

UNDERSTANDING WHAT CONSTITUTES EFFECTIVE INTERPROFESSIONAL
FACILITATION: AN INTEGRATIVE REVIEW

By

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Abstract

Background: Health care delivery consists of multiple providers across different sectors meeting the needs of increasingly diverse and aging populations. Lack of communication and collaboration between healthcare providers has lead to fragmented patient care and adverse patient outcomes.

Objective: Interprofessional education (IPE) is linked to improved healthcare provider collaboration and patient outcomes. There is an increasing need for educators who can effectively facilitate the delivery of IPE. The purpose of this review is to uncover what constitutes effective interprofessional facilitation (IPF) for pre-licensure health science students.

Methods: Whittemore and Knafl (2005) five-step approach to integrative reviews was utilized: problem identification, literature search, data evaluation, data and analysis and presentation. Four databases were searched for literature published between 2013-2018. Inclusion criteria were: a) literature published in English b) literature published in common wealth countries c) literature covering in-class pre-licensure health science IPE d) quantitative, qualitative, systematic reviews and non-empirical methodologies.

Results: 14 articles met inclusion criteria and were reviewed for quality using critical appraisal tools. Two articles addressed student perceptions of IPE and six articles addressed interprofessional faculty member's perceptions of IPE and IPF. Three articles addressed the nature of IPF and faculty development initiatives. One article focused on students developing an interprofessional identity. Four major themes were identified in the literature: IPF strategies, IPF training, creating a culturally safe learning environment and student perceptions of IPE.

Conclusion: This integrative review uniquely adds to the body of IPF research. A number of strategies were uncovered to enhance IP facilitator's ability to deliver effective IPE. IPF training

is vital in supporting and preparing educators to facilitate IPE effectively. Policies and educational institutions need to support educators in IPF with training programs and resource materials. Effective delivery of IPE has a large impact on preparing future healthcare professionals to provide safe, collaborative person-centered care.

Key words: Interprofessional education (IPE), Interprofessional facilitation (IPF), Faculty development

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Chapter One: Introduction

Health care delivery consists of multiple providers across different sectors (e.g., acute care, community), meeting the needs of increasingly diverse and aging populations. Lack of communication and collaboration between healthcare providers can add to fragmentation of patient care within complex healthcare environments (Rossen, Bartlett & Herrick, 2017).

Numerous research reports have demonstrated that lack of interprofessional collaboration between healthcare providers increases the risk of adverse outcomes for patients, including preventable complications (e.g., infections), injury (e.g., falls) and mortality (Fewster-Thuente & Velsor-Friedrich, 2008; Lancaster, Kalakowsky-Hayner, Kovacich & Greer-Williams, 2015).

Significance of Interprofessional Education

Interprofessional education (IPE) is linked to improved healthcare provider collaboration and patient outcomes (WHO, 2010; Reeves & Fletcher et al., 2016). Interprofessional education is defined as “an intervention where the members of more than one health and/or social care profession, learn interactively together, for the explicit purpose of improving interprofessional collaboration and/or the health/well being of patients/clients” (Reeves, Perrier, Goldman, Freeth & Zwarenstein, 2013, p. 2). Outcomes of effective IPE include providers’ capacity to create trust-based relationships, to understand each other’s roles and accountabilities, to communicate critical information effectively, and to solve problems together (Reeves & Fletcher et al., 2016). The hallmark of pre-licensure IPE is cognitive and behavioural changes associated with participants’ greater understanding of other disciplines’ contributions to patient-centered collaborative practice (Khalili, Orchard, Spence-Laschinger & Farah, 2013; University of Toronto, 2016).

History of Interprofessional Education in Canada

In Canada, IPE is recognized as a means to better equip the healthcare workforce to provide quality, safe care within complex healthcare environments (Canadian Interprofessional Health Collaborative [CIHC], 2008). In 2002, the Romanow Report highlighted the need for healthcare training programs to educate health sciences students in teams, rather than learning and practicing in silos (Gilbert, 2010). In 2003, Health Canada introduced the “Interprofessional Education for Collaborative Patient-Centered Practice” (IECPCP) initiative. Health Canada funded twenty IECPCP projects across Canada and created the Canadian Interprofessional Health Collaborative (CIHC) in 2007. The CIHC is a national hub to strengthen IPE (Gilbert, 2010). In 2009-2011 Health Canada funded the CIHC to develop IPE standards, criteria and evaluation methods for the following healthcare disciplines: Medicine, Nursing, Pharmacy, Physical Therapy, Occupational Therapy and Social Work (AIPHE, 2011). The CIHC (2010) established a National Interprofessional Competency Framework (NICF) of pre-licensure IPE competencies for universities’ health science programs. Currently, the NICF is the foundation for IPE curricular review and accreditation within university-level health sciences programs in Canada, India and Thailand (J. Gilbert, personal communication, July 8th, 2018)

Problem Statement and Purpose

To build on CIHC momentum and advance IPE across Canada, healthcare educators need to be prepared to effectively facilitate IPE (CIHC, 2008; Reeves & Fletcher et al., 2016). There is an increasing need for faculty who can effectively facilitate the delivery of IPE (LeGros, Amerongen, Cooley & Schloss, 2015; Derbyshire, Machin & Crozier, 2015). The purpose of this integrative review is to answer the following research question: What constitutes effective

interprofessional facilitation (IPF) for pre-licensure health science students? My ultimate goal is to support evidence-informed IPF within Canadian pre-licensure health sciences curricula.

In this chapter, I have provided a background and history of IPE in Canada and established IPE relevance to health sciences educators. In chapter two, I describe the integrative review methodology including my search methods, data sources, inclusion/exclusion criteria, overview of studies selected for review and article appraisal methods. In Chapter three, I include my search results, matrix table, theme chart and narrative findings. In chapter four, I include implications for education, practice, policy and research, limitations of my integrative review and conclusions.

Chapter Two: Integrative Review Methods

An integrative review was conducted to answer the following research question: What constitutes effective IPF for pre-licensure health sciences students? An integrative review methodology allows researchers to review, critique and synthesize literature of diverse methodologies to generate a comprehensive understanding and unique perspectives related to a particular topic of interest (Taracco, 2005; Whittemore & Knafl, 2005). Integrative reviews may include quantitative, qualitative, mixed methods, systematic reviews and non-empirical theoretical sources. To ensure a systematic approach to this review, I will utilize an integrative review framework that includes five steps: problem identification, literature search, data evaluation, data analysis and presentation (Whittemore & Knafl, 2005).

Problem Identification

Interprofessional Education promotes and enables the attitudes, skills and behaviors associated with effective healthcare team functions and improved patient and organizational outcomes (WHO, 2010; Reeves & Goldman et al., 2011). Interprofessional education is an integral component of health sciences accreditation: IPE experiences are required in six health and human service education programs (Medicine, Nursing, Pharmacy, Physiotherapy, Occupational Therapy and Social Work) in Canada (Kanji, Lin & Krekoski, 2017; AIHPE, 2011). While there is growing evidence reporting the effectiveness of IPE on students' ability to deliver collaborative safe patient-centered care, little attention has been placed on the facilitation teaching processes required to provide effective IPE (Reeves & Pelone et al., 2016). Evidence indicates that educators, including experienced ones, are not always effective interprofessional (IP) facilitators due to unique features of IPE (Derbyshire et al., 2015). Educators who deliver IPE curricula must often leave their comfort zones and enter an unfamiliar context that includes

differing healthcare provider's (HCP) values, perspectives and priorities. (Anderson, Cox & Thorpe, 2009; Anderson, Thorpe & Hammick, 2011; Ruiz, Ezer & Purden, 2013). The problem therefore, is a need to know what types of facilitation strategies are effective for IPE delivery.

Literature Search

I worked closely with the UBC health sciences librarian to develop a comprehensive search utilizing four data bases; CINAHL, ERIC, Ed Source and Medline (Ovid). The literature search was undertaken July 2018 to identify pertinent literature related my research question. The general search terms were: Interprofessional education, facilitation and faculty development. Table 1 details the search strategies employed and number of direct hits for each database.

Table 1: Database Search Strategies and Results		
Search	Strategy	Number of hits
CINAHL	(interdisciplinary OR interprofessional OR multidisciplinary) N2 (educat* OR learn* OR workshop* OR course*) OR IPE OR (MH "Education, Interdisciplinary") AND Facilitat* OR (MH "Problem-Based Learning") OR (facilitate OR facilitator OR facilitators OR facilitating OR facilitated OR facilitation OR facilitative OR facilitatory).	521
Ed SOURCE	(interprofessional educat*) OR (interprofessional or interdisciplinary or multiprofessional or multidisciplinary) N2 (education OR workshop* OR class*) OR IPE OR DE "Interprofessional education" OR DE "Interprofessional relations" AND (facilitat*) N2 (interprofessional educat* OR interprofessional	14

	workshop* OR interprofessional class*) OR facilitat* OR DE "Facilitated learning" AND health professions OR DE "Health occupations school faculty" OR DE "Health occupations schools" OR DE "Health occupations students" AND DE "Teacher development" OR DE "Teacher education" OR faculty development	
Medline (OVID)	Problem-Based Learning/ OR facilitate* AND interprofessional educat* OR Education, Professional/ or Interprofessional Relations/ or "Attitude of Health Personnel"/ or Learning/ or Cooperative Behavior/ or Interdisciplinary Communication/ AND FACULTY/ or FACULTY, NURSING/	534
ERIC	(interdisciplinary OR interprofessional OR multidisciplinary) N2 (educat* OR learn* OR workshop* OR course*) OR IPE OR DE "Interprofessional Relationship" (facilitat* OR interprofession*) N2 (learn* OR teach* OR educat* OR workshop*) AND facilitat* OR DE "Facilitators (Individuals)" DE "Coaching (Performance)" OR DE "Mentors" OR DE "Adult Educators" OR (facilitat* OR interprofession*) N2 (learn* OR teach* OR educat* OR workshop*) AND Allied health occupations education	54

	OR DE “Allied health occupations education”	
Total		1149

I utilized ancestry searching while doing a general review of IPE. I reviewed reference lists of articles that were pertinent to my research question. I was able to connect with Canadian IPE experts, John Gilbert and Lesley Bainbridge, who recommended I reference IPE programs at the University of Toronto, University of British Columbia and University of Alberta. They also shared non-empirical IPE documents with me.

Inclusion and Exclusion Criteria

My final inclusion criteria were: a) literature published and accessible within the last five years 2013-2018; b) literature published in English; c) literature from Canada and other countries with similar health sciences programs, specifically the UK, US and Australia. d) pre-licensure health sciences IPE in-class education e) quantitative, qualitative, systematic reviews and non-empirical methodologies.

Study Selection

After screening all articles for duplicates, I reviewed titles and abstracts to ensure relevance to my research question and appropriateness with respect to my inclusion criteria. I did a second review for relevance and appropriateness of all full text articles. Table 2 in Chapter 3 is a matrix of final articles with the following headings: Author, year and title, purpose, methodology and findings.

Data Evaluation

According to Whitemore and Knafl (2005), data evaluation involves identification of the strengths and weaknesses of selected articles for review. I used quality appraisal checklists for qualitative, quantitative and mixed methods articles based on Polit and Beck (2014) and a

Johanna Briggs appraisal checklist for non-empirical theoretical articles. The detailed appraisals are presented in Appendices A through D. I gave each article an overall scientific merit rating of one to four based on Polit and Beck (2014) criteria. Table 2 in Chapter 3 shows scientific merit scores (SMS) for 12 articles, excluding two non-empirical theoretical articles.

Quantitative appraisal. A quality appraisal of included articles was performed using Guidelines for Evaluating Quantitative and Qualitative Reports (Polit & Beck, 2014). Articles were reviewed for the following qualities; problem statement, literature review, theoretical framework, study purpose, definition of terms, subject selection, ethical considerations, research design, data collection instruments and procedures, data analysis and discussion. An overall SMS was assigned to each article based on these criteria.

Qualitative appraisal. A quality appraisal of included articles was performed using Guidelines for Evaluating Quantitative and Qualitative Reports (Polit & Beck, 2014). Articles were reviewed for the following qualities; problem statement, literature review, study purpose, subject selection, ethical considerations, data collection and analysis, confirmability of findings and discussion. An overall SMS was assigned to each article based on these criteria.

Literature Review appraisal. Guidelines for critiquing systematic reviews was utilized for the review of three articles (Polit & Beck, 2014). The following qualities were reviewed; the problem, search strategy, sample, quality appraisal, data extraction, data analysis and conclusions. An overall SMS was assigned to each article based on these criteria.

Non-empirical appraisal. The Johanna Briggs Institute (JBI) Critical Appraisal Checklist for Text and Opinion was used to appraise two non-empirical theoretical articles. Articles were reviewed for source identification, source legitimacy, relevant population as a

central focus, analytical expression of opinion, extant literature reference and incongruences to extant literature defended (JBI, 2016). No SMS was assigned due to nature of literature source.

Data Analysis

“A thorough and unbiased interpretation of primary sources, along with an innovative synthesis of the evidence, are the goals of the data analysis stage.” (Whittemore & Knafl, 2005) Articles were grouped in chronological order and displayed in Table 2. Articles were reviewed iteratively and findings from each article that pertained to my research question were documented in the findings column in Table 2. The findings were then reviewed carefully for common themes, patterns, contrasts and comparisons (Whittemore & Knafl, 2005).

Data Presentation

Data from my integrative review is presented in Table 2: including the author, title, purpose, methodology and findings from each article. Common themes found in the reviewed literature pertaining to my research question are outlined in the findings section.

Chapter Three: Findings

Summary of Included Literature

The articles included in this integrative review were published between 2013-2018. The geographic setting of the studies varied with eight studies from the United States of America, three from Canada, two from the United Kingdom, one from Australia. Study designs varied with two quantitative, two mixed methods, five qualitative, three systematic reviews and two non-empirical theoretical articles. Two articles sampled health science students, six articles sampled IP faculty members, one theoretical article focused on health science students and the other focused on IP faculty members. The systematic reviews sampled articles addressing the nature of IPF and faculty development initiatives. Out of nine primary sources included, five studies were set in one post-secondary institution and four were set in multiple post-secondary institutions. Three articles focused on faculty perceptions of the impact of IP facilitator training programs. Three articles focused on what IPF training programs should contain. Two articles focused on faculty perceptions of the knowledge and skills needed for IPF. Two articles focused on exploring the nature of IPF. Two articles focused on student perceptions of IPE. One article focused on IP socialization and helping students to create an IP identity.

Search Results

A systematic search of four databases, Ovid Medline, ERIC, CINAHL and Ed source, resulted in 1,123 hits. Figure 1 provides a PRISMA chart of the article selection process. A total of 14 articles were included and reviewed for quality. Table 2 is a presentation of key information from the included articles.

Figure 1: Search Results

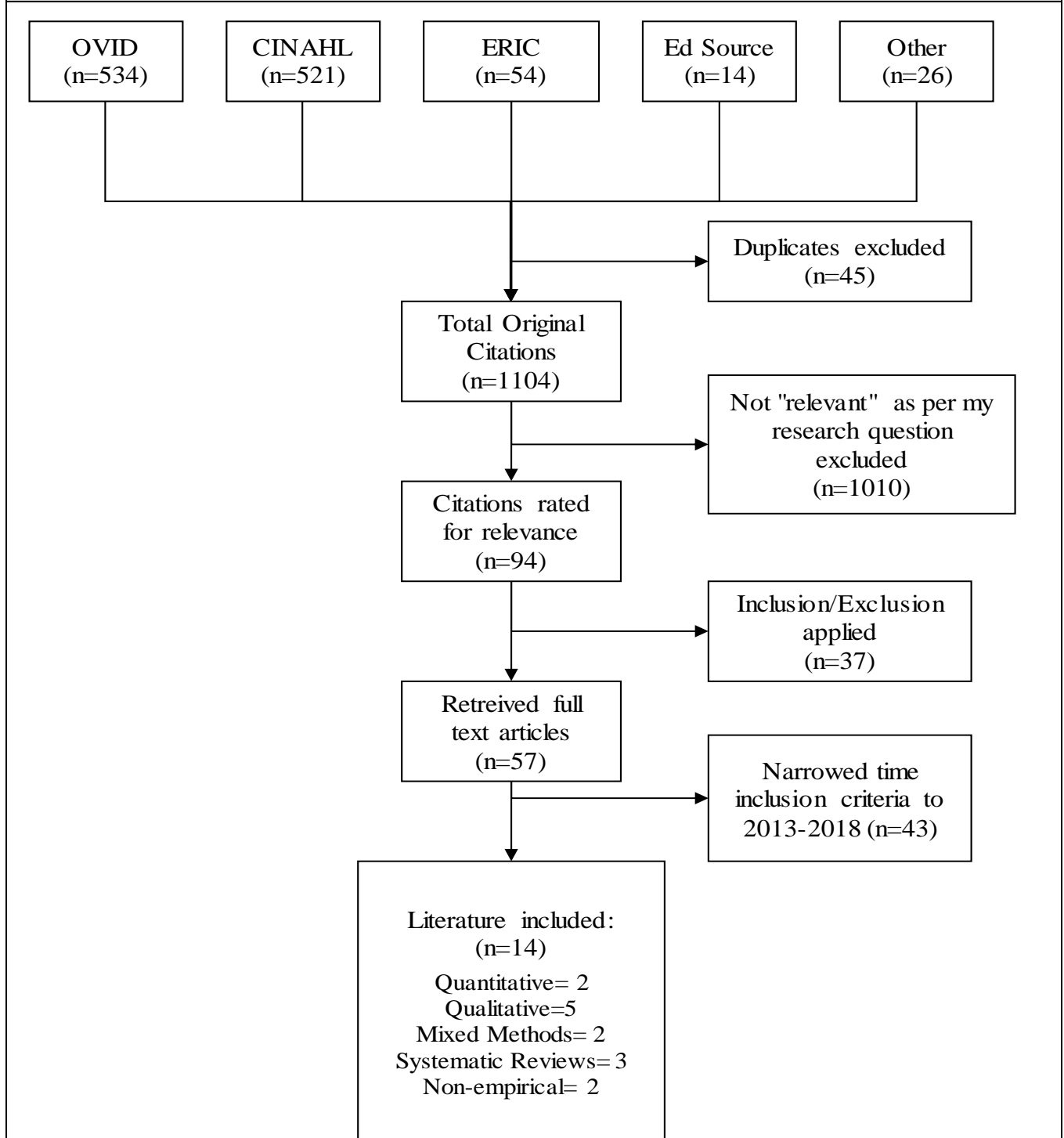


Table 2: Matrix display of included articles			
Author (Year) and Title	Purpose	Methods (Design, Setting, Sample) and Scientific Merit Scores (SMS)	Findings suggest that:
<p>Khalili, Orchard, Spence-Lashinger & Farah (2013)</p> <p>An interprofessional socialization framework for developing an interprofessional identity among health professions students.</p>	<p>“The aim of this article is to describe an interprofessional socialization framework created to reconceptualise socialization processes that will assist healthcare professions learners to develop a dual identity.” (p. 449)</p>	<p>Non-empirical theoretical article</p> <p>Canada</p>	<p>Stage 1: Breaking down barriers to collaborative practice.</p> <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • IP facilitators should discuss common misconceptions of professional groups and challenge those views through open discussion and reflection. <p>Stage 2: IP role learning</p> <p>IPF Strategies</p> <p><i>Role-modeling</i></p> <ul style="list-style-type: none"> • IP facilitators should focus on role-modeling interprofessional collaborative competencies (ICC). <p><i>Active group learning</i></p> <ul style="list-style-type: none"> • IP facilitators should have students practice ICC in case based scenarios. <p>IPF Training</p> <p><i>IPE Knowledge, Skills and Attitudes (KSA)</i></p> <ul style="list-style-type: none"> • IP facilitators should know and deliver the IP collaboration competencies (ICC). <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • IP facilitators should create an environment conducive to reflection and collaborative teamwork so students can develop a dual IP identity.
<p>Ruiz, Ezer & Purden (2013)</p> <p>Exploring the nature of</p>	<p>“This study aims to identify the pedagogical strategies and behaviors or</p>	<p>Qualitative Exploratory Case Study</p> <p>Canada</p>	<p>IPF Strategies</p> <p><i>Co-facilitation</i></p> <ul style="list-style-type: none"> • Co-facilitation is an opportunity for IP facilitators to role model respectful and professional behaviors.

<p>facilitating interprofessional learning: findings from an exploratory case study</p>	<p>facilitators participating in seven different learning activities with health care students from five different professions.” (p. 489)</p>	<p>Sample: 11 university and clinically based educators from 5 participating schools and 97 students from across nursing, medicine, PT, OT.</p> <p>SMS: 3 (medium)</p>	<p><i>Story telling</i></p> <ul style="list-style-type: none"> • Sharing concrete and relevant personal experiences enhances IPF effectiveness. <p><i>Student engagement</i></p> <ul style="list-style-type: none"> • Allowing for periods of silence and providing positive reinforcement can enhance student engagement in IPE sessions. <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • A respectful tone, answering questions politely, listening attentively to comments and not dismissing student opinions can create a culturally safe learning environment. • Setting the tone at the beginning of the session by reminding students to be respectful to ideas and opinions of others can create a culturally safe learning environment.
<p>Davis, Clevenger, Posnock, Robertson, Ander (2014)</p> <p>Teaching the teachers: Faculty development in interprofessional education</p>	<p>“To evaluate changes in self-concept for the knowledge, skills and attitudes toward interprofessional teamwork of facilitators who participated in training and an interprofessional training event.” (p. 31)</p>	<p>Quantitative; A pre-post test quasi-experimental design with a single group of interprofessional facilitators.</p> <p>USA</p> <p>Sample: 53 faculty members from one university who took part in the IPF training session responded to the pre-course survey, 49 facilitators completed the survey. 40 facilitators completed the post-course survey.</p>	<p>IPF Training</p> <p><i>IPE KSA</i></p> <ul style="list-style-type: none"> • A 2-hour training session increased IP facilitators’ IPE knowledge, skills and attitudes.

		SMS: 2 (low)	
<p>Derbyshire, Machin, Crozier (2015)</p> <p>Facilitating classroom based interprofessional learning: A grounded theory study of university educators' perceptions of their role adequacy</p>	<p>"The paper reports on a grounded theory study of university educators' perceptions of the knowledge and skills needed for their role adequacy as IP facilitators." (p. 50)</p>	<p>Qualitative: Grounded theory used semi-structured interviews.</p> <p>UK</p> <p>Sample: Nine faculty members within nursing, PT, OT, SW and midwifery from one university.</p> <p>SMS: 3 (medium)</p>	<p>IPF Strategies</p> <p><i>Role-modeling</i></p> <ul style="list-style-type: none"> • Role- modeling IP collaboration and challenging professional stereotypes enhances IPF effectiveness. <p><i>Self-reflection</i></p> <ul style="list-style-type: none"> • Demonstrating self-reflection in IPE enhances IPF effectiveness. <p><i>Story-telling</i></p> <ul style="list-style-type: none"> • Drawing on past-experiences of IP collaboration enhances IPF effectiveness. <p><i>Student engagement</i></p> <ul style="list-style-type: none"> • Valuing individual IP learner contributions and flexibility in IPF approach enhances student engagement. <p>IPF Training</p> <p><i>Preparation</i></p> <ul style="list-style-type: none"> • Preparation of clinical anecdotes health science students can relate to enhances effectiveness of IPF. <p><i>IPE KSA</i></p> <ul style="list-style-type: none"> • IP facilitators commitment to IPE and awareness of IPE curriculum, context and principles enhance IPF effectiveness <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • Managing potential conflict between professional groups is critical in creating safe learning environments.
<p>Hall & Zierler (2015)</p> <p>Interprofessional Education and Practice Guide No. 1:</p>	<p>"This guide describes the processes used to prepare the faculty for this work and summarizes the lessons learned</p>	<p>Non- empirical theoretical article</p> <p>USA</p>	<p>IPF Strategies</p> <p><i>Role-modeling</i></p> <ul style="list-style-type: none"> • IP facilitators should model collaboration, reflection, shared decision making and respect for each professions unique contributions. <p><i>Active group work</i></p>

Developing faculty to effectively facilitate interprofessional education	through this project.” (p. 3)		<ul style="list-style-type: none"> • Small group activities where students are asked to apply IPE competencies to relevant clinical problems can provide students with experiential learning opportunities. <p>IPF Training <i>IPE KSA</i></p> <ul style="list-style-type: none"> • IP facilitators need a comprehensive understanding of IPE KSA in order to mirror those competencies to students. <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • IP facilitators should be aware of the mix of health science students in the IPE session to ensure inclusion of all groups.
LeGros, Amerongen, Cooley, Schloss (2015) Using learning theory, interprofessional facilitation competencies, and behavioral indicators to evaluate facilitator training	“To apply findings from exploratory studies, learning theory and IPF competencies to develop an IPF training curriculum.” (p. 597)	<p>Mixed Methods: Online surveys that included quantitative and qualitative questions. Data from these surveys informed follow up facilitator focus groups.</p> <p>USA</p> <p>Sample: 21 faculty members within nursing, pharmacy and medicine the University of Arizona.</p> <p>SMS: Quant: 2 (low) Qual: 3 (medium)</p>	<p>Prior to training, IP facilitators perceived the following aspects of IPF to be important:</p> <p>IPF Training <i>Preparation</i></p> <ul style="list-style-type: none"> • Rehearsing IPE session content and discussing learning activity logistics before sessions. <p><i>Time management</i></p> <ul style="list-style-type: none"> • Giving clear instructions and keeping activities on track. <p><i>Role understanding</i></p> <ul style="list-style-type: none"> • Knowing the differences between general and IPF. <p>After training IP facilitators felt confident in their ability to:</p> <p>IPF Strategies <i>Co-facilitation</i></p> <ul style="list-style-type: none"> • Model IP collaborative practice and demonstrate positive interactions with facilitator team. Confirmed by student perceptions. <p><i>Active group learning</i></p> <ul style="list-style-type: none"> • Use interactive learning methods and guide student through activities. <p><i>Recognizing teachable moments</i></p>

			<ul style="list-style-type: none"> • Invite students to seek opinions from each other, identify and work through professional differences in a spirit of openness and collaboration. IP facilitators saw less opportunity for this than students. <p>IPF Training <i>IPE KSA</i></p> <ul style="list-style-type: none"> • Describe why IPE is important/explain how IP collaboration can enhance patient centered care. Student's perceptions supported this finding. <p><i>Role understanding</i></p> <ul style="list-style-type: none"> • Use general facilitator language to keep conversations on track.
Loversidge & Demb (2015) Faculty perceptions of key factors in interprofessional education	"The study aimed to improve our understanding of faculty perceptions, by exploring the experiences of medical and nursing faculty helping pre-licensure students learn to collaborate interprofessionally and prepare for teamwork." (p. 298)	Qualitative: Phenomenology USA Sample: Thirty-two faculty members from three universities. SMS: 4 (high)	<p>IPF Strategies <i>Role-modeling</i></p> <ul style="list-style-type: none"> • Respectful communication focused on information sharing, problem solving and goal attainment enhances IPE effectiveness. <p><i>Recognizing teachable moment</i></p> <ul style="list-style-type: none"> • Taking advantage of teachable moments engage health science students together. <p><i>Storing telling</i></p> <ul style="list-style-type: none"> • Sharing authentic experiences were the most powerful drivers of IPE. <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> • The use of narrative reflection helps students explore complex IP dynamics.
Williams, Brown, Mckenna, Palermo, Morgan,	"To examine the attitudes towards, and readiness for, IPE of students from eight different health disciplines at two	Quantitative; non controlled descriptive case study Australia	<p>Student Perceptions</p> <ul style="list-style-type: none"> • Teamwork skills are vital for practice. • Effective teamwork requires trust and respect among students. • IPE enthusiasm wanes as students advance in their programs.

Brightwell (2015) Students Attitudes Toward Interprofessional Learning: A Comparison Between Two Universities	Australian universities.” (p. 201)	Sample: Convenience Sample of 1 st -4 th year students enrolled in one of eight undergraduate courses from 2 universities. SMS: 2 (low)	
Blakeney, Pfeifle, Jones, Hall, Zierler (2016) Findings from a mixed-methods study of an interprofessional faculty development program	“To explore whether faculty were satisfied with the IPE faculty development program, believed the program was effective in developing the KSA in designing, implementing and evaluating IPE and planned to continue IPE and faculty development.” (p. 83)	Mixed Methods: Online surveys and semi-structured interviews USA Sample: 40 faculty members from eight education institutes were intentionally drawn (purposive sampling). SMS: Quant: 2 (low) Qual: 3 (medium)	IPF Strategies <i>Self-reflection</i> • IP facilitators need to consider their actions and words in reinforcing discipline related hierarchies. <i>Active group learning</i> • Immersive, active learning approaches enhance IPF effectiveness. • Group work promotes in-depth discussions among health science students.
Reeves, Pelone, Hendry, Lock, Marshall, Pillay & Wood (2016) Using a meta-ethnographic approach to explore the	To present a synthesis of qualitative evidence on the facilitation of IPE using a meta-ethnographic approach.” (p. 1221)	Meta-ethnography UK Sample: 12 studies included. Geographic settings included; UK, Canada, Australia, Denmark, Sweden and Vietnam. IPE delivered	IPF Strategies <i>Co-facilitation</i> • The use of co-facilitation can improve collaboration between IP facilitators. <i>Story-telling</i> • Drawing on previous experience enhances IPF effectiveness. <i>Student engagement</i>

nature of facilitation and teaching approaches employed in interprofessional education		in a classroom, clinical, online and simulation learning environment. SMS: 4 (high)	<ul style="list-style-type: none"> Shared reflection, instruction/feedback, exploring different knowledge domains, roles/responsibilities, displaying humor, enthusiasm and empathy improve student learning and engagement. <p>IPF Training <i>IPE KSA</i></p> <ul style="list-style-type: none"> IPF training programs should include the importance of framing patient care decisions as collective process.
Watkins, K. (2016) Faculty development to support interprofessional education in healthcare professions: A realist synthesis	“The purpose of this article is to synthesize the relevant evidence to describe how mechanisms of IPE faculty development programmes interact with contextual factors to achieve desired programme outcomes.” (p. 696)	Realist synthesis USA Sample: 15 articles/book chapters included. SMS: 2 (low)	<p>IPF Strategies <i>Self-reflection</i></p> <ul style="list-style-type: none"> IP facilitators can use self-reflection to improve IPE KSA. <p>IPF Training <i>IPE KSA</i></p> <ul style="list-style-type: none"> IP facilitators should feel confident in IPE KSA <p>Culturally Safe Learning Environment</p> <ul style="list-style-type: none"> Valuing diversity of participants, professions, roles and responsibilities can help create a culturally safe learning environment. Managing diverse groups and facilitating positive relations can help create a culturally safe learning environment.
Michalec, Giordano, Pugh, Areson & Spreakman (2017) Health Professions’ Students’ perceptions of their IPE program	“This case study explores potential barriers and facilitators to students’ engagement with IPE.” (p. 10)	Qualitative Exploratory Case Study USA Sample: 20 students from one health college in six health disciplines (medicine, nursing, PT, OT, pharmacy) at the end of year 1 and 2 of their programs.	<p>Students perceptions of the IPE program:</p> <ul style="list-style-type: none"> Student’s liked interacting with other health science students and found informal interactions most satisfying. Students viewed assignments as “busy” work and reported lack of feedback. Students would prefer assignments/ activities that facilitate collaboration and problem solving rather than siloed work beside one another. Students reported a lack of accountability, feedback and evaluation, which led to apathetic attitudes towards IPE. Some IP facilitators perpetuated stereotypes of professions and did not role model IP collaboration effectively.

		SMS: 3 (medium)	<ul style="list-style-type: none"> • Lack of understanding of their own role led to difficulty understanding the role of other health professions.
<p>Milot, Museux & Careau (2017)</p> <p>Facilitator training program: The Université Laval Interprofessional Initiative</p>	<p>“The article describes the impacts of an IPE facilitator program perceived by 22 IPE facilitators at the University of Laval. It outlines recommendations based on their pedagogical challenges and needs.” (p. 202)</p>	<p>Qualitative; Descriptive Case Study</p> <p>Canada</p> <p>Sample: 22 facilitators within OT, PT, nursing, SW and kinesiology at one university.</p> <p>SMS: 2 (low)</p>	<p>IPF Strategies</p> <p><i>Active group learning</i></p> <ul style="list-style-type: none"> • IP facilitators can foster learning through experience and guide students to find their own solutions. <p><i>Student engagement</i></p> <ul style="list-style-type: none"> • Valuing student participation, knowledge and experience can enhance student engagement. • Giving positive feedback to those who demonstrate a strong ability to collaborate can enhance student engagement. • Asking open-ended questions, rephrasing and summarizing student contributions can form a positive facilitator-learner relationship. • When addressing poor student behavior identifying and addressing the need rather than criticizing the behavior can enhance student engagement. • Showing empathy for student’s workload by modifying expectations and pace without losing sight of learning outcomes can enhance student engagement. • Showing flexibility increases student’s motivation and engagement. <p>IPF Training</p> <p><i>Time management</i></p> <ul style="list-style-type: none"> • Less emphasis on the rigidity of the schedule and rather allowing for uniqueness in the knowledge formed by the group enhances IPF effectiveness. <p><i>Role understanding</i></p> <ul style="list-style-type: none"> • IPF training programs should include the difference between facilitation and traditional teaching methods for IP facilitators to understand their role and expectations.

			<ul style="list-style-type: none"> When IP facilitators explain their role at the beginning of the session, they receive less resistance from students when they pose questions asked to them back to students for further discussion.
<p>Ratka, Zorek & Meyer (2017)</p> <p>Overview of Faculty Development Programs for Interprofessional Education</p>	<p>“To describe characteristics of faculty development programs designed for facilitate interprofessional education implementation, and to compile recommendation for development, delivery, and assessment of development activities for faculty engaged in IPE.” (p. 2)</p>	<p>Literature Review</p> <p>USA</p> <p>Sample: 17 articles identified for inclusion and represented programs from USA, UK, Canada and Australia. Articles were descriptive in nature or included quantitative or qualitative assessment data.</p> <p>SMS: 1 (low)</p>	<p>IPF Training</p> <p><i>Preparation</i></p> <ul style="list-style-type: none"> There is a need for more teaching tools and strategies to prepare educators for IPF. <p><i>IPE KSA</i></p> <ul style="list-style-type: none"> Effective IPF training programs should include the importance of IPE and collaborative practice. <p><i>Role understanding</i></p> <ul style="list-style-type: none"> Key components of an effective IPF training program includes role understanding and group facilitation skills.

Note. Scientific merit scores (SMS) are defined as: 1 or 2 (low), 3 (medium) and 4 (high).

Quality Appraisal Summaries

Quantitative appraisal. Two descriptive correlational articles (Williams et al., 2015; Davis et al., 2014) received a SMS of two (low). Both studies used non-probability sampling with no power analysis, which brings into question the representativeness of the sample and therefore the generalizability of the results (Polit & Beck, 2014). Williams et al. (2015) used data collection tools with low internal consistency coefficients threatening the internal validity of the study. Davis et al. (2015) used a tool with high internal consistency increasing the internal validity of the study results. However, there was a low response rate in the post assessment, threatening internal validity. Both studies used self-reporting Likert scale tools, which increased the risk of social desirability bias, yah and nah sayer bias decreasing the internal validity of the studies.

Mixed method appraisal. Two mixed method studies (Blakeney, Pfeifle, Jones, Hall & Zierler, 2016; LeGros et al., 2015) went under quantitative and qualitative quality review. Both articles received a quantitative SMS of two (low). Both studies used non-probability sampling, no power analysis and small sample sizes threatening the representativeness of the sample and generalizability of results. Both studies used non-validated self-reporting Likert scale tools, which increased the risk of social desirability and yah and nah sayer bias threatening the internal validity of the studies. Legros et al. (2015) had a low response rate for their online survey threatening the internal validity of the study. Both articles received a qualitative SMS of three (medium). Both studies had satisfactory background reports, problem statements and relevant literature reviews. Both articles used purposive sampling, increasing the representativeness of the sample and generalizability of the results (Polit & Beck, 2014). Both studies had small sample sizes and data saturation was not mentioned threatening credibility and dependability of the

results (Polit & Beck, 2014). Triangulation was used in both studies to validate study conclusions and to enhance credibility (Polit & Beck, 2014). Both studies outlined data collection and analysis steps to maintain trustworthiness of data but no audit trail was mentioned in either study.

Qualitative appraisal. Five qualitative articles went under quantitative quality review. Loversidge and Demb (2015) received a SMS of four (high) for the following reasons: the use of purposive sampling, sound description of data collection, use of reflective journaling, triangulation and member checking, no mention of data saturation but rich descriptive data was presented.

Three articles (Derbyshire et al., 2015; Michalec, Giordano, Pugh, Arenson and Speakman, 2017; Ruiz et al., 2013) received a scientific rating score of three (medium). Derbyshire et al. (2015) used purposive sampling which increased representativeness of the sample and transferability of the results (Polit & Beck, 2014). Data saturation was reached increasing the credibility and dependability of the results. However, a better description of the setting, participants and research methods was needed to enhance generalizability. Michalec et al. (2017) used stratified randomized sampling to increase representativeness of the sample and transferability of results. Clear data collection and analysis processes were outlined increasing dependability of results. There were no means of validating data and data saturation was not mentioned threatening credibility of study results. Ruiz et al. (2013) used convenience sampling limiting the representativeness of the sample and transferability of results (Polit & Beck, 2014). Credibility and dependability of the results were enhanced by data saturation, an audit trail and description of data collection and analysis processes.

Milot, Museux and Careau, (2017) received a scientific rating score of two (low). Sample methods were not described and limited transparency in data collection and analysis processes

were provided decreasing the credibility, dependability and transferability of results (Polit & Beck, 2014).

Systematic review appraisal. Three systematic reviews (Reeves & Pelone et al., 2016; Watkins, 2016; Ratka, Zorek & Meyer, 2017) clearly stated their research problem/question, defined concepts and reported selection criteria. Reeves and Pelone et al. (2016) used a meta-ethnographic approach and received a SMS of four (high). The authors used supplementary search methods (hand and reference searching). The authors clearly outlined their inclusion/exclusion criteria and presented search results on a PRISMA flow diagram. A comprehensive sample was obtained and selected articles were appraised for quality. Methods for pooling and reviewing data were provided which increased trustworthiness of conclusions drawn. Limitations and implications to further research were clearly addressed.

Watkins (2016) used a realist synthesis approach and received a SMS of two (low). Ancestry searching, manual searches and contacting experts in the field to locate key articles for inclusion was employed. The inclusion/exclusion criteria was unclear making it difficult to discern how articles were selected. Appraisal of selected articles was mentioned, however methods were unclear. Methods for pooling and analysing data were described and conclusions drawn were linked well to the original research question. A limited research time frame and the use of one reviewer threatened the credibility and generalizability of review results.

Ratka et al. (2017) used a literature review approach and received a SMS of one (low). The inclusion/exclusion criteria was unclear making it difficult to follow how articles were selected. Database searching was the only strategy used to obtain articles for review and yielded a small sample of studies. Their non-comprehensive search decreased the generalizability of the

literature review results. The literature review lacked transparency in data collection and analysis methods threatening the trustworthiness of results.

Non-empirical appraisal. Two non-empirical articles went under quality review. For both articles (Khalili et al., 2013; Hall & Zierler, 2015) key quality appraisal concerns were the credibility of the educators and the lack of evidence to support major conclusions. Both articles referenced existing literature throughout, supporting credence of recommendations and conclusions drawn. Hall and Zierler (2015) did not defend any incongruences with literature sources, which could indicate non-comprehensiveness and gaps in the review. Alternatively, Khalili et al. (2013), logically defended incongruences with appropriate literature support and drew conclusions from comprehensive and transparent processes. It was difficult to tell how the Hall and Zierler (2015) arrived at lessons learned but their recommendations were well supported by extant literature.

Data Analysis

A constant comparison method was used to convert extracted data into systematic categories to distinguish patterns, themes, variations and relationships (Whittemore & Knafl, 2005). My data analysis process revealed four main themes: Interprofessional Facilitation Strategies, Interprofessional Facilitation Training, Culturally Safe Learning Environments and Student Perceptions of IPE. Table 3 indicates a major or minor focus of each theme and sub-theme with each corresponding article. A narrative description of the findings is outlined below Table 3.

Table 3: Effective Interprofessional Facilitation Themes				
Author	Theme 1: IPF Strategies <i>Subthemes: Role-modeling Co-facilitation Self-reflection Active group learning Recognizing teachable moments Story telling Student engagement</i>	Theme 2: IPF Training <i>Subthemes: Preparation IPE KSA Time management Role understanding</i>	Theme 3: Culturally Safe Learning Environment	Theme 4: Student Perceptions of IPE
Khalili et al. (2013)	x	x	X	
Ruiz et al. (2013)	X		x	
Davis et al. (2014)		X		
Derbyshire et al. (2015)	X	X	x	
Hall & Zierler (2015)	x	x	x	
LeGros et al. (2015)	x	X		
Loversidge & Demb (2015)	X		x	
Williams et al. (2015)				X
Blakeney et al. (2016)	x			
Reeves et al. (2016)	X	x		
Watkins (2016)	x	x	x	
Michalec et al. (2017)				X
Milot et al. (2017)	X	X		
Ratka et al. (2017)		X		
Total	10	9	6	2

Note: **X** = major focus, **x** = minor focus

Theme 1: Interprofessional Facilitation Strategies

Interprofessional facilitation strategies was a common theme appearing in ten articles. Under this theme were seven sub-themes or specific strategies: role modeling, co-facilitation, self-reflection, active group learning, recognizing teachable moments, story-telling and student engagement.

Role Modeling. Role modeling during IPF was a common theme appearing in three articles (Khalili et al., 2013; Hall & Zierler, 2015; Loversidge & Demb, 2015). IP facilitator role modeling is demonstrating to students; collaborative problem solving and decision-making, sharing information and goals, and respectful behavior and communication (Hall & Zierler, 2015; Loversidge & Demb, 2015). One non-empirical article by Hall and Zierler (2015) created a guide to an IPE faculty development program and the key lessons learned. The authors highlighted that IP facilitators must role model IP principles that are being taught to students. The facilitation approach should demonstrate collaboration, reflection, shared-decision making and respect for each professions' unique contributions. Loversidge and Demb (2015) studied faculty perceptions of key factors in IPE with a phenomenological qualitative approach. Faculty perceptions of skilled IPF was an ability to mentor and role-model respectful communication focused on information sharing, problem solving and goal attainment. Khalili et al. (2013) described stages of developing an IP collaborative identity within health science students in a non-empirical theoretical article. During stage 2: Interprofessional role learning; the authors described the importance of IP facilitators role-modeling collaborative behaviors to facilitate IP role development among health science students.

Co-facilitation. Co-facilitation was a subtheme under IPF strategies appearing in three articles (Ruiz et al., 2013; LeGros et al., 2015; Reeves & Pelone et al., 2016). Co-facilitation is a

pairing of faculty or clinicians from different health science backgrounds who prepare for and facilitate an IPE session together. Co-facilitation creates opportunity for IP facilitators to collaborate and role model IP collaboration for students. Ruiz et al. (2013) aimed to identify strategies and behaviors of IP facilitators in a quantitative exploratory case study. The authors observed that co-facilitation provided an opportunity for IP facilitators to model respectful communication for students. Reeves and Pelone et al. (2016) used a meta-ethnographic approach to synthesize the qualitative evidence of IPF. The authors found the use of co-facilitation improved IP facilitator's ability to role model a value for differing professional perspectives and framing patient care decisions as a collective process. LeGros et al. (2015) used a mixed methods approach to evaluate IP facilitator's perceptions of their own ability to facilitate IPE after an IPF training program. The authors found after IPF training, IP facilitators felt they could model IP collaborative practice by demonstrating positive interactions with their co-facilitator.

Self-reflection. Self-reflection was a subtheme under IPF strategies appearing in three articles (Derbyshire et al., 2015; Blakeney et al., 2016; Watkins, 2016). Self-reflection for IP facilitators involves assessing personal biases towards other healthcare professions that may perpetuate stereotypes. The goal for IP facilitators is to maintain professional neutrality and not champion one profession over another (Shrader et al., 2016). Self-reflection and awareness of the hidden curriculum can help improve IP facilitator's ability to role model IP collaboration for their students. The hidden curriculum are the values, behaviors and attitudes educators emulate while teaching students. Watkins (2016) used a realist synthesis approach to synthesize relevant evidence to describe faculty development to support IPE. Watkins (2016) found effective IP facilitators use self-awareness and reflection to be positive role models for students. Derbyshire et al. (2015) used a qualitative grounded theory approach to study university educators'

perceptions of their role adequacy in facilitating classroom based IPE. Educators perceived effective IP facilitators use self-reflection to improve their ability role model IP collaboration to students. Blakeney et al. (2016) used a mixed methods approach to explore faculty perceptions of an IPE faculty development program. Faculty reported value in awareness of the hidden curriculum and sending unintentional messages about their own profession through hierarchical communication styles. Derbyshire et al. (2015) found IP facilitators need to be aware and able to challenge professional stereotypes respectfully during IPE sessions.

Active group learning. Active group learning was an IPF strategy appearing in four articles (Hall & Zierler, 2015; LeGros et al., 2015; Blakeney et al., 2016; Milot et al., 2017). Active group learning is when health science students are given the opportunity to engage in an exercise where they have to collaborate and problem solve in an IP group. LeGros et al. (2015) found IP facilitators perceived importance in their ability to utilize interactive learning methods and felt confident in these skills after IPF training. Blakeney et al. (2016) found during qualitative interviews faculty reported value in an immersive, active learning approach to IPE delivery. Faculty also reported value in group work and having in-depth discussions with other health professions. Milot et al. (2017) studied faculty perceptions of the impact of an IP facilitator program. Faculty perceived importance in knowing how to foster learning through experience by guiding students to find their own solutions. Hall and Zierler (2015) suggested the use of small group, case based scenarios for application of IP KSA to build experiential knowledge. Khalili et al. (2013) also support having health science students practice IP competencies in case based scenarios.

Recognizing teachable moments. Recognizing teachable moments was a subtheme under IPF strategies appearing in two articles (LeGros et al., 2015; Loversidge & Demb, 2015).

Teachable moments are when IP facilitators invite students to seek opinions from other students, identify professional differences in a positive manor and help students work through differences in a spirit of openness and collaboration (Legros et al., 2015). Legros et al. (2015) found IP facilitators perceived importance in recognizing teachable moments and some IP facilitators perceived an improvement in their ability to recognize teachable moments after IPF training. Loversidge and Demb (2015) found faculty perceived a key factor in IPF is taking advantage of teachable moments by opportunistically prompting dialogue to engage students together.

Story-telling. Story-telling was a subtheme under IPF strategies appearing in four articles (Ruiz et al., 2013; Derbyshire et al., 2015; Loversidge & Demb, 2015; Reeves & Pelone et al., 2016). Story-telling is IP facilitator sharing relevant past experiences to help students make meaningful connections to collaborative practice. Derbyshire et al. (2015) looked at faculty perceptions of IP facilitator role adequacy. Faculty perceived an importance in drawing on past-experiences of IP collaboration from prior IPI learning, professional, educational and personal experience. Loversidge and Demb (2015) found faculty perceived sharing authentic experiences as the most powerful drivers of IPE. Reeves and Pelone et al. (2016) presented a synthesis of the qualitative evidence on IPF and found drawing on past-experiences to be an effective IPF strategy. Ruiz et al. (2013) explored the nature of IPF in an exploratory case study and observed IP facilitators sharing relevant personal experiences to enhance effectiveness of IPF.

Student engagement. Student engagement strategies is a subtheme under IPF strategies appearing in five articles (Ruiz et al., 2013; Derbyshire et al., 2015; Reeves & Pelone, 2016; Milot et al., 2017; Ratka et al., 2017). Ruiz et al. (2013) explored the pedagogical strategies and behaviors of IP facilitators in a qualitative exploratory case study. The authors observed two techniques to encourage students participation; waiting for a response and positive

reinforcement. Silence made students uncomfortable; however, someone eventually spoke up to trigger a discussion. Positive reinforcement of relevant student contributions motivated students to either continue to participate or to contribute to the discussion. Milot et al. (2017) described recommendations from IP facilitators based on their pedagogical challenges and needs. IP facilitators perceived they could increase student engagement by valuing student participation, knowledge and experience. IP facilitators perceived effectiveness in frequently questioning, rephrasing and summarizing student's contributions to form a positive facilitator-learner relationship. IP facilitators perceived value in asking open-ended questions to trigger discussion based in course content. IP facilitators' perceived a successful way of dealing with students poor behavior was identifying and addressing the students' need rather than criticizing the behavior. Both Derbyshire et al. (2015) and Milot et al. (2017) found IP facilitators perceived importance in valuing individual learner contributions and giving positive feedback to those who showed a strong ability to collaborate. Derbyshire et al. (2015) and Milot et al. (2017) found IP facilitators perceived demonstrating flexibility in their approach and showing empathy for student workload seemed to increase student's motivation. Reeves and Pelone et al. (2016) presented a qualitative synthesis of IPF evidence. The authors found shared reflection, instruction and feedback, exploring different knowledge domains, roles and responsibilities, displaying humor, enthusiasm and empathy increased student engagement during IPE sessions.

Theme 2: Interprofessional Facilitation Training

The need for IPF training was a common theme appearing in nine articles (Khalili et al., 2013; Davis et al., 2014; Derbyshire et al., 2015; Hall & Zierler, 2015; LeGros et al., 2015; Reeves & Pelone et al., 2016; Watkins, 2016; Milot et al. (2017); Ratka et al., 2017). Under this theme are four subthemes: preparation, IPE knowledge, skills and attitudes (KSA), time

management and role understanding. These subthemes are recommended components of an IPF training program.

Preparation. Preparation was a subtheme under IPF training appearing in three articles (Davis et al., 2014; Derbyshire et al., 2015; LeGros et al., 2015). Recommendations for how IP facilitators can best prepare for IPE sessions should be included in IPF training programs. Derbyshire et al. (2015) found IP facilitators perceived a benefit to preparing for each specific IPE session to enhance their role adequacy. For example, being aware of the mix of health science students in the IPE session and preparing relatable clinical anecdotes to ensure credibility and inclusivity. LeGros et al. (2015) found faculty perceived importance in practicing and discussing learning activities prior to their IPE session. Ratka et al. (2017) described the characteristics of faculty development programs and compiled recommendations for IPF development in a systematic review. The authors identified a need for more teaching tools and strategies to prepare faculty to deliver IPE.

IPE KSA. IPE KSA was a subtheme under IPF training appearing in eight articles (Khalili et al., 2013; Davis et al., 2014; Derbyshire et al., 2015; Hall & Zierler, 2015; LeGros et al., 2015; Reeves & Pelone et al., 2016; Watkins, 2016; Ratka et al., 2017). IPE KSA should be incorporated into an IPF training program. The Canadian Interprofessional Competency Framework outlines the KSA of IPE and collaborative practice (CIHC, 2010). Four studies (Khalili et al., 2013; Derbyshire et al., 2015; Hall & Zierler; Watkins, 2016) found IP facilitators must have a strong understanding and ability to emulate IPE KSA. Watkins (2016) found IP facilitators must feel confident in their understanding of IPE KSA in order to effectively facilitate IPE sessions. Derbyshire et al. (2015) found university educators perceived a need to understand IPE curriculum, context and principles to ensure IP facilitator role adequacy. Hall

and Zierler (2015) recommend IP facilitators have a strong grasp of IPE KSA in order to mirror those competencies to students. Khalili et al. (2013) state during stage two: IP role learning, IP facilitators need to focus on delivering the IP collaboration competencies to health science students.

Two studies (Davis et al., 2014; LeGros et al., 2015) found IPF training improved IP facilitator's self-concept in IPE KSA. Davis et al. (2014) found IP facilitators left the two-hour IPF training session with higher self-concept scores on IP KSA required to function as an IP facilitator. LeGros et al. (2015) found after IPF training, IP facilitators and students perceived IP facilitators had the knowledge and skills to describe the importance of IPE and patient-centered collaborative practice.

Three studies (Watkins, 2016; Reeves & Pelone et al. 2016; Ratka et al., 2017) found importance in specific IP attitudes and approaches to adopt during IPF. Watkins (2016) and Reeves and Pelone et al. (2016) found IP facilitators should adopt the attitude of valuing students' future professions, roles, responsibilities, and frame patient care decisions as a collective process. Ratka et al. (2017) recommended IP facilitators have an appreciation and positive attitude towards IPE and collaborative practice for effective delivery.

Time management. Time management was a subtheme under IPF training appearing in two articles (LeGros et al., 2015; Milot et al., 2017). Time management is the ability of an IP facilitator to cover material and direct conversation to deliver an IPE session in the allotted time frame. LeGros et al. (2015) found faculty perceived time management as an important element to IPF. After IPF training, IP facilitators felt they could give clear instructions and keep activities and discussions on track. In contrast, Milot et al. (2017) interviewed an IP facilitator who

reported less importance of a rigid schedule and preferred to allow time for contributions and discussions unique to each IPE group.

Role understanding. IP facilitator role understanding was a subtheme under IPF training appearing in three articles (LeGros et al., 2015; Milot et al., 2017; Ratka et al., 2017). IPF training programs should include description and facilitation strategies associated with the role of an IP facilitator. Ratka et al. (2017) identified key components of effective IPF training programs, which included role understanding and group facilitation skills. Milot et al. (2017) found after IPF training, IP facilitators perceived a better understanding of the differences between facilitation and teaching. LeGros et al. (2015) found after IPF training, IP facilitators perceived better awareness of the differences between general facilitation and IP facilitation. Milot et al. (2017) found faculty perceived explaining their role as an IP facilitator at the beginning of IPE sessions seemed to lessen student frustrations when questions were posed back to the group rather than giving students an answer.

Theme 3: Culturally Safe Learning Environments

Creating and managing a culturally safe learning environment unique to IPE was a common theme appearing in six articles (Khalili et al., 2013; Ruiz et al., 2013; Derbyshire et al., 2015; Hall & Zeirler, 2015; Loversidge & Demb, 2015; Watkins, 2016). Creating a culturally safe learning environment involves making health science students feel safe and comfortable to participate as well as managing IP dynamics/conflicts should they arise.

Ruiz et al. (2013) identified pedagogical strategies and behaviors unique to IPF in a qualitative exploratory case study. The authors found IP facilitators used a variety of strategies to create a safe and engaging learning environment. IP facilitators used a respectful tone of voice, answered questions politely, listened attentively to comments and did not dismiss opinions expressed by

students. IP facilitators set the tone by reminding students to be respectful of ideas and opinions of others. Hall and Zierler (2015) suggested IP facilitators address all groups of health science students in IPE sessions to avoid favouring or excluding some groups. Khalili et al. (2013) found creating an environment conducive to reflection and collaborative teamwork allowed students to begin developing an IP identity.

IP facilitators need to be comfortable facilitating diverse groups, which includes managing differences, facilitating positive relations and establishing trust among IPE participants (Watkins, 2016). Khalili et al. (2013) found IP facilitators need to challenge common misconceptions or stereotypes of other health professions to help create a culturally safe learning environment. Loversidge and Demb (2015) found faculty perceived the use of narrative reflection helped students explore complex IP dynamics. While exploring these dynamics, Derbyshire et al. (2015) found faculty perceived IP facilitators need to have skills in managing conflict that could potentially arise within IP groups.

Theme 4: Student Perceptions of Interprofessional Education

Student perceptions of IPE was a common theme appearing in two articles (Williams et al., 2015; Michalec et al., 2017). By considering student perceptions of IPE programs, IP facilitators can better meet student learning needs and improve IPE engagement/ buy-in. Williams et al. (2015) examined student's attitudes and readiness towards IPE in a descriptive case study. Students perceived trust and respect as important to effective working groups and teamwork skills vital for IP learning. Students perceived IPE would improve their teamwork skills and overall effectiveness as a future health care provider. Williams et al. (2015) found as students advanced into their programs they were less enthusiastic about IPE. Michalec et al. (2017) explored potential barriers and facilitators to IPE student engagement in a qualitative

exploratory case study. The authors found that students liked interacting with other health science students and found the informal interactions most satisfying. Students' perceived assignments as "busy work" and reported lack of feedback, accountability and evaluation associated, which led to apathetic attitudes towards IPE. Students perceived difficulty in understanding the roles of other health professionals due to their lack of understanding of their own professional role. Students perceived that some IP facilitators perpetuated stereotypes of health professionals and did not role model IP collaboration effectively.

Chapter Four: Implications

Implications for education, practice, policy and research associated with effective IPF will be discussed below.

Implications for Education

Representatives from the British Columbia Ministries of Health (MoH) and Advanced Education are collaborating on a vision to improve team based care and IP collaboration in healthcare delivery (BC Ministry, 2018). Adrian Dix, the Minister of Health, has made numerous public statements regarding IP team-based delivery models to decrease fragmentation and increase access to primary care (BC Ministry, 2018). In the Nursing Policy Consultation Report, David Byres, the Chief Nursing Executive for the MoH, recommended employing an IPE model in entry to practice health-science education programs whenever possible to increase the effectiveness of team based care following graduation (Byres, 2018). Byres (2018) recommended having input from practice, education, operations, regulation and government to integrate an IPE model. Most recently, a provincial practice education working group was formed to create an IPE model for health science education programs in British Columbia (D.B, personal communication, October 30th, 2018). This provincial practice education working group is made up of representatives from policy, practice, education and research. Recommendations from this integrative review findings will be directed at the provincial practice education working group. An IPE model should include how faculty will be supported in the delivery of IPE (WHO, 2010; CASN, 2014). Findings from this study can help inform policy representatives on effective IPF for a new, province-wide IPE model.

Implications for Nursing Practice

Interprofessional collaboration is a requirement under the Health Professionals Act (HPA), which states that all twenty health profession regulatory bodies must “Enhance interprofessional collaborative practice between its registrants and persons practicing in another profession.” (HPA, 2018, part. 2 sec. 16) The British Columbia College of Nursing Professionals (BCCNP) regulatory functions include “Promoting and enhancing interprofessional collaborative practice between nurses and other health professionals.” (para. 4) The BCCNP (2018) state as a practice standard, “Entry-level registered nurse are prepared to engage in interprofessional collaborative practice, essential for improvement in client health outcomes.” (p. 4) The HPA and BCCNP use the language of promoting and enhancing IP collaborative practice and expect health professionals to have the skills to collaborate with one another. However, educational structures for health science students to build these collaborative skills are still developing. The findings of this integrative review focus on pre-licensure IP facilitation, and I will share my findings with provincial Schools of Nursing through Joanne Maclaren, who reports to David Byres within the MoH and includes nursing education within her portfolio.

Implications for Policy

In 2011, IPE was integrated into the accreditation standards of six health professions in Canada (AIPHE, 2011; Ruiz et al., 2013). The Canadian Association of Schools of Nursing (CASN) is responsible for setting standards and accreditation for nursing education curricula across Canada. An expectation from CASN is that faculty are supported in delivering IPE. The presence of faculty workshops indicate there is intuitional support for IPE (CASN, 2014). To meet CASN accreditation standards the findings of my integrative review can support the creation of an IP facilitator guide and workshop to enhance the delivery of IPE.

Implications for Research

The findings from this integrative review were based on mostly self-reported faculty and student perceptions of IPE and facilitation. While student and faculty perceptions are important to consider, only considering these perspectives reduces the objectivity of the research findings. Therefore, more observational research is recommended in order to uncover aspects of IPF that may not be possible from student and faculty perceptions alone (Reeves & Pelone et al., 2016). Further research is needed to track short-term and long-term outcomes for IPE program participants. Currently, valid and reliable metrics for short and long-term IPE outcomes have not been determined (Ratka et al., 2017).

Limitations

There are limitations to this integrative review that should be considered. Due to combining diverse methodologies (e.g., qualitative, quantitative and mixed methods) there are inherent limitations to integrative reviews that can contribute to lack of rigor, inaccuracy and bias (Whittemore & Knafl, 2005). Due to time and resource constraints, I narrowed the inclusion dates from 2013-2018, potentially excluding relevant findings from earlier work. My integrative review is limited to studies published in English and commonwealth countries, potentially excluding relevant studies outside of these parameters. I excluded articles where IPE was used in simulation, online and clinical contexts potentially missing areas where IPF is becoming more prevalent. I want to acknowledge the general bias within the publishing world to publish IPE literature that reports positive results (Reeves & Pelone et al., 2016).

Conclusion

Poor communication and collaboration between healthcare providers can lead to fragmented patient care and adverse patient outcomes (Rossen et al., 2017). Interprofessional education is linked to improved health care provider collaboration and patient outcomes (WHO, 2010; Reeves & Fletcher et al., 2016). Effective IPF is an essential component of IPE delivery and preparing health-science students to provide safe, collaborative person-centered care. This integrative review examined 14 published articles that addressed in-classroom IPE and facilitation for pre-licensure health science students. Four main themes arose: Interprofessional Facilitation Strategies, Interprofessional Facilitation Training, Creating a Culturally Safe Learning Environment and Student Perceptions of IPE. IPF strategies highlighted effective approaches to delivering IPE to a range of health science students. IPF Training highlighted the need to support educators in the delivery of IPE and components to include in training programs. Creating a culturally safe learning environment included how to make health science students feel comfortable in IP groups and managing IP dynamics. Student perceptions of IPE provided insight for IP facilitators to better meet student learning needs and enhance student engagement. My integrative review findings include evidence-based IPF recommendations that will be shared with provincial Schools of Nursing via the MoH and the IPE provincial practice working group. IP facilitators who can deliver IPE effectively will have a greater impact in preparing future practitioners to provide safe, collaborative person-centered care.

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Appendix A – Quantitative Evaluation

M= Mixed Methods		Davis et al., 2014	Le Gros et al., 2015 M	Williams et al., 2015	Blakeney et al., 2016 M
Problem Statement	Clearly defined	Y	Y	N- no clear link as to why it was important to review students attitudes and readiness for IPE	Y
	Background	Y	Y	Y	Y
Literature Review	Review Relevancy	Y	Y	Y	Y
	Documented References	Y	Y	Y	Y
Theoretical Framework	Theory linked	N	Y	N- Theories applied in earlier work mentioned but authors did not use a theory to support work	N
Study purpose	Researcher plans	Y	Y	Y	Y
	Hypothesis related to research problem	Y- that facilitator training would improve faculties KSA in IPE	Y- the application of competency-defining tools and learning theory for IPF training is a novel approach to optimize IPF training.	N- no hypothesis made	Y- participants would report satisfaction, learning, transfer, for themselves and their organization and recommend program expansion and/or continuation.

	Relationship among variables	Y- that by training faculty there would be an improvement in the KSA of IPE faculty participants.	Y- proposed relationship between training elements, IPF competencies and behavior on optimizing and increasing IPF skills in faculty.	N	N-to describe IPE initiative and summarize participant's feedback.
Definition of Terms	Defined relevant terms	N	Y	N	N
Subject Selection	Target population described	Y- mostly facilitators from nursing and medicine. 78% female.	Y- new and experienced facilitators from medicine, nursing and pharmacy were recruited.	Y- mostly first year students and from Monash university-	Y- not in a comprehensive way with no info on the demographics of the sample.
	Appropriate method for sampling	Y- non probability convenience sampling	Y- non-probability convenience sampling	Y- non-probability convenience sampling, at risk for sampling bias due to mostly females and from one university. Questionable representativeness and therefore decreased external validity.	Y- purposive sampling used to ensure there was representativeness from each institution. Then convenience sampling used when surveys were given back.

	Adequate sample size	N- No power analysis and 51 participants in total. Sm sample size.	N- 21 facilitators with 76% response rate for online survey.	UTA- No power analysis however high number of participants total= 1, 111.	N- no power analysis done; small sample size. Questionable representativeness with threats to external validity and generalizability of the study.
Ethical Considerations	Procedure for informed consent	UTA- did not mention	not required	?- verbal consent obtained after brief explanation of study.	N
	Monitoring for institutional review	Y- granted "exempt" status review board	Y	Y	Y
Research Design	Clearly identified	Y- pre test/post test quasi experimental design.	Y- mixed methods	N- Non controlled descriptive study?	Y- Mixed methods with a descriptive approach to the quantitative aspect of the study.
	Appropriate design	Y	Unsure- I find the purpose of this study hard to comprehend; lack clarity.	Y- Descriptive correlational research- looking for the relationship between student attitudes and perceptions and learning IPE.	Y
Data Collection Instruments	Strengths and Weaknesses	Weakness- compiling different tools to assess KSA of IPE.	Weak- the online survey questions were not presented in table or text. Hard to tell how the	Tool doesn't directly measure what is being discussed in the purpose of the article.	No validated tool- decreases the reliability of the study.

			questions were derived. Strength-included student observations of facilitator behaviors which was used to verify self-reporting behaviors by faculty.		
	Validity	Y- there are some validity issues with self-reporting instruments (ex-accuracy of self-assessment).	N- self assessment aspects were verified by student comments.	Self- report likert scale at risk for social desirability bias (SDB), yea and nay sayers which could decrease internal validity.	N
	Reliability	Y- cronbach alpha internal consistency scores 0.94 or higher	N- behaviors were assessed on a likert scale and verified with student open comments	N- alpha co-efficient scores lower than 0.8 on 2/4 subscales	N- no validated tool and "yes" or "no" responses which could result in SDB, yeah and nah sayers.
Data Collection Procedures	Steps in data collection	Y- clearly outlined in a comprehensive way.	Y	Y- data collection procedures were described in a non detailed or comprehensive fashion.	Y
Data Analysis	Tested hypothesis	Y	Y	N- Descriptive research	Y
	Clear/labeled tables and figures	Y	Y	Y	Y

Discussion	Findings related to study purpose	Y	Y	Partially- Student attitudes reported on but not student readiness for IPE.	Y
	Limitations discussed	Y	Y	Y	Y
	Recommendations	Y	Y	N	Y
Scientific Merit Score	1-4	2- Small sample size with mostly nursing and physician facilitators, low response rate for post assessment (78%). Non response bias threatening internal validity.	2- small sample size, low response rate, non disclosure of online survey questions, self reported with could introduce bias in how someone sees themselves.	2- Issues with internal validity; non probability sampling with questionable representativeness of sample, two universities only, no power analysis to know if sample size is adequate, self reporting liker scale which had low reliability scores and threats to internal validity with social desirability bias, yea and nay sayers.	2- Small sample with a non validated tool used. Low response rate.

Appendix B – Qualitative Evaluation

M= Mixed Methods	Qualitative Articles	Ruiz et al., 2013	Loversideg e & Demb., 2014	Derbyshire et al., 2015	Legros et al., 2015 M	Blakeney et al., 2016 M	Michalec et al., 2017	Milot et al., 2017
Problem Statement	Problem defined	Y- need to look at pedagogical strategies for teaching IPE	Y	Y	Y	Y	Y	Y
	Background presented	Y- good context of study provided	Y- short and not comprehensive	Y	Y	Y	Y	Y
Literature Review	Clear/complete references	Y	Y	Y	Y	Y	Y	Y
	Review is relevant	Y	Y	Y	Y	Y	Y	Y
Study Purpose	Purpose and plan match	Y	Y	Y	Y	Y	Y	Y
Subject Selection	Selection of participants is described	Y: limit: students in their first year.	Y	N- lack of participants description, setting not described.	Y- see table II for facilitator characteristics	Y	Y= 6 different HCP backgrounds/ disciplines	Y- participant criteria described, wide range of participants with varied experience/cr edentials.

	Sampling methods described	Y- convenience sampling used; lacks accuracy of the data	Y- purposive sampling	Y- purposive sampling	Y- purposive sampling	Y- purposive sampling	Y- stratified random sampling	N- not overtly stated.
Ethical Considerations	Monitoring by review board	Y	Y	Y	Y	Y	N	Y
Data Collection and Analysis	Appropriate methodology	Y- although not explicitly stated, seems like ethnography was used and field notes were taken from video recordings.	Y- phenomenology used to understand IPF perceptions	Y	Y- surveys after the IPE event were used to create questions for the 1 month post debrief.	Y	Y	N- unknown methodology; descriptive case study?

	Described data collection	Y	Y- included steps and ways researchers decreased bias and confirmed accuracy of information to increase internal validity.	Y	Y	Y	Y	Y- but weak description. Questionnaires filled out but no information on how data was confirmed or analyzed.
Data Analysis	Data coding procedures described	Y	Y	Y	Y	Y	Y	N
Confirmability of Findings	Credibility	Y- able to review videos for accuracy of interpretations	Y- researcher kept reflective journal, used triangulation and member checking for data accuracy	Y- the researches are all IPF therefore there experience could skew results?	Y- used self reports for facilitators and checked them against student reports on the same characteristic (triangulation) Used survey results to guide 1 month post debrief	Y- Data reviewed twice for accuracy, member checking done and triangulation done.	Y- random sampling used, comprehensive interview questions	N- lack of data checking measures, questionnaires used only

	Dependability	Y- audit trail was present	Y- steps to data collection and analysis were clearly outlined.	Y- steps to themes were clear and laid out.	Y- methods in data collection and analysis were clearly described. No audit trail mentioned however.	Y- purposive sampling, no audit trail, coding described, tracking document (same as audit trail?), researchers were also participants in IPE initiative.	N- no member checking or triangulation; data collection and analysis processes were clearly outlined.	N- lack of transparency in how data was analyzed
	Transferability	Y- data saturation was reached, limited to nursing and medicine, Hawthorne effect.	Y-no mention of data saturation however rich descriptive data presented.	Y- better description of sample needed, data saturating was reached after 9 participants	N- sm sample size, low IPE training time, no direct observation of facilitators.	Y- sm sample size, self reported data and use of volunteers as subjects.	Y- clear setting description, description of students could be more detailed, data saturation not reached.	N- lack of internal consistency so low transferability .
Discussion	In relation to relevant literature and findings	Y	Y	Y	Y	Y	Y	Y
	Consistent conclusions with interest and context	Y	Y	Y	Y	Y	Y	Y

Scientific Merit Score	1-4	3- Good data collection and analysis. Data saturation reached, audit trail described. Limits in first year students and convenience sampling used both decreasing generalizability of results.	4- Lack of background and lit review however sound structure of study, transparent about data collection and analysis, sample was clearly described.	3- sampling needed more description and methods to confirm accuracy of data would have improved credibility and transferability of study.	3- Good methodology for study. Low sample size decrease transferability of study.	3- Sm sample size, researchers as participants, questions for interviews not listed, data analysis was thorough	3- Good methodology and explanation for qual approach. Study setting well described, good data collection and analysis, sm sample size, volunteer participants could have led to those more likely to express concerns or accolades of IPE program, one ed institution. Therefore transferability should be cautioned.	2- Poor sample description, poor transferability due to decreased transparency of data collection and analysis procedures.
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Appendix C – Systematic Review Evaluation

Systematic Reviews		Reeves et al., 2016	Watkins 2016	Ratka et al., 2017
The Problem	Research problem/question stated?	Y- to review qualitative research to synthesize findings on the nature of IPE facilitation	Y- to synthesize relevant literature to describe how mechanisms of IPE FD interact with contextual factors to achieve desired programme outcomes.	Y- literature gap in IPE faculty development
	Concepts defined?	Y- facilitation and IPE	Y- IPE defined	Y- IPE and IPC both defined
	Integration approach appropriate and described?	?	?	?
Search Strategy	Selection Criteria reported?	Y- clear and comprehensive selection criteria for primary studies	Y- this process was explained clearly	Y- this could have been more specific (ex- no date range, any article with IPE FD was included)
	Data bases used and key words identified?	Y-	y- search strategy was shown in table 1	Y- data bases were identified, search strategy in text of paper
	Supplementary search efforts used?	Y- searching reference lists and hand searching.	Y- manual searches of reference lists, expert inquiries, relevant books and conference proceedings	N- no mention of ancestry searching, contacting an expert etc.
	PRISMA flow diagram used?	Y- presented in figure 1	Y- presented in figure 1	N- not in text of review
The sample	Inclusion/exclusion criteria	Y- clear inclusion/exclusion criteria	Y- again a bit vague	N- inclusion/exclusion criteria was not clearly stated.
	Comprehensive sample yielded?	Y 2821	Y- 1749 to 67 sources	N- low yielded numbers.

	Attempt to contact author for info or study excluded?	No mentioned of this	No mentioned of this	N- just mentioned that 7 articles failed to meet inclusion criteria
Quality Appraisal	Primary studies appraised?	Y- CASP tools used	Y- mention of ensuring literature matching review question, no appraisal tools used	N- no mention of quality appraisal
	How many people appraised?	Unsure?	No true appraisal done	N- no appraisal
	Appraisal information presented clearly	Y- outlined in table 2	Y- there is a section dedicated to it but methods of quality appraisal are unclear	N- no appraisal
Data Extraction	Methods/Administrative info	Y- clearly outlined in table 1	N- context of articles given but not study methods	Y- methods from reviewed studies are on table 1.
	Sample characteristics	N	n- context of study given but not details on sampling	N- no mention of sample characteristics from studies
	Findings	Y	y	Y
	Steps to increase integrity	Y- two reviewers	y- multiple review of the articles using frameworks and examples of the iterative process given.	Y- thematic analysis was carried about by three co-authors
Data Analysis	Method for pooling data	Y- Noblit and Harre (1988) approach	Y- Briggs 3 P model used	Y- use of a template to pull themes
	Analysis credible?	Y- frameworks used and multiple reviews of literature	Y- frameworks used and multiple reviews of literature	N- no analysis of data methods explained
	Effective use of tables?	Y-suggestion to include findings in table 1	Y- table 2 clear and easy to follow	Y- table 1 is clear and comprehensive
Conclusions	Reasonable conclusions drawn?	Y- rigorous methods used therefore trustworthy conclusions drawn.	Y- good link to initial research question	UTA- due to lack of transparency with analysis methods

	Limitations	Y- exclusion of grey literature and article included were written in English, known bias that only positive IPE research included.	Y- limited to time and constraints of one reviewer.	Y- low literature yield which decreases the generalizability of results. There were more limitations to mention.
	Implications and future research	Y- more research in each context of IPF in each context (classroom, online, simulation, practice placements, need to explore co-facilitation and the need to undertake observational studies of IPF rather than self reports.	Y- deeper understanding of contextual triggers, creating an expectation, building planning teams and creating leadership positions for IPE.	Y- the need for evaluative means of FD in IPE. Compare IPE FD to assess effectiveness.
Scientific Merit Score	1-4	4- Supplementary search methods used. Inclusion/exclusion criteria outlined clearly. A comprehensive sample was obtained and articles were appraised for quality. Methods for pooling and reviewing data were credible.	2- Supplementary search methods used. Inclusion/exclusion criteria was unclear. Appraisal of articles was mentioned but process was unclear. A limited time frame and use of one reviewer threatened credibility and generalizability of review results.	1- Database searching used only resulting in a incomprehensive search. Inclusion/exclusion criteria was unclear. Lack of transparency in data collection and analysis methods.

Appendix D – Non-Empirical Evaluation

Non-empirical articles		Khalili et al. 2013	Hall & Zierler 2015
Johanna Briggs Institute Critical Appraisal Checklist for Text and Opinion Papers	Source of point of view identified?	Y- the authors are clearly identified in the title of the article.	Y- the authors described lessons learned from an IPE initiative from 8 academic institutions from 2012-2013.
	Source standing in field?	N- it was difficult to tell the authors standing in the field.	N- the authors did not describe their standing or interest in IPE
	Population interests central to focus?	Y- the focus was the socialization of HCP students pre licensure	Y- describes lessons learned from faculty during an extensive IPE PD program
	Analytical process?	Y- the process and use of pre-existing theories (SIT and ICT) to support the dual identify theory. Clearly noted that the theory has not been empirically tested, therefore open to an iterative process of change.	N- It was difficult to tell the methods the authors used to come to lessons learned. It was mentioned that lessons learned emerged from faculty feedback.
	Existing literature referenced?	Y- Existing theories and literature used to support the idea of dual identity	Y- Existing literature is used throughout to support lessons learned.
	Incongruences logically defended?	Y- the incongruence between uniprofessional roles and boundaries and interprofessional dual identity was described and supported well.	No incongruences noted.