true collaboration. IPHE must involve interaction and engagement among students. Something active must take place in students' exchanges and encounters for IPHE to have taken place. IPHE must be intentionally planned within curricula, while at the same time be integrated with clinical learning that is relevant and of interest to students. Early introduction of IPHE seems to be an important characteristic, as does opportunities for face-to-face interaction.

This brief review of some of the characteristics of IPHE derived from the study and the literature provides the foundation for application of learning with, from, and

about each other. The emerging meaning of the three prepositions can now be placed into a specific IPHE context.

The Meaning of With, From, and About

Having now described characteristics of the IPHE learning environment that emerged during this study and are supported in the literature, we can turn our attention to learning with, from, and about using the concept of a taxonomy as a base. Learning with, from, and about is conceptualized as iterative and full of important meaning that can inform curriculum planning. To begin building this scaffolding for IPHE, let us first examine more closely the potential meaning of learning with, from, and about.

Learning with others may be characterized by an acknowledgement of the knowledge base of others. Physically or electronically, learners must be together in order to learn with each other, and the learners must value the opportunity to learn with those from other professions. Active and respectful interaction must occur when learning with each other, which is a deeper form of learning than learning about and from each other. Learning with others is most commonly content focused and involves joint problem solving.

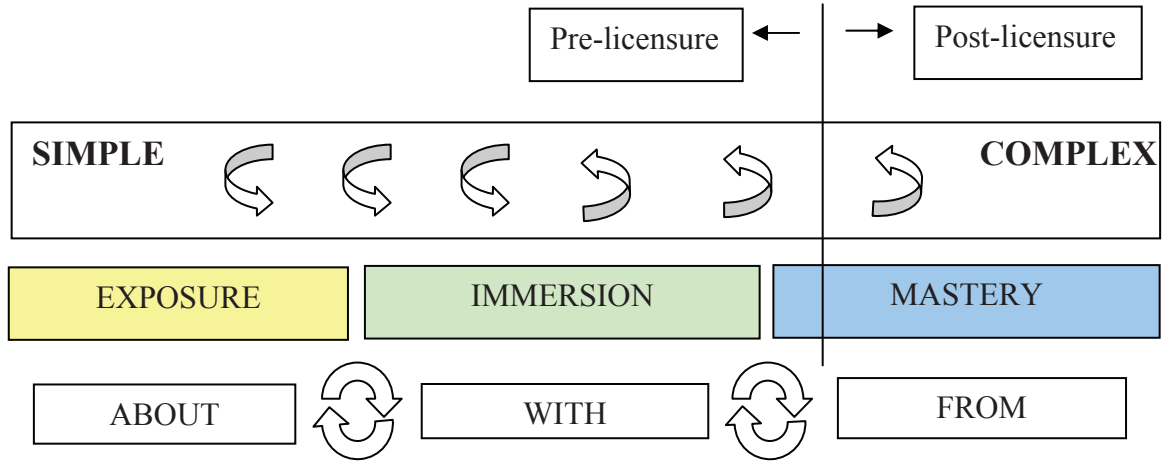
Learning from others requires a transfer of knowledge and is, therefore, often perceived as uni-dimensional. Learning from others requires active listening, and despite the potential for an inherent inequality to be present when learning from others, it also acknowledges differences among professional knowledge bases in non-judgmental and non-hierarchical ways. Learners must be open and willing to learn from each other and feel safe to ask questions. Learning from others also requires confidence in the knowledge of others.

Learning about each other is perceived as a preliminary learning stage, which sets the stage for deeper learning. Learning about others comprises more superficial and lower orders of learning. Learning about others requires more than reading about the roles of others. It is a voyage of discovery and exploration and involves knowing about others professionally, but also at an appropriate and more personal level. For example, knowing the non-work related interests of others can help one to understand behaviors in the collaborative work setting. Learning about others requires witnessing others in their professional role and allowing time for asking questions to develop a deeper understanding of the rationale and goals of other professions, as well as the roles.

Learning about others is seen as the first stage of IPHE; yet, the gradual, complex process that is IPHE is also iterative, meaning that each discrete stage of learning with, from, and about can happen simultaneously in some instances and in others can be a repetitive or cyclical process. This concept of an iterative or cyclical process may help to build IPHE along a continuum of simple to complex learning experiences. The concept of an iterative process may also complement the exposure, immersion, and mastery model.

A Potential Taxonomy

To bring a sense of order to IPHE, we can construct a potential taxonomy that uses exposure, immersion, and mastery in an iterative manner along a learning continuum of learning from simple to complex. Learning with, from, and about is then specifically and intentionally applied at various points along the continuum. In Figure 16, I present a basis for the proposed taxonomy that positions IPHE in both pre- and post-licensure domains along a continuum of simple to complex.



ABOUT: preliminary learning stage which sets the stage for deeper learning; more superficial and lower order learning; knowing about others as more than their professional role; understanding of the rationale and goals of other professions as well as the roles; requires witnessing others in their professional role.

WITH: an acknowledgement of the knowledge base of others; most commonly content focused and involves joint problem solving; physically or electronically, learners must be together; active and respectful interaction is required; a deeper form of learning; acknowledgement of the knowledge base of others; most commonly content focused and involves joint problem solving.

FROM: requires a transfer of knowledge and is, therefore, often perceived as uni-dimensional; requires active listening; acknowledges differences among professional knowledge bases in non judgmental and non hierarchical ways; requires an openness and willingness to learn from each other; requires a safe environment in which to ask questions; requires confidence in the knowledge of others.

Figure 16. A proposed taxonomy for IPHE.

Using exposure, immersion, and mastery to guide the journey from simple to complex, the arrows depict the iterative nature of IPHE and the need to allow the higher-order learning related to complex clinical encounters to cycle through exposure, immersion, and mastery when, for example, new clinical issues are introduced. The arrows also

illustrate the iterative nature of learning with, from, and about along the simple to complex continuum.

Within this proposed taxonomy, there is an iterative and flexible introduction of learning experiences that support learning with, learning from, and learning about others. These experiences are chosen and planned with intention and are designed to build from simple to complex, through exposure and immersion, to mastery. From the focus group data and from the literature, there are many learning strategies in support of IPHE. The list is long, emphasizing the complexity of IPHE. The range of learning activities across student and faculty member perspectives is representative of the need to provide learners with appropriate learning experiences throughout the professional curriculum. What is interesting is that the literature emphasized the importance of learning that is experiential, often in the practice context; yet, the majority of examples provided by focus group participants related to the academic setting. Of further note is that the survey results suggest that the majority of respondents agreed that the practice context is the best setting for IPHE; yet, the experiences offered to the focus group participants were primarily classroom based.

The literature provided a variety of perspectives on educational strategies to promote IPHE. First, is the consideration of the time, location, and the space to facilitate IPHE, and most especially, to reflect upon the learning experiences and the interactions of health and human service providers at the individual and team levels (Clark, 2006). Once the time, location, and space are in place, activities that promote interaction can be planned. These activities can also be looked at from the classroom or didactic setting or from the practice context, although many of the strategies offered throughout the

literature lend themselves to either. In the classroom setting, discussion and debate may facilitate IPHE (D'Eon, 2005), but this could also happen in the practice setting under the right circumstances. Clark (2006) also offered self-assessment inventories and group process time as examples of IPHE that promote reflection. Again, these could occur in either the academic or the practice setting.

The use of journaling as a way of reflecting and making meaning was strongly advocated (Clark, 1994; Drinka & Clark, 2000). The use of writing was generally believed to enhance learning, especially in the IPHE content. Bruffee (as cited in Clark, 1994) advocated writing as a social or collaborative activity, through which learners can articulate their ideas, experiences, and feelings and learn from them. Faculty members can also gauge the level and direction of the learning from journals. Journals may also be effective ways of bridging classroom and practice.

Collaborative learning, case-based learning, and problem-based learning strategies all rely on experiential learning principles (D'Eon, 2005). According to D'Eon, collaborative learning is based upon five principles: cooperative learning, common goals, mutual interdependence, face-to-face interaction, individual accountability, and group processing. These apply equally to either classroom or clinical settings. D'Eon applied the principles of collaborative learning in the following way:

Students bring skills and information to the process, either pre-existing or found through research (positive interdependence). They spend a good deal of the time in the same room discussing, explaining and debating their ideas and planning the next sessions (face-to-face interaction). Each individual is responsible for learning the material and cannot take a good mark simply because another member of the

group achieved the objectives for that case (individual accountability). And finally, PBL groups, at least in some instances, receive training in teamwork (social skills) and focus however briefly on how they functioned together (group processing). (p. 54)

Case-based learning, service learning opportunities, and learning in practice are described again by D'Eon (2005) as ways of situating IPHE in the context of real life situations. The use of simulation, mainly in the form of simulated or standardized patients, as a transition from the classroom to the clinical setting is advocated as a way of exposing students to experiential learning (Krajcik et al., 1996). McNair (2005a) described joint projects, a common orientation to clinical placements, and case conferences as useful IPHE strategies.

The proposed taxonomy (see Figure 16) may assist in taking these examples of IPHE strategies and applying them in an iterative manner using exposure, immersion, and mastery as a way of gradually and effectively increasing the complexity of the interactions. In addition, by applying a more explicit meaning of learning with, from, and about, the IPHE component of health professional education becomes more integrated, purposeful, and measurable. In Figure 17, I have situated examples of IPHE learning strategies within an iterative and increasingly complex framework using exposure, immersion, and mastery as the basis for an intentional application of learning with, from, and about each other, along a gradual and iterative pathway from simple to complex. Some of the examples are represented in more than one domain, as it is difficult to attribute only one preposition to the type of learning. Also, some learning activities can

be simple, fitting well in the exposure domain, and can then be developed further by adding complexity fitting well at this stage in the immersion domain.

The proposed taxonomy (see Figure 16) allows the educator to determine intentional learning strategies along a continuum from simple to complex using a preliminary understanding of learning with, from, and about in a purposeful manner.

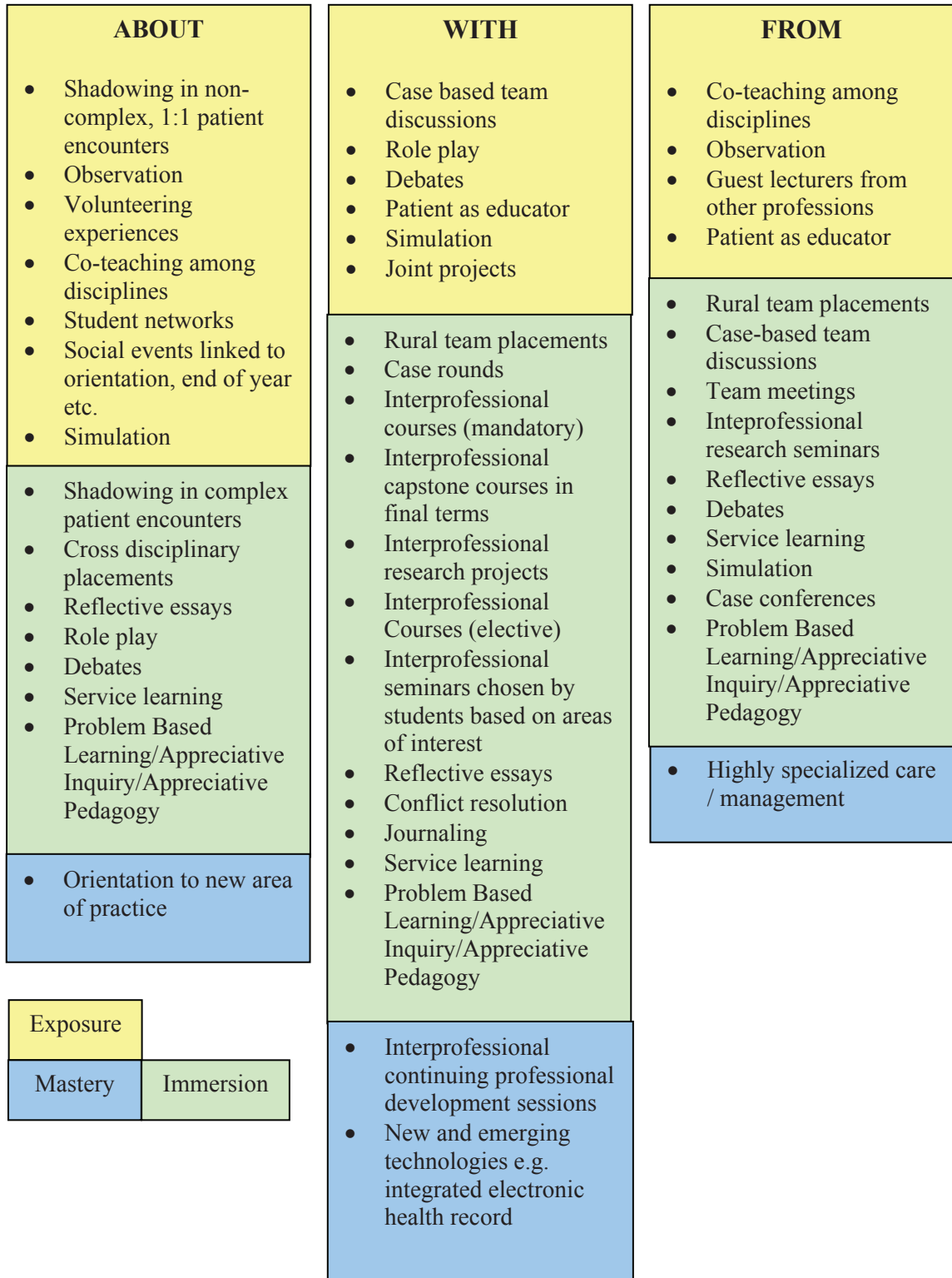


Figure 17. Strategies for IPHE based on the proposed taxonomy.

By using the characteristics of IPHE as described in this chapter and the previous one, there is a strong platform upon which to apply the proposed taxonomy (see Figure 16). The list of strategies (see Figure 17) is not exhaustive. As stated earlier, it was compiled from the focus group data and from the literature; as more and more attention is paid to IPHE, new and innovative strategies for facilitating learning with, from, and about will emerge. Any of the IPHE strategies can be applied in the context of relevant clinical learning that is of interest to learners. For example, primary health care may be the area of clinical learning, and the learning approach best suited to the area may be IPHE. By enabling students from different professions to learn about primary healthcare together, learning with, from, and about each other in very specific ways and based upon the emerging meaning of IPHE, educators would be engaging the students' interest. IPHE is not added on as an extraneous part of the learning process, and the collaborative nature of IPHE naturally emerges as students learn about primary health care.

One potential IPHE strategy that seems to fit naturally with shared or common learning is PBL. Bringing students together in small tutorials, facilitated by process rather than content experts, allows students from several professions to determine the learning objectives, learning strategies, and new knowledge that will help them to effectively discuss a specific clinical issue. Because the environment for small PBL tutorials is intended to be a safe and respectful place for discussions in which students support each other and share responsibility for learning, it seems a natural fit for IPHE. However, PBL is often predicated upon finding solutions to problems and can tend to lead to a search for solutions, sometimes neglecting processes such as communication with patients and families.

The concept of appreciative inquiry is an emerging approach that could be another example of an effective IPHE strategy. Appreciative inquiry focuses the students' attention on how working together, and with the patient and family, to use everyone's expertise to obtain the most positive outcome is equally as important as finding the right solutions. Originating in organizational behavior contexts, appreciative inquiry relies heavily on the "social process of inquiry and joint discovery" (Yballe & O'Connor, 2000, p. 475) Using a process for determining the best that an organization can be and building on existing strengths, appreciative inquiry has been used in recent years to enable an organization to collaboratively seek out solutions and collectively realize their joint vision of what can be. Using strategies such as conversational interviews, each member of the organization is involved in this collective enterprise. Yballe and O'Connor have adapted appreciative inquiry and described a learning approach called appreciative pedagogy, which "deliberately seeks out students' experiences of success and moments of high energy and great pride" (p. 476) By capitalizing on students' peak experiences and using collaborative processes to use past positive experiences to determine future action, appreciative pedagogy may be worthy of examination as an IPHE strategy that could exemplify effective use of the proposed taxonomy and focus students on the process of collaboration rather than on finding the right solution.

By using the proposed taxonomy, learning experiences can be organized to allow for a gradual and effective increase in collaborative practice skills in pre- and post-licensure contexts and in the academic and practice settings. There are many examples of areas of clinical interest that would benefit from IPHE if applied in the context of the proposed taxonomy. As well as primary health care, these may include chronic disease

management, geriatric care, paediatric care, rehabilitation, and home and community care. When embedded intentionally and seamlessly into critical areas or clinical practice, IPHE will become one of many critical domains of health professional learning.

The Importance of the Research

Given the prevalent use of the CAIPE definition of IPHE (Barr, 2002), this study and the emerging meaning of learning with, from, and about each other is important for a number of reasons and for a variety of target audiences. Without a clear understanding of what we mean by IPHE and how we apply it in a consistent and measurable manner, it is difficult to move ahead with the development of competencies, learning objectives, learning outcomes, and, perhaps most importantly, evaluation strategies that provide further evidence of the impact of IPHE on learners, practitioners, and patient or health outcomes.

The CAIPE definition (Barr, 2002) comprises two additional concepts over and above the meaning of learning with, from, and about: that the purpose of learning with, from, and about each other is to improve the quality of care and to improve collaboration. The importance of this research study lies in its preliminary insights into the meaning of learning with, from, and about each other without which it is not possible to interpret how IPHE impacts quality of care or collaboration. For policy makers in both education and health, it is critical that IPHE and its impact can be described thoroughly. Without a clear understanding of the meaning of IPHE and its application to learning in the health professions, we cannot move to an analysis of its impact on quality of care or collaboration. If future policy and funding decisions are to be made in the name of IPHE,

the emerging meaning of the process by which we train collaborative practitioners is essential.

In the context of service delivery organizations, this research may help to promote the concepts of collaborative learning environments and communities of practice.

Collaborative or clinical learning units have been implemented in the field of nursing for some time. Entire units become the teacher for any nursing students who participate in clinical learning on that unit. In Canada, there is interest in examining how the concept of a clinical or collaborative learning unit could be expanded to a collaborative learning environment that involves all of the health care providers on the unit to support student learning for any health professional student. In areas of common learning and shared competencies, such as communication, patient-centered and family-focused care, and ethical practice, to name a few, collaborative learning environment models can expose students in any health profession to collaborative practice. By using the proposed taxonomy for IPHE, staff or preceptors in a collaborative learning unit could organize IPHE learning to allow for learning with, learning from, and learning about other health care providers in a more structured manner. Using the proposed taxonomy would create an interprofessional learning environment that exemplifies the characteristics of IPHE described in the research. The proposed taxonomy would embed IPHE strategies based upon the level of the students, their pre-existing knowledge and skills, and the areas of clinical interest that present themselves in the collaborative learning environment. More specific evaluation of students' collaborative practice skills may also be more meaningful, if measured in the context of specific IPHE strategies that are intentionally positioned and are organized within the taxonomy.

In the same context, that of service delivery organizations, communities of practice may also emerge as a strategy for continuing learning that is collaborative and interprofessional. According to Wenger et al. (2002), communities of practice are defined as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4) come together. Communities of practice are defined by knowledge rather than task, exist because participation has value to its members, are characterized by a life cycle that is determined by its value to members—not by an institutional schedule, do not appear the minute a project is started and disappear with the end of a task, and take a while to come into being and may live long after a task is completed or an official team has disbanded (Wenger, 1998). Communities of practice relate to the area of shared inquiry and of key issues, the relationship among members and the sense of belonging, and the body of knowledge, methods, stories, cases, tools, documents (Wenger, 1998). Formally or informally sanctioned interprofessional ways of coming together to discuss issues of common interest and importance across professions may assist in keeping health care delivery focused on the patient and family and in breaking down some of the barriers to collaboration. An example at the BC Children’s Hospital illustrated the community of practice concept. One leader in nursing facilitated two half-day sessions of interested colleagues across the range of health care providers, including family members, to discuss what interprofessional collaboration means in the context of children’s health. Through this focused discussion, a set of competencies for collaboration at BC Children’s Hospital was developed, and the group has continued to meet regularly over the past three years to discuss issues of mutual concern across the professions and how solutions

might be sought collaboratively. This community of practice came together out of a common interest; it will meet as long as it remains relevant and rewarding to do so, and eventually it may no longer be needed. This may be the ideal environment in which to examine the quality of care and collaboration pieces of the CAIPE definition (Barr, 2002) of IPHE.

From an educator's perspective, knowing how to develop, implement, and evaluate IPHE more effectively in the context of their specific health professional curriculum will enable more effective curriculum planning, both within their own program and among several programs with common learning interests and requirements. In addition, there will be curriculum requirements for IPHE in the future. For instance, in Canada, the federal government, through Health Canada (2004), is funding a project entitled Accreditation of Interprofessional Health Education. The project brings together the professions of medicine, nursing, pharmacy, physical therapy, occupational therapy, and social work to develop principles and an implementation guide for the inclusion of IPHE accreditation standards in each of these six national education accreditation systems. The six professions are role modelling interprofessional collaboration through their participation in the project. The resulting standards for IPHE will be complementary across the professions, and the development of examples of evidence of IPHE will assist health education programs in these six professions to integrate IPHE more effectively into their curricula. Existing IPHE strategies and new innovations could be intentionally applied within the potential taxonomy. The emerging meaning of learning with, from, and about each other could support the application of future education accreditation standards for IPHE.

This research study is important in that it enables us to begin to understand more fully and explicitly the meaning of learning with, from, and about and to begin to link IPHE more clearly to improved quality of care and collaboration. By proposing a taxonomy for IPHE that begins to describe the meaning of the three prepositions with, from, and about and to apply those terms intentionally in an iterative and increasingly complex framework from exposure to immersion and finally to mastery, future research becomes clear. Educators, policy makers, and service delivery organizations should find the findings and application of the research encouraging and of value to future funding, policy, and service delivery decisions.

Limitations of the Study

The purpose of this research study was to discover a sense of meaning of “learning with, from and about each other to improve collaboration and the quality of care” (Barr, 2002, p. 17), with particular reference to the conceptualization of learning with, from, and about, and to situate the meaning in the broader context of IPHE to inform IPHE curricular development. There were limitations to the research related to both the focus groups and the survey, and these limitations are representative of the limitations of both a mixed methods approach and the individual components: focus groups, as the qualitative research approach, and a web-based survey, as the quantitative research approach.

The sample was a purposeful sample, limited to students who had participated in an interprofessional course. As the course offerings are all elective, the students were a self-selected group with an inherent interest in learning in an interprofessional context about subject areas, such as palliative care, that interested them. Because a sample of

convenience was used, there was not equal opportunity for all students in the health and human service programs to participate. However, the study did capture a diverse range of students. Faculty members were provided the opportunity to participate through the department or program head, and there was the potential for only those faculty members who felt they had participated in interprofessional learning to form a self-selected group of individuals who were not formally designated representatives of the larger group of faculty members. The faculty members were all located in the academic setting; therefore, perspectives from preceptors in the community were not included. This limits the extent to which the clinical or practice influence on IPHE is represented in this study and leaves room for further exploration of IPHE in the practice environment. Overall, for both student and faculty groups, the focus of the study relied on some prior knowledge of interprofessional education; therefore, the impact of these limitations was minor.

Given the self-selection bias and the unequal representation from programs, the findings of the study may not represent the responses of all students and faculty members in the health and human service programs. However, the views that were presented in the focus groups and the survey are still valuable in informing the research question. In addition, focus group results are usually limited to that group; Therefore generalizability, while limited in this study, does not preclude the importance of the findings in leading to larger studies, which will be generalizable. Although small, non-representative groups are limited in formal generalizability, the value of the mixed methods approach is that trends illustrated by one method, for example, the focus groups, can be viewed more confidently if supported by the second method, the survey.

While following a thematic network approach, I may have inadvertently influenced the analysis of the qualitative data. Although I took steps to minimize bias, it is difficult to completely rule out bias, and this may have influenced the interpretation of the findings. Some of the trends that emerged could have been artifacts of the way the focus groups were designed and conducted or products of inherent bias in thematic analysis. On balance, though, my experience and my ability to apply that experience to the interpretation of the findings has enabled me to provide some answers to the research questions and to inform directions for future research in important ways.

The survey design was not used as an experimental tool and was used primarily to determine whether a wider group of respondents agreed with key findings from the focus groups. While the response rate was relatively small, the results still supported the key findings from the focus groups. In addition, the parallels between the research findings in this study and the empirical literature are such that the patterns, illustrated by this study, hold true across contexts. The general ideas that have emerged from this research have supported much of the ongoing research in the field and have created a solid foundation for future scholarship by identifying areas that are worth studying in more depth and areas that would be worth examining further with a larger sample size.

Notwithstanding the limitations of the study, the findings and conclusions provide a start to interpreting learning with, from, and about situated within a description of IPHE that emerged from the study and which was supported in the literature. The three prepositions help to untangle some of the complexity of IPHE through important perspectives derived from students and faculty members who have been involved in IPHE and who remain committed to finding answers and solutions. In the absence of

strong, robust, empirical evidence that IPHE does improve health outcomes, there is enough focus on the field, nationally and internationally, that it is worth examining through further research. This study will help to provide further insights into the complex process of learning inherent in IPHE and to suggest directions for future study.

Areas for Future Research

This study has added an interpretation of learning with, from, and about, as it is used in the CAIPE definition (Barr, 2002) of IPHE and has consolidated a deeper understanding of IPHE broadly. This study illuminated the complexity of the process of IPHE and the difficulty of describing the three prepositions used commonly to describe this complex process. Through this attempt to understand more fully what learning with, from, and about each other actually means to the student as the recipient of the IPHE experience and to the faculty member who is designing IPHE experiences, some preliminary depth of meaning can be assigned to this section of the CAIPE definition (Barr, 2002). This study, therefore, suggests key research areas for the future.

In this study, the practice or clinical environment was described as one of the most effective places to situate IPHE. Further research examining the characteristics of the practice environment that support IPHE, the approaches of preceptors who enable IPHE in the clinical setting, and the organizational factors that encourage students to participate in IPHE are all representative of interesting areas for further examination. For instance, in BC a set of measurable indicators for assessing the quality of student experiences in the practice setting have been developed, including indicators for successful interprofessional education. These indicators have been developed for chief executives and for program managers; further research is necessary to expand the

indicators to the practice level and to examine the impact of the indicators on any organization's ability to support IPHE. The practice setting provides a rich environment to examine many aspects of IPHE and its impact on learners, staff members, patients, and organizations.

The meaning of the CAIPE definition (Barr, 2002), in the context of learning with, from, and about, needs to be tested with a larger group of subjects, representing a wide range of professions who are not self-selected members of a group of students or faculty members. Testing the application of the emerging meaning of learning with, from, and about each other, to see if and how it guides the IPHE learning activities and evaluation as well as the optimum timing of IPHE, will strengthen the use of the CAIPE definition in guiding IPHE curriculum design.

The observations of the instructor or preceptor that signal that IPHE learning has occurred could provide useful indicators for learner evaluation. The descriptors of self-recognition of IPHE, as described by students, could inform a reflective exercise as part of an IPHE curriculum and be examined further to seek a more explicit understanding of the importance of collaborative practice for students in particular.

Introduction of a curriculum based on about, with, and from along a continuum of learning, and using a scaffolding approach to the complexity of learning, could be examined and both short- and long-term impacts and outcomes measured. It would be helpful to expand the study results to further develop the taxonomy for IPHE along the lines of Barrows's (1986) taxonomy for problem-based learning. By describing broad IPHE learning objectives and articulating the variables related to the instructor, the student, and the range of teaching strategies that could facilitate effective IPHE, it may be

possible to further develop a taxonomy that would provide direction to IPHE curricular design and evaluation.

There are several future research directions that emerge from a social sciences and anthropological lens applied to learning with, from, and about. How does gender influence IPHE and collaborative practice? Is the collaborative relationship between a physician and a nurse the same as the relationships among other health care providers? What are the status markers in the health service delivery system and how do we examine issues of power and status on collaboration? In addition, there are exciting future research questions that relate to a more definitive description of what collaboration actually means and evaluate the kind of educational models that facilitate learning the skills for collaboration. There is much future work that needs to be done to explain more fully the characteristics of IPHE and their implications. For example, if one takes the issue of timing of IPHE, can we examine how quickly status markers shape the development of emerging health care providers and can we influence the impact of status through IPHE?

There are many research questions that provide an exciting future for educational scholarship related to IPHE. This research study has hopefully provided a stimulus for advancing and promoting more focused examination of the meaning of IPHE, its application, and its impact.

Summary

This study was completed to address a gap in interprofessional health education or IPHE. IPHE, as a way of training collaborative practitioners, is developing into an important component of health professional education, because of issues related primarily to patient safety and health human resource shortages. The study was grounded in social

and educational theory. A mixed methods approach to the research was used, comprising focus groups and a web-based survey. Participants in the study represented students who had completed an IPHE course at UBC and faculty members in the health and human service programs at UBC.

Focus group data were transcribed verbatim and analyzed using a thematic network approach. The survey data were used to examine differences among students, new graduates, and faculty members related to key concepts that emerged from the qualitative findings and to confirm, or not, these specific findings. From the data emerged a set of meanings attached to learning with, from, and about that strengthens the commonly applied definition of IPHE offered by CAIPE (Barr, 2002). In addition, the study results confirm and consolidate key characteristics of IPHE that, when matched with the meaning of with, from, and about, allows more informed IPHE curricula to be developed and evaluated. The proposed taxonomy may serve to inform emerging applications for IPHE in the context of education, service delivery, and policy. Further research can expand the emerging new meaning of the CAIPE definition and examine its application in curriculum design and evaluation in both academic and practice settings. The importance of the research lies in its contribution to an emerging understanding of IPHE that will pave the way for more robust competency development and for sound curriculum design, continuing professional development, and evaluation of the impact of IPHE and collaboration on health outcomes. IPHE represents an exciting field of study and future research will contribute to a solid understanding of this critical form of education for health professionals.

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APPENDIX A: INITIAL LETTER OF CONTACT

Dear

Education of health professionals globally has typically occurred in discipline-specific silos. There is now, however, a rapidly emerging trend toward more collaborative models of education and practice as one means of improving quality of patient care. Interprofessional health education (IPHE) is the process by which health care professionals and students are trained to be collaborative practitioners.

I am about to undertake a doctoral research study with the following 3 objectives;

1. To examine the descriptors of interprofessional education through the lens of students and faculty members
2. To articulate a detailed and contextual description of interprofessional health education.
3. To identify ways to apply the description of interprofessional health education to curriculum design.

As a student or former student (or, for faculty letter, a faculty member at UBC who participates in interprofessional curriculum development or teaching) who has participated in a Interprofessional health and Humans Service (IHHS) course at UBC and who has consented to be listed in a data base of individuals willing to be invited to participate in research studies, you are invited to participate in a focus group of student/former student colleagues. The focus group will be audio-recorded.

We will require 2 hours of your time for the focus group and up to 1 additional hour shortly after the focus group to review the typed transcripts to ensure they accurately reflect the conversations. Victoria Wood, Research Assistant for this project, will be e-mailing you presently with the recruitment letter asking for you to consider participation in the study.

Risks and Benefits:

There are no anticipated risks associated with participation in this study. Should you experience any discomfort relating to questions posed in the focus group, you should feel free to decline to respond to these questions. Benefits associated with participation in the study include the opportunity for you to share your experience of interprofessional education, and to positively influence education of future health care professionals in the area of collaborative practice.

Confidentiality:

No personally identifying information will be noted in the focus group transcripts; a numeric identification code will be used instead. The identities of any focus group participants will not be revealed in any reports or presentations of the study's findings, without their written permission. *I encourage all participants to refrain from disclosing the contents of the discussion outside of the focus group; however, I cannot control what other participants do with the information discussed.*

All data will be securely stored in the College of Health Disciplines at the University of British Columbia. All computer-entered data will be de-identified and

password-protected. Only myself and the research assistant will have access to the data which will be stored for a minimum of 5 years.

Consent:

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without consequence. You may keep this letter for your records.

Contact for information about the study:

If you have any questions or desire further information with respect to this study, you may contact Victoria Wood, Research Assistant, at xxx-xxx-xxxx or xxxxx.xxxxx@xxxxxx.xxx at any time.

Contact for concerns about the rights of research subjects:

If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at xxx-xxx-xxxx.

Sincerely,

Lesley Bainbridge

PhD student and

Associate Principal, College of Health Disciplines

APPENDIX B: INFORMATION AND RECRUITMENT LETTER

Interprofessional Health Education: A contextual description to inform curriculum development and evaluation.

This information letter provides all the information I think you will need to know in order to decide whether you wish to participate in the study. If you have any questions after you read through this letter, please contact Lesley Bainbridge at xxxxx@xxxxxxxx.xxx or Victoria Wood at xxxxx@xxxxx.xxx.

Title of Research Study

Interprofessional Health Education: A contextual description to inform curriculum development and evaluation.

Investigator(s)

Principal Investigator:

Lesley Bainbridge, PhD student (Union Institute & University, Cincinnati, OH)

Research Assistant:

Victoria Wood, MA

Study Sponsor

This study comprises part of the doctoral program of study of Lesley Bainbridge.

Purpose of the Research

Education of health professionals globally has typically occurred in discipline-specific silos. There is now, however, a rapidly emerging trend toward more collaborative models of education and practice as one means of improving quality of patient care.

Interprofessional health education (IPHE) is the process by which health care professionals and students are trained to be collaborative practitioners.

There are currently several reasons for interprofessional education and collaborative practice. The first and most prominent is patient safety. Human factors and health service delivery research suggests that improved collaboration among providers can reduce medical error and improve patient safety. The second major driver of interprofessional education is recruitment and retention of health care professionals. By reducing professional isolation, observing the positive effects of interprofessional teamwork on patient care, and creating opportunities for health care providers to learn from each other, employers are using interprofessional education and collaboration to attract and retain employees. The third trend impacting the uptake of IPHE is the changing focus of health human resource planning processes. Typically numbers of specific professionals alone have guided planning for future health care needs rather than integrated or inclusive approaches. Integrated health human resource planning would only be strengthened by a focus on interprofessional health education and collaborative practice. In order to ensure that interprofessional health education is fully understood in the context of health professional education, we must understand what it means and how it can effectively inform curriculum.

The study has the following three main objectives:

1. To examine the descriptors of interprofessional education through the lens of students and faculty members
2. To articulate a detailed and contextual description of interprofessional health education.
3. To identify ways to apply the description of interprofessional health education to curriculum design.

Description of the Research

All students and faculty members in the health and humans service programs at UBC who have been exposed to interprofessional health education are invited to participate in this study.

If you choose to participate in this research, you will be asked to participate in a 2 hour focus group which will be audio recorded as well as a follow up review of the transcript to verify the conversation which may take up to 1 hour. Your name will not be included on, or linked with, any of these materials to make sure that your privacy is respected.

If you agree to participate in a focus group, the Research Assistant will contact you to arrange participation in the focus group time that is most convenient for you. The RA may ask for your name, email address, phone number, and organizational affiliation. This is because a maximum of 8 participants per focus group will be required, and the RA will want to ensure that a broad mix of affiliations is represented (i.e. student, faculty member, professional program etc).

Potential Harm (Injury, Discomforts or Inconvenience)

There are no known harms associated with participation in this study. The research assistant will make every effort to ensure that the focus group time and location are convenient for you. There are no sensitive questions involved in the focus group discussions.

Consent

You will be asked to sign a formal consent form when you present yourself for the focus group. I will ensure that you understand the research project and your participation before asking you to sign the form.

Potential Benefits

Individuals who participate will be assisting with the on-going understanding of interprofessional health education.

Confidentiality and Privacy

All materials used in this study will be confidential; your name will not be used in any of the transcripts or the final report. *I encourage all participants to refrain from disclosing the contents of the discussion outside of the focus group; however, I cannot control what other participants do with the information discussed.*

The focus group discussions will be audio recorded and transcribed. The research assistant will remove names from the transcripts which will be securely stored for 5 years following the study. The primary investigator will only have access to

these anonymous transcripts. Your name will not be associated with any of your responses.

Publication of results

Results of this study will be incorporated into the doctoral dissertation. Following approval of the dissertation, the study findings may be disseminated through presentations at conferences and through publications in peer-reviewed journals. Participants in this study will remain anonymous; you will not be identified in the study results in any way.

Reimbursement

There is no reimbursement associated with this research project. However, I will reimburse parking costs upon presentation of a receipt and will provide refreshments.

Participation and Withdrawal

Participation is voluntary. If you choose to participate you can withdraw from the study at any time without consequence by contacting the research assistant. Your role as a student or faculty member will in no way be adversely affected and your decision will remain confidential.

Research Ethics Board Contact

If you have any questions as a research subject you may contact the University of British Columbia Office of Research Services at xxx-xxx-xxxx.

APPENDIX C: INFORMED CONSENT

Date:

Informed Consent

Prospective Research Subject: Read this consent carefully. Ask as many questions as you like before you decide whether you want to participate in this research study. You are free to ask questions at any time before, during, or after your participation in this research.

Project Title: Interprofessional Health Education: A contextual description to inform curriculum development and evaluation.	
Researcher: Lesley Bainbridge	Organization: University of British Columbia and Union Institute & University xxx xxxx xxxx xxxx, Vancouver, BC xxx xxx
Location of Study: University of British Columbia	Telephone #: xxx-xxx-xxxx
Research Assistant: Victoria Wood	Organization: University of British Columbia
Location: University of British Columbia	Telephone #: xxx-xxx-xxxx

Purpose of This Research Study

You are being asked to participate in a research study designed to explore the experience of developing/participating in an interprofessional learning experience in the health and human sciences. The research study will be conducted as part of a program of doctoral studies at Union Institute & University in Cincinnati, Ohio.

The purpose of this study is to examine interprofessional health education to describe it more fully in order to improve curriculum development and to improve the learning experiences of health professional students. More and more attention is being paid to interprofessional education so that students learn about collaborating with other professions throughout their program of study. This research is designed to determine what interprofessional health education should look like in order for it to be a valued and relevant learning experience.

Procedures

You will be asked to participate in a 2 hour audiotaped focus group session with 7 other students/faculty members. You will also be asked to review the transcripts to verify the

conversation. This will require an additional hour of your time. The session will involve a discussion about each person's experience with interprofessional health education as a student or as a faculty member who is designing interprofessional curriculum components.

During the focus group session, the conversations will be recorded for the purposes of analyzing themes. A research assistant will also observe the focus group session to record the conversation. Following the focus group, the discussion will be transcribed (typed out verbatim/word for word) and I will ask you to verify that the transcript accurately reflects the conversation. Your name will not be used in the transcripts so that your contributions to the discussion will not be identifiable through the typewritten notes.

Possible Risks

This research study does not pose any risks to you as a participant. However, if you find that any questions make you feel uncomfortable, you are under no obligation to answer them.

Possible Benefits

While this study is unlikely to benefit you directly, it may benefit future students and faculty members by improving interprofessional curriculum development and learning activities.

Financial Considerations

You will not receive any financial compensation for your participation in this research. If you incur parking expenses, you will be reimbursed upon submission of a parking receipt. There will be refreshments provided during the focus groups session.

Confidentiality

Your identity in this study will be treated as confidential. Results of the study, including all collected data, may be published but will not give your name or include any identifiable references to you. However, any records or data obtained as a result of your participation in this study may be inspected by the persons conducting this study and/or Union Institute & University's Institutional Review Board, provided that such inspectors are legally obligated to protect any identifiable information from public disclosure, except where disclosure is otherwise required by law or a court of competent jurisdiction. *In addition, although I encourage all participants to refrain from disclosing the contents of the discussion outside of the focus group, I cannot control what other participants do with the information discussed.* All research records for this study will be kept private in so far as permitted by law.

Your identity will not be noted in the focus group transcripts. I will collect very simple demographic data so that I can identify you as a faculty member or a student and the date and time of the focus group. None of this information will be traceable to you individually through this data.

Termination of Study

You are free to choose whether to participate in this study. You may also choose to withdraw from the study at any time. You will not be penalized or lose any benefits to

which you are otherwise entitled if you choose not to participate or choose to withdraw. You will be provided with any significant new findings developed during the course of this study that may relate or influence your willingness to continue participation. In the event you decide to discontinue your participation in the study, please notify Lesley Bainbridge at xxx-xxx-xxxx or Victoria Wood at xxx-xxx-xxxx of your decision so that your participation can be terminated in an orderly fashion. Your participation in the study may be terminated by the investigator without your consent if you are unable to participate on any of the dates scheduled for the focus groups.

The focus group conversation will follow a specific format designed to elicit a similar conversation in each of the focus groups. The sessions will be audio-taped using a digital recorder and a tape recorder in case one system fails during the focus groups. This record will be used to transcribe the conversation. No names will be included in the transcripts. No other identifying information will be included in the transcripts.

After the Study is Completed

A summary of the results of the study will be sent to you upon request. Tapes/digital recordings and transcripts will be kept securely for a minimum of 5 years.

Resources

Any questions you have about this study will be answered by Lesley Bainbridge, xxx-xxx-xxxx or xxxxx@xxxxxx.xxx OR by Victoria Wood, xxx-xxx-xxxx or xxxxx@xxxxxx.xxx.

Any questions you may have about your rights as a research subject will be answered by the University of British Columbia Office of Research Services at xxx-xxx-xxxx.

In case of a research-related emergency, call Lesley Bainbridge at xxx-xxx-xxxx or Victoria Wood at xxx-xxx-xxxx.

Subject and Researcher Authorization

I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable federal, state, or local laws.

Signatures

Participant Name (printed): _____

Participant Signature: _____

Date: _____

Researcher's Name (printed): _____

Researcher's Signature: _____

Date: _____

DEMOGRAPHIC DATA:

Please identify the following as appropriate:

Student

Faculty Member

Program of study:

Associated faculty/program:

APPENDIX D: SURVEY QUESTIONS

Please read the consent that you received by e-mail carefully. Ask as many questions as you like before you decide whether you want to participate in this research study. You are free to ask questions at any time before, during, or after your participation in this research. Please note that by completing the survey you are providing the researcher with your consent. The survey questions have been designed to capture your perspectives on interprofessional education in the health and human services. They contain ideas and thoughts that were expressed during the focus groups in an earlier part of this study. We are asking for your response to these ideas and are not relying on you to generate new ideas. Our primary purpose of the survey is to examine how you react to the major themes expressed in the focus groups. The survey should take no longer than 15 minutes to complete. No personal identification will be attached to your response although we would like to know your professional background/program of study and other demographic information that will assist us in the quantitative analysis. You will not be identified in the analysis of the data nor in the final report. Once you have completed the survey please indicate that you would like your responses submitted by checking the appropriate box in the final question. This question is a mandatory field. If you choose to withdraw from the survey, please indicate in the final question that you ‘disagree’ and your responses will be removed from the final data set. We very much appreciate your participation.

Information

1. Professional Program:
2. Status:
3. Gender:
4. Age:
5. Number of years in a practice or clinical setting:

Medicine

Physical Therapy

Nursing

Occupational Therapy

Social Work

Pharmacy

Nutrition

Audiology

Speech Sciences

Dentistry

Dental Hygiene

Human Kinetics

Other (please specify)

Faculty Member Student New Graduate Male Female

Please indicate the extent to which you agree or disagree with the following statements.

6. Interprofessional health education is the process by which we train practitioners from different disciplines to practice collaboratively.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
7. Interprofessional health education is a complex process.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
8. The main foundation for interprofessional health education is the patient/client.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
9. The best location for interprofessional health education is the practice setting.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree

Some of the following questions relate to the commonly used definition for interprofessional education, which is: ‘occasions when two or more professions learn with, from and about each other.’

10. Learning ‘with’ other health and human service professional students requires active engagement with each other.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
11. Learning ‘with’ other health and human service professional students requires all students being in the same place at the same time.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
12. Learning ‘with’ other health and human service professional students requires an environment in which all students are valued equally.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
13. Learning ‘from’ other health and human service professional students requires confidence in others’ knowledge and skills.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
14. In order to learn ‘from’ other health and human service professionals there needs to be a level of trust.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
15. Learning ‘from’ other health and human service professionals requires respect.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
16. Learning ‘about’ other health and human service professionals must be done before learning ‘with’ and ‘from’ others.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
17. It is important to learn ‘about’ who a person is outside their professional capacity (e.g. hobbies, family, sports).
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree

18. Learning 'about' other professions helps overcome stereotypes.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
19. Focus group participants suggested that there is a distinct moment in the interprofessional learning process when one's way of thinking changes. Do you agree with this statement?
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
20. Interprofessional health education should be introduced early in curriculum.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
21. Interprofessional health education should be introduced later in curriculum.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
22. Interprofessional health education should be incorporated throughout the continuum of learning.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
23. Interprofessional education is a gradual process that takes place over time.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
24. Reflection is not considered an important part of interprofessional health education.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
25. Interprofessional health education can be included in a curriculum without intentional planning.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
26. A shared goal for health and human service providers overcomes professional boundaries.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
27. Educators must ensure that the learning environment for interprofessional health education is a safe place.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
28. The order of learning 'with', 'from' and 'about' is not important in interprofessional health education.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
29. It was suggested in the focus groups that learning 'from' others requires that one has learned 'about' and 'with' other professions before.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
30. Learning 'with', 'from' and 'about' is a circular, iterative process with no one part coming first or last.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree

31. Learning ‘with’ means communicating and sharing thoughts.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
32. Learning ‘with’ needs to be non-judgemental.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
33. Learning ‘about’ is learning facts about someone from a distance.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
34. Learning ‘about’ other professions is superficial learning.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
35. Learning ‘about’ other professions does not require interaction.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
36. Interprofessional education creates an awareness that changes how one interacts with others.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
37. Interprofessional health education increases one’s comfort level when interacting with other professions.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
38. Interprofessional health education increases one’s understanding of other professions.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
39. The biggest barrier to interprofessional health education is the attitudes of faculty members.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
40. There are more barriers to interprofessional health education in the practice setting than in the academic setting.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
41. Interprofessional health education can be integrated with profession specific learning.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
42. Interprofessional health education needs to be distinct from discipline specific learning.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
43. Interprofessional learning outcomes must be explicitly stated in health and human service program curricula.
Strongly Agree/Agree/Somewhat Agree/Somewhat Disagree/Disagree/Strongly Disagree
44. I wish to submit my answers:

Yes/No

APPENDIX E: QUESTIONING ROUTE FOR FOCUS GROUPS

Students

INTRODUCTORY COMMENTS: Thank you for agreeing to participate in this focus group. Although I know you received a description of the study, I would like to reiterate its purpose. The study is designed to examine the meaning of interprofessional health education: how we describe it and how we use it in curriculum design and evaluation of learning. This focus group is aimed at finding out about your experiences in participating in interprofessional courses. This experience will assist me to develop a rich description of interprofessional education. The conversation over the next two hours is your conversation. I have some specific questions to focus the dialogue and I encourage you to engage your fellow focus group participants in active discussion as it relates to the questions. Remember that you will not be identified by name in the transcripts of the discussion but I cannot control what you all say outside the context of this group. Do you have any questions before we begin?

OPENING: 1. Would each of you please tell us a bit about your interactions with other professions in your professional program? What was the context? What was the situation?

INTRODUCTORY: 2. Would each of you please describe an experience of interprofessional education in your professional education program that you remember as being ineffective or negative? It would be a situation which left you wondering why students from other professions were in the same learning experience with you.
3. Would each of you please describe an experience of interprofessional education in your professional education program that you remember as being highly effective or positive? It would be a situation which left you thinking this is what it's all about – this is why we are all in the same learning experience even though we're from different professions.

TRANSITION: 4. What do you think characterizes interprofessional learning experiences?
5. How do you know when you've experienced interprofessional learning?

KEY: 6. How would you describe learning “with” other health professionals?
7. How would you describe learning “from” other health professionals?
8. How would you describe learning “about” other health care professionals?
9. How does learning “with” differ from learning “about”?

- ENDING:**
10. If you had to explain interprofessional education to a new student in just one or two sentences, what would you tell them?
 11. I will briefly summarize the discussion and then ask: Is there anything that you think we haven't asked that is important?

Faculty Members

INTRODUCTORY COMMENTS: Thank you for agreeing to participate in this focus group. Although I know you received a description of the study, I would like to reiterate its purpose. The study is designed to examine the meaning of interprofessional health education: how we describe it and how we use it in curriculum design and evaluation of learning. This focus group is aimed at finding out about your experiences in creating interprofessional curricula/courses. This experience will assist me to develop a rich description of interprofessional education. The conversation over the next two hours is your conversation. I have some specific questions to focus the dialogue and I encourage you to engage your fellow focus group participants in active discussion as it relates to the questions. Remember that you will not be identified by name in the transcripts of the discussion but I cannot control what you all say outside the context of this group. Do you have any questions before we begin?

- OPENING:**
1. Would each of you please tell us a bit about your experiences with other professions in creating interprofessional course content? What was the context? What was the situation?

- INTRODUCTORY:**
2. Would each of you please describe an experience of interprofessional curriculum development in your professional education program that you remember as being ineffective or negative? It would be a situation which left you wondering why you even tried to develop curriculum with another health care professional.
 3. Would each of you please describe an experience of interprofessional curriculum development in your professional education program that you remember as being highly effective or positive? It would be a situation which left you thinking this is what it's all about – this is why we are all working together to create interprofessional curriculum components even though we're from different professions.

- TRANSITION:**
4. What do you think characterizes interprofessional learning experiences?
 5. How do you know when you've created interprofessional learning experiences?

- KEY:**
6. How would you describe learning experiences that encourage learning "with" other health professionals?

7. How would you describe learning experiences that encourage learning “from” other health professionals?
8. How would you describe learning experiences that encourage learning “about” other health care professionals?
9. How does curriculum that encourages learning “with” differ from curriculum that encourages learning “about”?

ENDING:

10. If you had to explain interprofessional education (curriculum) to a new faculty member or student in just one or two sentences, what would you tell them?
11. I will briefly summarize the discussion and then ask: Is there anything that you think we haven't asked that is important?

APPENDIX F: INITIAL E-MAIL CONTACT TO FACULTY HEADS

Dear ,

My name is Victoria Wood, research assistant to Lesley Bainbridge. As she begins her doctoral research she would like to ask for your assistance in contacting members of your faculty who participate in interprofessional curriculum development or teaching that might be willing to participate in a focus groups in aid of her research. I have attached an initial letter of contact outlining Lesley's project.

We would be most grateful if you could forward this on to all relevant faculty, asking anyone who is interested in participating to contact me by July 9th when I will send them further information.

Thank you in advance for your assistance in this matter.

Sincerely,

Victoria Wood

APPENDIX G: EMAIL REMINDER

Dear colleagues: Within the next 2 days we will be sending you a request to complete an electronic survey. The research study is being conducted as part of a program of doctoral studies at Union Institute & University in Cincinnati, Ohio. The study is examining the definition and description of interprofessional health education. The results of the study will inform curriculum development and evaluation as more attention is paid to training collaborative practitioners. Patient safety, quality of care, and recruitment and retention of staff are all primary drivers for the move toward interprofessional education for collaborative patient-centred practice. The survey builds on previous focus groups and is intended to examine the extent to which you agree with statements that emerged through the qualitative analysis. It should take you no longer than 15 minutes to complete the survey and to submit it on-line. Thank you for your consideration of our request. The link to the survey will be distributed with the consent by e-mail within the next 2 days.

APPENDIX H: INITIAL CONTACT E-MAIL MESSAGES

Initial Contact E-mail to Students:

Dear colleagues:

Within the next 2 days we will be sending you a request to complete an electronic survey. The research study is being conducted by Lesley Bainbridge as part of a program of doctoral studies at Union Institute & University in Cincinnati, Ohio. The study is examining the definition and description of interprofessional health education. The results of the study will inform curriculum development and evaluation as more attention is paid to training collaborative practitioners. Patient safety, quality of care, and recruitment and retention of staff are all primary drivers for the move toward interprofessional education for collaborative patient-centred practice. The survey builds on previous focus groups and is intended to examine the extent to which you agree with statements that emerged through the qualitative analysis. It should take you no longer than 15 minutes to complete the survey and to submit it on-line. Thank you for your consideration of our request. The link to the survey will be distributed with the consent by e-mail within the next 2 days.

Regards,

Victoria Wood
Research Assistant

Initial Contact E-mail to Faculty:

Dear colleagues:

Within the next 2 days we will be sending you a request to complete an electronic survey. The research study is being conducted by Lesley Bainbridge as part of a program of doctoral studies at Union Institute & University in Cincinnati, Ohio. The study is examining the definition and description of interprofessional health education. The results of the study will inform curriculum development and evaluation as more attention is paid to training collaborative practitioners. Patient safety, quality of care, and recruitment and retention of staff are all primary drivers for the move toward interprofessional education for collaborative patient-centred practice. The survey builds on previous focus groups and is intended to examine the extent to which you agree with statements that emerged through the qualitative analysis. It should take you no longer than 15 minutes to complete the survey and to submit it on-line. Thank you for your

consideration of our request. The link to the survey will be distributed with the consent by e-mail within the next 2 days.

We would be grateful if you could forward this and the subsequent e-mail with the survey link to faculty in your department. Also, could you please let me know how many people you send this out to?

Regards,

Victoria Wood
Research Assistant

APPENDIX I: BASIC THEMES FROM STUDENT DATA

Table I1: *Themes Derived from Student Focus Group Data*

Basic Student Themes
Interprofessional exposure is an imperative learning experience that should be accessible to all students.
Knowledge about other professions helps to reduce bias and to increase group collaboration.
Flexibility and diversity add to the quality of the learning experience.
Space, context, and language influence interprofessional learning in both classroom and clinical contexts.
Safe interprofessional learning is important and may happen more effectively before entering the practice setting.
Conflict and emotions must be part of the learning.
Reflection assists with application of learning.
Educators need to ensure that IPHE is a focus throughout curriculum, not just at the end.
IPHE requires shared responsibility for learning.
Interaction must happen through listening, talking, and doing.
Values such as respect and honesty are key to IPHE.
How we treat each other, e.g. kindness, is reflective of the quality of collaboration.
The new learning must be transferable to the work place.
IPHE must allow for interaction.
The best learning experiences have the right mix of learners.
Organizations must resource IPHE adequately.
The patient and their goals must form the common ground for collaboration.
The learning experiences must be reflected in practice.
Relationships pave the way for strong IPHE and collaborative practice.

Basic Student Themes

IPHE has to have value to the learner.

Learning and working together improves patient care.

The patient goals form the common ground for IPHE.

Staff satisfaction is improved through IPHE and collaboration.

IPHE and collaborative practice reduce practice errors.

Collaboration requires a focus on the patient.

Inclusion of everyone as valued is a hallmark of collaboration.

Emotions form part of collaboration, e.g. compassion.

Seeing all the contributions come together to make care better is a key part of IPHE.

Learners must complete an interprofessional experience feeling valued, confident in themselves, and appreciated.

Learners must experience and actual change as the result of interaction.

Patient acknowledgement of collaboration is important.

Effective IPHE must relate to real practice.

Complexity is inherent in IPHE.

Interconnectedness characterizes effective IPHE and collaborative practice.

The team must be able to articulate the common goal

Effective IPHE must create a level playing field so that all learners feel equal and able to learn with each other.

Learning with requires one to be humble.

Learning with means acknowledging the value of learning.

Learning with means acknowledging the knowledge base of others.

Learning from requires a transfer of knowledge.

There is an inherent inequality in learning from.

Basic Student Themes

Learners must be open to learning and willing to learn.

Confidence in others' knowledge is key.

Learners must feel safe asking questions.

Learning about is a deep level of learning.

Knowing someone as a person, e.g. their interests, helps build a relationship.

Knowing about someone requires witnessing them in action, their rationale and goals, as well as their roles.

Learning about is a voyage of discovery and exploration.

The order of the learning (with, from, and about) does make a difference to the learning experience.

Learning about needs to come before learning with and from.

Learning with, from, and about may all happen at the same time.

Learning with, from, and about may be a cyclical process.

IPHE is a process for bringing different disciplines and patients together to seek solutions.

Collaboration requires honesty.

IPHE requires self-examination and application.

There are many similarities among professions: e.g., same feelings, same mistakes.

IPHE relates to health and policy.

Collaboration requires interaction and practice.

APPENDIX J: BASIC THEMES FROM FACULTY DATA

Table J1: *Themes Derived from Faculty Focus Group Data*

Basic Faculty Themes
IPHE involves many different ways of bringing students from different professional programs together.
It is possible to mix the classroom learning with the practice setting.
IPHE may be formal, informal, or non-formal.
It is important to alert students to other professions early in their training.
IPHE must be intentional and involve person-person contact.
The learning must happen in a safe and welcoming place.
The learner must actively process the learning experience to effect a change.
IPHE can be assisted by creating time in curricula.
IPHE is best situated in the practice setting.
Creating and taking opportunities to connect with other professions broadens the chance of IPHE taking place.
Any environment can foster IPHE.
A practice setting where all professions are working makes for good intended and unintended IPHE.
IPHE does not need to be tagged to linear curricula.
When appropriate, focus on interprofessional as the reason for any given learning experience.
IPHE requires flexibility in curricula.
Faculty attitudes can be a barrier to IPHE: e.g. not important, or not teachable (inherent).
Professional histories can get in the way of collaboration.
Focus of profession specific learning goals can reduce space for specific interprofessional goals.

Basic Faculty Themes

IPHE requires time for reflection so that learners can relate changes to self and own profession.

Students must drive the interprofessional agenda.

Faculty, students, preceptors, and learning sites must all be prepared for IPHE.

There is no clear sense of the best timing for IPHE.

Learning in an interprofessional context early on in the program helps to avoid professional cultural barriers.

Interprofessional learning later on in the program builds on experience and confidence in who you are.

In interprofessional experiences, people suddenly understand what others know and how to communicate.

IPHE allows students to realize what they do know and can share—increases confidence in themselves.

Interprofessional is complex and requires higher order learning.

IPHE has created a change in learners when they display increased comfort challenging each other, articulating others' rationales for decisions, and changing their responses based on interprofessional discussions.

When IPHE has been effective, learners are more open with each other and refer more often and more appropriately to each other.

Learning with means being physically or electronically in same place.

There must be active and respectful interaction when learning with.

Learning with is content focused.

Joint problem solving exemplifies learning with.

Learning from requires equal status on the part of the learners.

Learners must be open to learning from each other and from experts in other professions.

Learning from requires active listening.

Basic Faculty Themes

Differences must be acknowledged in non-judgmental and non-hierarchical ways in order to effectively learn from.

Learning about requires a respectful, trusting, open-minded context.

At a superficial level, learning about other professions is a preliminary part of IPHE that sets the stage for deeper learning later.

Imagining another person's role, day-to-day and overall, can help to learn about.

Learning with, from, and about is not mutually exclusive and may all happen at the same time.

Learning about is superficial and lower order learning and, therefore, should be the first type of activity.

Learning with is deeper, broader and encompasses collaboration and interaction.

Learning from is uni-dimensional.

Learning about should always come first.

IPHE is client and/or issue centred.

IPHE is an interactive, mutual, non-judgmental, and respectful process for problem solving.

IPHE does not water down professions—it acknowledges, strengths, and combines them to reach the best client outcomes.

IPHE includes the patient.

Values are an important part of IPHE.

APPENDIX K: ORGANIZING THEMES FROM STUDENT DATA

Table K1: *Organizing Themes Derived from Basic Student Themes*

Student Organizing Themes
IPHE is an imperative learning experience characterized by accessibility, flexibility, diversity, safety, integration, transferability, and complexity.
IPHE is a learning process that includes knowledge, conflict, emotions, and values (respect, honesty, kindness, and trust).
IPHE is a structure that involves space, language, and context.
IPHE requires shared responsibility for learning, interaction, relationships, inclusivity, and coming together.
IPHE involves valuing of others, appreciation, self-confidence, and inter-connectedness.
IPHE must result in a change in the way professions interact.
Reflection and values are critical parts of IPHE.
The most effective anchor for IPHE is the patient and his/her goals.
IPHE improves patient care.
IPHE and collaborative practice must add value in the educational setting.
IPHE and collaborative practice must improve staff satisfaction, and reduce practice errors.
Learning with means feeling equal and showing humility.
Learning with means acknowledging the value of learning and the knowledge base of others.
Learning from requires a transfer of knowledge.
Learning from requires an openness to learning and a willingness to learn.
Learning about requires actively seeking information.
Learning about involves knowing the whole person as well as their professional traits

Student Organizing Themes

The order of IPHE learning is not clear (e.g., requires that learning about comes first).

The order of the terms with, from, and about is important.

Learning with, from, and about may or may not happen all at the same time.

APPENDIX L: ORGANIZING THEMES FROM FACULTY DATA

Table L1: *Organizing Themes Derived from Basic Faculty Themes*

Faculty Organizing Themes
IPHE is a diverse, flexible process.
IPHE can take place in any context and in any combination of didactic and practice learning.
It is important to consider when IPHE is introduced to students.
IPHE is intentional learning that actively connects people and creates a change.
IPHE creates sudden awareness and change. These are reflected in comfort levels, conversation, and referrals.
IPHE revolves around the client.
IPHE is client-centred, mutual, non-judgemental, respectful, and interactive.
Barriers to IPHE include faculty attitudes and professional histories.
Preparation for IPHE for students, preceptors, faculty members, and learning sites is important.
Learning experiences require reflection.
Learning with means co-location, active learning, respect, collaboration and interaction.
A focus on content and problem solving characterizes learning with.
Learning from requires equal status and openness to learning.
Learning from is non-judgmental, non-hierarchical and uni-dimensional.
Learning about should come first, setting the stage for later deeper learning.
Learning about is superficial.
Certain characteristics are necessary for learning about (e.g., trust, respect, etc.)

APPENDIX M: SURVEY RESULTS

Table M1: Mean Number of Responses to Each Question Out of N=94

Variable name (Question)	(Str D)	(D)	(Som D)	(Som A)	(A)	(Str A)	Total Responses
6: Process	0	0	2.1	12.6	41.1	44.2	95
7: Complex process	0	3.2	6.4	22.3	28.7	39.4	94
8: Patient/ client as anchor	1.1	1.1	6.4	21.3	33.0	37.2	94
9: Practice setting is best for IPHE	1.1	5.3	9.5	41.1	31.6	11.6	95
10: “With” means active engagement	0	0	1.1	4.2	40.0	54.7	95
11. “With” means co-location	3.2	16.8	25.3	31.6	20.0	3.2	95
12: “With” requires equal value of all	0	0	1.1	1.1	23.2	74.7	95
13: “From” requires confidence in others’ Knowledge and Skills	0	3.2	0	11.7	45.7	39.4	94
14: “From” requires trust	0	1.1	1.1	4.2	46.3	47.4	95
15: “From” requires respect	0	0	0	1.1	26.6	72.3	94
16: “About” comes before “with” and “from”	1.1	14.7	21.1	32.6	21.1	9.5	95

Variable name (Question)	(Str D)	(D)	(Som D)	(Som A)	(A)	(Str A)	Total Responses
17: “About” outside work environment is important	2.1	11.6	18.9	48.4	12.6	6.3	95
18: “About” helps to overcome stereotypes	0	0	1.1	14.7	50.5	33.7	95
19: A distinct moment of change occurs in IPHE	0	5.3	8.4	40.0	34.7	11.6	95
20: Early intro of IPHE is important	2.1	0	10.5	13.7	32.6	41.1	95
21: Later intro of IPHE is best	16.1	36.6	22.6	12.9	7.5	4.3	93
22: IPHE is best integrated throughout curriculum	0	1.1	2.1	11.7	47.9	37.2	94
23: IPE is a gradual process	1.1	3.2	2.1	14.7	56.8	22.1	95
24: Reflection is not important in IPHE	43.2	35.8	12.6	5.3	1.1	2.1	95
25: IPHE does not require intentional planning	16.0	38.3	13.8	20.2	10.6	1.1	94
26: A shared goal overcomes professional boundaries	1.1	6.5	8.6	29.0	41.9	12.9	93
27: IPHE needs a safe place to learn	0	0	0	5.3	46.3	48.4	95
28: “With”, “from”, and “about” order is not important	7.4	20.0	30.5	24.2	15.8	2.1	95

Variable name (Question)	(Str D)	(D)	(Som D)	(Som A)	(A)	(Str A)	Total Responses
29: “From” must come after “with” and “about”	1.1	12.6	30.5	35.8	14.7	5.3	95
30: “With”, “from”, and “about” are iterative in no specific order	0	6.3	11.6	27.4	38.9	15.8	95
31: “With” is communicating and sharing	0	0	2.1	10.6	60.6	26.6	94
32: “With” must be non- judgmental	0	1.1	5.3	7.4	45.3	41.1	95
33: “About” means facts and learning from a distance	6.3	27.4	35.8	23.2	7.4	0	95
34: “About” is superficial	9.5	34.7	30.5	20.0	4.2	1.1	95
35: “About” does not require interaction	15.8	38.9	25.3	16.8	3.2	0	95
36: IPHE creates awareness about interacting with others	0	1.1	2.1	12.6	53.7	30.5	95
37: IPHE increases comfort level with other professions	0	0	1.1	10.5	52.6	35.8	95
38: IPHE increases understanding of others	0	0	2.1	5.3	49.5	43.2	95
39: Biggest barrier is faculty attitudes	3.2	21.3	24.5	35.1	13.8	2.1	94

Variable name (Question)	(Str D)	(D)	(Som D)	(Som A)	(A)	(Str A)	Total Responses
40: More barriers in academic than in practice setting	2.2	11.8	22.6	25.8	22.6	15.1	93
41: IPHE can be integrated with profession specific learning	0	0	5.3	18.1	58.5	18.1	94
42: IPHE must be distinct from profession specific learning	7.4	28.7	26.6	18.1	13.8	5.3	94
43: IPHE learning outcomes must be explicit in curricula	0	1.1	4.3	23.4	40.4	30.9	94

Note: Questions 1 to 5 comprised the demographic data, which are presented earlier in the document and therefore not included here.