The Impact of Peer Coaching on Clinical Faculty within Health Professions Education: A Realist Evaluation on Peer Coaching as a Form of Faculty Development

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Education by Roberta June Preston.

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ABSTRACT

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Although peer coaching is gaining popularity as a form of faculty development within higher education, the related literature criticises it for weak research design and the lack of empirical evidence that supports the effectiveness of its use. Using a theory-based, realist evaluation methodology, this study addresses the research gap by examining the impact of peer coaching on clinical faculty in a health sciences education environment.

Using literature, professional experience and input from stakeholders, a series of four program theories were created and used to guide the research questions and data analysis. These program theories center on Social Learning Theory, Adult Learning Theory, Theory of Reflective Practice and Community of Practice Theory. Following the principles of realist evaluation, ten semi-structured interviews were conducted within McMaster University's Faculty of Health Sciences (medicine, nursing and rehabilitation sciences) with faculty who have participated in peer coaching and/or peer observation. The interviews were recorded and transcribed before the contexts (C) + mechanisms (M) = outcomes (O) (CMO) were identified in the data and coded into NVivo11. Using this coded data, a robust and unique list of 24 CMOs configurations were created which provides insight into peer coaching which can be used to enhance faculty development initiatives both within and external to health professions education.

The findings from the realist evaluation align with the literature and the program theories in several key areas. The research concludes that if done well, in the spirit of collaborative practice and a context of support, peer coaching can have a positive impact on faculty, evoking the sense of belonging and changes in teaching practice. When trained coaches provide specific and targeted feedback, improved feelings of support, collegiality and reflection can follow. This original contribution to research identifies the nature and role of trust in peer coaching and its greater impact on faculty development.

This practitioner-based research contributes to the body of realist evaluation in healthcare education by offering information that can be used to improve the design and use of peer coaching and peer observation; introducing greater awareness of how context triggers mechanisms which result in outcomes. This research would be interesting to researchers in healthcare education environments that are conducting realist evaluation or are designing peer coaching initiatives.

Key Words: faculty development, peer coaching, peer observation, realist evaluation, trust, critical realism, program theory, context-mechanism-outcome (CMO) configuration, social learning theory, adult learning theory, reflective practice, community of practice.

ACKNOWLEDGMENTS

I dedicate this thesis to my two sons, Jonathan and Gregory. Thank you for your patience and support over many years while I studied. Also, to the loving memory of my mother, Mary Elizabeth who imparted the importance of education upon me. I also acknowledge my family, friends and colleagues who encouraged me to keep moving forward.

Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for any other award or credit at this or any institution of higher education. To the best of my knowledge, the thesis is wholly original, and all material or writing published or written by others and contained herein has been duly referenced and credited.

Signature 

Date: September 3, 2019

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Abbreviations

APLL	Assisting Physicians in Life Long Learning
BeHEMoTH	Behaviour of interest (Be), Health Context Exclusions (HE), Models (Mo) or Theories (Th)
BEME	Best Evidence Medical Education
C	Context
CARES	Centre for Advancement in Realist Evaluation and Synthesis
CEP	Cultural emergent properties
CMO	Context-mechanism-outcome
CoP	Communities of practice
DME	Distributed Medical Education
FHS	The Faculty of Health Sciences at McMaster University
HIREB	Hamilton Integrated Research Ethics Board
M	Mechanism
MIIETL	McMaster Institute for Innovation and Excellence in Teaching and Learning
MRT	Middle range theories
O	Outcome
PBL	Problem Based Learning curriculum
PEP	Personal emergent property
RCT	Randomised control Trial
SEP	Structural emergent properties

CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter provides a brief introduction of the environment of this research study, at McMaster University's Faculty of Health Sciences (FHS). Next, it offers an overview of the structure, methodology and goals of the thesis. Finally, I will introduce myself, my professional background and who I am as a researcher.

1.2 Overview of the Faculty of Health Sciences at McMaster University

McMaster University is a research-intensive institution that prides itself being ranked within the top 100 of the Times Higher Education and the Academic Ranking of World Universities (Shanghai Ranking). The Faculty of Health Sciences (FHS) at McMaster University in Hamilton, Ontario, Canada, includes five healthcare professions: Michael G. DeGroote School of Medicine, School of Nursing, School of Rehabilitation Sciences (Occupational Therapy, Physiotherapy, Speech Language Pathology, and Rehabilitation Science and Health Management), Midwifery Education Program, and the Physician Assistant Education Program. Each program or school has it own professional development initiatives, focused on the specific requirements of their faculty and the accreditation standards required to maintain the educational program. Additionally, the Faculty of Health Sciences' Program for Faculty Development and McMaster University's MacPherson Institute offers centralized professional development support to all FHS faculty.

Similar to other health professions education programs in Canada, the FHS relies heavily on adjunct faculty to teach a substantial proportion of the curriculum to its students. For example, McMaster University operates a model of Distributed Medical Education (DME) that requires a robust network of preceptors teaching clinical skills to its medical students. Preceptors are most often clinicians who teach students clinical skills within their own healthcare practice. This clinical experience is mandatory for all of the healthcare professional programs. Each year, over 3000 clinical weeks are taught by adjunct medical preceptors away from the main academic health centre in Hamilton, Ontario. These part-time preceptors teach from a few hours to

several hundred hours a year; teaching students in ambulatory settings, facilitating small group learning sessions or delivering formal lectures. Unlike many healthcare professionals whose formal clinical responsibilities include protected time for teaching within academia, adjunct or associate faculty may not have similar teaching requirements, nor the access to support and development opportunities. Additionally, many faculty (including all physicians) uphold their professional licensure outside the university and can, if they choose, discontinue teaching and return to full time clinical practise. McMaster University faces similar challenges to other healthcare education environments: changing curriculum, exacting accreditation standards, increased student expectations and public pressure over spending and outcomes. Working closely with faculty in the FHS, I observed how many assumed demanding teaching and leadership responsibilities without adequate training or support.

These are some of the reasons why McMaster University, and other universities within Canada are challenged to recruit, develop and retain preceptors who are willing to withstand the demands a dual role of a clinical practice and teaching responsibilities.

1.3 Research Environment and Subject of Thesis

Since 2007, when McMaster University introduced teaching track faculty positions, the expectations of the quality of teaching have increased and within the FHS, all teaching faculty are now required to have an academic review with their Department Chair before their faculty appointment is renewed. Faculty who choose to pursue a greater career in academia are required to follow the steps outlined in the most recent Academic Appointment, Tenure and Promotion Policy (McMaster, 2012) to show their research, teaching and/or leadership pursuits. McMaster University's academic tenure track beyond the adjunct level requires faculty to complete a teaching portfolio that includes evaluation of their teaching effectiveness, their teaching approach, philosophy, and any activities used to improve their teaching skills

(McMaster, 2012). These requirements undoubtedly put pressure on faculty, especially those within FHS who are also practicing clinicians.

A review conducted by Sturman, Régo & Dick (2011) suggests that to foster faculty engagement in medical schools, support and reciprocal benefits must be offered to preceptors. Peer coaching is one such offering. It occurs between colleagues who help each other reflect and improve on their workplace challenges. It is usually a confidential and formative practice. Peer review or peer observation is another development offering that involves observing and giving feedback related to teaching. Both forms of peer coaching currently exists within the FHS and remain ad-hoc at the department and program level. An internal report (McMaster, 2017), suggests that peer review of teaching can be part of its "transformational reforms" but recognizes that there are "striking difference of practices" (p.8) throughout the university. This doctoral research examines the impact of peer coaching and considers the effect of these variables.

1.4 Scope and Purpose

The original idea for this practitioner-research was to focus on peer coaching with medical faculty. Initially, I believed narrowing the emphasis would enable me to create a more manageable study. However, when I attended a Peer Observation of Teaching training program as an observer (mentioned below), I noticed how members from different health professions responded uniquely to the coaching experience. For example, the two surgeons in the room responded differently from the family doctors and the nurses. This observation, along with my increased understanding of the significance of context, influenced my decision to broaden the research focus to include faculty from other health professions, seek participants who had been involved in other peer coaching programs, and those who did not have formal training in the subject.

The purpose of the study was to investigate the impact of peer coaching on clinical faculty within health professions education and to understand how context influences outcomes. The results of the research may be used to inform other faculty development initiatives.

1.5 Coaching Programs at McMaster University

In 2014, I was asked to join an inter-professional group of medicine, nursing and rehabilitation sciences faculty tasked with developing a peer observation program within the FHS. This group created the **Peer Observation of Teaching Program**, a "formative, low-stakes peer review process" (Walsh, 2014) designed to impart basic, peer coaching tools and techniques to self-selected faculty to use when giving feedback on peer's clinical, on-line, and/or classroom-based teaching. Three models of peer observation of teaching are introduced in this program: peer evaluation, peer development and peer coaching. The peer evaluation model focuses on performance and quality of instruction that are used as part of a tenure and promotion formal assessment. The main focus of this faculty development program is peer coaching, in which peer to peer learning, mutual dialogue, and reflective practice are described, modelled by facilitators and practiced by the participants.

The Peer Observation of Teaching Program was first delivered to faculty participants in February 2016 with the goal to encourage participation in peer coaching within the FHS. The contents of the program were made openly available on the University's website (McMaster, n.d.). Departments, programs and schools within McMaster University have permission to modify these tools and resources as they believe appropriate for their particular teaching contexts, with or without the guidance of other FHS faculty who have been identified as peer coaching consultants. One aim of the program is to create and maintain a list of voluntary faculty who are interested in becoming peer coaches. However, there are no established criteria for becoming a peer coach and attending the program is not a pre-requisite to becoming involved in peer coaching, or participating in this research study. These open-ended,

non-directive practices are in keeping with McMaster's espoused culture of self-directed and autonomous learning.

Separate from the Peer Observation of Teaching Program are three other known peer coaching initiatives for faculty within the FHS. In 2011, the **Assisting Physicians in Life Long Learning (APLL)** was a pilot offered by the Council of Ontario Faculties of Medicine to train physicians to become peer coaches. The goal of the program was to create a network of physicians who could help peers identify and achieve their professional learning goals. For reasons that were not shared publicly, the program did not move beyond the pilot phase. Another program, **The Tutor Coach**, was created internally within McMaster's undergraduate medical school and designed to train existing faculty in the skills to coach new tutors to effectively teach the Problem Based Learning (PBL) curriculum. The peer coach observation session is now a mandatory requirement for new Medicine faculty teaching McMaster's undergraduate medical students. Finally, another smaller and **informal peer program** was developed within the Nursing School so that faculty could come together to discuss and share teaching strategies.

The team developing the Peer Observation of Teaching Program supported my request to use the program as a key piece of this evaluation research. They were particularly interested in understanding what contributes to the effectiveness of peer coaching with health sciences faculty. Possible causal factors they believed could include:

- Individual attributes of the peer coach and coachee
- Coach training program
- Effectiveness of coach's skills
- Professional differences (either inter or intra professional differences)
- Other factors not yet considered

1.6 Researcher Background

Before I began employment as an administrative manager at the Michael G. DeGroote School of Medicine at McMaster University, in Ontario, Canada, I worked in the professional development field with more than a decade of experience as a professional coach, both in corporate and education sectors, in Europe and North America. Using coaching strategies of listening and questioning, I helped individuals and teams with personal and work-related issues. These matters included setting and achieving goals, dealing with issues of self-confidence and interpersonal skills, and learning to work collaboratively with others. Through my experience in coaching, I came to understand that despite people's achievement, hierarchical position or status within an organization, they often felt self-doubt, wanted feedback and acknowledgment for their contribution and effort. I knew that clients 'liked' coaching and found it useful to talk and reflect. I also witnessed significant personal transformations but I was unable to identify what made coaching 'work'.

I used the curriculum delivered in the Doctorate of Education to help guide my investigation. Through weekly readings in the Doctorate of Education program, questions and discussions with my global network of student peers, I gained new perspectives and enhanced my critical thinking skills. As we examined our own world view, we considered how individuals have their own unique lived experiences which they attach meaning, (Slaughter, 2001). A crucial piece of my personal learning in this doctoral journey has been to understand the significant influence of my perceptions of the world around me. The practice of examining big ideas and concepts led me to consider my core values and beliefs about the nature of reality: how I know what I know. I now consider the consequences of my ontological and epistemological beliefs and how these beliefs impacted my choice to use realist evaluation methodology, how I reviewed the literature, the interview questions I chose to ask, and how I interpreted the data. For example, in our readings, the positivist paradigm never felt plausible to me; I do not agree that knowledge of one single truth can be obtained through measurement and observation. Even post-positivism, which suggests that reality can be approximated while the investigator remains on the periphery without contaminating the research, all the while taking an empirical

approach to testing hypothesis, does not align with my epistemological beliefs. My opinions may have been formed partly as a result of my education which an undergraduate degree in politics and economics, a Masters in Human Resource Management, and a certification in professional coaching. Additionally, my first-hand experience working within human resources, training and development and coaching functions, led me to understand the numerous contextual variables which cannot be contained for empirical research. I also believe we interpret the world around us in an ongoing and developing process. What I considered 'true' ten years ago, is no longer 'true' today. Lastly, the process of the thesis research deepened my self-reflection and I came to embrace the critical realist philosophy, described in third chapter which explores the Theoretical Framework of this research.

1.7 Rationale for Choosing Realist Evaluation

My professional experience working in training and development in corporate and educational organizations was similar to that described by Schwellnus and Carnahan (2014) and Steinert, Naismith and Mann (2012); that programs are not evaluated much beyond Kirkpatrick's Level 1: Reaction and Level 2: Learning. What I have experienced within medical education is that most faculty development initiatives are evaluated using a Likert tick sheet. Fortunately, my desire to study the impact of coaching at a deeper level coincided with the opportunity to evaluate peer coaching at McMaster University.

As a doctoral student, I was not tied to one methodology as can sometimes be the case when the research is sponsored, nor did I have "epistemological single-mindedness" (Pallas, 2001, p.7) formed from past research projects. I understood the importance of focusing on a "problem driven, not methods-driven" (Moses and Knutsen, 2007, p.290) approach when it came to choosing a methodology. The choice of evaluation was influenced by my professional experience and familiarity of the complexity of the interdependent factors within coaching that I believe could not be individually isolated for study. McMaster University is a research-intensive environment and internal stakeholders questioned why I was not using a more traditional, empirically driven methodology. My choice to use a methodology that includes

participants in the research design was a partly in consideration for the environment within the FHS, which includes problem-based pedagogy and promotes active participation in learning. It is with these considerations that I chose to conduct applied research. My thesis supervisor introduced me to realist evaluation, a relatively new and at times, complicated, theory-based evaluation. The suggestion proved to be correct as my research goal went beyond exploring the effectiveness of specific training programs, to examining generative causation (Jagosh, 2017), what makes coaching work, how it impacts faculty and how context influences outcomes.

Frustrated by evaluators who were “feigning certainty” of outcomes, Pawson and Tilley developed a realistic evaluation methodology that stems from critical realism and focuses on the contextual complexities of situations, seeking to answer "what works for whom, in what circumstances and in what respects, and how?” (Pawson and Tilley, 1997, 2004). Realist evaluation examines the choices made, changes in reasoning and behaviour outcomes (1997). It does not focus on scientific output but is practically driven which helps program and policy makers. Chapter 3 describes this methodology and how I followed the RAMESES ll Reporting Standards for Realist Evaluations (Wong at al., 2016) to conduct a comprehensive realist evaluation.

In the end, I am a novice practitioner-researcher, and this thesis was my first opportunity to learn how to conduct a theory driven evaluation. I remain transparent throughout the thesis, describing both findings and limitations.

1.8 Ethical Approval

I received approval from two separate ethical boards. The University of Liverpool (Appendix A) and Hamilton Integrated Research Ethics Board (HIREB) (Appendices B and C), which oversees research projects that involve McMaster University’s Faculty of Health Sciences. I also received written permission to mention McMaster University by name (Appendix B). There was a lengthy delay in receiving approval from HIREB while a data sharing agreement (Appendix D) was

created and signed by both academic institutions. The ethics submissions outlined my concern that there was a slight chance that the faculty taking part in the research may feel personally or professionally uncomfortable.

1.9 Structure of Thesis

This introduction is the first chapter in a seven-chapter thesis. Chapter 2 will outline the literature review, and in particular, where coaching fits within faculty development. It will also describe my search for established theories and how these helped inform the development of the candidate program theories for this research. Chapter 3 explains the theoretical framework and Chapter 4 outlines the realist evaluation methodology and methods used. The data collection and analytical framework are presented in Chapter 5, with the findings and discussed in Chapter 6. Chapter 7 outlines recommendations and the conclusion. Appendices and the Bibliography are located at the end.

1.10 Contributions from Research

This research contributes to faculty development practice, operational and realist evaluation in the following ways:

1. It adds to the body of realist evaluation in healthcare education setting
2. The Context + Mechanisms=Outcomes (CMOs) configurations created in this research provide information that can be used when developing faculty development activities (at McMaster University and other universities).
3. Knowing how to conduct a realist evaluation improved my skills as a researcher. These skills can be applied to other research topics in different settings.
4. Application of critical realism to my daily operational role by asking “why” in a more systematic and purposeful approach.

1.11 Summary of Chapter

This chapter outlined my professional and personal interest and experience in coaching. By choosing to use realist evaluation (Pawson and Tilley, 1997), the thesis focuses on the contexts, mechanisms and outcomes for peer coaching. One key aim of the thesis is to provide "useable guidance" (Linsley, Howard, Owen, 2015, p.30) for peer coaching and future faculty development activities both at McMaster University and other universities. The next chapter delivers the literature review.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will describe the main findings of the literature review for this theory-based, realist evaluation research. The structure of a literature review conducted for a realist evaluation is different from what the reader may have come to expect. It is separated into two stages: the first stage remains consistent with a traditional review and briefly explains the literature related to faculty development and peer coaching. It identifies knowledge gaps and how the research question fits into the larger body of research. The second stage proposes candidate program theories and explores the literature that supports each of these possible theories. The proposed theories are then used as the basis of the data gathering interviews.

2.2 Terminology

In their scoping review on peer coaching, Schwellnus and Carnahan (2014) described how terms are inconsistent in the peer coaching literature. The table below outlines definitions (both my own and from published sources) to assist the reader in understanding some of the key words used in this research:

Term	Definition
Coaching	Coaching involves non-judgmental and active listening in a process that uses open-ended questions to guide the coachee to reach their self-selected goals. Coaches rarely offer advice but instead, provide support and challenge, holding the coachee accountable for their actions.
Peer coaching	"A confidential process through which two or more professional colleagues work together to reflect on current practices; expand, refine,

	and build new skills; share ideas; teach one another; conduct classroom research; or solve problems in the workplace". (Association for Supervision and Curriculum Development, n.d.).
Peer Observation of Teaching (PoT)	"A process by which an educator observes the teaching of another educator (usually a colleague) with the purpose of providing constructive feedback on the teaching process" (Swinglehurst, Russel and Greenhalgh, 2008, p.383).
Faculty Development	``All activities health professionals pursue to improve their knowledge, skills, and behaviors as teachers and educators, leaders and managers, and researchers and scholars, in both individual and group settings`` (Steinert, 2014).
Faculty	For the purposes of this research, faculty at McMaster University refers to part or full time, adjunct, clinical and non-clinical teaching faculty within the Faculty of Health Sciences (FHS) in Medicine, Nursing, Occupational Therapy, Physiotherapy, Speech Language Pathology, and Rehabilitation Science and Health Management, Midwifery Education Program, and the Physician Assistant Education Program. Faculty may teach small group and Problem Based Learning groups in ambulatory settings and/or traditional lecture style environments.
Mentoring	Mentors are "wise advisors…generally older and far more experienced… are often exemplars-models of the way to one's life or assume particular responsibilities" (Bacon & Spear, 2003, p.102). There may be hierarchical/power differentials with a mentor and the mentee.

Table 2.1 Terminology

2.3 Search Strategy: Identifying Literature

When initially considering coaching as a thesis subject, I was curious about possible factors that could contribute to the success of peer coaching including the individual attributes of coach and coachee; the coach training received; and the professional differences of those involved. From a series of published scoping reviews (see below) it became clear that the context of professional healthcare education is sufficiently unique that I chose to narrow the literature search to include university faculty and/or healthcare professionals (Finn, Chiappa, Puig & Hunt, 2011; Ladyshewsky, 2006, 2010, 2017; Moore, Westwater-Kerry, 2016; Schwellnus, & Carnahan, 2013). I excluded most, but not all articles from other environments such as primary and secondary education, online teaching and business because I believed the context and use of coaching were sufficiently different. However, there were several of these authors that contributed something useful to this research (Bacon & Spears, 2003; Swinglehurst, Russell, & Greenhalgh, 2008; Vidmar, 2005).

My preliminary literature search included scoping reviews published by Schwellnus and Carnahan (2013) and Steinert (2011, 2012). These reviews identified gaps in faculty development research, including the lack of theory-based studies and the need for more thorough evaluation of development initiatives. In keeping with realist evaluation methods and before completing a thorough literature review, I carried out preliminary interviews with three key stakeholders at McMaster University to understand the outcomes they anticipated from the research and their own experience of peer coaching. The stakeholders included the senior leaders within the FHS at McMaster University. They were hopeful that the research would reveal how coaching is used and the outcomes it has within different contexts of the FHS at McMaster University. They wanted to understand whether coaching helped faculty submit teaching portfolios and pursue increased responsibility within the FHS. While their expectations did not set the goals for this research, they did assure me that my research would be of interest and use to them.

Early in my literature research, I was influenced by Pawson (2006a) who suggests that researchers “dig for nuggets” and look beyond the quality of “bad research” for “good

evidence" (p. 127). By focusing on systematic reviews and following strict rules for inclusion criteria, Pawson warns that important material can be missed which would otherwise contribute to the literature review. Pawson cautions against using the "generic quality axe" (p.128) and encourages the researcher to go beyond creating a stringent protocol. For realist evaluation purposes, he believes much of the value of the literature can be found in the synthesis where unanswered questions are defined, and in the "pearls of wisdom rather than acres of orthodoxy" (p.136) which can direct further research towards investigating the causal and contextual relationships. The importance of identifying these relationships are described in the methodology chapter.

A realist literature review takes a less rigid approach (Pearson et al., 2015) and has fewer rules (Jagosh, 2017) than traditional literature reviews. It should be directed by what is needed throughout the research and may include return visits to the literature as the data collection progresses. Despite this purposefully flexible nature, the realist evaluation community is working towards processes and standards to assist researchers with the often complex and confusing nature of realist research, and to help realist researchers pass exacting peer review panels. Booth et al. (2013) are amongst those who continue to produce material that supports realist literature searches and systematic realist literature reviews. The RAMESES Publication Standards: Realist Syntheses (Wong, Greenhalgh, Westhorp, Buckingham and Pawson, 2013) also outlines the steps for publishing larger scale systematic reviews which is beyond the scope of this research but nevertheless, provides useful guidance to a novice realist evaluator like me.

A key tenent of conducting a realist evaluation is the transparency of process decisions (Pawson & Tilley, 1997; CARES, 2016; Jagosh, 2017). I followed Suri's (2013) advice that theories are difficult to glean from within a regular literature sample and that close reading is required to access undeclared theories. In reviewing the RAMSES guidelines and examining other doctoral theses, I made the decision not to code my literature review. At this stage of learning how to conduct realist evaluation methods, I felt coding would potentially draw my attention away from identifying the contextual and theoretical issues found in the literature.

2.4 Literature Findings

Given that peer coaching began appearing in academic literature with increasing regularity from 1990's, the results of this literature search range between 1990-2018. The search used the University of Liverpool and McMaster University's online libraries which have links to search platforms including DISCOVER, Web of Science, SCOPUS, Science Direct, MEDLINE, PubMed, NCBI, Market Line, Google Scholar, ERIC, Wiley Online Library and Liverpool's and McMaster's complete library catalogue.

The following search terms yielded predominantly more results from within medical education than from the other healthcare professions. To mitigate this imbalance, additional searches on the non-medical healthcare professions were completed, which resulted in a further eight usable sources. To focus on the relevant literature, titles and abstracts were read, literature outside healthcare faculty were eliminated (with a few exceptions) and duplicates were deleted. In addition, there were resources gathered individually by using citations and bibliographies from other sources:

Search Terms	**Results**	**Useable**
Faculty AND coaching AND evaluation	131	11
Realist evaluation AND coaching	8	1
Realist evaluation AND faculty development	123	1
Faculty AND coaching AND realist	2	0
Faculty AND realist evaluation AND coaching	3	0
Peer coaching of faculty	644	14
Peer coaching AND nursing	34	3
Peer coaching AND physiotherapy	6	1
Peer coaching AND occupational therapy	0	0
Peer coaching AND healthcare faculty	14	4
TOTAL	**965**	**35**

Chosen by using citations and bibliographies in other sources		28
TOTAL		**63**

Table 2.2 Overview of Literature Search

2.5 Outcomes from Literature

The outcomes gathered from the literature search are summarized into the following three main categories:

(A) Faculty Development,
(B) Peer Coaching, and
(C) Peer Observation.

From these categories come several key statements:

- There is the need for faculty development research studies that focus on outcomes and are embedded in theoretical/conceptual frameworks.
- Coaching encourages reflective practice
- Peer coaching is most effective when it is a voluntary endeavor with a self-selected, peer partner.
- Peer observation practices can be successful if non-evaluative and peer coaching methods are used in a trusting and supportive environment

(A) Faculty Development

Steinert (2010, 2011, 2014, 2016), a key contributor to the subject of faculty development, is referred to throughout this chapter. While her focus is predominantly on medical education, the information she delivers is also applicable to other health professions education. The systematic review written by Steinert and other notable Canadian education specialists, Naismith and Mann (2012) was influential in my choice of research topic and methodology. Their review looked at the methodological quality of studies on faculty development initiatives

and found that while some programs described theoretical frameworks, there was an "overwhelming reliance on the use of self-reported questionnaires, most with no stated measures of validity or reliability" (p.496). They also identified research gaps and emphasised the need for a methodology that supports the complexity of faculty development, considers context and uses multiple data sources and outcome measures. Additionally, their review examined effective learning methods, and brought attention to the impact of institutional culture, support and the value of fostering a community of practice in faculty development programming.

Steinert (2010) suggested that most teaching faculty prefer not to ask for feedback from their colleagues. It appears that situation and context are important, though, because this suggestion contradicts a more recent research study by Blitz, De Villiers, & Van Schalkwyk, (2018) who looked at programs for clinician- faculty at distributed locations throughout South Africa. They found that the faculty turned to people they knew and trust for help rather than attending formal development programs. From this study, they recommend strengthening the network of social connections which can "maximise learning capability" (p.10). This recommendation is particularly important when considering McMaster University's own network of distributed preceptors who deliver clinical education but do not have access to the same support as faculty working at the academic center. O'Keefe, Lecouteur, Miller, & McGowan (2009) also observed that developing peer support initiatives is an approach that may help to reduce professional isolation or attrition rates of clinical faculty and Vos and Trewet (2012) found preceptors who accessed development felt more confident.

A decade after they published their prominent review on faculty development in medicine, Steinert, et al. (2016), published a follow up analysis of faculty development in the form of a Best Evidence Medical Education (BEME) Guide. After closely reviewing 111 medical education articles, the authors recommend that faculty development be less focused on skill development and more on "renewal and reflection on personal and professional growth" (p.779). Additionally, it identifies features for effective faculty development including incorporating

opportunities for feedback and reflection; building supportive professional communities; creating longitudinal programs and gaining ongoing institutional support (p.780). Finally, the Guide recognises the importance of understanding "how" and "why" change happens in faculty development and investigating whether it is an outcome of the intervention, the individual and/or the context. Their Guide is relevant to my research on peer coaching because it identifies areas for further study and recommends research be embedded in a theoretical or conceptual framework. These reviews are further supported by additional literature (Schreurs & Grave, 2010; Moore, Westwater-Wood and Kerry, 2014;) which also recommend developing programs that are theory based and incorporate adult learning principles.

In conclusion, the literature review on faculty development in healthcare education describes the recent interest in the importance of examining context, individual differences in learning, and the value of theory-based development programs. To summarize, there is the need for:

- Better research on program outcomes
- Attention given to the context of programming
- Theory-based faculty development
- Community based development initiatives

(B) Peer Coaching

There are many classifications of coaching (leadership, sports, personal and business) and while some of the attributes are similar for each coaching category, they are not identical practices. For the purposes of this research, the focus is on peer coaching for faculty; which is a reciprocal and non-evaluative partnership between peers that aims to encourage cooperative and shared learning of peers who are equal in status (Ladyshewsky, 2006). When done properly, peer coaching is a reflective endeavor (Jackson, 2004) which is part of an ongoing relationship that usually occurs in one's own practice setting and involves trust, safety and confidentiality between equal status colleagues (Ladyshewski, 2017). Peer coaching is a social and collaborative form of learning (Ladyshewsky, 2010; Schwellnus & Carnahan, 2014) which guides

the coachee through the process of understanding their own behaviour and performance, through to setting and obtaining self-identified goals. The terms peer coaching and mentoring are often used interchangeably, but this is incorrect because the aims are different. In mentoring, there is usually an expert (Schwellnus & Carnahan, 2014) with a hierarchical or power differential, which does not exist in coaching.

The exact provenance of peer coaching in academic settings is unclear, but it is has been used for several decades and the attention paid to this development technique continues to grow (Beckman, 2004; Finn, Chiappa, Puig and Hunt, 2011; O'Keefe, Lecouteur, Miller & McGowan, 2009; Regan-Smith, Hirschmann, & Iobst, 2007; Siddiqui, Jonas-Dwyer and Carr, 2007). In their scoping review of peer coaching of health care professionals, Schwellnus & Carnahan (2014) describe the lack of consistent definition and weak study designs. Despite these shortcomings, peer coaching is considered a well-accepted and "promising format of professional development" (p.38).

In a review examining approaches to encourage faculty engagement, peer coaching is considered one of the practices that supports preceptors in a meaningful way and enhances their satisfaction with teaching (Sturman, Régo & Dick, 2011). Amongst the benefits of peer coaching (Hooker, 2013; McLeod & Steinert, 2009; Rice, 2012; Schwellnus and Carnahan, 2014) are mutual and individualized learning, cost effectiveness, and collaboration amongst peers.

The following chart (Steinert, 2014, p.12) demonstrates where coaching fits into the variety of faculty development choices available. Peer coaching is classified as a formal development approach within an individual learning context.

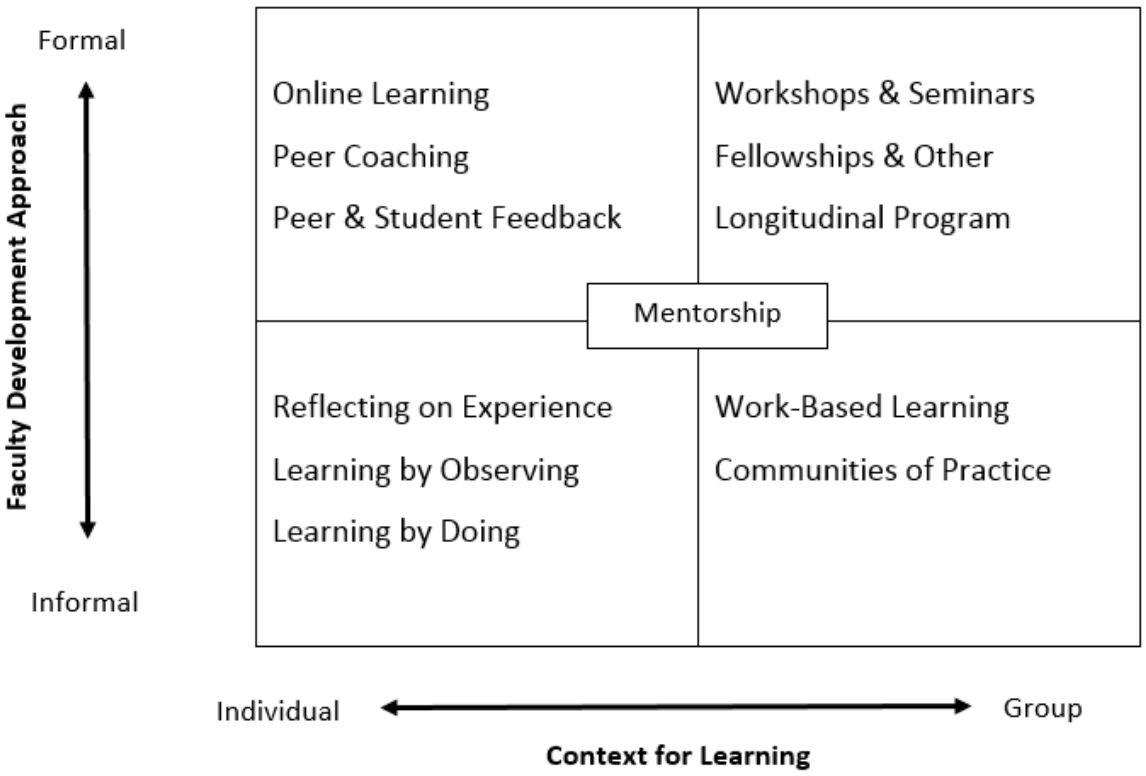


Figure 2.1 Steinert's Approaches to Faculty Development (2014)

The following examples demonstrate where peer coaching has been used successfully in health professions educational environments:

- A direct observation study at the Mayo Clinic's Internal Medicine department showed that peer observation was equally effective outside the traditional classroom environment at the 'bedside' (Beckman, 2004). The experience at the Mayo Clinic demonstrated that both the observer and the observed gained insight and growth.

- Cox (2012) followed academic teaching staff within education coaching dyads and found that participants perceived peer coaching to be highly relevant to their needs when: they could volunteer to join in a mutual partnership; pick their coaching partner from within

their own collegial network of peers; and their leaders were not involved in the process of setting their goals. These finding reinforce the impact of an open organizational culture.

- A small, qualitative, pilot study in Denmark with non-physician, healthcare staff from nursing, occupational therapy and physiotherapy, indicated that coaching improved "self-insight, performance and feelings" (Ammentorp, Jensen & Uhrenfeldt, 2013, p.41) which resulted in participants taking action. The peer coaching process also fostered stronger "appreciative and respectful relationships" (p.45).

Roxa and Martensson, (2011) describe how within the context of academia, faculty is frequently evaluated through peer reviews, meetings, and everyday encounters in which there is a "culturally formed system of norms" (p.3) that cannot be ignored. Within this cultural context, faculty learn how to both teach and learn from one another (Brydges & Butler, 2012). The professional climate in which they find themselves also contributes to whether they trust each other enough to engage in meaningful conversations and hence, whether to fully engage in a peer coaching relationship. Although there is no one best model, there is agreement about the components of an effective approach. Peer coaching works best when it is non-evaluative and voluntary (Waddell & Dunne, 2005; Ladyshewsky, 2006). Coaches are not usually experts, but they do require the skills to ask non-judgmental questions that encourage deep thinking (Ladyshewsky, 2017) and reflective dialogue (Brockbank and McGill, 2007). Coaches also need to demonstrate active listening skills and understand the interpersonal impact they may have on their coaching partner (Ammentorp, Jensen & Uhrenfeldt, 2013). Both coach and coachee must have or be willing to develop, reflective skills by setting aside time to consider what they are learning.

Kaufmann (as cited in Ammenthorp, Jensen & Uhrenfeldt, 2013) suggests that people respond positively to coaching because it takes a non-directive and appreciative approach. The coachee gains a feeling of empowerment (Hooker, 2013) when taking ownership of their own learning by choosing the focus of the coaching. For example, they may choose to improve their

classroom or time management skills, refine teaching techniques, or deal with administration and leadership challenges.

Cox (2012) highlights the importance of interpersonal trust as a requirement for the success of peer partnerships which can be developed through a mix of confidentiality and openness between colleagues (Ferrar in Cox, 2012). For individuals to make themselves vulnerable with their peers, there must be a safe learning environment that is created over time by faculty who maintain control over their (voluntary) involvement in the process. The relationship of peers cannot be commanded, nor can there be fear of consequences from the outcomes of the coaching (Ladyshewsky, 2006). Vidmar (2006) recommends that coaching happens in low stake, non-threatening environments which encourages private conversations, free from oversight by hierarchical authorities.

Despite its popularity, there are concerns about the effects of coaching (Brockbank & McGill, 2007; Cox, 2012; Ladyshewsky, 2006; Vidmar, 2006). One concern is the impact of the hidden curriculum present in health care education, including the Western, biomedical worldview which rarely takes other global philosophies of life into account (Tilburt & Geller, 2007; Rizvi, 2009). This is a particularly relevant concern given the increasing diversity of McMaster University's faculty and student population. Peer coaching may compound the "pressure for adoption and conformity" (Beerkens, 2008, p.26) and the social isomorphism (Beerkens, 2008) which reinforce the existing structures within the professions. Another worry is the misuse of power (Boud and Walker, 1998) but this is contingent on how peer coaching is used. Regardless of what the organization calls the practice, if it is used for evaluation or career promotion purposes, it is not coaching.

(C) Peer Observation

Peer observation is a specific type of coaching that focuses on observing teaching performance. Most clinical faculty teach alone, often in the style they were taught as students, but teaching in the healthcare environment is changing (Finn, Chiappa, Puig, & Hunt, 2011) and as described

in the first chapter, McMaster University requires innovative and robust teaching methods from their clinical faculty. Within healthcare education, peer observation can occur in a clinical, small group tutorial or lecture session either in person or from a video recording. It is a planned and reflective conversation (Vidmar, 2005) during which the coach asks questions and encourages their partner to consider their teaching challenges and goals. Together, they collaborate strategies through a process of a planning meeting before the observed session and a reflective debrief afterwards. In some cases, three peers come together, with one acting as an observer to the peer observation process. Vidmar describes the approach building on from teachers "natural tendency to talk to colleagues but in a more purposeful way" (p.147). The literature maintains that for those who do participate, both parties in this critical friendship (Kemmis and McTaggart as cited in Bell, 2002) receive valuable benefits include new ideas, techniques and the opportunity to build critical reflection (Bell, 2002) and better self-assessment skills (Vidmar, 2005). Similar to peer coaching, peer observation requires mutual trust and the willingness to participate (Gosling 2002) and its success is often influenced by the connection it has to review and career promotion (Hammersley-Fletcher and Orsmond, 2004). Watkins (as cited in Swinglehurst, Russell, Greenhalgh, 2008) cautions that "a focus on learning can enhance performance, whereas a focus on performance can depress performance" (p.386). Therefore, peer observation should not be used for formal evaluation.

The following examples demonstrate some outcomes of peer observation:

- In a 2007 observational study, Regan-Smith, Hirschmann, & Iobst, were able to show that faculty who participated in a two-year, teaching observation with feedback program, improved their faculty ranking with medical residents.

- Bell and Mladenovic (2008, p.736) found that 94% of participants rated peer observation as a valuable exercise and 88% indicated that they would change their teaching as a result of the exercise. They also found the barriers to using peer observation included the amount of time involved, the anxiety it could cause in some participants, and the perception that it is

intrusive and challenges academic freedom (if used coercively or for promotion purposes). What is missing from this research is whether changes in teaching actually occurred.

- A peer observation program in the Faculty of Health Sciences, University of Adelaide, Australia, was designed to offer health sciences faculty a "collegial partnership", as part of an eight-week multidisciplinary, longitudinal intervention – where faculty learned skills to create their own learning objectives, plus give and receive feedback with colleagues. Outcomes included improved confidence in teaching ability, new ideas and increased feelings of support from their organization and peers. Participants particularly liked having the chance to discuss education with their peers. Despite the positive feedback, the authors suggest the need for a longer-term evaluation of the change and impact on teaching faculty and their students (McLeod and Steinert, 2009; O'Keefe, Lecouteur, Miller & McGowan, 2009).

In summary, there is consistency in the literature about the benefits of peer coaching and peer observation as forms of faculty development. These benefits include improvements in personal reflection, self-confidence, feelings of institutional support and improved collaborative relationships with colleagues. There is also strong agreement in the recommendations that trust, privacy of the conversations, voluntary participation and the absence of leadership oversight helps create effective outcomes.

2.6 Identifying Theories in Literature

Locating theories in the literature is the next and crucially important phase of the realist evaluation process. This step does not involve looking for grand theories such as Feminism or Marxism, but for small 't' theories. By searching for the theories that underpin a program or intervention, it is possible to gain insight into the reasons why an intervention does (or does not) work. These insights can then be used when developing future initiatives. Identifying

theories and theoretical frameworks can be challenging because they are often not clearly identified and must be found by carefully reading the literature.

As previously mentioned, Booth and his colleagues (2013, 2014, 2015) focused their attention on creating search techniques to help locate and identify theories from within complex healthcare interventions, giving specific attention to the context. They created the BeHEMoTH approach to help researchers "identify, explore or validate a theory" (Booth & Caroll, 2015, p.221) through systematically considering Behaviour of interest (Be), Health Context Exclusions (HE), Models (Mo) or Theories (Th). Their approach does not aim to understand why a program works but to help researchers of larger projects meet the requirements of peer reviews without being so mechanical as to impede useful insights. Although this thesis is not a systematic review of the theoretical literature, the BeHEMoTH gave me insight into what might be possible with additional time and resources for larger realist evaluation projects.

Using the more traditional literature search approach and the same search engines and date range as listed above in Section 2.4, I identified less than twenty papers that identified theories in use:

Search Terms – including 'Theory'		
Theory AND concept AND model AND framework AND faculty AND development	105	6
Faculty AND , coaching AND, evaluation, AND theory	16	0
Theory AND peer coaching AND faculty	84	2
Realist evaluation AND theory AND coaching	5	1
Faculty AND , coaching AND, theory	51	9
TOTAL	**261**	**18**

Table 2.3 Overview of Literature Containing References to Theory

I also revisited the faculty and peer coaching literature, closely reading and searching for information that would help me to identify the program theories associated with peer coaching. In the end, the theories were not clearly articulated, nor tested. This gap can be problematic for two main reasons: using the wrong theory(ies) to create and deliver a program can negatively interfere with outcomes (Astbury & Leeuw, 2010); and not identifying theories from a successful program can be a lost opportunity for future development initiatives. Despite the lack in the literature, I was able to tease out possible program theories, which will be explained in the next section.

2.7 Developing Candidate Program Theories

Astbury and Leeuw (2010) describe programs as "embodiments of theories" (p.364) created with a set of assumptions about how and why change will occur. These assumptions are known as program theories. Whereas the outcome of a standard literature review can be a conceptual model, in a realist evaluation, proposing candidate program theories that can be tested with data collection, is the prime objective of the review. Program theories can be used as the framework for the evaluation and Pawson (2006b) recommends that candidate program theories be identified before data is collected. This research will adjudicate between several rival or candidate program theories and whether there is more than one theory that can apply to peer coaching.

I discovered inconsistency in the literature surrounding the terminology and use of program theories, middle range theories (MRT) and context-mechanism-outcome (CMO) configurations. All three weave lived experiences, literature and theories together to critically examine and explain what drives results in a development activity, however, each has a different purpose. At the individual program level, program theories can be created before an intervention is designed with proposed outcomes (e.g. 'Through practice and repetition, Program X will help faculty develop their confidence in teaching small group tutorials'). Program theories can be formulated before or while the program is running, and not all interventions have stated program theories. Program theories propose the underlying logic of the intervention and are used as the foundation in a realist evaluation to collect and analyze data. This data is used to

produce evidence-informed, CMO configurations. MRTs also describe data-informed theories but they are more abstract and generalized than program theories, and cut across a range of different contexts in larger study environments. Chapter 5 & 6 will describe how the candidate program theories were tested, the data collected and analyzed to become the basis for the CMO configurations.

2.8 Candidate Program Theories

The process of creating program theories "varies significantly" (Astbury & Leeuw, 2010, p.365) but I followed the suggestions from many sources (Jagosh, 2016, 2017; Pawson, 2006; Pawson & Tilley, 1997; Westhorp, 2014; Wong et al, 2016), used my own experience working as a coach, conducted interviews with key stakeholders at McMaster, read the grey literature / policy statements from the University, and searched the literature to help create the program theories. Several possible or rival program theories emerged, and I decided to focus on the four which seem the most logical and are supported by the literature. The following table provides an overview of the candidate program theories that may influence the outcomes of peer coaching. Each associated theory is explained in further detail below:

Candidate Program Theory	**References from faculty development and peer coaching literature that support the program theory**	**Associated (underlying) Theory**
An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience.	• Boud & Walker (1998) • Hooker (2013) • Ladyshewsky (2006, 2010,2017) • Moore, Westwater-Wood and Kerry (2016) • O'Keefe, Lecouteur, Miller, & McGowan (2009)	**Social Learning Theory** (Bandura 1977) suggests that people learn from one another, via observation, imitation, and modeling.

Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn.	• Cox (2012) • Gosling (2002) • McLeod and Steinhert • Moore, Westwater-Wood, & Kerry (2016) • Schreurs & Grave (2010) • Ladyshewshy (2006)	**Adult Learning Theory** (Knowles 1973) proposes that adults learn best when they have ownership over their learning and are not told what and how to learn.
Peer coaching encourages learning in both the coach and coachee through a process of mutual feedback and reflection.	• Jackson (2004) • Brockbank & McGill (2007) • Hooper (2013) • Roxå & Mårtensson (2009) • Brydges & Butler (2012)	**Theory of Reflective Practice** (Argyris and Schon 1974) reasons that continuous learning is achieved through the process of reflecting on actions before, during and after an experience.
The context of where people work and their professional practice, influence the experience and impact of peer coaching	• Vidmar (2006) • Ladyshewsky (2006) • Roxå & Mårtensson (2009) • Brydges & Butler (2012)	**Community of Practice** (Lave and Wenger, 1991) A group of people who share a common profession and learn through this social context

Table 2.4 Candidate Program Theories and Associated Theories

The following section describes each candidate program theories, how they are connected to an established theory, and the proposed impact they have on peer coaching.

Program Theory 1:

An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience.

(Social Learning Theory)

This program theory suggests that social connections and relationships have positive impacts on the success of peer coaching. Supporting this idea are the authors who propose that learning is a social activity, (Bandura, 1977; Boud & Walker,1998; Hooker, 2013); and that professional skill "includes a social dimension" (Wenger-Trayner and Wenger-Trayner, 2014, pg. 14).

In the late 1960's, Bandura proposed Social Learning Theory to explain how individuals learn by watching, imitating and modeling others. Despite modifying the theory in the mid 1980's to include the impact of social experiences on learning and renaming it Social Cognitive Theory (SCT), it remains popularly referred to as Social Learning Theory. The theory describes how people learn from observing; not by unconsciously imitating but by witnessing the behavior of those who are like them, considering what they are seeing, and then choosing whether to imitate what they have observed. Learning and change do not merely happen. The learner must be motivated to replicate what they see.

In healthcare education, faculty come to the academic environment with well-established clinical expertise related to their profession. They observe individuals like themselves within their own specialty and may choose to model new ways of behaviour and develop greater levels of teaching mastery. Cruess , Cruess and Steinert (2018) endorse the influence of social learning theory and suggests it has the "capacity to encompass the multifaceted nature of medicine's knowledge base, including its foundations in biomedical science, the nature of the identify of a physician and its rich mix of tacit and explicit knowledge" (p.185). Their belief can of course, be applied to other healthcare professions including nursing and the other health education professions

Social Learning Theory is considered a "key component" (Moore, Westwater-Wood, & Kerry, 2016, p.121) in peer coaching especially in "highly social and complex learning disciplines" (p.122) such as healthcare. Furthermore, Ladyshewsky (2006) suggests that peer coaching partnerships are "first and foremost a social relationship that must be managed appropriately" (p.8). In their scoping review of peer coaching within healthcare, Schewellnus and Carahan (2014) explored how this cooperative approach prompts the social responsibility of learning. Moreover, conversations are significant in the social partnerships that form in peer coaching. Research conducted by Roxa and Martensson (2009) focused on the conversational partners of academic teachers and reported that many "rely on a small number of significant others for conversations that are characterised by their privacy, by mutual trust and by their intellectual intrigue" (p.547).

In conclusion, this program theory rests on the foundation that peer coaching can be influenced and impacted by the surrounding social network and peer relationships. Trusted social support, non-evaluative feedback and the opportunity to voluntarily learn from one another is significant in the peer coaching experience.

Guiding Research Questions:

- How can the relationship influence the coaching experience?
- In what ways does the coach and coachee both learn from each other?
- What is necessary for people to learn from one another in peer coaching?

Program Theory 2:

Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn. (Adult Learning Theory)

This program theory focuses on the importance of self-directed learning in peer coaching and is guided by Adult Learning Theory. It was partially shaped by my professional coaching

experience; witnessing the difference in outcomes between those who come voluntarily and those who are mandated by their supervisors to participate. At its core, peer coaching should be learner-centered and learner-lead, focused on the coachee's real life challenges and assume individuals have the ability to make change.

Popularized by Knowles (1973), Adult Learning Theory describes the principles surrounding adult learning. Understanding how adults learn evolved from the concepts of andragogy, which examines forms of adult learning. Knowles suggests that while not all adult learners are the same, transmission or didactic teaching methods are not effective and most learn best when they are ready, have control and understand why they are learning. Peer coaching aligns with the main principles of Adult Learning Theory (Knowles, 1973; Moon 2000) in the following ways:

- **The need to know**: Adults need to know what and why they are learning. They also need to set their own goals. *Goal setting is an essential step in the peer coaching process*.
- **Self-concept**: Adult learners are self-directed and responsible in their own (context dependent) lives. *Peer coaching is learner-led*.
- **Experience**: Adult learners are defined by what they do and their life experiences. Learning should be associated with real experiences relevant to the learner. *Coachee identifies gaps and sets own goals for learning.*
- **Readiness to learn**: Learners are individuals and their learning should be timely and relevant to their own needs. *Coachee co-creates the agenda in coaching*.
- **Orientation to learn**: Learning is problem-centered, applied to what is immediately important and is often experiential. *Peer coaching follows the experiential learning cycle.*
- **Motivation to learn**: Motivation is an internal process and the individual chooses whether or not to engage in learning. *Coaching is most successful when coachee participates voluntarily.*

Two decades ago, Laidley and Braddock, (2000) identified the lack of teaching methods that preceptors use when teaching in ambulatory settings. Since then, there has been increased attention given to teaching methods in healthcare education yet Roxa and Martensson (2009) suggest, many faculty continue to use their own personal teaching philosophies rather than documented and tested pedagogy.

This program theory is particularly important when considering the FHS faculty at McMaster University. Depending on their individual educational and professional experiences, FHS faculty are clinicians with diverse teaching abilities and learning needs. FHS faculty at McMaster are expected to use self-directed learning principles with their students and therefore, it is logical that similar methods should be used for their own development process. Being actively involved in one's own development is essential in adult learning (Laidley and Braddock, 2000) yet complications can arise when learning gaps are incorrectly self-identified. Argyris and Schon (1974) described the differences in espoused theories vs theories-in-use; how the beliefs we have about our practices will not always be accurate. Peer coaching can help with these incongruences by broadening an individual's self-perception. Although coaching may help to bring greater awareness (Brockbank & McGill, 2007), behavioural change may not automatically follow. Motivation, opportunity, expectations within the working environment all influence change.

In summary, this program theory supports the idea that peer coaching works better when faculty come voluntarily, with the freedom to set their own goals. Rather than being assigned to an expert who dictates what should happen, faculty benefit by deciding what is important for their own growth, in the context that makes most sense to them, (be it in a clinical, small group or tutorial setting). This program theory is also a reminder that not all learners are identical and that offering flexibility in delivery methods is important to development practise.

Guiding Research Questions:

- How does goal setting impact peer coaching outcomes?
- What impact does setting own learning goals have on motivation in peer coaching?

Program Theory 3:

Peer coaching encourages learning in both the coach and coachee through a process of mutual feedback and reflection.

(Theory of Reflective Practice)

This candidate program theory focuses on the impact of reflection and feedback on both participants in the coaching partnership.

Three decades ago, Schon (1991) popularized Reflective Practice Theory as the process by which an individual gives time and attention to consider their thoughts, behaviours, actions and reactions, all with the goal of greater understanding of self. Influenced by personal experiences and through the mental process of reflection (Moon, 2000), an individual goes beyond what they currently know about themselves towards "deeper levels of learning" (Brockbank & McGill, 2007, p.85) and greater self-awareness. The terms used in this theory describe the levels of thinking before, during and after an activity (Schon, 1991; Argyris and Schon, 1974, Boud & Walker, 1998; Mann, Gorden and Macleod, 2007). These terms include: "knowing-in-action" (thinking in the act of doing something); "reflection-in-action" (interpreting at the same time as doing the action– particularly important in teaching situations when faculty have to think on their feet); and "reflection-on-action" (which occurs as a debrief after the activity is complete). There is also reflection-on-emergent practice, which includes learning "by listening, watching, doing and being coached" (Brockbank and McGill, p.87). Steinert, (2010) perhaps frustrated with the ongoing battle of definitions, states "whatever the nomenclature, self-awareness, critical analysis, and the development of a new perspective are fundamental to the process of reflection" (p.425). Boud and Walker propose that reflection occurs within a context which is "never possible to set aside" (p.197) and that "defines those outcomes from reflection which are accepted as valid" (p.198). Understanding the impact of context will be a focus of my research.

Despite the lack of evidence to show how reflective practice results in improved patient care, it has become a guiding principle within healthcare education (Mann, Gordon & MacLeod, 2007) and is considered a necessary skill for the clinical practitioner. Someone who has reached the professional status of faculty in healthcare education may have knowing-in-practice and theories-in-use so ingrained into their thinking and behaviour that they "may miss important opportunities to think about what he (sic) is doing" (Schon, 1991, p.61). Furthermore, Webster (as cited by Brockband and McGill, 2007) recommends that faculty use reflective practice to focus on their own teaching practices rather than merely teaching it to their students.

Undoubtedly, there are gaps in Schon's reflective practice theory. One criticism of reflective practice is that it can be self-confirming (Harvey & Knight as cited in Brockbank & McGill, 2007). Faculty may avoid their own practice by "intellectualizing reflection" (Boud & Walker, 1998, p.194) and focusing on their students. Wilson (2008) suggests that Schon misses the importance of reflection-on- the–future that he believes is a necessary skill for professionals to develop. I believe the act of coaching develops the skill to anticipate possible reactions to future situations.

Reflective practice can be achieved alone and/or can be directed by an external person such as a coach. Importantly, after reviewing coaching within nursing, Hallett (1996) noted that the coach can effectively challenge the coachee's theories-in-use which may help align the coachee's self-assessment with external points of view. It is clear in the literature that reflection requires "climate of trust and safety" (Boud and Walker, 1998, p.201). When there is trust, peer partners can challenge each other as critical friends (McNiff and Whitehead, 2009). Coaching offers a semi-structured process to guide reflective practice in the following process: coachee considers their development goals before actively participating in coaching; the coaching pair meets and coach asks probing questions ("What would you like to focus on? What is challenging you? What do you already know about yourself in this situation? How might you react in this environment? How would you like to be different?"). Using reflection-before-action, they discuss potential scenarios and outcomes along with possible ways to meet the goals. In a follow up session, the coach and coachee review and reflect what occurred and what might need to happen as a next step. The coach is not the expert but works alongside the

partner to create a plan of action. My belief is that reflective practice does not occur just for the coachee but occurs mutually for both coach and coachee.

Bing-You, Paterson and Lavine (1997) conducted a study on optimizing feedback to medical residents and found that perceived sender credibility (including their hierarchical position and clinical experience) influenced the residents' receptivity to the feedback. In addition, trust and respect towards the sender was also significant. The research also found that feedback was discounted when it did not "coincide with residents' self-perceived knowledge" (p.42) or when the feedback given on subjects they did not want to discuss. The study determined that further investigation on the contextual factors of giving feedback is needed. In a different study, Sargeant, Mann and Ferrier (2005) examined a small sample of family physicians and their reactions to multi-sourced (360-degree) peer feedback. The results indicate that acceptance of feedback from colleagues is influenced by the "perceptions of accuracy, credibility and usefulness of feedback" (p.497) and that there are emotional reactions to feedback, especially when it is not consistent with self-perceptions. A 2009 AMEE Guide on Reflection, (Sandars) suggests that feedback from another professional impacts the value of reflection. These findings are noteworthy when considering how peer coaching pairs are established: are the individuals coming to it voluntarily and able to choose their peer partner? Did the participants receive training and have sufficient practice in giving feedback? In their best practices guide, Gormally, Evans and Brickman (2014) summarized that giving formative feedback should be "timely, specific, corrective and positively framed" (p.193) and be "voluntarily sought" (p.192). The study indicates that in peer observation, a pre-observation meeting results in "more thoughtful, focused, practical feedback" (p.194). Their guide concludes that further research is needed to understand the impact of feedback on faculty.

In summary, this program theory examines two pillars of effective coaching: reflective practice and feedback. The coaching process helps the coachee navigate through the stages of reflection, before, during and after their self-determined goal, activity or personal challenge is complete. This program theory proposes that providing effective feedback is fundamental and that both the coach and coachee learn in this reflective process.

Guiding Research Questions:

- Does reflective practice occur for both the coach and coachee?
- How does reflection contribute to the peer coaching experience?
- What does feedback contribute to peer coaching?

Program Theory 4

The context of where people work and their professional practice, influence the experience and impact of peer coaching.

(Community of Practice)

This program theory rests on the belief that faculty learn from one another in groups within varying professions and contexts. This theory explores how the professional and situational environment impacts the outcomes of peer coaching.

In the 1991, Lave and Wenger developed Situated Learning Theory which examines how learning occurs in communities of practice (CoP). CoP is inherently social in nature and individuals foster their identity within their professional group (Wenger, 2010, p.181). Barab, MaKinster, & Scheckler, (as cited in Barab, Barnett & Squire, 2002, p.495) describe CoP as "a persistent, sustaining social network of individuals, who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise". Being part of a community can give a sense of identity and personal commitment. Cruess, Cruess and Steinert (2018) suggest that CoP is a foundational and organizing theory onto which other learning theories can be added.

There are multiple layers within CoP: micro is at the individual level, meso at the organizational level; and macro focuses on social structures, institutions, national initiatives (Otten, 2009, p.407). When considering healthcare professions, Cruess, Cruess and Steinert (2018) draw attention to the significance of the location of practice and clinical speciality. For example, a nurse who works in radiation oncology in a well-funded, academic hospital will have different

experiences than a nurse who is the sole healthcare practitioner in a resource poor, geographically remote location in northern Canada. Faculty can simultaneously belong to several communities (Wenger, 2010) with various standards of practice, traditions and expectations. Furthermore, each profession has nuanced practices (Jawitz, 2009) which are conveyed in the daily tasks, conversations and behaviour of individuals within the group – often without conscious awareness (Trowler, 2005). There are also theories-in-use which "encompass the formal philosophy of the profession" (Moon, 2000, p.40). Roxa and Martensson (2009) suggest "university teaching is individually constructed as well as socially influenced" (p.548) with many groups creating their own meaning and professional values within their academic tribe (Trowler, 2005). Yet, all healthcare professions in Canada are governed by provincial and federal regulations and so, there are limits to how much the profession can transform their practice. This does not mean that healthcare faculty are powerless to influence their environment only that they may face greater challenges within their CoP. The notion that a learner's personal experience, chosen profession and working environment are influential (Boud and Walker, 1998) are important for my research; the faculty at McMaster University are heterogeneous and so, my research will seek to examine these considerations.

Cruess, Cruess and Steinert (2018) caution that using CoP as a theoretical framework comes with potential negative impacts on the individual and the community itself. If we accept Lave and Wenger's Situated Learning Theory and how academics participate in CoPs, (Jawitz, 2009), it is quite possible that peer coaching with faculty could "propagate a biased view of what is really important in medical [healthcare] training" (Tilburt & Geller, 2007, p.819). Peer coaching may subtly (or overtly) reinforce the ways of a dominant few (Wenger as cited in Jawitz, 2009, p.603) which would strengthen the existing healthcare education beliefs, values and knowledge systems (Jackson, 2004).

In closing, this program theory examines how context and professional practice impact peer coaching. The literature on situated learning theory and communities of practice highlight key areas to examine in the data collection phase of the thesis.

Guiding Questions:

- What difference does the professional environment/culture make to the experience of peer coaching?
- In what way does professional identity impact peer coaching?
- What influence can McMaster University have on the Community of Practice?

2.9 Gaps in Literature

A significant gap in the literature is the absence of research on peer coaching within the other healthcare professions, including nursing and OT/PT. In contrast, medical education represents most of the literature found in this review. McLeod & Steinert (2009) identified the need for wider exploration of peer coaching and Hooker (2013) specifically recognised the opportunity for further research on how individuals should be trained for peer coaching, including the length and content of the curriculum. In addition, despite the belief that theory is implicit in all programs (Wong, Westhorp, Pawson and Greenhalgh, 2012) there is the lack of openly identified theories within the peer coaching literature and it appears that many peer coaching programs are not developed with a theoretical framework. Lastly, little attention is given to how context within the healthcare professions impact the outcomes of peer coaching.

2.10 Summary of Chapter

This chapter offered an overview of the relevant literature on faculty development and peer coaching. The main findings include how peer coaching has remained a consistent topic in higher education over the past several decades and has grown to become increasingly popular in healthcare education. This chapter also briefly explained how conducting a realist evaluation (my chosen methodology) involves the identification of possible program theories associated with the research topic. Using the literature and my own professional experience, I created four plausible, evidence- based program theories to help guide my EdD thesis. My goal is to use the four program theories and the guiding research questions listed above **to examine the impact of peer coaching on healthcare education faculty.** My thesis does not evaluate a

specific peer coaching program but instead, it uses these candidate program theories to discover the impact of this form of faculty development.

The next chapter will describe the theoretical framework used in this research (which is different from the theories and program theories described in this chapter) followed by the methodology chapter.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 Introduction

The previous chapter outlined key aspects from faculty development, coaching and peer coaching literature. It also described four candidate program theories created from the literature and my professional experience as a coach. The aim of this chapter is to explore the theoretical and philosophical influences on my research study. It introduces Bhaskar's philosophy of Critical Realism and Archer's Realist Social Theory. These theories are amongst the many "intellectual precursors" (Pawson, 2013, p.3) that contributed to the development of realist evaluation, my chosen methodology. In addition, I include input from Clark (2008, 2015) Davis (2015) and Sayer (2010) who endeavor to make critical realism accessible to novice researchers. I have marked key concepts in bold to assist with understanding. Finally, I discuss my personal insights from this theoretical journey. The methodology chapter follows the theoretical framework.

3.2 Significance of Theoretical Framework

A theoretical framework serves several purposes: it describes the theory of the research study; informs the methodology; helps narrow the scope of the research; and clarifies associated concepts. It highlights the theoretical lens from which the researcher views the world and reveals how their ontological beliefs (their assumptions about reality and the way things are in the world) affects their opinions on epistemology (how we produce knowledge), and in turn, how they advance the research process.

As a reminder to the reader, the purpose of this thesis is to examine the impact of peer coaching on clinical faculty within health professions education with McMaster University's Faculty of Health Sciences. I chose realist evaluation as the methodology because of its suitability for this topic. I considered how my beliefs influenced my research study; including the choice of methodology, the approach to the literature review, the questions I asked, and

how the data was analyzed. I recognize that when I began examining realist evaluation, I was in a methodological and ontological jumble. At the time, I did not fully understand critical realism but I now see that my journey was part of the study. I feel confident that I worked through my initial confusion, gained greater clarity and produced a more transparent account of the study.

3.3 Bhaskar's Critical Realism

Critical realism is a philosophy of science and social science which is ideally suited to studying complex situations. In the late 1960's Bhaskar, the creator of critical realism, proposed that a singular, real world exists independently from our beliefs and experiences of it. He focused on ontology and what the world must be like for knowledge to be possible. Bhaskar confronted the **epistemic fallacy** he described as "the view that statements about being can be reduced to or analysed in terms of statements about knowledge; i.e. that ontological questions can always be transposed into epistemological terms" (2008, p. 26). Bhaskar proposed that **ontology determines epistemology** and so, if ontologies are different, then epistemologies will be different.

Bhaskar's theory challenged mainstream science, including positivism and postmodernism. He questioned the understanding of reality and whether it could ever be known. Critical realism submits that our beliefs about the environment, the culture we live in, the life around us, etc. are only ever an **account of reality**. Sayer (2010) holds that the "concept of absolute truth is incoherent" (p.205) which means that **we can only know a fallible, mind-independent reality** (Clark, 2015).

Critical Realism is a **non-reductionist, explanatory theory**. As a **model of causality with no universal truths,** Bhaskar defined critical realism as "a philosophy that we can act on" (Bhaskar, 2014). Rather than accepting how things appear on the surface, predicting outcomes and measuring results, critical realists **question everything**. Discovering **the 'why' of complex situations** and the **underlying explanatory factors** (Davis, 2015) are the goals of critical realist enquiry. Critical Realists maintain the natural world operates as a **complex, open system** that

cannot be studied in the same manner as a closed systems. Reality is not simple and **"**causation is not linear" (Clark, 2008, p. E70). Patterns of events in reality exist somewhere between chaos and uniformity (Bhaskar, 2014). There are only demi-regularities which are impacted by context and are always subject to change.

According to Bhaskar, **the world is stratified** (2008), into three domains: the **empirical** (what we know through perceptions or experience), the **actual** (events, actions and outcomes), and the **real** (underlying structures and powers that may not be obvious). Bhaskar illustrates this idea with the following diagram:

	Domain of Real	**Domain of Actual**	**Domain of Empirical**
Mechanisms	✓		
Events	✓	✓	
Experiences	✓	✓	✓

Figure 3.1 Bhaskar's Domains of Reality (2013, p.47)

Explained another way, we can only perceive things through observation or experience, known as the 'empirical'. We have an account or interpretation of these experiences, referred to as the 'actual'. This means we can never truly know 'the actual', thereby making our **knowledge imperfect**. Underneath the actual, is 'the real'. The real may remain latent and unseen; it can be activated or generated to influence outcomes in the actual domain. In other words, "the way things are affects the way which we know them, and the extent to which they can be known" (McGarth, 2016). Critical realism seeks to identify and understand these '**explanatory factors**' (Clark, 2015).

Bhaskar presented critical realism as a **stratified and emergent** ontology (Clark, 2015). Over time, elements can come together or emerge which result in change or the creation of

something new. Bhaskar describes how these **emergent powers** cannot be reduced to their more fundamental parts: "the operations of the higher level cannot be accounted for solely by the laws governing the lower order level in which we might say the higher-order level is 'rooted' and from which we might say it was 'emergent'" (Bhaskar, p.102). This means that if an element from lower down in the hierarchy is removed, elements higher up the hierarchy will no longer exist.

In summary, Bhaskar's theory of critical realism encourages us to question what we observe, think critically about what appears, and consider how reality exists in a complex and open system that can never really be known.

3.4 Archer's Realist Social Theory

Building from Bhaskar's philosophical work, the theorist Archer made a significant contribution to critical realism by creating the Realist Social Theory (1995). This theory explores the key concepts of embodiment, reflexivity, structure and agency, causal powers and morphogenesis.

As physical beings, people are constrained by real things (their bodies, gender, what is possible in the environment or historical context, etc.). This is referred to as **embodiment**. We have subjective, inner lives and our experiences are different from each other which influences who we are and what we think about. Critical realism encourages researchers to look at the whole picture. They neither conflate nor reduce these experiences into a grand narrative (Davies, 2014).

Archer (1995) highlights the "**vexatious fact of society**" (p. 1) which includes the everyday realities of living. We may have shared, common experiences but society, culture, family and other key figures contribute to the unique identity we create. Although constrained by the "**involuntaristic placement**" (p.201) we are born into (e.g. class, race, gender, historical time), Archer believes we are not permanently defined by it. When we reach a level of maturity at the appropriate life stage, we can reflect, create our own identity and take action. We have **agency** (Archer, 1995).

Archer suggests that our ability to reflect is what defines us as humans. **Reflexivity** is the "regular exercise of the mental ability, shared by all normal people, to consider themselves in relation to their (social) contexts and vice versa" (Archer, 2007, p.4). We have **inner and ongoing conversations with ourselves**, which enable us to reflect, question, evaluate and make change in our lives. Additionally, we continually evaluate what we are doing, who we are and who we want to be. Archer outlines several types of reflexivity, yet it is communicative reflexivity that is the most relevant to this research. Communicative reflexivity focuses on "those whose internal conversation require completion and confirmation by others before resulting in courses of action" (2007, p.93). It is particularly important because sharing internal dialogue with a coach is fundamental to the peer coaching process.

The ability to hold internal conversations is one of the three main causal powers outlined by Archer (2007). The first causal power is **personal emergent property** (PEP) and is exercised through the ability to reflect and engage in inner dialogue which are crucial to "how we actively make our way through the social world" (p.65). The next two causal powers are **structural emergent properties** (SEP) and **cultural emergent properties** (CEP) which are **activated by the PEP**. Instead of sidestepping the impact of structural and cultural influences, Archer proposes that the interaction of these three powers, including processes of culture, geography and environment are necessary for agency to be activated. In the context of educational institutions, structure can include the academic institution, national accreditation bodies, and professional regulatory agencies. Culture can include public and student expectations, the larger institutional and academic culture of the University plus the norms and expectations within the faculty and the specific healthcare professions. These powers are latent until they emerge through human action (agency) in certain conditions (contexts). It is not a given that an outcome will occur, but through inner conversations and our ability to reflect, we can make choices about whether or not to take action.

Archer's work explores the significance of the factors that contribute to the complexity of agency:

> *"To talk about Social Agency at all means returning to the central problem presented by the 'vexatious fact of society' and its human constitution. That neither the structuring of society nor the social interaction responsible for it can be discussed in isolation from one another is the central tenet of the morphogenetic perspective" (Archer, 1995, p.247)*

Morphogenetic perspective is another key concept of Archer's Realist Social Theory. In biology, morphogenesis is the beginning stage of a process that causes an organism to take its shape. In social sciences, Archer (1995) defines morphogenetic perspective as:

> *"The 'morpho' element is an acknowledgement that society has no pre-set form or preferred state: the 'genetic' part is a recognition that it takes its shape from, and is formed by, agents, originating from the intended and unintended consequences of their activities" (1995, p.5)*

In summary, Realist Social Theory contributed to Critical Realism Theory by exploring the impact of both our involuntary placement in and the vexatious fact of society. It examines the interactions between agency, structure and causal powers which may or may not be activated to result in an outcome(s).

3.5 Criticism of Critical Realism

I do not pretend to understand all of Bhaskar's academic writing and I still have unanswered questions about critical realist philosophy. One concern I have is the extent to which Archer suggests that our identities are formed by external factors and how with maturity and reflection, we can make change. There appears to be insufficient attention given to the individuality we have from birth. My own belief is many people have well-formed personalities from a young age and are secondarily influenced by the world around. Critical realism is by no means a theoretical panacea. It stirred up debate and critics are particularly vocal in their disapproval. A sociology blog (orgtheory.net) written by guest American academics includes subject titles such as "*United Against Critical Realism"* which laments that "critical realism is lame" and is "low-quality, confused, and misleading body of work".

3.6 My Journey with Critical Realism

Taking the time to create this theoretical framework made a significant contribution to my research and me as a researcher. Before learning about critical realism, I did not pay much attention to how I perceived the world or how my propensity to question everything was in fact, living like a critical realist. My doctoral coursework provided the opportunity to examine other epistemological theories including positivism, empiricism, objectivism and constructivism. Although each theory had merit, they did not seem completely logical to me. Once I examined critical realism, it made more sense why I chose realist evaluation methodology and how it aligns to my thinking.

Deciphering Bhaskar's critical realist theory was difficult for me. I sat in quiet anguish and self-doubt for many months before I discovered that I was not alone in my confusion. Bhaskar's initial PhD thesis at Oxford University was rejected for being too radical and he was instructed to simplify the thesis for his examiners. This simplified (!) thesis was eventually accepted and printed virtually unchanged as Realist Theory of Science (1975). I continued my efforts until I eventually understood the main tenets of his philosophy. Overcoming this confusion was a highlight of the doctoral process. My understanding of critical realism continues to evolve and with it, comes new personal and professional growth in the following areas:

Research: As a novice researcher, I have considered the influence that my own beliefs have on the collection and analysis of data in this study. Critical realism offers a lens of questioning that goes beyond what I can see and understand; accepting there is a real world that is mind-independent helps me to understand that both my research participants and I have partial and fallible knowledge. It encourages me to critically question things that seem 'true' and also consider how structures "exist and exercise power irrespective of whether it is known or recognized by individual humans" (Clark, Lissel and Davis, 2008, p. E69). I continually remind myself to take a step back and critically evaluate what might be beneath the participants' answers and challenge myself to recognize my own assumptions about the data.

Coaching: The tenets of critical realism bring academic depth to coaching. Archer's (1995) question, "what are people doing when they engage in self-talk" (p.4), is highly relevant

because coaching is taught as a set of skills (active listening, asking questions which encourage reflection, discovery and action, etc.) with the goal of revealing the internal dialogue of the coachee. As a coach and in my current position of employment working at a medical school, Realist Social Theory reminds me to appreciate and respect the unique, lived experiences of individuals. Similarly, I remain aware how multiple realities exist within diverse contexts, all which can produce different results. When evaluating the impact of coaching as a faculty development tool, it is beneficial to remember that the world is complex, which can never truly known and as such, there is no one solution that fits all people, in every context.

Reflexivity: Archer describes reflexivity as what people say when they "talk to themselves within their own heads" (Archer, 2007, p2). She views this as "the means by which we make our way through the world" (p.5). As mentioned above, internal conversations are what coaches try to access and critical realist theory has prompted me to examine my own beliefs about reflexivity in the coaching process. When coaching in previous professional situations, I came across many individuals who did not acknowledge their ongoing inner dialogue and followed it without reflection. I also witnessed individuals being highly self-aware in certain areas of their lives (e.g. at work) and not aware in other areas (e.g. personal relationships). Taking a critical realist perspective, although people have agency, they are also deeply complex. I remain cautious in over stating the power that peer coaching can have on faculty's existing thinking to produce improved behaviours.

3.7 Summary of Chapter

This concludes the theoretical framework. The chapter reviewed the main tenets of critical realism philosophy including the seminal works by Bhaskar and Archer. Researching their work initiated a greater understanding of my own beliefs and the influence they have on my research. The following chapter on methodology will describe realist evaluation.

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter reviews the methodology and methods used in the research. The first section describes the main concepts of realist evaluation and how it works. Next, an explanation of the RAMSES ll Reporting Standards, which are used as guidelines, is given. Relevant information about the context and background of the research environment is shared, followed by an explanation of the research design and the methods used. Finally, the limitations of the research and the impact on the researcher are discussed.

4.2 Choosing a Methodology

Undoubtedly, determining the methodology is a critical stage of the thesis process and Charmaz (2006), encourages the researcher to "let your research problem shape the methods you use" (p.15). The literature supports the view that peer coaching is a popular faculty development activity and yet, there is a lack in understanding in what makes it effective. I considered this gap in knowledge when formulating the aim of the research (*understanding the impact of peer coaching on clinical faculty within health professions education*) and developing the research questions listed above in the previous chapter *(e.g. how does the relationship influence the coaching experience? In what ways does the coach and coachee both learn from each other? etc.*). While conducting the literature search, I noticed how common it is for evaluators to use empirical-analytical methods with the goal of measuring variables and seeking objective knowledge. This approach did not align with my theoretical beliefs and so, I examined other research studies in healthcare education and the different types of evaluation used by researchers. As explored in the theoretical framework, critical realism aligns with my beliefs and by extension, so does realist evaluation methodology.

As a methodology introduced less than three decades ago, realist evaluation has become less experimental and a more accepted methodology. An "avalanche of evaluation activity" (Jagosh,

Tilley and Stern, 2016, p. 268) has occurred which cite a realist perspective when choosing a methodology. There is also an increasing number of realist evaluations being used to investigate the complexity of healthcare programs (Porter and O'Halloran, 2012, p.21). I knew I wanted to conduct an evaluation within my academic organization but choosing this type of methodology was challenged by the stakeholders in the research-intensive environment at McMaster University. Although they stated their preference for an approach more in-line with a randomized control trial, I was able to address their concerns and gain approval by providing additional information about this theory-driven form of evaluation. With all these considerations, **I chose to use realist evaluation methodology**.

4.3 What is Realist Evaluation?

Shaped by Bhaskar's Theory (2008) of Critical Realism in which the real world exists and is interpreted through human senses, this methodology incorporates the complexities of situations, including the multiple layers of social and structural systems, and explores the generative causation to help understand what influences outcomes. Realist evaluation was developed by Pawson and Tilley as a form of applied research that was "deliberately constructed to stand between the poles of positivism and relativism" (1997, p.158). It seeks to identify the theories that influence the specific program being evaluated and goes beyond the level of success of a program ('did it work?'), to identify and evaluate how context and mechanisms influence program outcomes. Realist Evaluation seeks to understand the inner workings of social structures and to identify generalizable themes from complex environments to help isolate the factors that contribute to change in participants. In their seminal book, *Realistic Evaluation*, Pawson and Tilley's (1997), outlines how to examine "What works for whom, in what circumstances, and in what respects, and how?" (Pawson and Tilley, 1997, pg. 85). This tagline was later revised to "Discovering what works, for whom, in what circumstances, in what respects, over what duration and, above all, why." (Pawson, 2018, p. 49).

What makes this evaluation different from other forms of evaluation is that it moves away from the classical experimental design. Realist evaluation investigates how programs or interventions

are influenced when different elements come together. It is underpinned by the critical realist theory, that knowledge is fallible and can never really be known. It aims to describe how structure and agency lay dormant until something is triggered that leads to an action or outcome. It also accounts for complexity and accepts that many results can be found; "every outcome of a programme is a result of multiple causes, and that every program may have many different outcomes" (Westhorp, et al., 2011, p.3). Realist researchers do not seek "outcome regularities" (Clark, 2008, p. E71) but accept that programs "operate as open systems in which all levels are interacting" (Westhorp, et al, p.3) that cannot be controlled. Expressed another way: multiple participants, in multiple contexts, with multiple mechanisms, produce multiple outcomes. Understanding how these multiplicities interrelate will provide insight which can be used to create more targeted faculty development programs and interventions. Accepting there are many possible causes and answers to a situation is essential when embracing the nuances of a realist evaluation, which can make it unpopular with evaluators who hold a positivist frame of reference.

4.4 How Does Realist Evaluation Work?

Realist evaluation describes causation with a context-mechanism-outcome configuration formula referred to as **CMO Configurations.** It is not a mathematical formula (Jagosh, 2017) but an interaction between context and mechanisms that produces an outcome:

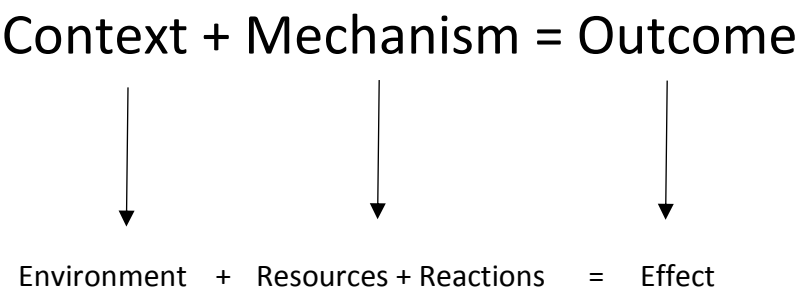
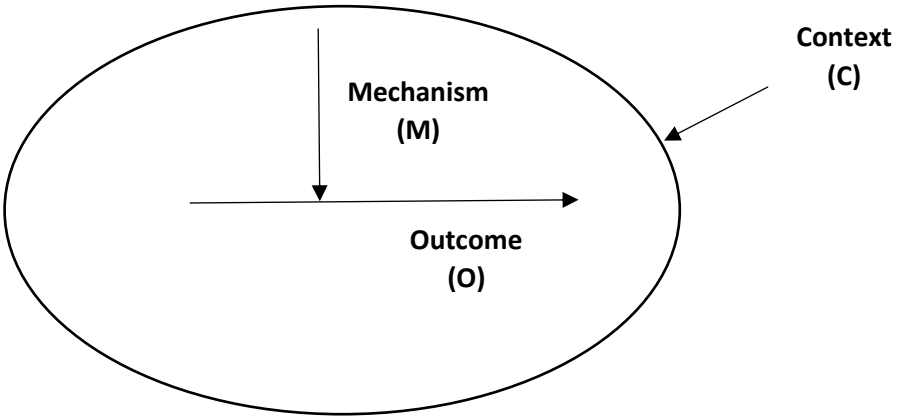


Figure 4.1 CMO Configuration (Pawson and Tilley, 1997; Jagosh, 2017)

CMOs are representations of realist thinking: “programs work (have successful ‘outcomes’) only in so far as they introduce the appropriate ideas and opportunities (mechanisms) to groups in the appropriate social and cultural conditions (contexts)” (Pawson & Tilley, 1997, p. 57). This form of evaluation operates on the belief that programs do not change things, but people make decisions to change with the information they receive (Westhorp et al., 2011, p.5) in programs.



“An action is causal only if its outcome is triggered by a mechanism acting in context”

Figure 4.2: Generative Causation (Pawson & Tilley, 1997, p.58)

Context (C)

The best way to explain context is “anything in the backdrop of the program that is not formally part of the program” (Jagosh, 2017). Interventions or programs are delivered in pre-existing social contexts and realist evaluators seeks to understand how these pre-existing contexts either “‘enable’ or ‘disable’ the mechanism of change” (Pawson & Tilley, 1997, p.70). Context is always changing, and most settings have several different layers to it (Brydges & Butler, 2012). Realist evaluators expect that outcomes from programs will be different depending on the context in which they are delivered (Westhorp, 2014). In this study, contexts can include:

- the cultural norms within the healthcare profession (e.g. medicine, nursing or physiotherapy);
- the work location (i.e. central teaching hospital or rural clinical site);
- where they sit on the teaching hierarchy (tenured professor through to new adjunct clinical preceptor);
- McMaster University's teaching, tenure and promotion policies;
- how peer coaching is used within the professional faculty (whether summative and formative).

Mechanisms (M)

Mechanisms help explain the hidden workings (Pawson & Tilley, 1997, p.65) of programs. Mechanisms are not the same as program's strategies (Jagosh, 2017) or program activities (Westhorp,2014) but are the 'active ingredients' (Westhrope et al, 2011, p.1) which "triggers a reaction from its subjects" (Pawson & Tilly, 1997, p. 66) at the individual level and from the "choices and the capacities they derive from group membership" (p.66).

Mechanisms refer to the resources in programs that influence people's decision to make change. They are influenced by contextual factors, not always evident and can remain latent until prompted by an external influence; they have latent potentiality (Jagosh, 2017). Mechanisms are on continuums of activation, not on/off, but more gradual like the activation of a "dimmer switch" (Dalkin, Greenhalgh, Jones, Cunningham & Lhussier, 2015, p.5). The concept of a mechanism relates to the critical realist idea of causation and a stratified reality (Bhaskar, 2008).

Additionally, mechanisms are a **mix of reasoning and resource**, which can include positive or negative, emotional or cognitive reactions, that can either activate or inhibit an outcome. Dalkin et al., (2015) modified the formula for CMO configurations to account for Pawson and Tilly's "weaving process" (1997, p.66) binding resources and reasoning together as two, equally influential parts of the mechanism:

M (Resources) + C ⟶ M (Reasoning) = O

The following diagram shows how an intervention of **resources** is introduced within a **context** and may influence a person's **reasoning**, which then changes their behaviour to produce an **outcome(s)**.

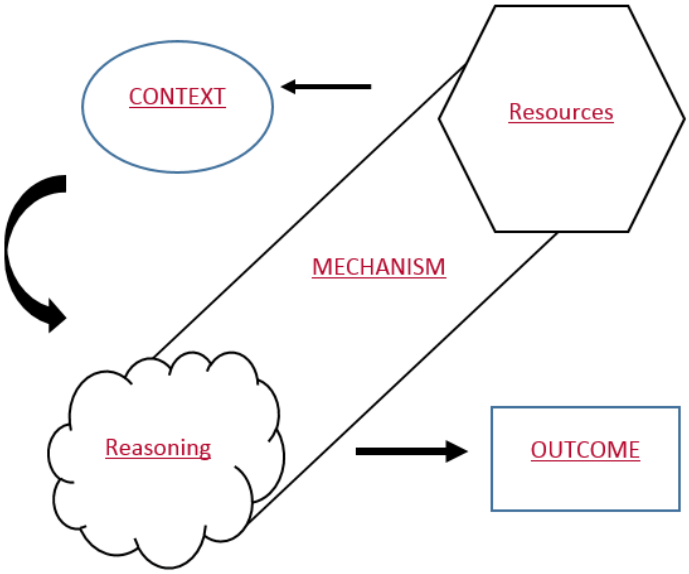


Figure 4.3 Refined CMO (Dalkins et al., 2015, p.5)

Identifying mechanisms is difficult for several reasons. Firstly, there can be many mechanisms within the same context. Secondly, individuals can react differently to the same mechanisms. Next, making decisions is an "internally complex" (Pawson & Tilley, 1997, p.38) activity which can occur at any time along the "entire learning process" (p.38) and may lie dormant for any length of time. Furthermore, mechanisms function at multiple levels of reality and can impact outcomes that are not directly related to the mechanism itself (Westhorp et al., 2011).

Outcomes (O)

Interventions do not produce outcomes but offer opportunities "which may (or may not) be triggered into action via the subject's capacity to make choices" (Pawson & Tilley, 1997, p.38). Outcomes can be influenced by multiple contexts and mechanisms (Marchal, van Belle, van Olmen, Hoerée & Kegels, 2012) which realist evaluators seek to identify. Pawson and Tilley (1997) encourage evaluators to understand how multiple outcomes are created and how outcomes can be intended (e.g. participant learns the specific skill outlined in the program objectives) or unintended (e.g. participants form new work relationships), qualitative, (e.g. increased self-esteem) or quantitative (e.g. improved ratings in faculty's feedback from students).

In summary, the realist evaluation cycle (Pawson and Tilley, 1997, p. 85) is shown as:

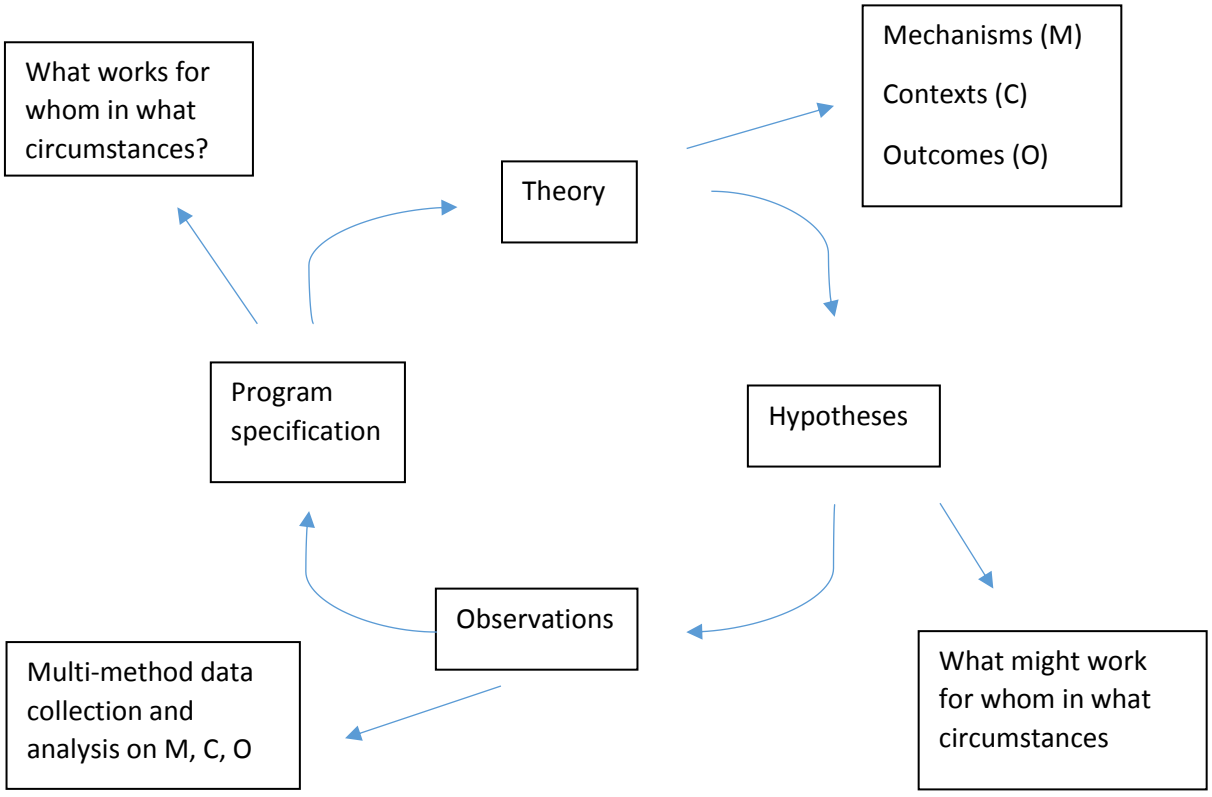


Figure 4.4 The Realist Evaluation Cycle (Pawson and Tilley, 1997, p.85)

4.5 Limitations of Realist Evaluation

Although the body of realist evaluation literature develops, there are ongoing issues that have not been fully addressed and cause limitations to this research methodology. Among the main gaps determined are inconsistently applied methods; including the definition and identification of mechanisms and contexts; plus the misunderstanding of how multiple, co-existing and/or dormant mechanisms influence outcomes.

Concerned with the reliance on input-output relationships and the linear chains of causality on organizational research, Weber (2006), suggests "for mechanism-oriented research to be generative of theory, researchers should act as playful pragmatists and treat mechanisms as toolkits for working on theoretical puzzles" (p.120) rather than being overly systematic and empirical which, in Weber's opinion, adds little to existing theories. Weber supports the use of mechanisms but highlights the need for a specific but often missing, skill set to properly carry out this type of theory building research. In 2010, Astbury and Leeuw also described the persisting ambiguity and misunderstanding about what mechanisms are, how they areidentified and their use in evaluation. In a later review of published studies using realist evaluation in health research, Marchal et al. (2012) found differing opinions and inconsistent definitions of mechanisms and contexts plus a significant variety on how realist evaluations were being conducted. As an example, not all researchers create mid-range or program theories to guide their evaluation, a crucial step in the research process. Marchal et al. also identified problems in detaching mechanisms from contexts and properly identifying the contexts that "really matter" (p.208).

In a critique of realist evaluation in healthcare research, Porter (2015) suggests that in addition to issues with the theoretical framework, remains the continuing irregularity over the terms used and "categorical confusion" (p.239) between context and mechanism. Porter dismisses Pawson and Tilley's definitions and reasons that the "crucial distinction lies not between contexts and mechanisms but between pre-existing contexts and novel programmes, both which contain mechanisms" (p.246). Porter challenges the assigned passivity of context by instead, construing it as a "collective noun for mechanism" (p.246). Using Porter's approach,

mechanisms could be identified within the background (contextual mechanisms) and within the intervention (programme mechanisms). Porter modifies the original C+M=O to Contextual Mechanisms (CM)+Programme Mechanisms (PM)+ Agency = Outcome (p.250). It appears that this approach has not been embraced by the realist community but it does provide additional perspective to the assignment of context and mechanism when analyzing collected data.

As shown above in Figure 4.3, Dalkin et al. (2015) sought to address some of the aforementioned challenges by refining the C+M=O equation. They encourage evaluators to recognise that mechanisms can include both resources and reasoning and are on a continuum of activation.

In my own experience with using this methodology, I felt the confusion and labour intensity described by these researchers. I discovered that along with the lack of specific procedures (CARES; 2016a; Jagosh, 2017) in conducting realist evaluation, exists few guidelines and detailed research examples to follow. Even RAMESES ll does not offer specific strategies when identifying contexts and mechanisms. Being aware of the limitations of realist evaluation and understanding the common errors researchers make, I prepared by having ongoing dialogue with supervisor. I am aware that data from interviews is rich and by its very nature, a snapshot of what occurred at the time of doing results. My data analysis use CMO configurations as a way to consolidate and understand possible causality in relation to program theories and literature. My interpretation of data is part of a stratified and iterative research process (Pawson, 2006b) and will develop and deepen over time with experience and reflection.

4.6 RAMESES ll Reporting Standards

Realist evaluation was created without strongly set rules (CARES; 2016; Jagosh, 2017) and although the absence of prescribed rules offers the freedom to craft evaluations around specific objectives and contexts, there are challenges in operationalizing this form of evaluation. In 2016, Wong, et al. and created RAMESES ll Reporting Standards for Realist Evaluations to help distinguish it from other forms of evaluation. These reporting standards, funded by the United Kingdom's National Institute of Health Research's Health Services and

Delivery Research (NIHR HS&DR), were created using a Delphi panel of 35 global members who ranked and created a 20-item list of the standards that should be included in all realist evaluations. (See RAMESES Reporting Standards in Appendix E). The aim of the standards is to offer an ordered framework that offers "consistency and rigour" (p.1) when conducting an evaluation in complex situations.

Initially, these standards appeared like a check list to me, merely words on a page. Yet, as I referred to them throughout the research, I modified and improved my actions. Although the reporting standards do not follow the traditional order of a thesis, in the end, they blended with the thesis structure to provide a framework for a thorough, detailed and credible research study. Following the RAMESES ll Reporting Standards, I completed the research with a deeper understanding of the process and meaning of conducting a realist evaluation.

4.7 Rational for Using Realist Evaluation

Before making the decision to conduct a realist evaluation, I considered other methodologies. In my doctoral program, we examined many facets of action research and from this exposure, I knew that evaluations based on a positivist framework and the idea of an expert and neutral evaluator who searched for objective assessment (Greenwood & Levin, 2007), were not appropriate for my environment, the research question or my own epistemological beliefs. As with much existing research in medical education, I wanted to follow a sequential (Creswell, 2009) participatory approach (Guba and Lincoln, 2008) which would actively involve faculty. I was also interested in the action research cycle as a "collaborative democratic partnership" (Coghlan and Brannick, 2005, p.4) which would further include faculty as an active part of the research decision making. I was drawn to realist evaluation methodology because it is a cyclical process that includes ongoing refinement and redefinition.

I briefly considered conducting a realist randomised control trial (RCT) (Jamal, et al., 2015). Even though it is likely that this approach would have been well-received by stakeholders within Faculty of Health Sciences, it did not align with my belief and experience that coaching is too complex for a realist RCT. Additionally, the cost, time and practicality of such a study were not

feasible. I was also aware that the gold standard in evaluating health sciences education is whether the intervention improves student learning and increases patient care but that there are innumerable factors that can impact these outcomes and evaluating such measures require significant resources not within the parameters of this thesis.

Realist evaluation piqued my interest and it took several attempts, including two trips from Canada to the Centre for Advancement in Realist Evaluation and Synthesis (CARES) at the University of Liverpool to begin to understand and embrace it as my chosen methodology. Realist evaluation is suited to studying the impact of peer coaching in healthcare education because as Wong et al., (2012) suggest "medical education interventions are highly context-dependent" (p.90). By extension, educational interventions in the other healthcare professions (nursing, physiotherapy, etc.) also have this level of complexity. Realist evaluation is suited because there is an expectation to focus on the overall process of what is being evaluated and to understand the complexity of the assessment (McEvoy and Richards, 2003). Research conducted in learning environments is multifaceted (Salomon, 1991) which makes it difficult to accurately anticipate the outcomes of development activities.

4.8 Background to Research Problem

Approaching research from a critical realist perspective, the goal is to understand how faculty's contextualised social situations (Linsley, Howard, Owen, 2015), including how their organizational, professional and personal situations, influence their experience and outcomes of peer coaching. Pawson and Tilley (1997) believe that "programs are always introduced into pre-existing social context....[and]…these prevailing social conditions are of crucial importance when it comes to explaining the successes and failures of social programs" (p.70). In this research, the **macro** (or large systems) context includes the national and professional bodies of the healthcare programs in Canada, plus the societal and legal expectations of higher education institutions in training students as future healthcare providers.

At the **meso** (or medium systems) context, we have McMaster University as an organization. Until recently, the emphasis on McMaster University's faculty has been on their research and scientific contributions. Yet, in the changing culture of accountability and challenging accreditation standards, there is greater attention on teaching effectiveness. In 2006, McMaster University was one of the first in Canada to add teaching stream appointments to its faculty positions. These positions allow faculty to focus on the vocation of teaching without the pressure of producing academic research outcomes. In 2013, the McMaster Institute for Innovation and Excellence in Teaching and Learning (MIIETL) was launched to provide expertise and support to "advance pedagogical innovation" (McMaster, 2013) to cultivate the University as a learning organization and to support the increased value given to teaching. In addition to these changes, tenure-track faculty are encouraged to create and maintain a teaching portfolio which includes self -assessment, feedback from students, and support from other faculty members. This portfolio can be used as part of their appointment, tenure and promotion process (McMaster, 2012). Although there is support from the central functions for faculty, the Faculty of Health Sciences (FHS) behaves independently from the University and creates its own policies, and designs and delivers its own faculty development initiatives. It is expected that FHS students and teaching faculty assume a student-centred, inter-professional approach to healthcare education, which also includes problem based learning (PBL) and evidence based medicine as core learning methods (both having originated from McMaster University).

The first chapter provided an overview of the coaching projects within McMaster University and the literature review discussed the increasing attention given to the professional development of healthcare education faculty (Steinert, 2010; Steinert 2011). In particular, the use of peer coaching has gained popularity and yet, there is insufficient evidence to show the effectiveness of this development approach (Schwellnus & Carnahan, 2014). Within Canada, some medical schools have published research on the subject (McGill University's Cruess, Cruess, & Steinert being the most notable contributors and referred to elsewhere in this thesis) but McMaster University has yet to contribute much to this academic dialogue.

It was in this environment that an inter-professional project team within McMaster University was awarded a small internal grant to develop its own peer coaching program within the Faculty of Health Sciences (FHS). The goals for creating this activity are to use peer coaching strategies to help promote teaching excellence and best practice through feedback and reflection on clinical, classroom and/or small group teaching practices. As the only staff member on this all faculty project team, I was interested in understanding the impact of peer coaching; particularly which aspects of the experience influence which outcomes. I joined the project team with the existing assumption that coaching is an effective development tool. Peer coaching can be complex; occurring formally or informally, structured or unstructured, voluntary or mandatory, all within numerous professional contexts. Early on, I realized that it would be improbable within the scope of this research to isolate all the key contextual variables (Plank, 2011) and control the external influences (Scott & Morrison, 2007) found in teaching settings. In addition, it was not within the range of this research to fully test the effectiveness of coaching, nor to evaluate one program (*did it work?*). Instead, the goal is to closely examine the pieces that contribute to the outcomes achieved through peer coaching, in an attempt to answer the realist evaluation mantra of *"what works for whom, in what circumstances, and in what respects, and how?"* (Pawson and Tilley, 1997, pg. 85).

Finally, there is the **micro** context, (individual or relationship level). In this research, the micro context involves individual faculty and what "prior knowledge, beliefs and emotions" (Brydges and Butler, 2012, p.74), they bring to the learning context the interactions and professional experiences they have within their own working environments, and as a coach or coachee.

4.9 Realist Evaluation Research Design

This section outlines the main steps involved in conducting a realist evaluation which includes the following actions (Jagosh, 2017; Wong, et al., 2016):

A. Create Program Theories or MRT if larger studies (*Chapter 2)*
B. Review internal documents *(Chapter 4)*

C. Follow interview protocol *(Chapter 4)*
D. Gather evidence *(Chapter 4)*
E. **Analyse data** *(Chapter 5)*
F. Construct theory and data into CMO configurations *(Chapter 6)*
G. Discuss results *(Chapter 6)*
H. Present research conclusions and recommendations *(Chapter 7)*

A. Create Program Theories

Pawson and Tilley describe programs as ideas with goals and objectives, which are underpinned by (stated or unstated) small 't' theories. Realist evaluators aim to describe how these theories work to bring about the change. The theories are reviewed and modified based on the first few interviews and continue to be tested and refined throughout the evaluation cycle (Westhorp, 2014).

As described in the literature chapter, I proposed four candidate program theories that I developed based on the literature, input from key stakeholders, my experiences as a doctoral student and as a professional coach. Each program theory has an associated theory which is indicated in brackets:

1. An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience (Social Learning Theory).
2. Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn (Adult Learning Theory).
3. Peer coaching encourages learning in both the coach and coachee through a process of mutual feedback and reflection (Theory of Reflective Practice).
4. The context of where people work and their professional practice, influence the experience and impact of peer coaching (Community of Practice).

These candidate program theories were used as the foundation to create semi-structured interviews with research participants.

B. Review Internal Documents

Analysing internal documents and multiple sources of data has become a 'staple' (Bowen, 2009) of qualitative research as it can provide further detail on the context of what is being evaluated. Taking its roots from data triangulation (Denzin, 1970) where multiple data sources contributes additional information (Bowen, 2009; Cohen, Manion and Morrison, 2011), Yin (2018) describes the importance of gathering data from "people and institutions in their everyday situation" (p.98), and from various sources as a way to provide a "convergence of evidence" (p.129). Investigating grey literature such as institutional reports, policies, minutes, open letters, content from workshops, etc. (Blaxter, Hughes, & Tight, 2006; CARES, March 2016) can also help challenge assumptions or biases researchers may hold about the organization under study.

Realist evaluation is method-neutral (Westhorpe, 2014) which offers the freedom to use data collection methods that best suit the research question(s). A fundamental part of realist evaluation methodology examines how context, including norms, values and relationships, impacts mechanisms and outcomes (Jagosh, 2017; Pawson and Tilley, 1997; Westhorp, 2014). Although I made the decision to collect data through voluntary, semi-structured interviews with faculty from within the health professions education, reviewing internal documents related to faculty teaching and peer coaching at McMaster University, contributed additional information which was useful when creating the interview protocol and understanding the context of what participants were saying. Taking a step back to examine elements of the organizational culture also challenged possible bias and assumptions I had as an insider-researcher (Unluer, 2012). The documents I reviewed are publically available online and offer insight into the teaching environment within the health professions education at McMaster University. One example, is the Policy and Regulations with Respect to Academic Appointment, Tenure and Promotion (McMaster, 2012) which gives context for academic appointment and promotion requirements, and how faculty's teaching could be assessed. I am also aware that internal documents are a

version or interpretation (Atkinson and Coffey as cited in Bowen, 2009) and not proof of the context.

The following documents were reviewed:

Document/Resource	Overview
Policy and Regulations with Respect to Academic Appointment, Tenure and Promotion (McMaster, 2012).	Rules associated with academic appointment and promotion, including the assessment of a candidate's teaching (which may include student and peer evaluation).
Tenure and Promotion Workshop: Guidance for Faculty Members: Tenure and Permanence (McMaster University, 2012)	Overview of main process of Academic Assessment, Tenure and Permanence
MacPherson Institute Website (McMaster, 2018).	This resource provides faculty assistance with teaching development related activities (written and in-person learning opportunities).
New Faculty Guide - MacPherson Institute (McMaster University, 2014)	Comprehension information written for new faculty to prepare them for teaching.
Peer Observation of Teaching (McMaster University, n.d.)	Website with resources on Peer Coaching, Observation and Mentoring
Peer Observation of Teaching Project: Faculty of Health Sciences Forward with Integrity Faculty Development. (A. Walsh, 2014).	Objectives of the FHS Peer Observation of Teaching and Coaching Project include: 1. To facilitate Departments, Programs and Schools in designing and implementing peer observation of teaching programs. 2. To build mentoring and coaching relationships between teachers in order to enhance teaching practice. 3. To promote interprofessional collaboration towards teaching excellence. 4. To define best practices in peer teaching consultation.

Teaching Stream Faculty Committee Report (McMaster University, 2014)	Overview of the impact of Teaching Stream Faculty implemented in 2007 and suggestions regarding the policies surrounding Teaching---Stream Faculty
University Teaching Program (UTP) (n.d.)	Centrally delivered program for faculty at McMaster University to prepare them in the rigours of teaching at the university level.
Teaching Stream Appointments at McMaster University (2014)	Letter from Provost addressing the history and progress of teaching stream faculty
University Administration Proposes Expansion of the Teaching Stream (2017)	Letter from Provost and Vice President (Academic) responding to the McMaster University Faculty Association public request for the expansion of the teaching stream.
Self-Directed Learning from the Continuing Health Sciences Education (McMaster, 2018)	Two trained (physician coaches) are listed as available to help with identifying professional goals and pursuing continuing professional development activities.

Table 4.1 List of Internal McMaster University Documents Reviewed

C. Follow Interview Protocol

This section describes the interview protocol used as a data collection method. As a reminder to the reader, the focus of this research is to understand and describe the impact of peer coaching on health sciences faculty, ("What is the impact of peer coaching on clinical faculty within health professions education ?") using program theories to guide the research questions. My original plan had been to concentrate the research on physicians attending one specific per coaching program, the Peer Observation of Teaching Program offered as a faculty development program within the FHS. However, as I learned more about realist evaluation, it became evident to me that this focus would be too narrow and would exclude important sources of contextual data. Additionally, I was not looking to evaluate one program (e.g. *did the program work*?) but instead, to examine the broader impact of using coaching as a form of faculty development. Finally, the uptake of participants was low and by expanding, I was able to increase the number of interviews conducted. For these reasons, I expanded the scope to include other coaching

initiatives within FHS and interviewed faculty from the healthcare professions who either attended one, more, or none of the coach training programs offered at McMaster University.

The Realist Interview

Interviews conducted for realist evaluations are different from interviews within a constructivist framework. In an article dedicated to the realist evaluation interview, Manzano (2016) refers to interviewing as a craft, with key differences being the purpose of the interview (p.344) and how questions are asked (p.352). Whereas structured interviews rarely give the interviewee an "opportunity to question, or even understand the researcher's chosen theoretical framework" (Pawson, 1996, p. 298), realist evaluators clearly describe the theories they are investigating and invite participants to a semi-structured, theory driven discussion to work together. Participants help researchers "confirm, falsify and basically, refine the theory" (p.299). This approach is in contrast to other types of interviews, where the theories are described only once the final report has been written (Pawson & Tilley, 1997). Manzano advises that the planned interview protocol in a realist interview is "unpredictable, unstable and uncertain" (p.348). Despite Pawson & Tilley's (1997) recommendation to use the teacher-learner cycle, Nanninga and Glebbeek (2011) found that it was seldom used in the realist interviews, with only parts of the process identified. From my own experience, I can understand why this happens as it was a challenging process to follow.

Realist interviews are not considered as a "means to the end" (Manzano, 2016, p.346) but instead, part of a bigger data gathering process which are contextually grounded. The interview tests out a suggested theory and then is refined before the next interview happens. Manzano describes three distinct phases of realist interviewing:

Phase 1: Theory Gleaning Interviews: In this phase, the researcher already has exploratory program theories formulated from a literature review and professional experience. Practitioners are interviewed before the users of the program are interviewed. This group of

participants may identify “programme barriers and unintended consequences” (p.350) that they experienced. The goal of this phase is to achieve a full picture of what is happening and so, participants are actively encouraged to be direct with their experiences and opinions.

Phase 2: Theory Refinement Interviews: In this phase, interviewers aim to be transparent with interviewees and openly make reference to information gathered in the previous interviews. The researcher describes the theories under consideration which helps guide the interviewee to know what information the research is looking to answer. Interviewees continually add to the understanding of the program by enhancing or rejecting hypothesis (Pawson, 2013). Manzano tells interviewers to “plan for the unplanned and be ready for the exploration of unexpected” (p.352) which means there are continuing changes to questions in a realist evaluation.

Phase 3: Theory Consolidation Interviews: In this final phase**,** theories are either modified or dropped, and “theory refinement is never ending task” (p356). Manzano also recommends that researchers can consider returning to participants for a follow up interview to discuss results. Given the time constraints of this thesis, and moving across Canada to another university, follow up interviews were not completed. Follow up interviews could be considered if future research cycle is completed by another researcher at McMaster University.

Question Formation

Before fully understanding how to conduct a realist interview, I created a schedule of interview questions that focused on collecting information rather than investigating the candidate theories. Although the literature lacks many concrete examples about how to structure a realist interview question, fortunately, this methodology is forgiving of the novice researcher who may fumble. After learning about realist evaluation through the literature, attending programs dedicated to this methodology, and making mistakes, I better understood what it meant to ask questions that are “less standardized and more tailor made to refine specific outcomes” (Manzano, p.355). I created research questions to test the program theories as part of an ongoing process: each interview was influenced by the previous interview and the questions at

the end of the evaluation cycle were different from those at the beginning (Appendix F). I also followed each participant's lead on what they wanted to discuss. By doing this, I was able to capture data on additional and unexpected topics.

Recruiting Participants

The original intention of this research was to examine the impact of peer coaching on medical faculty. Nonetheless, this research expanded to include other healthcare education professions within the Faculty of Health Sciences, including nursing and rehabilitations sciences. The expanded scope was partly due to the need to increase the number of participants and partly my growing understanding of the significance of profession on outcomes (explained in the section below). Fortunately, adapting to the ongoing situation is acceptable, and even encouraged, within realist evaluation methodology.

Given the relative newness of coaching within FHS and the busy schedules of healthcare faculty, I had anticipated a small sample size and geared the research design accordingly. However, I naively believed the social capital I had built working at the university would make it easy to recruit participants. This was not the case. I had not fully appreciated how difficult it would be to get people from at least the three main professional disciplines of FHS: medicine, nursing and rehabilitation sciences (speech therapy, occupational therapy and physiotherapy) to participate in the research study. Nor had I expected that no one from either the Midwifery Education Program, or the Physician Assistant Education Program would volunteer. I experienced an unexpectedly slow and weak response rate to the email invitation I sent to faculty who I knew had participated in the Peer Observation of Teaching program and/or who had been involved in other peer coaching initiatives. After two unsuccessful attempts with email invitations, I enlisted the help of the Assistant Dean of the Continuing Professional Development for FHS and the Associate Dean of the Undergraduate Medical Education Program at McMaster University. Both gave me additional names of individuals known to be involved in peer coaching. While this approach resulted in a few more interviews, it became evident to me that coaching may not be used within the healthcare education programs within the FHS as much as I had believed or hoped.

Although I was concerned about the slow uptake in finding participants and the gaps in the sample, in retrospect, the time enabled me to step back from the interviewing phase, read more of the literature, refocus and modify the questions for more meaningful and relevant conversations. I was better able to consider the "knowledge profiles" (Pawson & Tilley, 1997, p.161) and attempted to create a meaningful "hierarchy of expertise" (p.163) and consider whether a participant would be able to refute or contribute to the candidate program theories. In addition, I learned a great deal from listening and transcribing each interview before conducting the next one. I reflected on my interviewing skills and endeavored to improve with each new interview.

Sampling

Emmel (as cited by Manzano, 2016) cautions realist researchers about the "allure of the number n" (p.346). Manzano echoes this warning and confirms that there is "no set number of interviews" (p.347) in a realist evaluation. The ideal situation when choosing participants is an abundance of potential interviewees who are chosen by their ability to contribute to the investigation (Pawson and Tilley, 1997). Therefore, instead of focusing on the number of interviews, they direct the realist evaluator to consider "who knows what?" (p.159) when seeking information and to gather sufficient data to compare the varying lived experiences of the participants. Pawson (2013) recommends continuing until the proposed theories have relevance and rigour. Disappointingly, a challenge of this research is relative newness of peer coaching initiatives at McMaster. This situation greatly reduced the number of faculty from which to gather interview participants. I accept that the subjects interviewed may not be a strong sample of the wider faculty population because it includes faculty who are interested in coaching.

Despite numerous and earnest attempts to gather participants from all clinical professions, no faculty from the Midwifery or Physician Assistant programs came forward and more medical faculty volunteered to participate than the total of the other professions. In the end, I

interviewed eleven individuals in total, with one participant choosing not to have their data included in my results (which I have removed from the data). As outlined in Chapter 1, I received ethical approval from both the University of Liverpool and McMaster University to conduct the interviews. Each participant received the Participant Information Sheet (Appendix G) at least five days before the interview which gave them an opportunity to ask questions and request additional information before participating in the interview. They were also asked to complete the Participant Consent Form (Appendix H).

Given their schedules and the widespread, geographical locations of the faculty, the interviews were conducted over the phone and each lasted between 23 and 70 minutes. The interviews were audio recorded, transcribed and placed into NVivo11 and reviewed in small sets (1-3 interviews) before the following interview(s) took place. The following table outlines the interviews conducted. Eleven interviews were conducted but only ten participants gave permission for me to include the data from the interview.

	Knowledge Contribution: Who Knows What	**Medicine**	**Nursing**	**Rehabilitation Sciences (Physio/Occ Therapy)**	**Physician Assistant and Midwifery**
Phase 1: Theory Gleaning Interviews	Interviewed stakeholders including senior leaders and faculty who were involved in creating and/or supporting coaching programs.	3	0	0	0
Phase 2: Theory Refinement Interviews	Leadership and Participants (including Assistant Deans and Department Education Coordinator, etc.) involved in using peer coaching.	3	1	1	0
Phase 3: Theory Consolidation Interviews	Tutor/Participant (Part-time or associate faculty who may use coaching either as coach or coachee)	2	1	0	0

Table 4.2 Interviews Conducted by Phase and Profession

The next chapter presents the data gathered from these interviews.

Reflection on Realist Evaluation Interviews

Part of the doctoral journey is reflecting on becoming a researcher. My personal experience of conducting realist interviews was that it was complicated, and I felt unprepared. Fortunately, my decision to transcribe each interview myself provided the feedback where my approach was clumsy, and I did not fully grasp how to complete a realist interview effectively with transparency. Despite realist evaluation requiring ongoing refinements from the initial set of questions, I initially felt an obligation to ask the same questions of everyone and was uncomfortable moving away from my script. In my first phase of interviews, I learned that being explicit about theories appeared to cause participants discomfort. In hindsight, I should have foreseen how asking healthcare faculty about their opinions on learning theories could induce their desire to give me the 'correct' answer. When I made this realisation, I redirected my focus back to the literature, revised my interview style and made adjustments to the questions (Appendix F). In the second round of interviews, I was more aware "who might know what about the program" (Pawson & Tilley, 1997, p.160) and I chose to simplify the information I shared about theories by asking more practical questions while explaining what I was trying to learn. I followed the realist evaluation approach and did not leave individuals to make the leap or connections themselves between theories and their experiences.

D. Gather Evidence

Realist evaluation is methods neutral. However, Clark, Lissel, & Davis (2008) suggest that "relying solely on qualitative accounts (particularly of those directly involved in a program) runs the risk of ascribing primacy to subjective accounts" (p. E76). Therefore, gathering data from different sources, referred to as triangulation, can be important to a realist evaluation.

Further Sources of Data

In addition to reviewing internal documents and collecting data through interviews data, I observed the delivery of a three hour long, Peer Observation of Teaching Program attended by

faculty members (further details about this program can be found in the first chapter). Watching and listening to this program from the back of the room, activated my understanding of how context can influence outcomes; it brought critical realism to life. My observations were not part of the formal data collection but contributed to the queries I had regarding peer coaching including:

- my original decision to include only medical faculty and the follow up decision to expand the sample to include other professional groups. I noticed a stark contrast amongst the faculty and their areas of speciality. Anecdotally, the nurses and general practitioners appeared similar to each in their questions and comments. The three surgeons in the room appeared to struggle with the concept of coaching and the importance of listening and asking questions. Their directive style was more in line with being an expert mentor;
- how different types of training programs can impact how coaching is used (e.g. Peer Development Model which is collaborative and formative vs a Peer Evaluation Model which may be used as part of a summative, promotion decision);
- the influences of having a voluntary vs assigned peer partner (this choice was strongly debated by the faculty who attended the Program!);
- the influence of trust and confidentiality within the coaching interaction

I did not attend any other coaching workshops at McMaster University as they had already occurred before I began conducting this research.

A traditional survey/questionnaire is another possible method of collecting data that I considered but did not use in this research. Given the small numbers of faculty who use or have used peer coaching within the FHS, I felt it would not contribute worthwhile information. Perhaps this tool would work if a future study involves a greater number of individuals in other faculties at McMaster University or from other universities.

Finally, I considered whether observing peer coaching meetings would give me additional information that would be beneficial, but it would not. This research does not evaluate coaching interactions but rather, aims to evaluate the impact of the coaching experience.

4.10 Summary of Chapter

This chapter reviewed the main principles of realist evaluation including what it is, how it works and the rationale of using it. It explained the research gaps and how following RAMESES ll Reporting Standards assisted with conducting the research. This chapter also provided an overview of internal documents. It described a realist interview protocol, including how participants were recruited and offered a personal reflection on the interview process.

The next chapter, Chapter 5, will explain the analytical framework and present the data collected in the interviews with faculty. Chapter 6 will offer a discussion about the data gathered and present research conclusions as CMO configurations. The final chapter will provide conclusions and offer recommendations for future.

CHAPTER 5: DATA ANAYLSIS

5.1 Introduction

The previous chapter outlined the methodology and research methods of this realist evaluation. This chapter continues a realist evaluation research design (Jagosh, 2017; Pawson and Tilley, 1997; Wong et al., 2016) by presenting the data gathered in the study:

A. Create Program Theories or MRT if larger studies (*Chapter 2)*
B. Review internal documents *(Chapter 4)*
C. Follow interview protocol *(Chapter 4)*
D. Gather evidence *(Chapter 4)*
E. **Analyse data** *(Chapter 5)*
F. Construct theory and data into CMO configurations *(Chapter 6)*
G. Discuss results *(Chapter 6)*
H. Present research conclusions and recommendations *(Chapter 7)*

5.2. Data Analysis

The RAMESES ll Reporting Standards (Wong et al., 2016) describe data analysis as an iterative process which takes a realist lens. Developing the coding system is an essential step in this process and includes analysing the data, searching for contexts (C), mechanisms (M) and outcomes (O). These pieces are brought together as CMO configurations which are tested in further evaluation cycles. The following diagram illustrates the process used to analyze the data:

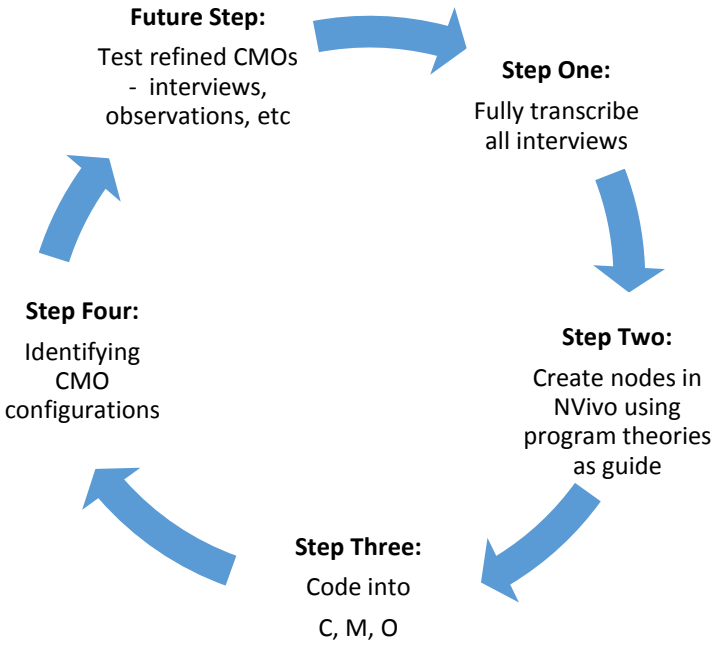


Figure 5.1 Data Analysis Cycle (Modified from Pawson and Tilley, 1997; Marchal et al., 2012)

Step One: **Fully transcribe all interviews**

Following the ethical permissions received from McMaster and Liverpool Universities, I conducted ten phone interviews between January 2018 and March 2018. The interviews were digitally recorded and I fully transcribed clusters of between one to three interviews at a time. As is standard in a realist evaluation, the questions were slightly modified after each transcription. The changes reflected any new information gathered in the interviews and for mistakes identified in when transcribing. For example, it became clear that the original set of questions resulted in participants expressing concern about their lack of theoretical knowledge. To address these concerns, the questions were modified (Appendix F) to encourage answers more in line with data collection and less about appearing to test their knowledge.

The following table provides a breakdown of the ten interviews I had permission to use. The definitions of terms used in the table are outlined in the legend:

Legend

Interviews: Interviews are listed in chronological order from first to last interview. Each interview participant is assigned a letter. **Professional Practice**: Medicine, Nursing or Rehabilitation Sciences (Physiotherapy, Occupational Theory or Speech Language Pathology) **Clinical Location**: Central (academic learning center) or Distributed (teaching campus away from McMaster University's central campus)	**Career Stage:** Stakeholder (invested in outcome of peer coaching); Faculty Leader (responsible for the direction of other faculty); Faculty (full or part-time faculty). Some participants have multiple responsibilities. **Training Received:** McMaster's Peer Observation of Training, Tutor Coach, APLL, Other (internal or external), None. These training programs are explained in Chapter One

Interview	Duration Min/Sec	Word Count	Professional Practice	Clinical Location	Career Stage	Training Received
A	28.06	2020	Medicine	Central	Stakeholder, Faculty Leader	P.O.T. & Tutor Coach & Other
B	31.14	2550	Medicine	Central	Stakeholder, Faculty Leader	None
C	27.42	2125	Nursing	Central	Faculty Leader	None
D	50:08	4275	Physiotherapy	Central	Participant	P.O.T.
E	29:09	2610	Medicine	Central	Faculty Leader	APLL & P.O.T.
F	41:32	5175	Medicine	Distributed	Faculty Leader	Tutor Coach
G	22:51	2820	Medicine	Distributed	Faculty	P.O.T.
H	71:52	3505	Medicine	Distributed	Faculty	Super Tutor
I	35:26	4312	Medicine	Central	Stakeholder, Faculty Leader	Tutor Coach & Other
J	31:41	4370	Nursing	Central	Faculty	Other

Table 5.1 List of Interview Participants

Step Two: Create nodes using program theories as guide

The next step was to broadly classify the transcribed data (approximately 34,000 words) into nodes. This was an essential part of the data analysis process because it provided an overview and an understanding of the themes emerging in the interviews. The following table lists the nodes along with a description of each. This list of nodes was created from the Codebook feature in NVivo.

Node	Description of Node
Adult Learning Theory	Discussion regarding adult learning theory
Setting Own Goals	Coachee setting coaching agenda
Appreciative Conversation	Thoughts and opinions about the theory of appreciative conversations
Being Coached	The experience of being coached
Mentoring	Experience of being mentored
Being the Coach	Experience being the coach and coaching someone else
Skills Needed to Coach	Describes the skills and mindset needed for effective coaching
Coach Training Received	What type of coach training did participants receive?
Definition of Program	Discussions re the coach training
Community of Practice	Explores Community of Practice Theory
Context of Coaching	What is the environment in which people are coaching?
Context of Teaching Environment	Focuses specifically on teaching environment
Culture of Profession	Context of professional practice
Helping Preceptors	Development needs of preceptors and how university can help
How Coaching is Used	Describes how coaching is used in their professional context
Choosing Coaches	How coaches are chosen
Impact of how coaching is used	Explore the different contexts
Mandatory or Voluntary	Is coaching mandatory or voluntary in their work environment?
Other Coaching Programs	Describes other coaching programs (other than the main three described)
Self-Selection	Describes how coach pairs are created (self- selection or assigned)
Structure of Coaching	How coaching is structured
Impact of Peer Coaching	General thoughts on impact of coaching
Impact on Own Teaching	How coaching experiences impact own teaching skills, etc.

Node	Description of Node
Leadership Support	Importance of having leadership support for coaching
Level of Teaching	What level are they at McMaster University (leadership, professors, tutor)
Logic of Peer Coaching	Response to paragraph on the logic of peer coaching
Reflective Practice	Captures discussion re the theories surrounding reflective practice
Stakeholder Expectations	What do the key stakeholders expect from peer coaching?

Table 5.2 Nodes from NVivo

Step Three: Code into Contexts (C), Mechanisms (M), and Outcomes (O)

As previously indicated, there is a lack of firm rules when conducting a realist evaluation. It was only when I began to consider how to code the transcribed interviews, did I realize that with this freedom, can come confusion and uncertainty on how to properly assign CMOs to the data. In their practice paper, Punton, Vogel and Lloyd (2016) acknowledges these difficulties and the lack of literature that explicitly describes the process of data analysis in realist evaluation. Nevertheless, by exploring other realist evaluation studies and joining the RAMESES List Serve, (an online realist evaluation advice forum), I developed the coding system that took into account the data, research goals and my abilities as a first-time realist evaluator.

Identifying mechanisms is unquestionably difficult. As a reminder, mechanisms are defined as "underlying entities, processes, or structures, which operate in particular contexts to generate outcomes of interest" (Astbury and Leeuw, 2010, p.368). Evaluators are told that mechanisms are not "universal covering-laws that apply always and everywhere" (p.369). Nor, are they program activities and so, they can remain out of view operating as "hidden causal levers" (p.375). Hedstrom & Swedberg (as cited in Astbury and Leeuw) caution about "belief-formation mechanisms" (p.369) which can be formed from evaluators' own opinions about a situation and not through deep investigation of what is actually occurring. I paid particular attention to this warning by reminding myself to be an impartial observer of the data and to purposely to seek data that contradicted my own opinions.

There are also different expectations of the data collected in a realist evaluation. When Tan and Harvey (2016) published their results of a realist evaluation within social services in a BMC Health Services Research Study Protocol, they emphasized the importance of staying focused on testing the actual against the initial programme theories while remaining prepared to recognise "absent and unanticipated contexts, mechanisms and outcomes" (p.1468). Johnston & Campbell (2018) further contributed to the discussion on data analysis by highlighting that partially evidenced outcomes may in fact, offer key data and "a lack of robust evidence does not, however, undermine the effect the context and mechanisms under scrutiny may have had on what was aimed for" (p.7).

When faced with analysing their evaluation data, Jackson and Kolla (2012) created a technique to identify CMOs directly into the primary data, using natural CMO configurations contained within the participants' own answers. They suggested that this approach reduces errors when identifying CMOs, especially compared to using a traditional method of reducing data into codes and themes. The second step in their method involves creating coding strings for further analysis. However, after creating hundreds of linked codes, Jackson and Kolla report that "no patterns emerged" (p.343) in their data and they questioned the suitability of this approach when "there are multiple program elements under review….[or]… for application in later stages of evaluation" (p.346). Although using their approach to code CMOs directly into the transcribed interviews was transformational for my data, I chose not to link codes as it appeared unsuitable for my research, nor for my first attempt at identifying and constructing CMO configurations. In the end, I created a hybrid approach and made the decision to focus attention on CMOs that related to the candidate theories, research questions, and to remain alert for unexpected results.

For each of the parent nodes listed above in Table 5.3, separate child nodes of Context, Mechanisms and Outcome were created. I reviewed all transcribed interviews, searching for contexts, mechanisms and outcomes, then assigned them to the relevant nodes. Many evaluation studies describe having more than one person reviewing the data for CMOs. This approach would certainly have improved quality control of the data analysis and is a consideration for future realist evaluation projects. After assigning CMOs, I reviewed the data

twice more, looking for misidentified data. I also included my thesis supervisor in overseeing the data analysis stage.

Overview of Interviews

Each interview began with a description of how realist evaluation is a theory-based evaluation which seeks to discover "what works for whom - in what circumstances - and in what respects, and how?" (Pawson and Tilley, 1997). I asked participants to share their experiences and thoughts with me and explained that one goal of the interview is for both of us to learn from the experience, (See Appendix F).

Before presenting the data, there are two key reminders:

- The purpose of the realist interview is different than other interviews. Realist interviewers ask questions aimed at involving participants in testing proposed theories which can determine the effectiveness of a program or policy. Using the learner-teacher-cycle (Pawson & Tilley, 1997), the interviewer teaches the interviewee about the programme theories, and the interviewee teaches the interviewer about their lived experiences in relation to these theories.
- The aim of this research is not to evaluate one specific program, but to learn about how peer coaching impacts faculty. The expectation is that the subjects interviewed will each have their own unique experiences of peer coaching.

Relevant portions of the data are now presented in distinct sections related to the four program theories introduced in the literature chapter (Social Learning Theory, Adult Learning Theory, Reflective Practice, Community of Practice, plus Additional Results). The results are classified and identified typographically as *Context* (C), Mechanism (M) or **Outcome** (O) or left blank. Each participant is assigned a letter (A to H), which also relates to the chronology of their interview (see Table 5.1).

For a selection of quotations, there is additional explanation of how some of the C, M and Os were identified and assigned, plus their significance to the evaluation process. This step will

provide the reader greater understanding of how the data is analyzed and evaluated before the CMO configurations are created. The reader will gain further understanding and appreciation of the complexities and limitations of this research methodology.

Program Theory 1:

An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience.

(Social Learning Theory)

After I gave a brief introduction on Social Learning Theory, (people learn from one another through observation, imitation, and modeling), participants were asked to share their thoughts and experiences in relation to this program theory.

Trust and Safety

Issues surrounding trust and safety in the working environment were raised by several different participants and became a key theme to arise from the data:

> I think that in general, **people are receptive to feedback** (O) <u>when they feel</u> (M) *that it is a safe environment* (C) <u>and the person that provides their feedback is interested in their success</u> (M). (Interview C)

In the quotation above, I assigned 'the safe environment' as the context as it exists separately from the peer coaching program. Next, Dalkin's et al., (2015) approach to identifying the resource ("the person that provides feedback is interested in their success") and the reasoning ("when they feel") help identify the mechanism. The participant clearly identifies an outcome ("people are receptive to feedback").

The relationship between the observer and the observee has to very collegial comfortable and the goals have to be set from the beginning. (C) The goal will be to improve your teaching and your lecture style to benefit you. (M) ….. *From my perspective everything is acceptable. There are no limits* (C) (Interview E)

But if both parties are coming to it voluntarily (C) in that spirit of a mutually beneficial discussion,(M) **then the room to feel threatened is kind of gone**.(O) **There's nothing to lose** (O) *Nobody has power here*. (C) It's not about promoting you or taking away your position. It is just a space for learning. (M) (Interview F)

I was thinking …. about coaching in general and how **much it makes workplace more cohesive, makes me happy to work (O)** there because I feel connected with my colleagues and because I feel protected and helped by them**.** (M) When it comes to how good I'll feel by having a mentorship, coaching relationship with one of my peers about teaching, give me about how important is teaching in my life. (M) *If we're not full time employed faculty at a university (C), and it's a small part of what we do or it's a very intermittent part of what we do,* (C) **it doesn't have the same kind of impact on me**. (O) (Interview G)

This quotation provides an example of how mechanisms are most often hidden (Astbury and Leeuw, 2010) or on a continuum of activation (CARES, 2016a). Feelings of being "protected and helped" may not be obvious or openly shared by faculty but nevertheless influence an outcome ("makes me happy to work").

The Conversation

Participants were asked about how the conversation is a component of the peer coaching practice. Not all chose to discuss the significance of the conversation in peer coaching but of these who did, the following answers offer insight into their experiences:

I think the conversation is the place where the coaching happens, it is the dialogue, it is the fact that it is back and forth. It's what makes it (M) **less threatening** (O) then if we call it feedback or direct observation or something like that. It is the idea that if there is someone there who is observing and giving you that feedback but in response to what you're bringing your questions, your successes you've had and celebrating those with

you (M). *A good coach should be doing that*. (C) **I think there would still be hesitation and reluctance by some teachers to be involved in something like this** (O) *we are not used to being watched* (C) and may be afraid of what people may tell us and the feedback won't be good, and we want to be perfect in everything that we do. (M) (Interview F)

Structure can set that up if you are working beside someone or pass them in the hall, (C) and **those are the people who you will end up having the conversation with.** (O) (Interview G)

The previous extract demonstrates that not all data fits neatly into a C+M=O equation. However, it does provide useful information when considering how the program relates to the program theories.

Feedback in general needs to be a conversation.(M) *People often confuse feedback and evaluation.(C)* … **it's all about performance enhancement**.(O) So how do you enhance performance? So, with feedback is what you're supposed to be able to do. (M) So, you have a feedback session, and you should be able to understand not just what the performance is, but the idea of how they're going to improve it and understand why they need to improve it (M) …. Versus evaluation saying "you did a good job", (M) **but that doesn't actually change anything** (O)… and it has to be a conversation. It can't just be the coach telling the person here are the five things that you need to do differently going forward. (M) (Interview I)

Learning from Each Another

In response to the suggestion that peer coaching is underpinned by learning from one another through observation and collaboration, participants offered the following replies:

When I read the literature and through this one experience it became obvious (M) **that the benefits are not one direction. The benefits are going both directions**. **Both observer and observe.** (O) I actually **learned a couple of strategies** (O) just by observing her interact with the class. (M) This was a two hour lecture which is unusual for our program but when you as a teacher, **need to use strategies to engage the students, that's what I learned from her.** (O) Oh that's well done, I think I could use that strategy in my mini lectures. I don't provide a lot of large groups but I have many mini lectures. My point **is that I learned maybe from my feedback.** (O) (Interview D)

This faculty member had many outcomes from both reading literature on the topic, observing and giving feedback but it is unclear which outcome came from which mechanism. This extract shows possible interconnection amongst multiple mechanisms and how there will be many sources and pathways contributing to a CMO configuration.

> **They were interested and appreciative of the time**, (O) *because as teachers we are so rarely ever directly observed teaching and so, the feedback we get is related largely related to student satisfaction. Often get much on student outcomes. If we have a student in difficulty is it because we were poor teachers or because the student was already having difficulties or having learning issues*. (C) So this was really an opportunity to receive feedback which is not common as a teacher. And also to identify certain things about this role that were challenging (M): It is really a struggle with how to engage the quiet learner, and then you had someone who was watching you with a specific focus. What strategy did they use? what strategies could they try? (M) **So it really allows the teacher to ask for specifics (O)** (Interview F)

At first glance, there can appear to be similarities between context and mechanisms. Realist evaluation unpicks context (social, cultural, beliefs) to find whether the context has a role in activating the mechanism (Jagosh, 2017). In the above excerpt, this faculty member works in an environment where student satisfaction feedback is common (C) but the change introduced (M – resource) was the opportunity to have a discussion and to identify (M- reasoning) about the challenges of their role.

> *I gave you a very good example. As medical educators with our students if you really get the idea that we are lifelong learners and that we can all learn from one another,* (C) we can extend it to our professional and educational realms (M) Should be embraced. (M) Honestly, I think when you have something to hide, that is actually part of this whole process as well. (M) *You are not just going to get the people who are voracious learners* very often. *You're going to get people who may have Asperger's Syndrome* (C) *who do not appreciate why have to frame things in certain ways or who really have views that*

are very paternalistic. (C) **That's more challenging and difficult** (O) and it's an art of making people comfortable with process. (M) (Interview H)

That's the reason I did the collaborative testing because of that theory. Because learning is a social thing (M) and if you can encourage students to work on the things together, I noticed that the students love it when we do that. (M) **I think there's a lot of learning (O)** (Interview J)

Importance of Timing

Despite being a strong advocate of peer coaching and the social connections it brings, this participant presented an interesting viewpoint about the timing of a coaching relationship as a factor to consider:

Now that I'm in a teaching situation, (C) It's really wonderful to have a moment to get a moment to speak to somebody in the same teaching situation, to bounce ideas or thoughts of how it's going with somebody else. (M) **I find that the teaching is well-supported** (O) because there is a person whose put you into that situation and they are there to be your guide if there are any troubles.(M) Sometimes that comes from that person and then I've had it come from other people who are teaching the same courses me. *Some courses are collaborative so you have a co-facilitator* (C) **and it turns into a very intense peer feedback** (O) The peer coaching relationship is the appreciated part.(M) *But right now because teaching is a small part of what I'm doing* (C) I don't think I would get anything out of it (M). I don't want peer coaching teaching relationship. (M) (Interview G)

To summarize, discussing social learning theory brought forward a considerable number of C, M,Os from several participants and there were no dissenters about these ideas. In the following chapter, this data will be further analysed and constructed into possible CMO configurations.

Program Theory 2:

Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn. (Adult Learning Theory)

This next program theory describes how adult learners who identify their own gaps and set their own goals (which are meaningful to them), will have the intrinsic motivation to learn. Coaching becomes more of a process between two learners and less about an expert directing a protégé.

Answers have been assigned as a *Context* (C), Mechanism (M), **Outcome** (O) or left blank.

Learning Goals

Several participants agreed that setting learning goals was a significant part of the peer coaching process:

> Peer observation is like any constructive debriefing. *This is all the rage now with simulation-based education*.(C) It has to relate to something specific you observed rather than a gestalt. Because you can put theory around that (M) … Address the feedback related to a specific observation, then the person can reflect on what they were doing in the moment. Then blueprint it back to a specific goal they had**.** (M) (Interview B)

> Thinking back, using the PoT [Peer Observation of Teaching] workshop. I think that one thing that is very helpful is that for the person that is being observed is the pre-observation meeting. (M) At that point, the person who is observed, has to identify what in her teaching skills the observer should pay more attention to. (M) **They are forced to think about what are they doing well** (O). *Then I am teaching in this environment*, (C) and what I think I am not quite there yet. Not a weakness but a skill that they would develop (M). So I think that some of the faculty members would not think of that if they didn't go through this process. (M) So, I could see when I met with this one faculty member before the time of the observation, I asked her to think about what she wanted to get out of the observation, she sent me an email with a few points

that she thought of that she felt she needed a bit more development. (M) **I don't think she would have done that if she had not engaged in this event.** (O) (Interview D)

That's incredibly important. That's all about aligning agendas. (M) And if the *agendas are not aligned* (C) **and you're not going to get the buy-in** (O). So for example, if the tutor is telling me that they are really focused on just knowing the content really well, (M) if I don't address that concern and I start giving them all these tips about giving better feedback or managing group dynamics or something like that. (M)**Then they're going to completely tune out and not be interested in what I'm saying.** (O) So you always have to tie it back in to what their objectives are and their agenda is. (M) **Sometimes the agendas won't align**,(O) and that part of the art of coaching (M) If you see somebody doing something that is really detrimental to tutoring performance, you have to get them to understand why it's detrimental. (M) I'll give you an example. A lot of times, one of the biggest problems we have is that *we have all the content experts that are tutors and they end up giving these many lectures during PBL, (C)* so they think that this is their job because they were trained this way to. (M) They never identify that as a problem beforehand, (M)…. and a lot of it is getting them to understand what they're doing is detrimental or how it could be better**.** (M) (Interview I)

In this interview, the participant describes a few possible outcomes ("not going to get the buy-in", "completely tune out" and "agendas won't align") which can influence or become the context in subsequent coaching or faculty development initiatives.

A Key Difference in Coaching

One participant described how his physician colleagues were keenly interested in discussing the role of setting goals in peer coaching.

I think they were very intrigued how, they said we've been giving feedback. How is it different than coaching? *Well feedback can be done in a different relationship between the learner and the teacher. The teacher is the one that dominates that encounter when here she gives the feedback*. (C) Feedback can be very intimidating, (M) **it can not be received well by a learner. Even constructive feedback**. (O) … So coaching is not about telling the learner or telling the coachee what you want them to do (M), **it is about having them change or set a goal** (O)…… So, there was quite a debate. (Interview E)

Lacking Insight and Setting Goals

Participant C, suggested that setting goals could result in misidentified learning needs was introduced:

> The only thing I would say is that *sometimes the individual doesn't even know what it is that they should be working on.* (C) If you lack the insight to a particular area in teaching or an approach then they aren't even asking their peer coaching to evaluate that. (M) **Then there is a gap.** (O) (Interview C)

The outcome ("there is a gap") is a further example of how an outcome can become the context in the next cycle of evaluation. The "gap" caused by the "lack of insight" could impede the mechanism ("they aren't even asking") which possibly result in a learning outcome.

Multiple Goals

Interview H drew attention to goal setting as part of the bigger context of both the students' academic requirements, as well as the professional and institutional expectations has on the faculty. This participant also raised issues of the transparency of learning goals.

> *Setting your own goals has to be a big part of it. And then, there is also kind of institutional goals like with the College,* (C) you have to make sure of the standards (M). Or with education you are being sensitive to the learners (M) *and making sure that the things they have to accomplish in a very dense education* (C) So how do you balance? So it can't be just about your own goals only. How do you blend with the institutional goals of the review? (M) **Otherwise it seems a little dishonest to me**.(O) Because what's the purpose of the peer mentoring? It could be that we are all Jolly Good Fellows. We just want to learn. (M) But if there's another purpose, it should be stated .(M) **And I think it sharpens us**.(O) *We have goals as tutors, job descriptions as tutors, doctors, standards* (C) then we also have to be aware that we are measured by ourselves against those. (M) And how can we set our own goals of where we think we need to grow in whatever our jobs are? (M) (Interview H)

The outcome "otherwise it seems a little dishonest to me" is a good example of what was described earlier as a partially evidenced outcome (Johnston and Campbell, 2018). The

importance of 'trust' is scattered throughout the interviews and this passage is a reminder that CMO configurations are often identified and created from multiple sources and pathways.

In conclusion, the interviews provided strong examples of how goal setting can affect the experience of peer coaching. They provided little information on how goal setting links with motivation to learn within a peer coaching framework.

Program Theory 3:

Peer coaching encourages learning in both the coach and coachee through a process of mutual feedback and reflection.

(Theory of Reflective Practice)

This program theory suggests that coaching activates learning in both the coach and coachee through a process of feedback and reflection in and on action.

Answers have been assigned as a *Context* (C)*,* Mechanism (M), **Outcome** (O) or left blank.

On Being a Coach

Participants shared their personal experiences of being a coach and learning alongside their coaching partners.

> *What I appreciated in what she was doing, that I sometimes miss, is posing the question to the group and having enough patience to wait for an answer. I pose the question and if I don't get an answer in the next few seconds, I give them the answer or pose another question. And it escalates. So that is something that I appreciated. I should do that. ……..I have to engage the whole class in listening to the answer. I noticed how she was doing that.* (C) And I reflected on what I was doing and what I should be doing. (M) **It makes me more aware**. (O) I probably had it in the back of my mind but seeing how someone else is doing it, (M) brought it to the forefront of my attention.(M) (Interview D)

It was really interesting and valuable. **I learned as much as a coach as I think I would as being coached** (O) because it forced me to be very engaged in the observation of the tutorial, (M) to be considering the teaching the whole time as opposed to just considering the content. (M) *because when you are there as a tutor or just delivering the material, you're so focused on making sure the students get all the content (C) that you* sometimes can't step back and think about how you are delivering the content. (M) **So it really made me think about process.** (O) It made me have to identify okay where areas for potential growth, where were areas of challenge, what were alternate approaches to that? (M) Which again you do not often think about you're teaching, that meta cognition, is missing. (M) *You are usually just doing.* (C) (Interview F)

I absolutely agree that reflection on how somebody else does a job that you have done is so important, because we don't get to see alternative ways of doing it. (M) *Consciously reflecting on the process, we ask our students to do that all the time (C)…* But it's really taking that step back from being busy in the moment, to consciously consider what are you doing, why are you doing it, how could you do it differently. (M) So that I think the **faculty that's being coached, it makes them think deliberately about their teaching.** (O) Also the coach has to be watching for these things, listening, picking apart, and in doing so (M) and **grows so much more themselves**. (O) … you're watching and consciously critiquing how someone else is doing and then you internalize that (M) and say how might I arrange things, I really appreciate how they did that or that was a bomb when they did that, (M) **I will remember not to do that.** (O) (Interview F)

The above quotation provides several possible mechanisms ("take that step back", "internalize that") how someone else is teaching and outcomes (faculty "think differently", "grow so much more themselves") to consider. Conducting a realist evaluation does not provide researchers with absolutes but with data to consider in relation to program theories and literature (as presented in the next chapter).

I really think being observed and opening yourself up to that, (M) **getting empathy for students that are giving constantly feedback in observed and evaluated** (O) was a very healthy thing. (M) (Interview H)

Reflecting and Improving

For one faculty member within medicine, receiving feedback as a coachee provided the impetus to reflect and modify their teaching approach:

> **I started to change the style of my teaching** (O) **…..** *X found that my audience was not participating and it was mostly me talking.* (C) ….. well I think that the peer observation feedback that I received from X helped me (M) **change my approach the way I give workshops**.(O) Yeah, so reflecting on it,(M) **it made me aware of my mistakes, maybe not mistakes but you know a different approach**.(O) I wasn't, I didn't know, I could consider this avenue until X opened my mind. (M) **It made me aware that there are different ways of getting information to people.** (O) *But I wasn't aware, nobody trained me to give this workshop. It was my own initiative*. (C) (Interview E)

Another faculty member reflected on how she gave feedback to her students:

> I haven't thought about my involvement in the group. *Now that I think back, I was involved in the development of the form in different contexts***.** (C) **Maybe I became aware of how I give feedback to students**. (O) *When I am in the clinical skills, when I teach clinical skills which is of course not lecture based, by developing the form related to clinical teaching, I had to look at the literature to see what would be the best elements to include in the form that would be used by someone who observed the clinical teaching.* (C) So one thing that we put in the form was the feedback that you would TACT (Timely, Appropriate, Constructive, Thoughtful). (M) Timely piece of the feedback made me think a little more on how I give feedback in the clinical lab when I observe students doing the skills. (M)And in tutorial, it is always a balance between should I wait until the end of the tutorial to give feedback, or should I wait until the end of the tutorial. (M) **So I have became more aware of how I give feedback to my own students**. (O) (Interview D)

A faculty leader described coaching as being able to fulfill the lack feedback their receive from leadership and as a possible opportunity to provide feedback to their reports:

> *Right now, what I am realizing as a leader, and the leader of leaders, we really don't get feedback on what we are doing as leaders. And we don't have that opportunity for somebody to sit down with us and say what are your goals, how are you working towards them, what resources do you need? It is not an evaluative thing, it is supportive and driven through a mutual understanding of how helping someone to advance. Not*

> *saying whether you did a good job or a bad job…..Some of it is about feedback on performance but more of it is about career path….Also helping set priorities and strategic planning as an individual, what do I need to accomplish that and how can I support my leaders to accomplish what they need too?* (C) (Interview F)

In this excerpt, the faculty member is not specifically discussing peer coaching but describing the broader context in which she finds herself; her lived experience, (Pawson and Tilley, 1997) as a leader. As a reminder, context is not static and includes background issues which are not "formally part of the program" (Jagosh, 2017) but are attached to something which can influence a mechanism and/or an outcome.

Encouraging Self-Reflection

Interview I involved speaking with a skilled coach who designed and delivered peer coaching within his own medical speciality for almost a decade. He provided the following insight about actively encouraging reflective practice within coaching:

> Absolutely, for sure,100%. As a coach you are learning how to break down things to components. (M) Think about what makes a good tutor, better tutor start thinking about things. That's all about conscious competence. When you break it down into component parts, you are able to see what's going on, see things on a different level. (M) …. It's not nearly as useful to give them a list… That part of self-reflection, they have to get to the answer themselves (M) …The art of coaching is steering someone so they can actually see where issues are and improvements can be. (M) Some people can't even see where that is. A lot of times people are very intuitive and have very good self-assessments and they already know what they need to work on. They just don't necessarily know how to do it. (M) That's a lot easier than someone who doesn't even realize what they're doing. (M) (Interview I)

This is another example of how there can be many possible mechanisms, some obvious ("learning how to break down things to components") and some hidden ("they have to get to the answer themselves"). Each mechanism is sensitive to variations in context, can influence, impede and/or generate outcomes.

No Reflection

Not all participants agreed with the idea of reciprocity in the process. This participant has not been actively involved in a coaching partnership but is responsible for ensuring faculty members in her program receive peer observation as part of the promotion process:

> This may just be my observation but I **don't get the sense that the person evaluating the other is gaining as much.** (O**)** There isn't reciprocity in that dynamic that I think your statement is saying. I think there is an assumption that it is more than a one way or unidirectional focus. (M) An instructor needs instruction, they ask someone they trust to evaluate their teaching. That person evaluates their teaching and provides feedback and then the individual receives the feedback. (M) **I don't get the sense that there is a reciprocal dynamic.** (O) (Interview C)

In conclusion, faculty who have been actively involved in coaching partnerships, provided positive examples of both giving and receiving feedback, and the reflection that resulted from these experiences.

Program Theory 4

The context of where people work and their professional practice, influence the experience and impact of peer coaching.

(Community of Practice)

The next program theory focuses on community of practise and looks to answer how the experience of coaching is influenced by where an individual works and by their professional practice. This program theory is of particular significance to faculty within McMaster University as its Faculty of Health Sciences encompasses medical, nursing and rehabilitation sciences programs.

Answers have been assigned as a *Context* (C)*,* Mechanism (M), **Outcome** (O) or left blank.

Interprofessional Education

Unlike the universities that have their medical schools separate from other healthcare programs, McMaster University purposefully brought them together within the Faculty of Health Sciences, and committed to inter-professional education through their Program for Interprofessional Practice, Education and Research. When asked about the feasibility of peer coaching in an inter-professional peer environment, the following answers were given:

> *If I ever mentor a student, a resident, a peer, someone from another discipline , I always go into with a sense that we are all life-long learners, you can't do everything perfectly, whatever we are talking about now, for what it's worth along the way in the journey with you and your students and your own professional development.* (C) So there has to be a sense of humility and realism and recognition and not just the content that's important…. (M) (Interview H)

> *I think the interdisciplinary model could be more challenging because there are cultures within each discipline and teaching. This is how we teach medicine, this is how we teach nursing*, (C) and it there would have to be someone who is very open to whole concept and embracing of these other cultures and identities, for a physician to accept coaching from a nurse(M). **And it's not that there wouldn't be a lot of value to bring from that, (O)** *but I think that we are still largely siloed in our disciplines*. (C)

With further thought, the same faculty member described her personal connection with a colleague from a different healthcare profession:

> *So I'm thinking... about how I have engaged with my colleague, who is head of the ____ program…..I have an email from her waiting on some advice from me. So, we sort of informally done that. What we have done is identified where our challenges are similar. I struggle with x, you struggle with x, okay. (C)* We can give each other feedback on x. If my experience is y and yours is x, that's okay then. (M) ***The feedback I give you would***

be out of context and may be more challenging than to be relevant *……***But this is been absolutely delightful for me.** (O)

Finally, this member of the medical faculty had insight about the influence of context:

> Well, if it's going to be a global movement, we have to figure out ways of having people who will coach people within and outside their tribe [and be] at relative ease with the process. I guess we have to think about ways to tackle the contextual issues. (Interview H)

Professional Identity

One participant offered a contrary opinion on this program theory by describing how coaching impacts their professional identity:

> **I think the flip side is that your coaching can strongly impact professional identity.**(O) If you *believe that somebody in your tribe supports you, cares about your progress, wants to see you succeed and is engaged in your success*, (C) **the likelihood that you will work harder in that position is much higher.** (O) *I think a lot of our teaching is done in tribes as we can call them , post grad teachers tend to hang out with post-grad teachers, clerkship instructors and clinical teachers tend to hang out together, tutors hang out together, (C)* so there is must be something inherent in that type of teaching that draws certain people to it. (M) *And if you ask most teachers they say I love teaching X but I'm not so thrilled about new learners or late learners or students in difficulties or whatever, (C)* **so I think that we form that professional identity.** (O) If we had somebody coaching us making us consider why do you love that kind of teaching, what do you love about it, (M) I think it would help us strengthen that identity and have it boil down a little faster. (M) *It may be just that we saw someone that was really inspiring or that was where we were needed and we got roped in to doing something*, *there doesn't seem to be a lot of intentionality about where you teach and how you teach. (C) (Interview F)*

This participant's answer provides an example of how mechanisms are sensitive to variations in context ("somebody in your tribe supports you, cares about your progress…") which enables a mechanism to be triggered which results in an outcome ("the likelihood that you will work harder…"). Astbury and Leeuw (2010) stress that mechanisms are not "context bound; just that

context matters" (p.370). There are also contexts that impede mechanisms from activation. In this example, it could be that in an unsupportive environment, the mechanism(s) that result in an outcome is not triggered. This does not mean that the mechanism does not exist but it remains dormant until the right context.

Culture of Feedback

When discussing feedback, one participant suggested that McMaster University should take a greater role in building a culture that accepts giving and receiving feedback:

> *Any of the current continuing education stuff that is helping to promote a sense that we are all on a life long learning journey (C)* … and it is best that we are all open to feedback (M) Nobody's perfect **it's okay to ask for help**.(O) **It's okay to correct someone I noticed something.** (O) Anything that can help breed that environment so whether that means mindfulness courses or getting more people involved with teaching students, helps to build that culture and society. So maybe the University's role is to push this culture on all the practicing doctors who are teaching. (M) *Yeah, because that doesn't come by itself in a clinical format, it's not something that most people who are in practice got at med school*. *Maybe if they went to Mac [McMaster] to some degree*. I see the university kind of giving us the tools to allow (M) us to have a mutual interaction with one another (M) in a way that we might not have already figured out on our own (M)….. *Medical students are in small groups and they are perfect in small groups. They know how to do that* (C) and so, **I end up learning by doing (O)** *that because I didn't learn that in med school.* (C) I think that maybe a role that the University plays is teaching that culture because it is easy (M) if you have a couple in that group that already feel that is what we should be doing. *(M) I think the new grads coming out of that, if they're hanging out together later on (C)* **then it will be natural for them, (O)** if they already know each other (M) (Interview G)

A key organizational stakeholder in this research also questioned McMaster's role in creating a culture that embraces feedback:

> **Shifts the culture a little bit,** (O) *having your teaching observed and having a discussion about it is more of a normal and routine thing rather than something yucky and*

threatening. (C) But that's worth knowing about too. What are the barriers? …….Roped exercise that people have to jump through? (M) How do we turn this requirement that I have to do into something more helpful? (M) Fear – people are nervous about it. (M) *Not only am I going to have a peer to watch me teach but something will go into the dossier.* (C) (Interview A)

This one starts with considering the outcome first ("shifts the culture a little bit") in relation to mechanisms ("how do we turn this requirement…into something more helpful?") that can impact two possible (future) cultures ("more of a normal and routine thing" versus "something yucky and threatening"). This is also an example of how reasoning (Dalkin et al., 2015) can be an emotional response which happens inward and not be an obvious, outward response.

Influence of Medical School Education

As an extension to the subject of professional practice, several participants mentioned how their own medical school education influenced their teaching and peer coaching experience:

Products of our tribe? I could see that in more traditional medical school setting…..I went to X for medical school and my internship. I must say that it is not my experience at McMaster. I think that there is a lot less tribalism and more of an openness to collegiality (C). It has its downside too and we may not always be cutting edge….even though we are cutting edge in many ways. (C) (Interview H)

This participant continued by describing their struggle of being assessed against a strict PBL model which:

I will go back to the tutorial, part of what happened the tutorial, is that you could get other tutorial leaders, Especially I think it was one of our leaders of professional faculty development that did a lot of tutoring to come in and observe. That was part of quality assurance on their part and again they provided an opportunity to have someone be present, offer a few tips to both the students and me. But here's the where the difference is, this particular individual also came from a traditional Medical School. x has Authority because she came through the Mac system. And this particular person had a very strong bent toward absolute purest problem-based learning model but the students don't like that. (C) So I got his feedback so it put me in inner conflict within me. Do I really expect

from the students the purist model when they're not happy with that? (M) *At McMaster, it's very self-directed learning.* (C) So again back to Super Tutor when I saw who this super tutor was that made a lot of sense. *It comes back who does the coaching, how attuned are they to the students and the whole tutorial experience*. (M) I have also had other coaching situations where it **put me in a little inner conflict** (O) with how to go about it with my own particular group of students and my own personality. (M) *(Interview H)*

In one medical speciality, they acknowledge the impact of PBL on teaching and because of this, they pair all new clinical tutors with a trained, peer coach: require all new faculty to have a coach. For this program, peer coaching is a mandatory requirement to begin teaching:

*I think it's easy from our perspective because we are coaching people who have never tutored before. (*C) *So they all realize that this is something they've never done before* (C)*, so* they feel like complete novices*.* (M) They are very open in general to the idea of coaching. (M) *We have* encountered some people who are very resistant to feedback.(M) Just liking anything else but for the vast, vast majority of people they are so thankful that they are actually having somebody watch them to make sure that they're doing it right. (M) *Because most doctors are not tutoring PBL unless you've gone through it in your medical school, you will have never been exposed to it (C)* so you don't feel like an expert in that field at all. (M) There's no hang-up about you know how good they are as a tutor (M) *because they are all novices.* (C) (Participant I)

Influence of the Coach

For some participants, the coach's abilities, guidance and reputation within a professional community, had a powerful effect:

I have my own areas of expertise, and lack of expertise, and my own personality that I bring to it. *And X is a very different type of person with a different blend of expertise… It was very much the McMaster way*. (C) *You go into a booth,* looking at your own goals and process in a kind of a holistic way. The feedback was just very collegial*.* (M) And I have to jump to the conclusion of it. (M) Even though it was two years ago**, my confidence grew** (O) and just from having talked to somebody who was the best. (M) Who both validated and gave some encouragement. (M) When I could challenge the

students to contribute more, or work harder. I also sat in on one of the manager's tutorials so I was able to see how she did things. (M) **And in the last round of evaluations apparently I had a perfect score** (O) and *X is now our Assistant Dean* (C) so she took the trouble to email me, (M) to say that *although they have many faculty with many strengths seldom do they see someone who has a perfect score.* (C) I kind of deflected it back to her with her mentoring and coaching, and just her all-around stimulation of the kind of learning environment that students need and teachers need (M) (Interview H)

This statement is another strong example of how outcomes ("my confidence grew" and "I had a perfect score") are influenced by mechanisms ("just from having talked to someone who was the best. Who both validated and gave some encouragement"), which for this individual, her success was activated in a context of accepting personal and professional differences ("different type of person with a different blend of expertise…the McMaster way").

Informal Coaching as Part of Professional Practice

Interview F described how an informal coaching practice happens naturally outside of McMaster:

> *In my clinical work which is not at McMaster, there is a large group of doctors that work together ….And so, there's a lot of mentoring that goes on between us. It is very rare to have any actual observation to occur*. *I don't think that really does. We often ask each other questions. Between people who are similarly trained. That would be my main source of mentoring or coaching from my fellow doctors there. I also get a lot of mentoring from a specialist a psychiatrist, so that doesn't count as a peer* (C)…… *There is a number of us, a small group, problem-based learning*. (C) So in a way, it is a forum for peer coaching, and so it happens there but the main purpose, is that we all do a little bit of reading and then we learn from each other. It is not one person coaching somebody else. (M) ….*That we don't make a plan and a time and pull up a chair (C)*. Someone's got a clinically difficult situation, it might be a longer conversation. Sometimes it's just what medication do you use for this, just a quick question. (M) **Nevertheless, it is teaching both parties on the question. (O)** *Sometimes it is it is a little longer but it I would not say it's ever formal. Not like it would be with a learner or a resident. (C)* (Interview G)

In summary, the interviews were closely examined for examples of CMOs for the four program

theories and questions originally identified from the literature and my professional experience. The next section examines the data that was unexpected and/or did not fit within these themes.

Additional Findings

Realist evaluators are encouraged to be ready for the unexpected and to remain transparent in everything they do and discover (Jagosh, 2017; Westhorp, 2014; Wong et al., 2016). While following the coding process outlined earlier in this chapter, I became aware of several subjects that did not fit within the four candidate program theories. Primarily, these additional subjects centered around the:

A. **position of coaching within the working environment**
B. **skills and training needed to coach**
C. **support and influence from leadership**

In this section, these unexpected findings are shared. As a final reminder, the transcribed answers have been assigned as a *Context* (C), Mechanism (M), **Outcome** (O) or left blank.

A. How Coaching is Positioned

The interviews revealed variations in the format and reasons why peer coaching is used within the FHS's healthcare education programs. These differences include whether it is voluntary or mandatory; a formal process or ad hoc; peer coaching or peer observation. These differences provided significant data to analyze.

One participant described the significance of how peer coaching is positioned within the University and the impact it can have on outcomes:

> *With our faculty, we accept a range of experience, a range of skill sets, a range of strengths. And as long as we believe they are delivering the curriculum, there is not one right way of doing it (C).* So if we come in and say we are observing you to evaluate you so that you are doing it the right way, (M) **that's really threatening (O)**……*But if we say we would like to support you in your role, we are interested in what your challenges have been (M),* **people might bring something that is really unique and different** (O), and **clearly allows us to plan faculty development in new ways** (O)….*I'm really struggling with this problem* (C) and we may have not considered it to be an issue**.** (M) (Interview F)

In a realist evaluation, there are usually multiple outcomes to consider in relation to the program theories under study. In this example, there are several unexpected outcomes ("that's really threatening", "people might bring something that is really unique and different"). Outcomes are not absolutes (CARES, 2016a) but can contribute valuable information to when considering possible results of a program.

These participants echo similar thoughts:

> The first question was "if we engage in this process, how is this going to be used? Is it a formative or summative? Are they going to be used as an evaluative component in the decision of tenure and promotion process? ….I think she would have received a lot of barriers to the process… if making the decision to include this to be a summative evaluation. (M) (Interview D)

> I think that if this is viewed as criticism… people have to understand the value of this exercise. *(*M*)* Yeah, it can be very intimidating *(*M*)* to have a colleague come watch you do a lecture or in a tutorial. (M) Once it is clearly understood what the benefits of this observation and coaching that I think,(M) **There will not be any barriers.** (O) (Interview E)

> And it's interesting because this is a thought that's been echoed throughout my conversations with people, *the importance of having the right champion and also the culture in which champion speaks*. (C) S*o if it's more if we want this because we want to have the best tutors out there, versus this is a requirement if you expect to go for promotion and tenure. (C)* (Interview I)

There are strongly divided opinions on whether peer coaching should be mandatory or voluntary. To help explain the environment, this participant provided a notable distinction of the mandatory requirements:

> *What is mandatory in the whole of FHS is the engagement of a peer and that is outlined in our faculty handbook in the McMaster University Faculty Association. As a DEC [Department Education Coordinator], I use the manual often to discuss what is expected from my faculty members and I draw their attention to the fact that ….. a peer's visit of lectures or other teaching situations, and evidence that the observation is being discussed with a colleague. So, it is not necessarily the results of the observation but engaging in the peer observation is expected. (C)* (Interview D)

Mandatory Requirement

Some FHS programs override these guidelines with their own mandatory requirements. For example, in the Nursing Program, peer coaching is in fact, mandatory peer evaluation and necessary for promotion and tenure:

> *I have the responsibility in the school of nursing to write the department teaching evaluation report. Those reports are one component of the tenure and promotion package for all faculty who are going for tenure, promotion, teaching permanent or contract renewal. So, in addition to describing the faculty member's teaching, I also need to include a peer evaluation teaching component. So, for every faculty who is going forward for promotion and tenure review, I encourage them to use the peer observation for teaching tools that are on the website in order to enhance their teaching dossier and their teaching education package?* (C)…… *My role is to simply push them towards those tools* **so they can obtain peer feedback and through the peer feedback, enhance their teaching dossier. (O)** (Interview C)

As a reminder, realist evaluation explores "what works for whom, in what circumstances, and in what respects, and how?" (Pawson and Tilley, 1997, pg. 85) by considering the complexities that exist beyond the program or initiative. This nursing leader offers a glimpse of a context ("my role is to simply push them towards the tools") that most likely impacts the circumstances within the nursing education program (as compared to the health profession education programs within FHS).

When I inquired about the uptake of this process, the participant replied:

> *I implicitly require it. It has to be 100% in order for me to write their letter* (C) **(Interview C)**

This response further establishes the context (mandatory requirement for their dossier) in which the following Nursing faculty member experienced peer observation of her teaching:

> *I did fill out for Dr. X. I had two people fill out teaching, sort of information about them observing [me].* (C) *….. I asked Y to do it, to listen to one of my recorded lectures. Y wasn't actually in the room but he did give his feedback…. my other colleague has actually come in and watched me teach but she was reporting later on what she had seen earlier* (C) …... **I didn't get a whole lot of feedback myself, it was more here's the feedback to me to meet that requirement.** (O)….**He just wrote down his observation of what he thought was good or approved on** (O). Oh, I think it would be a good idea to do that pair up thing, although I haven't looked into it. I can see that it would be valuable because sometimes you think you're getting something across, but it doesn't always work out that way. (M) (Interview J)

Even within the same health profession, there are different approaches and divided opinions, on whether coaching should be mandatory or voluntary. For instance, medicine has both mandatory and voluntary, plus formal and informal processes. One medical speciality requires all new faculty to participate in peer coaching, and that the peer coaches are trained:

> *We tell them right off the bat that it's mandatory. So they don't have an option. They know that when they sign up for being a tutor that they are getting coached. Everyone who goes through it, we try to get them to fill out an evaluation form but they don't*

> *always do that.* (C) **Some of them feel that is less useful than others (O)** and that's probably due to a variety of reasons. (M) Sometimes people just don't have a good interaction with their coach, different coaches have different styles, different personalities. Sometimes people just don't gel for whatever reason (M). But in general, **there is no resistance (O)** because they're told it's mandatory. (M) … **Most people are very appreciative of that and don't feel like it is a chore (O)**. And then in fact for the people being coached, it is very little work for them.(M) (Interview I)

This passage also describes a context where coaching is also "mandatory". However, this participant elaborates on possible differences within the mechanisms ("don't have a good interaction with their coach", "different styles", "different personalities") that may impact the outcome ("less useful" or "very appreciative").

Yet, in another medical speciality, coaching is not mandatory but it should be according to one physician:

> *I think that it should be mandatory, if for instance you are going for promotion and tenure, as part of the dossie*r, *you need to include couple of peer observation with your teaching activities. So you should include in the dossier, some those observed and feedback received for your teaching….We have to be reviewed by peers locally, provincially, nationally and internationally, depending on what type of promotion you're going for. But there's no peer observation of your teaching. That's not mandatory. (C)* So I think it has to be made mandatory. (M) **This way we can all benefit from it we can train more.** (O) Peer Observers, we can train more junior faculty, improve their teaching skills, *but we don't have such process now*.(C) *I always used to be junior but now I'm more senior in my department and get involved in so many projects lately so I haven't had a chance,* (C) but I want to offer my junior colleagues, I want to ask them if they want to be observed and that I can coach them into that. (M) **And that's my plan. I want to use my skills as peer observer and pass them to my younger colleagues.** (O) *And I think that they may be struggling. When I was in their shoes I struggled a lot and I wasn't even aware of this coaching. (C)* (Interview E)

The quotations in this section add to the understanding that there are no context-free (CARES, 2016b) peer coaching programs. Differences exist with who is giving and receiving feedback, the relationships between individuals, and the organizational and departmental norms for the

coaching initiatives. As previously discussed, these variables contribute to both the mechanisms and outcomes, which can be studied further in subsequent cycles of evaluation.

Voluntary Development Program

However, there is also concern within medicine that making it mandatory would cause resistance:

> **I think that there would be a lot of resistance (O)** *to it because, as physicians we are not used to being observed. Once we are in practice, which is the interesting thing. As learners we are continually being observed and in positions where people are watching what we do and commenting on what we do. But when we are in practice* (C)*,* we really lose the opportunity for this and I don't think we do a good job giving feedback to our peers period. (M) *We have learners that observe us which is interesting, when I think about how often as docs we are observed, it is mostly by Learners who is assumed what we are doing is good and valid and important. (C)*

The outcome ("a lot of resistance") could ripple outward to become a future context for this group. This ripple effect (Jagosh et al., 2015) is described in the next chapter in section 6.4.

> I think it also has to be voluntary and that it has to be that somebody cares enough that they want to help you. You have to want to listen to that person about that problem. So I should be cautious about programs that are set up. (M) You will be this person's coach and you will mentor each other. (M) Because if it is coming from outside and it is not being driven by the personalities who are in it (M)**, may not be as nearly as useful**.(O) (Participant G)

Rehabilitation Sciences decided that peer coaching would only be used as a formative and voluntary practice**:**

> *I think since the work of this group became known* (C), ***people became more open to being observed*****.** (O) Wanting to engage in the process and from what I have seen, it is a genuine interest in getting involved in the process, not necessarily for tenue and promotion. (M) It is a genuine interest in become better educators. (M) *If I look at the majority of us here, none of us went through formal teaching education of how to*

become a teacher. I think people are genuinely interested in becoming better educators. (M) And **I think this program will help a lot.** (O) **The work of this group will help a lot** (O)*. At least I have a positive feeling about my faculty here.* (C) The fact that they wanted to have group come here to do the workshop here is very positive. (M) ….I think she [Assistant Dean] would have received a lot of barriers against the process in making the decision to be a summative evaluation. People expressed some concern about this being used as a summative evaluation mostly because it becomes a mandatory process (M), **people would become resistant** (O). (Interview D)

Selecting Coaches

Another issue raised centered around how coaches are chosen and assigned:

> Because this is a new process, for the majority of faculty members, I think they feel more comfortable selecting the observer rather than being assigned an observer .Being assigned an observer makes you think a little more towards how is this going to be used, will this be used for tenure and promotion? (M) **The development part of the process gets a little bit lost.** (O) Maybe that's why people wouldn't be open to having an observer designated by someone else. Have or choose their own observer because it is a point of time when they are placed in a vulnerable position of when they are being observed. (M) And usually, I would think, if you pick you will pick someone who has more experience than you, who you trust that will be fair and would be confidential. (M) **I think this would determine who a faculty member would ask to be the observer**. (O) (Interview D)

There can be multiple mechanisms ("feel more comfortable selecting the observer", "being assigned an observer makes you think … how is this going to be used…?", "you will pick someone…who you trust that will be fair and would be confidential") that align to create an outcome ("determine who a faculty member would ask to be the observer"). There is rarely a full CMO configuration created from one participant source. Instead, the realist evaluator's role is to identify and analyse the contexts, mechanisms and outcomes at their different stages of formation (could be a thought, an experience or a reflection) from many subjects before creating configurations.

I think it's an honour actually. (O) I would almost make the pitch that in some cases people who have done very well and are recognized, they might be asked to do it. And they should also be an opportunity for people to sign up and go through some kind of process. (M)That goes back to who doesn't? You don't want the people who don't have enough to do. And think that this would be a another feather in the cap. Do you want people who are doing, as you were saying, as mutual growth experience? (M) (Participant H)

I mean where do we get our coaches from? We had group meetings, how we going to select coaches. For the most part, these people are being hand selected, so it's not like where you are sending out a mass email to everyone who was a tutor before and asking them whether they be interested in being coached. For the most part, we're selecting people who are already in leadership positions in the undergrad MD program, so all the directors, some of the sub-unit planners as well we are invited selected people to attend on depending on how many more people we need for the pool that kind of thing. We just had another training group of five people in the past year, so I probably won't need to do another batch for a probably another year or two. But these will also be hand selected. (C) Mostly anyone who is already in undergrad MD leadership positions is the kind of person open to the idea of this kind. There's a lot of hand-picking, people we know who have that kind of personality that would make them amenable to coaching. That's a very abstract kind of thing to know for sure. (C) (Participant I)

As described in the previous chapter, one of the main challenges of realist evaluation is the proper identification of contexts and mechanisms, and in particular, identifying contexts that matter (Marchal at al., 2012). This passage provides an example of how context and mechanisms can be challenging to determine. If I was focusing on the process of selecting coaches, this information could be viewed as mechanisms. However for this research, it is classified it as context because it provides useful information on the environment or "social and cultural conditions" (Pawson & Tilley, 1997).

Where Coaching May Not Work

Realist evaluators expect programs will not work in all environments. Faculty offered the following examples of where peer coaching may not work:

I can't think of a case where it wouldn't work. (O) Unless perhaps it was someone who didn't really know what your content area was and what you were trying to get across. (M) **That is the only case in which it wouldn't work**. (O) (Interview J)

It won't work (O) if everyone is too busy and burnt out. (M) And it doesn't work if you don't get to know people, and you don't feel like you know them as a person. You won't feel like you want to ask them and you won't get a chance to find out what other people's strengths are, you won't know who to ask.(M) (Interview G)

Impact of Coaching on Individuals

Some individuals who participated in coaching described outcomes that were personally and professionally significant:

The first time somebody did that for me (C)…. **that was transformative for me as well (O)** because it just doesn't happen right in medicine a lot.(M) *Starting to happen more that people are getting coaching about their teaching***, but that was transformative for me in 2009.** (O) That's **when the light bulb went off for me,** (O) the first time that it happened. **For a lot of people it is a good experience (O)** (Interview E)

This faculty leader raised a salient point regarding how peer coaching could enhance the teaching experience of overburdened clinical faculty and as a means to encourage them to continue to teach:

I think what really struck me **is the increase satisfaction that could come out of this (O)** because *I am very aware of this right now, the rates of physician burnout, challenges of clinical medicine, (C)* I like to think that being involved in teaching is protective because it is an enjoyable activity, (M) *it is not super mandated remunerated*.(C) *Nobody does it for the money or the glory but people do it because they are passionate about it. But it is time and energy intense and it does not always well or numerated,* (C) so if we had value-added things to our teachers, but help them learn more about themselves, feel more supported feel more encouraged and enjoy their role, (M) **they are more likely to continue teaching.** (O). *If we don't support them in that way* then it is just one more thing to do on my list that's already too long. (M) **It is very easy for us to lose our teachers. (O)** (Participant F)

B. Skills and Training for Coaching

The next unexpected theme centers around the inconsistencies of opinions around skills training for coaching. As described in the chapter one, McMaster University does not require coaches to have skills training as this fits into the culture of self-directed learning. Coach training is mandatory in one medical speciality that requires all new coaches to train before they coach new clinical teaching faculty. However, this approach is not consistent with other medical specialities or health education programs at McMaster:

> There was an informal program before I started this program but the problem was, *and I really believe this, was* that coaches need to be trained. (M) *Not everyone is suited to be a coach.* (C), **I think people do gain some benefit from having any peer watch them, and any kind of self-reflection people will benefit from it**. (O) *But the maximum benefit you will get is from someone who is experienced and trained coach*.(O) (Participant I)

Several participants spoke of the process and specific skills, and the training:

> Because coaching somebody is a skill just like any other and some people are just naturally good at it. And others like myself, need to learn what am I doing as a coach. Do I have a plan going in? (C)You need to understand what your role is in terms of things like, There are all these theories about aligning objectives, setting ground rules, having a process, that kind of thing.(M) For example, what used to happen in the MD program is that, is our tutor said that I'm having trouble with my group, *they would get an experienced tutor to come in and just watch them*. (C) *A lot of times the experienced tutor would just come in and watch them and say "Oh yeah, everything look pretty good" or "good job"* (C) So coaching someone and giving feedback to someone is a skill, just like any other skill, it has to be practice, and learned (M). And for some people, they are better at it than others, I think that's a very important thing to consider. (M)

Not everyone thought the coach training was helpful:

> Well, I think that they said that that coaching is a better way to change behavior. They felt that they needed to have some training on how to coach someone, some said they

know how to do it, some said that they need some professional development or training and they did recommend that it was very different than feedback and they were pretty neutral about the tools. (M) **I didn't get the sense that they felt that the tools were beneficial.** (O) (Interview E)

C. Ongoing Support and Influence from Leadership

The interviewees drew attention to influence that leadership could have in making peer coaching a successful practice:

I think that the Departments and Chairs need to be supportive of this type of exercise (C) (Interview E)

Oh, there I think there needs to be a willingness from leadership, it has to come from the top down. Even just for Logistics....resources are in such tight supplies everywhere, I find proposing new programs,(C) can be threatening, scary or the automatic reaction (M) is 'we don't have admin staff for that, we don't have support for that'. I don't think it [peer coaching] is that resource-intensive but it requires one or two champions who will really drive it. (M) (Interview F)

You really need to have somebody who is a champion and is passionate about it (C) and **if you don't have that it will just die (O).** …… If we do anything in this department or within a big organization, you have to have a *champion who's going to behind it. You have to plan for when that champion leaves or move on to other things, when you come to replace him (C).* (Interview I)

It's interesting because this is a thought that's been echoed throughout my conversations with people, *the importance of having the right champion and also the culture in which Champion speaks*. *So if it's more acceptable if we want this because we want to have the best tutors out there, versus this is a requirement if you expect to go for promotion and tenure. (C)* (Interview I)

5.3 Using NVivo Queries

As described above, all interviews were transcribed, placed into NVivo 11, and coded both by a topic and then by context, mechanism and outcome. The queries I ran contributed to my thinking and understanding of the data.

Standard Word Query: Created and used as a snapshot of the forty most frequent five or more lettered words:

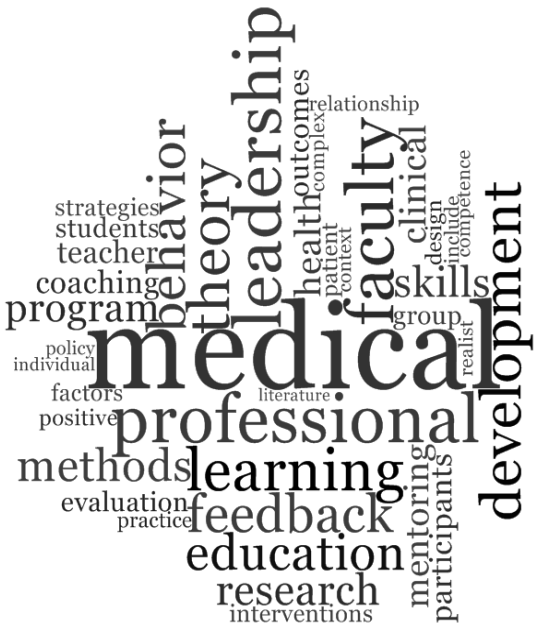


Figure 5.2 Word Cloud

Coding Matrix Query: Using the Matrix Coding feature within NVivo, I ran several node matrix coding queries to help analyse the data. This feature enabled me to double click on specific cells and go directly to the location in the transcript where these words were coded. Here is an example of one query that shows nodes by rows and the percentages participants discussed (the darker cells indicate a higher percentage coded in that particular node):

	A : A	B : B	C : C	D : D	E : E	F : F	G : G	H : H	I : I	J : J
1 : Adult Learning T...	13.1%	0%	5.93%	0%	0%	35.76%	0%	25.99%	0%	19.23%
2 : Adult Learning T...	0%	14.78%	10.43%	0%	15.22%	6.09%	0%	22.39%	21.3%	9.78%
3 : Adult Learning T...	0%	9.74%	8.47%	15.81%	5.27%	2.56%	0%	17.09%	32.59%	8.47%
4 : Adult Learning T...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5 : Adult Learning T...	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
6 : Adult Learning T...	0%	7.46%	4.98%	8.96%	0%	13.43%	0%	28.36%	22.39%	14.43%
7 : Community of Pr...	4.07%	1.8%	7.61%	9.59%	8.33%	21.27%	20.67%	14.92%	0.3%	11.44%
8 : Community of Pr...	2.18%	0%	2.1%	8.26%	0.53%	28.93%	23.52%	24.12%	4.51%	5.86%
9 : Community of Pr...	8.41%	0%	0%	9.32%	0%	40.23%	27.95%	5%	2.5%	6.59%
10 : SOCIAL LEAR...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
11 : Social Learning...	1.28%	0%	1.7%	7.87%	5.11%	27.66%	18.3%	25.32%	10.43%	2.34%
12 : Social Learning...	0%	0%	2.56%	12.8%	0%	32.35%	22.91%	16.04%	8.49%	4.85%
13 : Social Learning...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
14 : Social Learning...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
15 : Social Learning...	0%	0%	1.87%	34.49%	0%	17.91%	24.33%	16.58%	2.94%	1.87%
16 : THEORY OF R...	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
17 : Theory of Refle...	0.83%	7.25%	7.85%	38.29%	4.88%	35.43%	0%	3.09%	2.38%	0%
18 : Theory of Refle...	2.78%	0%	5.03%	17.01%	2.43%	35.76%	0%	9.2%	27.78%	0%
19 : Theory of Refle...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20 : Theory of Refle...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
21 : Theory of Refle...	3.16%	10.44%	12.66%	18.67%	16.77%	32.28%	0%	0%	6.01%	0%
22 : UNEXPECTED	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
23 : Future recomm...	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
24 : Unexpected CO...	0%	0%	6.61%	7.89%	16.79%	8.02%	4.79%	10.05%	39.11%	6.74%
25 : experience of b...	0%	0%	0%	55.88%	8.73%	18.03%	0%	17.36%	0%	0%
26 : experience of b...	0%	0%	0%	49.74%	5.15%	17.78%	0%	27.32%	0%	0%
27 : experience of b...	0%	0%	0%	26.72%	17.24%	56.03%	0%	0%	0%	0%
28 : Unexpected ME...	0%	0%	0%	21.14%	30.9%	21.14%	15.01%	2.62%	9.18%	0%
29 : Unexpected Re...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
30 : Unexpected Re...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
31 : Unexpected OU...	0%	0%	3.02%	2.22%	36.69%	14.31%	6.65%	4.44%	28.43%	4.23%
32 : Unexpected Le...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
33 : How Coaching i...	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
34 : Leadership Con...	0%	0%	24.72%	8.46%	0%	0%	0%	4.23%	62.6%	0%
35 : Leadership Mec...	0%	0%	0%	20.77%	4.75%	0%	14.24%	14.24%	45.99%	0%
36 : Leadership Out...	0%	21.67%	25.12%	13.3%	0%	0%	11.82%	10.34%	17.73%	0%

Table 5.3: Example of Coding Matrix Query by Row

This representation shows the same data but as column percentages for participant discussing the nodes:

	A : A	B : B	C : C	D : D	E : E	F : F	G : G	H : H	I : I	J : J
1 : Adult Learning T...	42.14%	0%	7.05%	0%	0%	11.45%	0%	11.68%	0%	23.57%
2 : Adult Learning T...	0%	21.79%	5.94%	0%	5.95%	0.93%	0%	4.81%	4.39%	5.73%
3 : Adult Learning T...	0%	19.55%	6.56%	4.25%	2.8%	0.53%	0%	5%	9.14%	6.75%
4 : Adult Learning T...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5 : Adult Learning T...	0%	0%	0%	0%	0%	0%	0%	1.03%	0%	0%
6 : Adult Learning T...	0%	4.81%	1.24%	0.77%	0%	0.9%	0%	2.66%	2.02%	3.69%
7 : Community of Pr...	22.74%	9.62%	15.72%	6.87%	11.81%	11.81%	24.52%	11.63%	0.22%	24.33%
8 : Community of Pr...	9.7%	0%	3.47%	4.72%	0.59%	12.81%	22.25%	14.99%	2.69%	9.94%
9 : Community of Pr...	12.37%	0%	0%	1.76%	0%	5.89%	8.74%	1.03%	0.49%	3.69%
10 : SOCIAL LEAR...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
11 : Social Learning...	2.01%	0%	0.99%	1.59%	2.04%	4.33%	6.11%	5.56%	2.19%	1.4%
12 : Social Learning...	0%	0%	2.35%	4.08%	0%	7.99%	12.08%	5.56%	2.82%	4.59%
13 : Social Learning...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
14 : Social Learning...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
15 : Social Learning...	0%	0%	0.87%	5.54%	0%	2.23%	6.47%	2.9%	0.49%	0.89%
16 : THEORY OF R...	0%	0%	0%	0.73%	0%	0%	0%	0%	0%	0%
17 : Theory of Refle...	2.34%	19.55%	8.17%	13.82%	3.48%	9.92%	0%	1.21%	0.9%	0%
18 : Theory of Refle...	5.35%	0%	3.59%	4.21%	1.19%	6.86%	0%	2.48%	7.17%	0%
19 : Theory of Refle...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20 : Theory of Refle...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
21 : Theory of Refle...	3.34%	10.58%	4.95%	2.53%	4.5%	3.39%	0%	0%	0.85%	0%
22 : UNEXPECTED	0%	0%	0%	0%	1.61%	0%	0%	0%	0%	0%
23 : Future recomm...	0%	0%	0%	0%	0%	0%	0%	4.02%	0%	0%
24 : Unexpected CO...	0%	0%	12.13%	5.02%	21.16%	3.96%	5.05%	6.96%	25.97%	12.74%
25 : experience of b...	0%	0%	0%	21.42%	6.63%	5.36%	0%	7.24%	0%	0%
26 : experience of b...	0%	0%	0%	8.28%	1.7%	2.3%	0%	4.95%	0%	0%
27 : experience of b...	0%	0%	0%	1.33%	1.7%	2.16%	0%	0%	0%	0%
28 : Unexpected ME...	0%	0%	0%	6.22%	18.01%	4.83%	7.32%	0.84%	2.82%	0%
29 : Unexpected Re...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
30 : Unexpected Re...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
31 : Unexpected OU...	0%	0%	1.86%	0.47%	15.46%	2.36%	2.35%	1.03%	6.31%	2.68%
32 : Unexpected Le...	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
33 : How Coaching i...	0%	0%	0%	0%	0%	0%	0%	0%	5.73%	0%
34 : Leadership Con...	0%	0%	18.81%	2.23%	0%	0%	0%	1.21%	17.24%	0%
35 : Leadership Mec...	0%	0%	0%	3%	1.36%	0%	3.41%	2.24%	6.94%	0%
36 : Leadership Out...	0%	14.1%	6.31%	1.16%	0%	0%	1.71%	0.98%	1.61%	0%

Table 5.4: Example of Coding Matrix by Column

Framework Matrix Query

I also created a framework matrix in NVivo to cross-tabulate the qualitative data. I exported the table as an Excel file which enabled me to easily navigate the data while I looked for common themes in the contexts, mechanisms and outcomes. This type of query facilitated a traditional pen and paper approach to the data. I also queried the results to see how the attributes I assigned to the interview participants (professional practice, career stage, training received, etc.) contributed to their experiences.

A : Adult Lea	B : Adult Learning Theory CONTEXT	C : Adult Learning Theory MECHANISM	D : Adult Learning Theory OUTCOMES	G : Social Learning Theory CONTEXT	H : Social Learning Theory MECHANISM
1 : A Position = Stakeholder Profession = FM Doctor Training = None				Most teachers try on their own Most teachers try on their own	
2 : B Position = Stakeholder Profession = Specialist Training = None	AN Setting a goal? Otherwise it becomes unfocused. If I didn't have in front of me, some sort of objectives, my mind would have wondered to what the students were doing. Peer observation is like any constructive debriefing. This is all the rage now with simulation based education. It has to relate to something specific you observed rather than a gestalt. Because you can put theory around that -	address your feedback related to a specific observation, then the person can reflect on what they were doing in the moment. If I didn't have in front of me, some sort of objectives, my mind would have wondered to what the students were doing. Because you can put theory around that - address your feedback related to a specific observation, then the person	Then blueprint it back to a specific goal they had Otherwise it becomes unfocused. If Then blueprint it back to a specific goal they had		
3 : F Position = Leadership Profession = FM Doctor Training = Super Tutor	But if we say we would like to support you in your role, we are interested in what your challenges have been, I'm really struggling with this problem But if we say we would like to support you in your role, we are interested in what your challenges have been, I'm really struggling with this problem	people might bring something that is really unique and different, we may have not considered it	clearly allows us to plan faculty development in new ways. I'm really struggling with this problem and we may have not considered it to be an issue. clearly allows us to plan faculty development in new ways. I'm really struggling with this problem and we may have not considered it to be an issue.	because as teachers we are so rarely ever directly observed teaching and so the feedback we get is related largely related to student satisfaction. Often get much on student outcomes. If we have a student in difficulty is it because we were poor teachers or because the student was already having difficulties or having learning issues. I think the conversation is the place It is the idea that if there is someone	because as teachers we are so rarely ever directly observed teaching and so the feedback we get is related largely related to student satisfaction. Often get much on student outcomes. If we have a student in difficulty is it because we were poor teachers or because the student was already having difficulties or having learning issues. So this was really an opportunity to receive feedback which is not comment as a teacher. And also to
4 : C	when they feel that it is a safe	they aren't even asking their peer	people are receptive to feedback	they feel that it is a safe environment	the person that provides their

Table 5.5: Example of Framework Matrix Query

5.4 Summary of Chapter

This chapter presented the data from ten, transcribed interviews. Using NVivo, the data was initially grouped in broad themes to provide an overview of the data collected. Five separately themed nodes were created to captured relevant data for each of the program theories and for

unexpected findings. The words were then coded either as a context, mechanism, outcome or left blank.

The next chapter will continue the Data Analysis Cycle (Diagram 4.1) by identifying CMO configurations, provide an analysis and conclude the realist evaluation research design.

CHAPTER 6: DISCUSSION

6.1 Introduction

The previous chapter presented data from ten interviews conducted around the four candidate program theories and the additional findings, all of which was coded into contexts, mechanisms and outcomes (CMO). This chapter will propose CMO configurations generalized from the data and will demonstrate how these configurations relate to the literature and research questions. It will explain the significance of the research and how it contributes to faculty development at McMaster University and beyond, and offer insight to those who may want to use realist evaluation in healthcare education. Finally, this chapter reviews the limitations of the study and considers validity, generalisability, and my own personal learning.

A. Create Program Theories or MRT if larger studies (*Chapter 2)*
B. Review internal documents *(Chapter 4)*
C. Follow interview protocol *(Chapter 4)*
D. Gather evidence *(Chapter 4)*
E. Analyse data *(Chapter 5)*
F. **Construct theory and data into CMO configurations** *(Chapter 6)*
G. **Discuss results** *(Chapter 6)*
H. Present research conclusions and recommendations *(Chapter 7)*

6.2 Overview of Study

The original goal of this study was to study the impact of peer coaching on clinical faculty within health professions education . This research is unique because if offers the faculty development community the opportunity to follow a realist evaluation which includes the investigation of four rival program theories related to peer coaching.

Although the use of realist evaluation is increasing, it is not yet considered a tried and true method. As a brief reminder, realist evaluation was first introduced by Pawson and Tilley (1997) to address programs in complex social conditions. This theory driven evaluation goes below the surface to explain the “unrecognized forces” (Boud and Walker, 1999, p.199) and questions how something happens (outcome) as a result of an action (mechanism) within an environment

or situation (context). Westhorp (2014) describes the realist approach as “a way of thinking” (p.7) which may seem ambiguous to anyone who is not yet familiar with this type of methodology. Realist evaluation aligns with Bhaskar’s (2008; 2014) critical realism perspective: that reality can never be known, and everything should be questioned in order to discover the underlying explanatory factors of complex, open systems, which are causal and contingent. Also, through Archer’s (1995, 2007) Realist Social Theory that describes how through individuals make a choice through human agency, whether they will make a change in their behaviour.

After conducting the first few interviews, I realized that most of the programs in the FHS use a form of peer observation of teaching but refer to it as peer coaching. The three main models being used include:

- fully voluntary, peer observation model, with no skills training required of coach
- fully mandatory, peer observation model, with no skills training required of coach
- fully mandatory, peer coaching model with mandatory skills training required of coach

I was initially disappointed to discover there were different types of coaching used in the FHS that could possibly frustrate my original study goal. After I consulted the RAMESES ll Reporting Standards (Wong et al.,2016) which describes how the “scope and design may evolve over the course of the evaluation” (p.10), I accepted the situation and continued reassured that realist evaluation is a methodology that is responsive to the unexpected.

6.3 Identifying CMO Configurations

The fourth step (Figure 6.1) of this realist evaluation process involves identifying the CMO configurations centered around the research questions, the four program theories and the additional findings. Furthermore, relevant dialogue was coded into Contexts, Mechanisms and Outcomes.

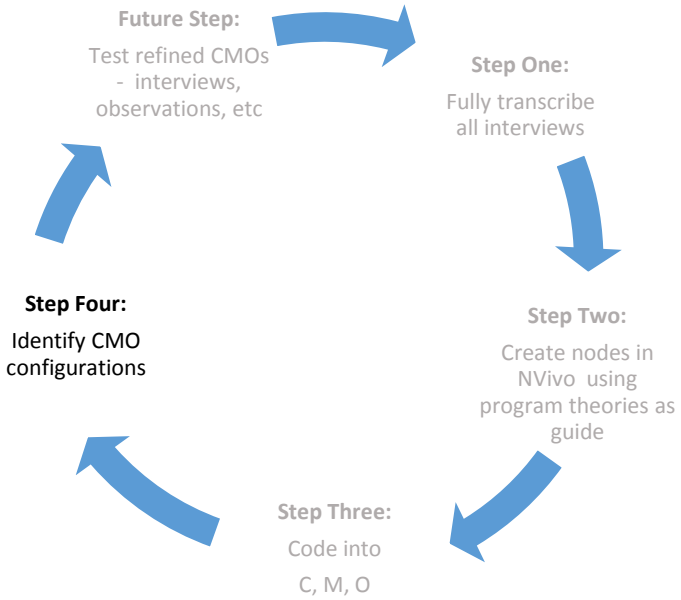


Figure 6:1 Data Analysis Cycle (Modified from Pawson and Tilley, 1997, Marchal et al.,2012)

Linsley, Howard and Owen (2015) caution that developing CMO configurations requires a great deal of skill and flexibility. This is where the influence of Bhaskar's (2008) critical realism, causation and stratified reality are influential: we are encouraged to think critically and question everything we see and hear. Contexts do not remain constant and involve many different influences, either "enabling or disabling the mechanism of change" (Pawson & Tilley, 1997, p.70). No doubt, it is difficult to identify what drives change and therefore, Archer's (2007) Social Theory (including PEPs personal power, CEPS cultural power and SEPs structural power) can help the realist evaluator consider what may activate agency.

As described earlier, realist evaluators look to understand and identify the mechanisms that explain the inner workings of an interventions that influence participants' decisions whether (or not) to take action or change behaviour. Different mechanisms can be activated in the same or similar context. It is also possible to have different outcomes from the same mechanisms, or even similar outcomes from different contexts and mechanisms.

Using a combination of direct words and paraphrasing from interviewees, this section presents the CMO configurations constructed from the transcribed data. It demonstrates how the CMOs relate to the associated literature, candidate program theories and the research questions:

Program Theory 1:

An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience.

(Social Learning Theory)

Stemming from Bandura's Social Learning Theory (Bandura, 1971), this program theory specifically focuses on how people learn from one another, through observation, imitation, and modeling. The underlying research questions for this program theory include: how relationships influence the coaching experience; whether the coach and coachee learn from each other; and what is required in the coaching environment to facilitate learning from one another.

The Relationship

The following CMO configuration describes the value of the peer relationship and how it can be established outside of a formalized program:

		Context	Mechanism	Outcome
Informal Relationship	CMO 1	Faculty have multiple responsibilities and significant time pressures	Value and appreciate support from colleagues	Some faculty seek informal relationships rather than participate in formal coaching partnerships

The coded interviews and CMO configuration demonstrate the importance of a trusted, social network and peer relationships. They add to the literature which describes peer coaching as a social and collaborative form of learning (Ladyshewsky, 2006, 2010; Moore, Westwater-Wood,

& Kerry, 2016; Schwellnus & Carnahan, 2014). It also confirms the study by Roxå & Mårtensso (2009) which describes how private conversations about teaching practice already exists amongst trusted peers. Undoubtedly, peer coaching can offer a structure and skill to these types of conversations but knowing that relationships created to discuss challenges exist outside of coaching may offer value information for faculty development. There may be other ways to facilitate these connections especially with busy clinicians and those who are located in distributed teaching environments and may not have ready access to teaching peers.

Mutual Learning

The following CMO configuration indicates that building trust with colleagues, helps support mutual learning:

		Context	Mechanism	Outcome
Learning from each other	CMO 2	Facilitated and ongoing conversations	Builds trust	Benefits both coach and coachee who learn from each other

Created from the answers given by interview participants, this configuration, aligns with the literature and draws attention to the importance of trust in the coaching partnership (Cox, 2012; Gosling 2002; Ladyshewski, 2017).

Facilitating Learning

Although issues of interpersonal trust and safety are explored in the literature, (Boud and Walker, 1998; Cox, 2012; Roxa and Martensson, 2009), I did not expect it would be mentioned as frequently as it was throughout the interviews. As a result, two configurations were created:

		Context	Mechanism	Outcome
Trust & Safety	CMO 3	Supportive safe work environment	Feelings of trust and belief that peers are interested in their success	Results in openness to learning and feedback
	CMO 4	Minimal power/ hierarchy differential	Perceived less threatening	Collegiality and mutually beneficial discussions

		between coaching partners		

The final configuration for this program theory centers around the participants' experience of peer coaching as a voluntary partnership:

		Context	Mechanism	Outcome
Voluntary Process	CMO 5	Voluntarily working in coaching pair	Sense of being personally connected with colleagues	Improves workplace environment and cohesion
	CMO 6	Freely working with peers	Generates informal and open dialogue	Less threatening environment to learn

These CMO configurations are in line with findings from other researchers (Ladyshewsky, 2006; Waddell & Dunne, 2005) who suggest coaching may work best when it is non-evaluative and voluntary environment. However, not all participants in the study think coaching should be a voluntary process. Additional CMO configurations related to this topic are presented in the Additional Findings section below.

Summary

The CMO configurations generated from the data, supports this program theory and the related literature. They show that voluntary and trusted peer relationships influence peer coaching. What helps people learn from one another in peer coaching is an environment where there is confidence in the process, a social network and the institutional support. The CMO configurations can be considered in relation to how learners make the choice whether to replicate what they have observed.

Program Theory 2:

Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn.
(Adult Learning Theory)

This program theory proposes that peer coaching should follow the concepts of adult learning, and seeks to answer how goal setting impacts motivation and peer coaching outcomes. The CMO configurations constructed from the interview data are as follows:

Goal Setting

		Context	Mechanism	Outcome
Setting Learning Goals	CMO 7	Coachee generates goals before coaching meeting/ observation	Attention is focused on pre-determined specifics	Coachee values process specifically related to their personal needs
	CMO 8	Multiple competing goals, (personal, professional and institutional goals)	Coachee takes responsibility for achieving these multiple goals	Sharpens performance in specific and targeted areas
	CMO 9	Feedback is related to goals predetermined by coachee	Agendas align and coach addresses specific goals	Coachee remains open to feedback and coaching process
	CMO 10	Coachee incorrectly identifies own learning gaps	Lacks insight and self awareness	Results in missed learning opportunities

CMO configurations 7, 8, 9 align with the research (Gormally, Evans and Brickman, 2014) that goal setting can help focus feedback which results in greater attention on the process. CMO 10 is congruent with the notion that what we believe we do, (espoused theories) is not always what we actually do (theories-in-use) (Argyris and Schon,1974). CMO 10 also raises the question about how a trained versus untrained coach would be able to navigate and help improve the coachee's reflective practice. It can be assumed that a skilled coach would have the additional skills to help the coachee re-align learning goals without taking over the process,

thus ensuring the coachee remains in charge of their learning, (as is the key concept of adult learning theory). This theory can be investigated in a further evaluation cycle.

This program theory also references the intrinsic motivation to learn but there was minimal data gathered about motivation. One possible reason is the sample population of clinical faculty already has an inherently high level of motivation and therefore, is not an outcome they consider important enough to mention.

Summary

The CMOs created from the interview data, support the literature which recommends that development programs follow adult learning principles (Hooker, 2013; Moore, Westwater-Wood and Kerry, 2014; Schreurs & Grave, 2010). In addition, the data gathered indicates that setting goals trigger mechanisms that impact coaching outcomes. This happens by engaging faculty in a process which enables them to stay in control of their learning and focus attention on what is meaningful to them. When the coachee is not in charge of the process, feelings of lack of control and fear may result. Within the context of McMaster University and healthcare education in general, this approach is significant and requires additional research.

There is not enough evidence gathered in the interviews to confirm or oppose the question whether goal setting has an impact on motivation in peer coaching. This program theory can be further refined and studied for additional data. Nevertheless, considering the literature and in particular Archer's (2007) discussion on the activation of agency, my sense is that without taking ownership of own goals, people will be less motivated to fully engage in coaching.

Program Theory 3:

Peer coaching encourages learning in both the coach and coachee through a process of reflection and feedback.

(Theory of Reflective Practice)

This program theory is underpinned by reflective practice theory (Schon, 1991) which includes reflection in, and on, action. It seeks to answer how reflective practice contributes to the peer coaching experience and whether it occurs for both the coach and coachee. It also seeks to know how feedback adds to peer coaching. Steinert (2010) suggests that at the individual level, reflection can focus on attitudes and beliefs; and at the institutional level, it can create opportunities for organizational learning.

Reflection

The data collected in the interviews form CMO configurations focusing specifically on reflection within peer observation practice:

		Context	Mechanism	Outcome
Reflection	CMO 11	Observing peers teach	Teaching rises to forefront of mind	Results in reflection of own teaching skills (for both coach and coachee)
	CMO 12	Observing peers teach	Internalizes observation and triggers awareness of new options	Both coach and coachee learn and improve teaching skills
	CMO 13	Coaching a peer	Opens mind to reflect	Style of teaching changes as a result

These configurations corroborate that coaching, when done properly, can be a reflective endeavor (Jackson, 2004). As reviewed in the literature chapter, Archer (2007) describes reflexivity as the "regular exercise of the mental ability, shared by all normal people, to consider themselves in relation to their (social) contexts and vice versa" (p.4). This inner

dialogue includes our ability to question and evaluate what we experience and contributes to our internal decisions to make change in our lives (Archer, 2007). My opinion entering into the research (formed from my professional experience as a coach) was that reflective practice occurs for both coach and coachee. Brockbank and McGill (2007) suggest that encouraging reflective practice for faculty may improve their practice; however, Boud and Walker (1998) question whose interests are followed when guided reflection is facilitated by an external source. They also draw attention to the importance of trust and safety as a requirement to foster reflection. Without it, the "most likely outcome will be compliance, in which participants go through the motions of reflection without revealing (sometimes even to themselves) what are fundamental learning issues" (p.201). The scope and impact of this reflection is something that can be investigated in a future cycle of evaluation.

Feedback

Another question within this program theory centers is what feedback contributes to reflective practice:

		Context	Mechanism	Outcome
Feedback	CMO 14	Giving and receiving feedback with colleagues	Opens self to being vulnerable	Results in empathy for own students and better feedback skills

Providing feedback is a key part of coaching, especially in the context of a peer partnership. What is needed is additional data from a future cycle of evaluation to further define how it specifically contributes to reflection in the coaching process.

Summary

This program theory confirms that reflection practice is active and contributes to the peer coaching experience. What remains unanswered is knowing whether McMaster is creating a peer coaching culture that fosters reflective practice from its faculty (as is mandatory for FHS students). It would be valuable to know for example, when feedback is given as part of a mandatory requirement for promotion, as it is in the Nursing Program, how accurate, honest and useful is it? Does a culture of collegiality protect faculty in mandatory observation settings

from ‘negative’ assessments when the stakes are connected to promotion? Finally, is reflection different within a context such as within the Rehabilitation Program, where the leadership has openly decided that peer coaching remains a formative process?

Program Theory 4

The context of where people work and their professional practice influence the experience and impact of peer coaching.

(Community of Practice)

The final program theory explores how the Community of Practice Theory (Lave & Wenger, 1991) influences the use and experience of peer coaching. It also considers the influence of the environment, professional identity and McMaster University’s culture in relation to peer coaching.

Professional Environment

Interviewees considered the culture of their professional environment but did not provide specific information related to their profession:

		Context	Mechanism	Outcome
Culture	CMO 15	An environment that encourages life long learning for everyone	Activates sense of humility and realism of what teaching is really like	A culture where asking for help or correcting a colleague is acceptable
	CMO 16	Institution promotes culture of learning and feedback amongst faculty	Opens faculty to give and receive feedback	Normalizes activity and shifts feedback culture

	CMO 17	Collegial culture where peers engage in everyone's success	Fosters belief that people in professional circle care about each other's progress	Results in positive professional connection with group

Cruess, Cruess and Steinert (2018) suggest the location of practice and the clinical speciality affects the outcomes in faculty development. In this study, it appears that the culture within the professional environment makes a difference to the use and experience of peer coaching but not in the way expected. The data does not indicate differences amongst the different healthcare professionals but instead, how the culture of the professional environment encourages a supportive internal culture.

The above configurations may be also relevant to the FHS's clinical preceptors distributed across southern Ontario (or to any university that operates a distributed network of teaching faculty) but this group may have unique needs which are different from faculty in the centralized teaching locations. The need to foster support through targeted and deliberate actions is in line with Blitz, De Villiers, & Van Schalkwyk (2018) who recommend strengthening the network of social connections of clinical faculty in distributed locations.

Professional Identity and Outcomes

Participants said little about how their professional identity influenced peer coaching, but did discuss the importance of trust and support with their colleagues, especially if these individuals are perceived as experts or had greater disciplinary knowledge.

		Context	Mechanism	Outcome
Reputation of Coach	CMO 18	Speaking with someone viewed as expert in professional field	Produces feelings of validation, recognition and encouragement	Results in growth in confidence

This configuration identifies the influence a coach can have on the outcome of a peer partnership and therefore, recruiting internal "champions" when establishing a peer coaching program is something worthy of considering.

Influence of PBL

The final guiding question for this program theory focused on how the FHS contributes to its Community of Practice. I had not anticipated how participants would view McMaster University's Problem Based Learning (PBL) curriculum as an influence to coaching:

		Context	Mechanism	Outcome
Problem Based Learning	CMO 19	Content experts who are not skilled in PBL (or any student centered teaching methods)	Approach does not come naturally	Variable results whether faculty learn to give/receive feedback to improve PBL methods

This idea aligns with Roxa and Martensson (2009) who suggest that teaching faculty are likely to use personal teaching concepts rather than recognised and researched pedagogy. This configuration may be especially important to adjunct faculty within McMaster's geographically distributed healthcare network, many who have different pedagogical philosophies developed from their own educational, professional and clinical experiences outside of the academic learning center.

Summary

Professional identity does not appear to be as important to participants as does a culture of support for faculty which facilitates openness to feedback and learning.

Given I was unable to recruit participants from all education programs from the FHS, there are possibilities for further investigation on the specifics of the cultures of the professional disciplines within the FHS. The CMO configurations listed above are a good starting point to delve deeper to know "how social structure interacts with individual or group agency" (Marchal et al., 2012, p. 207). A future cycle of evaluation could narrow the focus to different specialities within one professional group (e.g. family medicine, internal medicine and surgery) to gather more data.

Additional Findings

Realist evaluators are encouraged to look for the unexpected while analyzing study data and by doing so, I identified two additional topics from the data: the positioning of coaching and the influence of leadership. The following is an overview of these findings:

How Coaching is Positioned

Even though the literature is consistent about the importance of peer coaching and peer observation being voluntary and safe endeavors where faculty set their own learning goals (Cox, 2012; Gormally, Evans and Brickman, 2014; Gosling, 2002; Hammersley-Fletcher & Orsmond, 2004; Ladyshewsky, 2006; Vidmar, 2006), I had not anticipated the amount of discussion which would be generated regarding how coaching is positioned and therefore, I felt it was valuable to create its own section to discuss. These configurations are in addition to those created from the data gathered around Social Learning Theory.

The congruence of what is said and done, and the timing and choice of coaching partners are also influential in building trust when peer observation programs (and other faculty development initiatives too):

		Context	Mechanism	Outcome
Transparent Process	CMO 20	Misrepresenting (or changing) the purpose of observation	Triggers feelings of mistrust and fear	Greater apprehension and resistance to coaching
Voluntary Program	CMO 21	Coaching is voluntary	Fosters belief and trust in the benefits of coaching	Fewer internal barriers to volunteering
	CMO 22	Coach and coachee participate voluntarily, on a equal footing	Spirit of mutual assistance is evoked	Becomes a space for learning

This configuration aligns with Schwellnus and Carnahan (2014) who studied the impact of peer coaching in a variety of settings and found that it was most successful when set up in a voluntary and non-evaluative environment.

There is some support for coaching to be a mandatory requirement:

		Context	Mechanism	Outcome
Mandatory	CMO 23	Coaching is mandatory requirement for new faculty	Individuals are aware of requirement before they sign up as faculty	Junior faculty appreciate help they receive and not left alone to struggle

Configuration #23 was created from participants in an area where coaching skills training is given to faculty. I agree with Hooker (2013) who identified the need for further research on what is needed for skills training for peer coaching. I have questions (and concerns) about the hands-off approach to skills training at McMaster, especially in environments where peer observation is a summative process as part of promotion and tenure. This gap could be followed in a future research cycle.

Leadership

Participants described the influence of leadership to be important when establishing peer coaching practices. Leadership support was mentioned in relation to how it can influence faculty development:

Leadership Influence	CMO 24	Leadership encourages faculty to bring forward their challenges and learning needs	Stimulates freedom and security to discuss issues that are unique and different	Faculty development can create programming that may have not previously been considered

Institutional leadership is significant when considering how coaching is used. This idea aligns with Beerkens (2008) who cautions that if pressured, individuals may just reinforce existing university structures, both good and bad. There needs to be leadership awareness that evaluation is not coaching. Calling evaluation 'coaching' does not make it so.

Summary

Using the approach created by Jackson and Kolla (2012), I was able to identify and create CMO configurations (Appendix I) which are predominantly supported by the existing literature. These configurations can be adapted, modified and then further researched in a future cycle of realist evaluation.

6.4 The Ripple Effect

Realist evaluation is a cycle and therefore, is continually refined and repeated over time. The initial CMO configurations provide opportunities to ripple (Jagosh et al., 2015) into another cycle of evaluation. The outcomes of the first set of CMO configurations (Appendix I) can become the context in the next cycle of evaluation, as demonstrated in the following diagram:

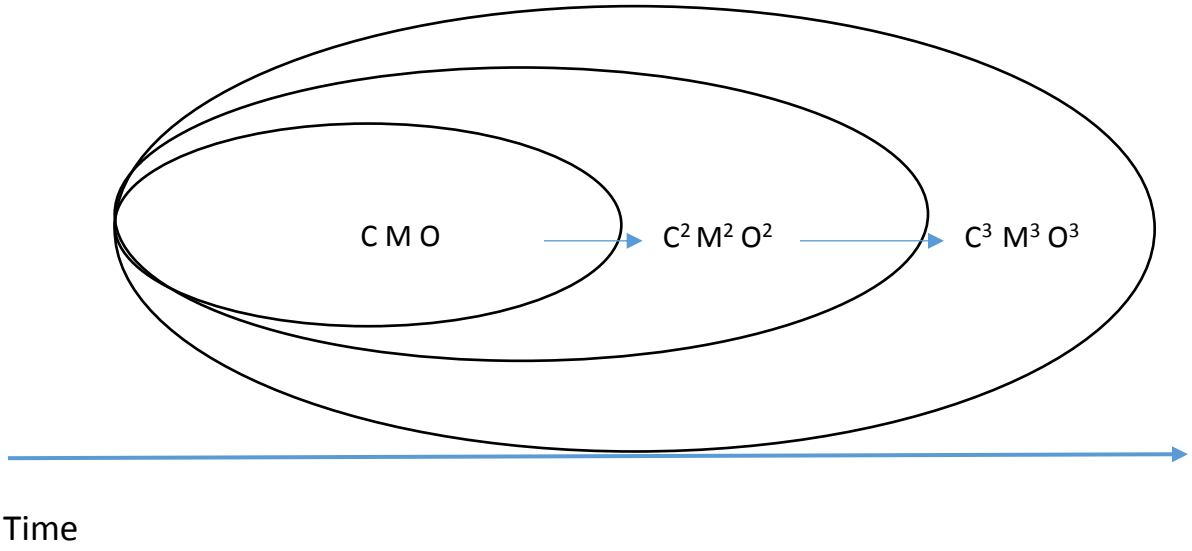


Fig. 6.2 Linked context-mechanism-outcome configurations depicting the ripple effect(Jagosh et al.,2015, p.4)

Future research can be created using the existing program theories or the evaluator may decide to use the configurations to test new program theories. This research focused on the first round of evaluations and it was not within the scope and limited time and resources to complete a

second evaluation cycle.

6.5 Impact of Peer Coaching on Clinical Faculty within Health Professions Education

The title of this thesis is "The Impact of Peer Coaching on Clinical Faculty within Health Professions Education : A Realist Evaluation on Peer Coaching as a Form of Faculty Development". Using realist evaluation methodology with the goal of going beyond "did it work?" (Pawson and Tilley, 1997), the research centered on four program theories with a series of research questions (Appendix J) used to guide the semi-structured interviews (Appendix F) to identify how using peer coaching results in change.

Most of the data collected aligned with the existing literature discussed in the second chapter including the benefits of peer coaching (and peer observation) as a form of faculty development and the environmental factors that influence its success. I am now able to answer the research questions using the realist evaluation mantra (*in italics*) (Pawson and Tilley, 1997; Pawson, 2018) with the following answer (**in bold**):

> "*Discovering what works (**Peer coaching**), for whom* (**faculty who seek feedback**), *in what circumstances* (**in trusting and collaborative environments**), *in what respect (***in voluntary partnerships***), over what duration* (**as long as needed**) *and, above all, why* (**prompts reflection which helps faculty make change in the performance areas they have self-identified**)." (Pawson, 2018, p. 49). Ultimately, for the provision of healthcare.

Thus, if done well, in a spirit of trust and collaborative practice, with institutional and leadership backing, peer coaching can have a positive impact on faculty. It can enable reflective practice for both coach and coachee, feelings of support, improved confidence, and greater enjoyment in one's professional role.

6.6 Nature and Role of Trust

As reported in the second chapter, the influence of trust in peer coaching is present in the literature (Blitz, De Villiers & Van Schalkwyk, 2018; Boud & Walker, 1998; Cox, 2012; Gosling, 2002; Ladyshewsky, 2017; McNiff & Whitehead, 2005; Roxå & Mårtensson, 2009; Orr & Sonnadara, 2019). What is unique to this study is the way in which the nature and role of trust was identified and reported. Interview participants described how their environment (e.g. "nobody has the power", "it is a safe environment', "someone in your tribe supports you") either facilitated or inhibited their thoughts and feelings of trust regarding peer coaching (e.g. "it can be very intimidating", "people expressed some concern about this being used as a summative evaluation", "requires one or two champions who will really drive it"). In turn, these mechanisms, influenced the outcomes of participating in peer coaching (e.g. "my confidence grew", "allows us to plan faculty development in new ways"). From these answers, original CMO configurations were created (#3, #4, #5, #20 in Appendix I) which involved elements of trust. From these CMO configurations, there are specific features of faculty development identified that contribute to trust: whether the program is voluntary or mandatory; if the discussion between peers remains confidential; and whether institutional transparency exists about the reasons and outcome of the program. The role trust can be regarded as important in clinical faculty's acceptance of peer coaching as a form of faculty development.

6.7 Contribution to Knowledge and Practice

Although peer coaching within medical education has already been studied, (Finn, Chiappa, Puig, & Hunt, 2011; Ladyshewsky, 2006, 2010; Mcleod & Steinert, 2009; Moore, Westwater-Wood & Kerry, 2016; Waddell & Dunn, 2005) this thesis provides a novel approach using realist evaluation methodology to specifically examine four program theories (underpinned by Social Learning Theory, Adult Learning Theory, Theory of Reflective Practice and Theory of Community Practice), which have not been reported in the context of clinical faculty in health professions education.

In addition to the 24 unique CMO configurations (Appendix I) created from the interview data and answering Pawson and Tilley's (1997) realist evaluation question above, this research contributes to knowledge in the following ways:

To Coaching: The tenets of critical realism bring academic depth to coaching. Archer's (1995) question, "what are people doing when they engage in self-talk" (p.4), is highly relevant because coaching is taught as a set of skills (active listening, asking questions which encourage reflection, discovery and action, etc.) with the goal of revealing the internal dialogue of the coachee. As a coach and in my current position of employment working at a medical school, Realist Social Theory reminds me to appreciate and respect the unique, lived experiences of individuals. Similarly, I remain aware how multiple realities exist within diverse contexts, all which can produce different results. When evaluating the impact of coaching as a faculty development tool, it is beneficial to remember that the world is complex, which can never truly known (Bhaskar, 2008) and such, there is no one coaching solution that fits all people, in every context. This study highlights the impact of having a supportive environment when establishing peer coaching.

To Faculty Development: As noted in the literature search, there is a need for more thorough evaluation of development initiatives (Schwellnus & Carnahan, 2013; Steinert, 2011, 2012). This research demonstrates how to create a theoretical framework which can be used to produce and evaluate faculty development programming. Additionally, understanding how context impacts mechanisms and outcomes can lead to improved conditions for program success. In particular, creating an environment of trust and safety (including confidentiality for participants, institutional transparency for the intended outcomes of the faculty development and whether programs are voluntary or mandatory) appears to have a significant impact on coaching which may also be the case for other faculty development initiatives.

To McMaster University: This research can inform University leadership of both the positive and negative outcomes from the culture they inspire or neglect. It brings attention to the inconsistencies of the use of peer coaching (and/or peer observation) and the impact that this can have on the effectiveness of the initiative. Specifically, how coaching is positioned in the

various programs with the FHS. At the time of this study, there is only one sub-specialty medical program that requires their faculty to participate in coaching skills training before embarking on mandatory peer coaching. Finally, the research introduced realist evaluation methodology to McMaster University.

To Realist Evaluation: The research extends the existing literature on conducting a realist evaluation in healthcare education environment. It offers a transparent account of the evaluation process that can be followed in practice, including an original modification to Jackson and Kolla's (2012) data analysis technique. The study also adds to the existing literature by offering an example of using the RAMESES II Reporting Standards (Wong, et al., 2016) in a realist evaluation.

6.8 Critical Overview of Study

Given that I chose critical realist as the theoretical framework and that my natural tendency is to question everything, it should be expected that I critically reviewed this research. This section provides an overview of this review.

Originality of Research: At the time of writing this discussion, I have not located published research using a realist evaluation of peer coaching within medical or other healthcare profession education. In 2016, Kovacs & Corrie published their research on using a realist evaluation for coaching in a corporate setting. Their work guided how I coded the interview data.

Choosing Realist Evaluation: Much of the literature describes realist evaluation as difficult and therefore, using this methodology was a stretch for me as a novice researcher. In hindsight, the scope of research was too large for my first attempt at realist evaluation and I suggest a narrower topic for anyone new to this methodology. However, the benefits of choosing realist evaluation outweigh these issues including the transparency at each step of the process, plus opportunities to continue the research in follow up cycles. The process strengthened my critical thinking skills to go beyond the surface towards identifying generative causation.

Sampling: The original plan for this research was to recruit medical faculty who attended the new FHS Peer Coaching Program (PoT Program) but slow participant uptake and my increased awareness of the influence of context, lead me to expand the study and include faculty from other FHS healthcare professions (Nursing, Physiotherapy, etc.). Broadening the scope did bring forward participants from other programs but it uncovered that peer coaching is either not used or has just began in some areas of the FHS. For example, despite many attempts, I was unable to recruit many interview participants from the other Health Sciences programs.

I am aware that there may be a perceived selection bias of participants because I accepted all participants who volunteered. This gap can be followed up in a future cycle of evaluation, seeking participants from under-represented programs.

Conducting Interviews: Aside from Manzano's (2016) work on conducting realist interviews, which is undoubtedly helpful, there is a lack of support literature about the structure of creating suitable interview questions. The initial interviews I conducted felt awkward but realist evaluation requires ongoing refinements and so, I was able to make modifications from the initial set of questions (Appendix F). I also recognized that being explicit about theories, (as is the recommended approach), caused stakeholders some discomfort about their knowledge of the theories). Therefore, I modified the information I shared about theories and asked more practical questions.

I conducted all interviews by phone because it was the easiest way to connect with busy faculty (plus I relocated across Canada and face-to-face interviews were no longer possible). Although phone interviews may miss visual cues, I have ten years of conducting employment interviews and coaching over the phone which helped to sharpen my auditory skills, (listening for sighs, inflection, changes in tone). I also transcribed a few interviews at a time and was able to use the recordings to reflect on my performance to improve my skills.

Validity: Validity is an essential consideration in all research. McNiff and Whitehead (2005) describes validity as "establishing the truth of a claim, its authenticity or trust-worthiness" (p.157). Simply put, did using realist evaluation measure what it is supposed to measure?

Gronlund (as cited in Cohen, Manion and Morrison, 2002) recommends that validity "should be seen as a matter of degree rather than as an absolute state" (p179) but should also be faithful to the traditions of the methodology. To this end, I provided details of each steps of the research, remained transparent throughout and used the RAMESES ll Standards (Wong et al., 2016) to remain focused and conduct the evaluation in accordance with their published standards. Although described in the Participant Information Sheet (Appendix G) and Participant Consent Form (Appendix H), no participant requested to read their interview report related to their interview before the data was analyzed. This step could have increased validity.

Reliability and Reproducibility: Reliability examines whether the test results are consistent, and outcomes can be replicated to show similar results. This study cannot be precisely repeated because there were many changes made along the way (as is often the case in a realist evaluation, interview questions are modified by the information received in the previous interview). I did create this research study with the goal that the design could be reproduced by another researcher conducting realist evaluation. By endeavouring to provide a clear account of how I conducted the research, those who conduct realist evaluation in a university setting, can follow the steps outlined on how to plan, execute and analyze a realist evaluation.

Researcher Bias: One possible challenge of any study is researcher bias and judgement. Astbury and Leeuw, (2010) describe "designed blindness" as a form of "tunnel vision" (p. 376) used to find proof for a program theory. Dey as cited in Ryan & Bernard (2003), suggest "there are many ways of 'seeing' the data as one can invent" (p.103). Therefore, the question becomes how has bias been avoided in this study? Exploring the theoretical framework (chapter 3) unquestionably helped me: explore my values and ontological and epistemological principles; question my 'claims'; when transcribing the interviews; and listen for leading questions or assumptions that I made. Some of the limits of the research include:

- a perceived selection bias of the participants because all those who volunteered were accepted (and they would be inherently interested in peer coaching to agree). As peer

coaching gains in use within the FHS, there should be more participants in future evaluation cycles.

- not having a research partner(s) to review the data, create CMO configurations and test Again if I were you I would indicate that your supervisor had an overview of the process and inspected the data and your analysis for intercoder agreement. To account for this, I reviewed the data multiple times including after assigning the relevant data to either context, mechanism or outcome. I also compared my assigned data with other published works using realist evaluation methodology to keep me focused on properly identifying each.
- As in every study (especially when using semi-structured interviews), there is potential bias when making a choice on the data to use and leave out. As much as possible, I used the four program theories and subject literature to guide my data analysis. The unexpected results were also included additional data that did not 'fit' initial expectations.

Triangulation: Triangulation in research involves using multiple methods and data sources to test a hypothesis. As previously described in chapter 4, I used internal documents from McMaster University (Table 4.1) plus one-on-one interviews with faculty. Given the small sample size, there was no need for a questionnaire at this stage. A questionnaire might be useful if a future research project increases the scope to include other faculties or universities.

Generalisability: In realist evaluation, the question of how far the data can be generalised is somewhat different and does not focus on the program under review. It does not assume that being able to use a program in one context, will work in another context. Instead, generalisability in a realist evaluation focuses on the mechanisms that can be generalized in other situations. For example, the data in this research showed that an environment that fosters trust triggers greater reflection and confidence. It can be generalized that issues of trust would also influence another development program. Another example is the generalisability of the influence of setting learning goals when participating in faculty development programs.

6.9 Personal Reflections

My doctoral voyage overlapped with my life journey. I discovered that part-time doctoral studies are not limited to a part-time endeavor but instead, are all-consuming. Throughout it, I learned about my deeply held beliefs, including the need to question what exists beneath the surface to understand that 'why' of a situation. As a student, the nine modules completed before commencing this thesis provided me weekly feedback and challenged my critical thinking and writing abilities. An invaluable experience for this thesis.

Using realist evaluation methodology required significant learning and perseverance. At times, I questioned my choice but, in the end, I am delighted with the results. It has given me a greater understanding of how to use theories in practical settings and the importance of being explicit about program theories in use. I reflected throughout this research process: reading, learning and looping back in a ongoing process of continually improving what I was doing. Undoubtedly, I was challenged by the 'grit' required to conduct a research program, and I was initially confused and did not grasp realist evaluation. I preserved and eventually understood what was required. Taking the time to understand the critical realist theory and the work of Bhaskar and Archer, and to create a theoretical framework, helped me consider the data at a deeper level then would have been otherwise possible. Centering the theoretical framework around the works of Bhaskar and Archer significantly helped with my understanding of the origins and workings of realist evaluation. It is only with time and distance that I can see how I journeyed along the five stages of learning as described by Moon (2001) from noticing, making sense, making meaning, working with meaning, through to transformative learning (p.6).

Upon completion, this methodology gave me peace of mind of who I am (questioning everything); helped me to consider how my own bias and those of others impact; and to appreciate that there are many layers of "truth" which can never really be known. I have greater awareness of the influence of context, which I did not have before this this research. As a professional, I am more comfortable with medicine's leadership and I believe my contributions are valuable. I also have greater confidence in producing reports at work. I learned research and evaluation methods that I can use in my workplace; a key benefit of completing a professional doctoral program.

Since beginning this research, I relocated to another medical school in a different part of Canada. I have had the opportunity to reflect upon my experiences at McMaster University and to question their organizational culture in relations to this research. I am currently working at a university whose institutional reputation and research budget is limited, and their international ranking and status is significantly below that of McMaster University. Nevertheless, they are able to produce healthcare education programs (medicine, nursing, rehabilitation and dentistry) which reach the required national accreditation standards. Dalhousie University is located in Atlantic Canada, known for its relaxed cultural and work environments. Given that the context is significantly different, I am curious to know whether the CMO configurations would be unique if a similar study was conducted here.

6.10 Summary of Chapter

This chapter provided a synthesis of the results gathered in this research study. Specially, I addressed the research questions, outlined the CMO configurations created from data and compared them against the literature. This chapter also reviewed how the study contributes to knowledge and described how validity, generalizability and limitations were addressed in the study. Finally, my own personal journey was shared. The following chapter concludes the thesis with a summary and offers recommendations for the FHS McMaster University, and the wider faculty development community.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter completes the research study by reviewing the aim of study, highlighting the most important findings, explaining the significance of the study to both McMaster University and the broader faculty development community. It concludes with suggestions for future research and recommendations.

7.2 Goal of Study

This doctoral research examined the impact of peer coaching on healthcare education faculty. It did not evaluate a specific program but instead, sought to explore how and in what circumstances faculty benefit from peer coaching, what meaning they give their experiences and what changes occur as a result. The research was conducted within the Faculty of Health Sciences (FHS) at McMaster University in Ontario, Canada. Internal stakeholders wanted to know what contributes to the effectiveness of peer coaching. Similarly, I began the research with questions stemming from my experience as a professional executive coach. I wanted to know the factors that make coaching 'work'. This research considered the gaps identified by my own literature review including the scoping reviews published by Schwellnus and Carnahan (2013) and Steinert (2011, 2012).

Using Pawson and Tilley's (1997) theory-driven, realistic evaluation as the methodology, the goal was to answer "what works, for whom, in what circumstances, in what respects, over what duration and, above all, why?" (Pawson, 2018, p. 49). This methodology stems from Bhaskar's Critical Realist Theory (2008, 2014), that knowledge is fallible and can never really be known; and Archer's Realist Social Theory (1995, 2007), which describes the subjective, inner lives and experiences that influence who we are and what we think. The influence of these two theories helped me critically evaluate what appeared on the surface and to challenge my own beliefs and assumptions.

There are no firm rules with realist evaluation (Jagosh, 2017) except to provide transparency when conducting an evaluation and delivering the results. In total, 24 unique CMO configurations were produced from the data gathered in this study (Appendix I) which demonstrate a variety of outcomes from peer coaching programs for clinical faculty within health professions education. These outcomes can be further tested and used to improve faculty development initiatives within McMaster and beyond.

As mentioned in the preceding chapter, I answered the realist evaluation refrain (*in italics*) (Pawson and Tilley, 1997; Pawson, 2018) in **bold**:

> "*Discovering what works (**Peer coaching**), for whom* (**faculty who seek feedback**), *in what circumstances* (**in trusting and collaborative environments**), *in what respect (***in voluntary partnerships***), over what duration* (**as long as needed**) *and, above all, why* (**prompts reflection which helps faculty make change in the performance areas they have self-identified**)." (Pawson, 2018, p. 49). Ultimately, for the provision of healthcare.

7.3 Impact on Faculty and Faculty Development

Overall, there are significant differences of how peer coaching is used within FHS and this has impact on the clinical faculty who are participating. Most is peer observation without standard rules, specific skill requirements or training for coaches. Some exists in the spirit of non-evaluative coaching, whereas some is mandatory and form part of a summative evaluation. What is noticeable is that FHS does not appear to follow the literature's suggestion to make peer coaching a voluntary part of faculty development.

When done well, in an environment that promotes feelings of safety and trust, the impact on faculty includes mutual learning and an openness to feedback. Reflection is triggered and both coach and coachee pay greater attention to their teaching skills. With the right coaching pair, confidence builds as a result of the coaching experience.

7.4 Future Direction

As shown, realist evaluation is a cycle (Diagram 7.1) that involves a future step of testing the refined CMOs through another cycle:

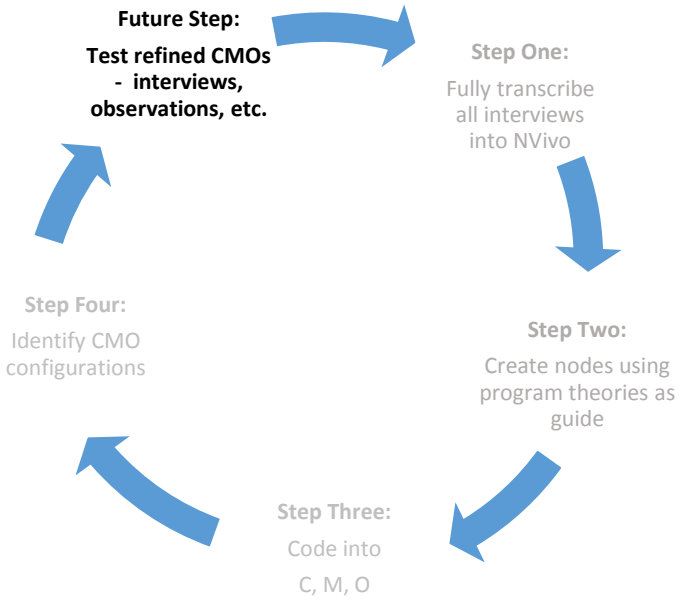


Figure 7.1 Data Analysis Cycle (Modified from Pawson and Tilley, 1997, Marchal et al., 2012)

However, there was limited time and resources to further test the CMO configurations in follow up research cycle. There now may be a greater chance to have more volunteers, especially from the Rehabilitation Sciences Program who have recently started to use peer coaching. This research has highlighted how faculty trust and supportive environments influence peer coaching initiatives (as shown in CMOs #2,3,4,5,6,15,16,20,22). By focusing on these areas, an additional cycle of evaluation would provide richer data to analyse and contribute to both peer coaching and the wider clinical faculty development community.

Furthermore, late in 2019, after completing the research analysis for this study, Orr and Sonnadara, published a scoping review on educational coaching (similar to peer coaching) in faculty development within medical practice. Similar to my research, they highlighted the

relevance of adult learning theory and social cognitive theory in peer coaching. A future evaluation cycle could also include their research contribution to the subject area.

7.5 Recommendations

To summarize, peer coaching has a valuable place in faculty development within health professions education. Realist evaluation lends itself to additional cycles of follow up research. The following recommendations are directed toward the FHS stakeholders but can be equally applicable to others within faculty development:

1. **Develop peer coaching as a comprehensive form of faculty development**. While peer observation is the preferred use at McMaster University, there are broader applications for coaching skills (e.g. goal setting, active listening, reflective questioning) in faculty development. An expanded use of peer coaching can include the development of new leaders, and peer support for faculty in distributed locations. Faculty Development within the FHS can create closer ties to McMaster's McPherson Institute for additional research and resources.

2. **If peer coaching (or peer observation) is a mandatory requirement, there should be mandatory skills training for the assigned coaches**. These skills should be clearly stated and valued by the leadership team. The literature supports this idea that coaches have some rudimentary coaching skills (Ammentorp, Jensen & Uhrenfeldt, 2013; Brockbank and McGill, 2007; Ladyshewsky, 2017).

3. **Faculty Leadership champion the creation and/or maintenance of a supportive faculty culture** within the FHS where giving and receiving feedback is encouraged and part of regular and ongoing dialogue between peers.

4. Continue to investigate the impact of organizational culture and supportive environments on trust. In particular, how it impacts the context of the working environment, influencing mechanisms and ultimately, the outcomes of faculty development.

5. **Include Realist Evaluation as an evaluation option.** The use and popularity of realist evaluation is increasing (Jagosh, Tilley, Stern, 2016) and within healthcare (Machal et al., 2012). Identifying and configuring CMOs is difficult and the recommendation is to start small, with a manageable subject.

7.6 Conclusion

This chapter concludes the research study.

In keeping with the expectations of transparency, I believe I provided an accurate account of a realist evaluation aimed at exploring the impact of peer coaching as a form of faculty development. I addressed the limitations of the research and provided valuable recommendations for future research and internal policy considerations for McMaster University and other institutions. Specifically, my research identified the influence of trust and highlights the importance of creating safe learning environments for the clinical faculty within health professions education as described by these participants:

> I think that in general, people are receptive to feedback when they feel that it is a safe environment and the person that provides their feedback is interested in their success. (Interview C)

> The relationship between the observer and the observee has to very collegial, comfortable and the goals have to be set from the beginning. The goal will be to improve your teaching and your lecture style to benefit you. ….. From my perspective everything is acceptable. There are no limits. (Interview E)

> …. if both parties are coming to it voluntarily in that spirit of a mutually beneficial discussion, then the room to feel threatened is kind of gone. There's nothing to lose Nobody has power here. It's not about promoting you or taking away your position. It is just a space for learning. (Interview F)

Finally, the process of this completing this doctoral thesis has strengthened my critical thinking skills, as well as developed my research abilities which I can use in my working environment. The knowledge, contribution to practice and transferable skills are what made the entire doctoral program valuable. Completing this thesis research is what made the experience life changing for me.

APPENDICES

Appendix A: VPREC Ethical Approval

Dear Roberta Preston	
I am pleased to inform you that the EdD. Virtual Programme Research Ethics Committee (VPREC) has approved your application for ethical approval for your study. Details and conditions of the approval can be found below.	
Sub-Committee:	EdD. Virtual Programme Research Ethics Committee (VPREC)
Review type:	Expedited
PI:	
School:	Lifelong Learning
Title:	The Impact of Peer Coaching on Medical Faculty: A Realist Evaluation on Peer Observation as a Form of Faculty Development
First Reviewer:	Dr. Marco Ferreira
Second Reviewer:	Dr. Kalman Winston
Other members of the Committee	Lucilla Crosta (Co-chair), Julie-Anne Regan, Janet Hanson, Michael Watts, Christos Petichakis.
Date of Approval:	19th August 2016
The application was APPROVED subject to the following conditions:	

Conditions				
1	Mandatory	M: All serious adverse events must be reported to the VPREC within 24 hours of their occurrence, via the EdD Thesis Primary Supervisor.		

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Sub-Committee should be notified. If it is proposed to make an amendment to the research, you should notify the Sub-Committee by following the Notice of Amendment procedure outlined at http://www.liv.ac.uk/media/livacuk/researchethics/notice%20of%20amendment.doc.

Where your research includes elements that are not conducted in the UK, approval to proceed is further conditional upon a thorough risk assessment of the site and local permission to carry out the research, including, where such a body exists, local research ethics committee approval. No documentation of local permission is required (a) if the researcher will simply be asking organizations to distribute research invitations on the researcher's behalf, or (b) if the researcher is using only public means to identify/contact participants. When medical, educational, or business records are analysed or used to identify potential research participants, the site needs to explicitly approve access to data for research purposes (even if the researcher normally has access to that data to perform his or her job).

Please note that the approval to proceed depends also on research proposal approval.

Kind regards,

Marco Ferreira

Co-Chair, EdD. VPREC

Appendix B: Ethics Approval from McMaster University

HiREB
Hamilton Integrated Research Ethics Board

August 15 2017

Project Number: 1994

Project Title: The Impact of Peer Coaching on Medical Faculty: A Realist Evaluation on Peer Coaching as a Form of Faculty Development

Principal Investigator: Dr Alan Neville

This will acknowledge receipt of your letter dated August 15-2017 which enclosed revised copies of the Consent Form along with a response to the additional queries of the Board for the above-named study. These issues were raised by the Hamilton Integrated Research Ethics Board at their meeting held on May 16-2017. Based on this additional information, we wish to advise your study had been given ***final*** approval from the full HiREB.

The following documents have been approved on both ethical and scientific grounds:

Document Name	Document Date	Document Version
Participant Information Sheet Consent Form RPreston August 15, 2017 V4	Aug-15-2017	4
Recruitment Advertisement RPreston Feb 2017	Feb-04-2017	2
Study Plan-Protocol RPreston Feb 24, 2017rp	Mar-17-2017	2

The following documents have been acknowledged:

Document Name	Document Date	Document Version
GCP training Dr. A. Neville	May-31-2017	2

Please Note: All consent forms and recruitment materials used in this study must be copies of the above referenced documents.

We are pleased to issue final approval for the above-named study for a period of 12 months from the date of the HiREB meeting on May 16-2017. Continuation beyond that date will require further review and renewal of HiREB approval. Any changes or revisions to the original submission must be submitted on a HiREB amendment form for review and approval by the Hamilton Integrated Research Ethics Board.

PLEASE QUOTE THE ABOVE REFERENCED PROJECT NUMBER ON ALL FUTURE CORRESPONDENCE

Sincerely,

Dr. Mark Inman, MD, PhD
Chair, Hamilton Integrated Research Ethics Board

The Hamilton Integrated Research Ethics Board (HiREB) represents the institutions of Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, and the Faculty of Health Sciences at McMaster University and operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug Regulations of Health Canada, and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations; For studies conducted at St. Joseph's Healthcare Hamilton, HIREB complies with the health ethics guide of the Catholic Alliance of Canada

Sran Bhupinder
to me

Aug 21, 2019, 1:11 PM (10 days ago)

Hello Roberta;

We confirm that you can mention McMaster University in your thesis.

Pin Sran; BSc, CCRA, MEd
HIREB Coordinator
Hamilton Integrated Research Ethics Board
Hamilton Health Sciences
293 Wellington Street North, Suite 102
Hamilton, ON L8L 8E7
Tel:905-521-2100 ext 42680
Fax:905-577-8378
E-mail: sranb@hhsc.ca
Website: www.hireb.ca

The eREB Helpdesk is now available to take your emails and calls for assistance.
Email eREBhelpdesk@hhsc.ca or call 905-521-2100 Ext. 70014

Appendix C: Extended Ethics Approval from McMaster May 18 to May 19

HiREB

Hamilton Integrated Research Ethics Board

Annual Review Approval

HiREB Project #: 2018-1994

Local Principal Investigator: Dr Alan Neville

Project Submission Title: The Impact of Peer Coaching on Medical Faculty: A Realist Evaluation on Peer Coaching as a Form of Faculty Development

[X] Approved for Continuation

[ ] Approved conditional on changes noted in "Conditions" section below

Type of Approval:
[X] Full Research Ethics Board
[ ] Research Ethics Board Executive

HiREB Approval Period: Approval period covers May 16-2018 to May 16-2019

Date of HiREB Meeting: June 19, 2018

Dr. Mark Inman, MD, PhD
Chair, Hamilton Integrated Research Ethics Board

The Hamilton Integrated Research Ethics Board (HiREB) represents the institutions of Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, Research St. Joseph's-Hamilton and the Faculty of Health Sciences at McMaster University and operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug Regulations of Health Canada, and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations; For studies conducted at St. Joseph's Healthcare Hamilton, HiREB complies with the Health Ethics Guide of the Catholic Alliance of Canada

Appendix D: Data Agreement Feb 2017

McMaster University

Health Research Services
Mailing: 1280 Main St. West, HSC 3H9, Hamilton, Ontario L8S 4K1
Courier: 1200 Main St. West, HSC 3H9, Hamilton, Ontario L8N 3Z5
Tel: (905) 525-9140 ext. 22465

Collaborative Research and Data Transfer Agreement
(the "Agreement")

Between

McMaster University
(hereinafter referred to as "McMaster")

And

University of Liverpool, England
(hereinafter referred to as "Collaborating Institution")

McMaster and Collaborating Institution each as a "Party" and collectively as "Parties"

Principal Investigator:	Dr. Alan Neville Associate Dean, Health Professional Education McMaster University
Student Investigator:	Ms. Roberta Preston Doctoral Student at The University of Liverpool, England Manager, Postgraduate Medical Education, McMaster University, Canada
Collaborating Investigator:	The Reverend Dr. David CM Taylor Reader in Medical Education University of Liverpool, England

Project Title: The Impact of Peer Coaching on Medical Faculty: A Realist Evaluation on Peer Observation as a Form of Faculty Development (the "Project").

Period of Collaboration (Effective Date): February 1, 2017 to September 30, 2017 unless extended by mutual written agreement, or terminated in accordance with the terms of this Agreement.

Scope of Work:

The scope of work and responsibilities to be performed by each Party under this Agreement including all Project deliverables is as follows:

The research for this thesis project will be completed at McMaster University by the Student Investigator under the local supervision of the Principal Investigator. The Student Investigator will conduct, record, and analyze qualitative interviews with medical and allied health faculty. The Student Investigator will share results with the Collaborating Investigator (doctoral thesis supervisor) who will advise and guide the research. The Student Investigator will begin collecting data as soon as human ethics approval has been granted by the local research ethics board (HiREB), as approval has already been given by the Collaborating Institution.

Appendix D: Data Agreement Feb 2017

Costs, Budget, and Invoicing:

There will be no transfer of funds associated with the Project. Each Party will be responsible for its own costs of implementing this Agreement.

Transfer and Non-Disclosure of Data/Samples:

The Data/Samples will not be collected and/or transferred until McMaster's research ethics board ("REB") and, if applicable the Collaborating Institution's REB, has a) approved the Project's study protocol and b) approved the Project's informed consent forms or waived the requirement to obtain consent.

The parties hereby agree as follows:

Definition of Data/Samples. As used in this Agreement, the term "Data" means all personal information (including without limitation medical data and information and other personal health information) and the term "Samples" means human biological samples derived from human subjects including blood, excrement, saliva, tissue or other, that has/have been collected for the purpose of the Project by one Party and is/are provided to the other Party for the purpose of carrying out the Project in accordance with the study protocol as approved by McMaster's research ethics board. The term "Data/Samples" as used in this Agreement means Data and/or Samples, as applicable to the Project. Each Party retains the right to refuse the transfer of the Data and/or Samples requested hereunder.

Definition of Modifications. Data or substances created by the receiving Party which contain or incorporate the Data/Samples.

Definition of Commercial Purposes. The sale, lease, license, or other transfer of the Data/Samples or Modifications to a for-profit organization. Commercial Purposes shall also include uses of the Data/Samples or Modifications by any organization, including the receiving Party, to perform contract research, to screen compound libraries, to produce or manufacture products for general sale, or to conduct research activities that result in any sale, lease, license, or transfer of the Data/Samples or Modifications to a for-profit organization. However, industrially sponsored academic research shall not be considered a use for Commercial Purposes per se, unless any of the above conditions of this definition are met.

Compliance with Law. The Parties shall comply with all applicable laws, regulations, guidelines and policies ("Applicable Law"). As applicable, each Party will prepare, handle and transfer the Data/Samples in accordance with Applicable Law, including without limitation obtaining all appropriate consents.

Assumption of Risk. The Parties acknowledge that the Samples may contain one or more infectious agents and may have additional unknown and hazardous properties. Each Party shall use the Samples under appropriate containment conditions. The receiving Party acknowledges that the Samples are experimental in nature, that all of its characteristics, as well as hazards associated with its use, may not be known. Receiving Party assumes all risk and responsibility for the use, storage or disposal of the Samples as well as the risks of transport, loss or damage to or by the Samples upon the Samples leaving the custody and premises of the other Party.

Warranties. The Parties make no representation or warranty of any kind, expressed or implied, with respect to the Data/Samples including but not limited to any representation or warranty with respect to the utility, efficacy, non-toxicity, safety, merchantability, title, or fitness for a particular purpose, or that the use of the Data/Samples will not infringe any patent, copyright or other intellectual property rights of a third party.

Limitation of Liability and Indemnity. Collaborating Institution assumes all liability for loss or damages arising from the use, storage or disposal of the Data/Samples and further agrees to indemnify, defend and hold harmless McMaster and its officers, directors and employees from all claims, actions and damages whatsoever, including legal fees, resulting from or in connection with the use, storage or disposal of the Data/Samples, except insofar as such claims result directly from the gross negligence or willful misconduct of McMaster or its employees or agents. In no circumstances will McMaster be liable for any special, direct, consequential, incidental or any other damages suffered by Collaborating Institution or any others resulting from the use,

storage or disposal of the Data/Samples or any product derived from use of the Data/Samples or any modification.

Non-Disclosure of Data/Samples. The receiving Party shall limit access to the Data/Samples only to its internal personnel and/or agents who need access for the purposes herein and who are bound by the same confidentiality obligations herein ("Project Staff"). The receiving Party agrees that it shall, and shall require its Project Staff, to:

a. maintain Data/Samples in confidence, and not disclose Data/Samples except as permitted by this Agreement.

b. use Data/Samples solely for the purposes of the Project or other expressly consented purposes under this agreement, in compliance with:

   i. the Project protocol as approved by its REB and as amended from time to time provided that amendments are approved by its REB,

   ii. any written conditions imposed by either Party's REB,

   iii. the Project subject's consent consistent with the informed consent form approved by its REB or, if the requirement to obtain consent has been waived by its REB, the waiver of consent given by its REB,

   iv. any other conditions or restrictions imposed by the other Party relating to the use, security, disclosure, return or disposal of the Data/Samples as set out in this Agreement.

c. not use the Data/Samples to identify any individuals.

d. not transfer the Data/Samples disclosed under this Agreement to any third parties without the prior written consent of the other Party and without obligating such third parties to comply with the terms and conditions hereof, except as set out below:

   i. to regulatory authorities, provided that prior written notice of such intended disclosure is given to the other Party;

   ii. as otherwise permitted by the informed consent form approved its REB or the waiver of consent given by its REB; or

   iii. in order to comply with Applicable Law or judicial process, or with a court or regulatory order, provided that the Party gives prior written notice of such intended disclosure to the other Party and that all reasonable and lawful actions are taken to obtain confidential treatment for such disclosure and, if possible, to minimize the extent of such disclosure.

e. securely destroy the Data/Samples as required by the protocol or the other Party and provide a written confirmation of the manner of destruction in a form acceptable to the other Party.

f. use appropriate safeguards (including without limitation with respect to encrypting identifying numbers, linking files, storing and retrieving files from secured locations) to prevent any unauthorized use or disclosure of the Data/Samples and shall promptly report to the other Party any unauthorized use or disclosure of which it becomes aware.

g. not make contact or attempt to make contact with any individual unless it first obtains the individual's consent to being contacted, except to the extent that the receiving Party is otherwise the individual's health information custodian.

Assurances:

The Parties will ensure that the Project is conducted in compliance with all Applicable Laws and regulations, including applicable privacy laws, regulations and guidelines, and according to established ethical, medical and scientific standards, including Good Clinical Practice (GCP) as described in the ICH Harmonized Tripartite

Guideline for Good Clinical Practice, the Tri-Council Policy Statement 2: Ethical Conduct for Research Involving Humans, and the Declaration of Helsinki. The Parties will also ensure the Project is conducted in compliance with the Project protocol and will ensure that a written approval has been obtained from the appropriate REB and any other required certificates as applicable (e.g. biohazards in accordance with The Laboratory Biosafety Guidelines of the Medical Research Council of Canada (2004), and animal ethics in accordance with the guidelines of the Canadian Council on Animal Care) are in place before research activities begin. A copy of these assurances will be provided upon request by either Party.

Conflict of Interest and Scientific Misconduct:

Each Party shall require all those individuals for whom it is responsible to carry out the Project in accordance with all its applicable institutional policies, including but not limited to conflict of interest and responsible conduct of research policies.

Any allegation of scientific misconduct shall be investigated and dealt with in accordance with the institutional policies of the individual subject to the allegation.

The Parties shall disclose to one another without delay any actual or potential situation that may be reasonably interpreted as either a conflict of interest or a potential conflict of interest or incident of scientific misconduct.

Intellectual Property:

Any intellectual property, including dataset, technical information, know-how, copyrights, models, drawings, specifications, prototypes, inventions and software, developed solely by Collaborating Institution in performance of the Project shall remain the property of Collaborating Institution. Any intellectual property, including dataset, technical information, know-how, copyrights, models, drawings, specifications, prototypes, inventions and software, developed solely by McMaster in performance of the Project shall remain the property of McMaster. Ownership of intellectual property developed jointly by personnel of both McMaster and Collaborating Institution in performance of the Project shall vest jointly with both McMaster and Collaborating Institution. Handling of such intellectual property, including the distribution of royalties and other revenues shall be by mutual agreement with respect to the institutional policies of both McMaster and Collaborating Institution. Each Party agrees to grant to the other Party a royalty-free, non-exclusive license to use intellectual property developed in performance of this Agreement to the purpose of the Project and for internal and academic research purposes. .

Publication:

Collaborating Institution will notify McMaster and provide for review at least thirty (30) days prior to the release of any media release, report or journal article relating to the findings in performance of this Agreement intended for submission and/or accepted for publication. Upon review by McMaster, should any intellectual property be identified within the intended publication, the Parties shall maintain confidentiality of this material and mutually agree to a reasonable period for seeking of statutory protection of said intellectual property prior to any public disclosure.

Publicity:

Neither Party shall use the name of the other Party, nor the name of any faculty member, employee, or student of other Party, in connection with any products, service, promotion, news release, or other publicity without the prior written consent of the other Party, or individuals, as appropriate.

Notwithstanding anything in this Agreement to the contrary and without further notice, the Parties hereto acknowledge and agree that each of the Parties may disclose the existence of this Agreement, the title of the Project, identify the Parties to this Agreement, and disclose the amount of funding actually received pursuant to this Agreement, including but not limited to acknowledgment in any publication or presentation relating to the results of the study as provided herein; and that Principal Investigator, Student Investigator and Collaborating Investigator may disclose the same information in a *curriculum vitae*.

Appendix D: Data Agreement Feb 2017

Termination of the Agreement:

This Agreement may be terminated by either McMaster or the Collaborating Institution by giving thirty (30) days' notice in writing to the other Party. Upon the effective date of termination, the receiving Party will discontinue its use of the Data/Samples and will, upon direction of the other Party, return or destroy any remaining Data/Samples and confirm in writing the destruction of the Data/Samples to the other Party.

Notices:

Notices under this Agreement will be sent to the Parties as follows:

To: McMaster University

Dr. Stephen M. Collins
Associate Dean, Research
Faculty of Health Sciences
McMaster University
Mailing: 1280 Main Street West, HSC-3H9,
Hamilton, ON, CANADA L8S 4K1
Courier: 1200 Main Street West, HSC-3H9,
Hamilton, ON, CANADA L8N 3Z5
Tel: 905-525-9140 Ext. 22465
Email: hsresadm@mcmaster.ca

To: Collaborating Institution

Kevan Ryan
Director, Legal, Risk & Compliance
The Foundation Building,
765 Brownlow Hill,
Liverpool, England
L69 7ZX
Tel: 0151 794 2110
Email:kevan.ryan@liverpool.ac.uk

*Please send the agreement to ethics@liverpool.ac.uk who will forward to their legal team for consideration

To: Principal Investigator

Dr. Alan Neville
Associate Dean, Health Professional Education
McMaster University
1280 Main Street. West, HSC-2E18
Hamilton, Ontario
L8S 4K1
Phone: 905-525-9140, ext. 22506
Email: adedu@mcmaster.ca

To: Collaborating Investigator

The Reverend Dr David CM Taylor
School of Medicine
Institute of Clinical Sciences
Faculty of Health and Life Sciences
The University of Liverpool
Cedar House (Room 4:27)
Ashton Street
Liverpool L69 3GE
Phone: +44 151 794 8752
Email: dcmt@liverpool.ac.uk

To: Student Investigator

Roberta Preston
Doctoral Student at The University of Liverpool,
Manager, Postgraduate Medical Education
McMaster University
1280 Main Street West, MDCL 3108
Hamilton, Ontario
L8S 4K1
Phone: 905-525-9140, ext. 22718
Email: prestor@mcmaster.ca

No Liability:

Each Party is liable for its own losses, costs damages or expenses of any nature which it may suffer, sustain, pay or by reason of any matter or thing arising out of, or in any way attributable to this Agreement except if such losses, costs damages and expenses are the result of the willful breach of the terms of this Agreement or the negligent acts and omissions by the other Party or the other Party's employees, agents or subcontractors.

IN WITNESS WHEREOF the duly authorized officers of the Parties agree to be bound by the terms of this Agreement.

MCMASTER UNIVERSITY

10/2/17

Name: Dr. Stephen Collins Date
Title: Associate Dean, Research
Faculty of Health Sciences

UNIVERSITY OF LIVERPOOL

11/1/17

Name: Kevan Ryan Date
Title: Director, Legal, Risk & Compliance

Acknowledgement:

The Principal Investigator, Student Investigator, and Collaborating Investigator, having read this Agreement, hereby agree to act in accordance with all the terms and conditions herein.

Alan J Neville 7/2/17.

Name: Dr. Alan Neville Date

30/1/2017

Name: The Reverend Dr. David CM Taylor Date

RJ Preston Feb 7/2017

Name: Ms. Roberta Preston Date

Appendix E: RAMESES Reporting Standards (Wong at al., 2016)

Table 1 List of items to be included when reporting realist evaluations

			Reported in document Y/N/Unclear	Page(s) in document
TITLE				
1		In the title, identify the document as a realist evaluation		
SUMMARY OR ABSTRACT				
2		Journal articles will usually require an abstract, while reports and other forms of publication will usually benefit from a short summary. The abstract or summary should include brief details on: the policy, programme or initiative under evaluation; programme setting; purpose of the evaluation; evaluation question(s) and/or objective(s); evaluation strategy; data collection, documentation and analysis methods; key findings and conclusions Where journals require it and the nature of the study is appropriate, brief details of respondents to the evaluation and recruitment and sampling processes may also be included Sufficient detail should be provided to identify that a realist approach was used and that realist programme theory was developed and/or refined		
INTRODUCTION				
3	Rationale for evaluation	Explain the purpose of the evaluation and the implications for its focus and design		
4	Programme theory	Describe the initial programme theory (or theories) that underpin the programme, policy or initiative		
5	Evaluation questions, objectives and focus	State the evaluation question(s) and specify the objectives for the evaluation. Describe whether and how the programme theory was used to define the scope and focus of the evaluation		
6	Ethical approval	State whether the realist evaluation required and has gained ethical approval from the relevant authorities, providing details as appropriate. If ethical approval was deemed unnecessary, explain why		
METHODS				
7	Rationale for using realist evaluation	Explain why a realist evaluation approach was chosen and (if relevant) adapted		
8	Environment surrounding the evaluation	Describe the environment in which the evaluation took place		
9	Describe the programme policy, initiative or product evaluated	Provide relevant details on the programme, policy or initiative evaluated		
10	Describe and justify the evaluation design	A description and justification of the evaluation design (i.e. the account of what was planned, done and why) should be included, at least in summary form or as an appendix, in the document which presents the main findings. If this is not done, the omission should be justified and a reference or link to the evaluation design given. It may also be useful to publish or make freely available (e.g. online on a website) any original evaluation design document or protocol, where they exist		
11	Data collection methods	Describe and justify the data collection methods – which ones were used, why and how they fed into developing, supporting, refuting or refining programme theory Provide details of the steps taken to enhance the trustworthiness of data collection and documentation		
12	Recruitment process and sampling strategy	Describe how respondents to the evaluation were recruited or engaged and how the sample contributed to the development, support, refutation or refinement of programme theory		
13	Data analysis	Describe in detail how data were analysed. This section should include information on the constructs that were identified, the process of analysis, how the programme theory was further developed, supported, refuted and refined, and (where relevant) how analysis changed as the evaluation unfolded		

Appendix E: RAMESES Reporting Standards (Wong at al., 2016)

Table 1 List of items to be included when reporting realist evaluations *(Continued)*

RESULTS		
14	Details of participants	Report (if applicable) who took part in the evaluation, the details of the data they provided and how the data was used to develop, support, refute or refine programme theory
15	Main findings	Present the key findings, linking them to contexts, mechanisms and outcome configurations. Show how they were used to further develop, test or refine the programme theory
DISCUSSION		
16	Summary of findings	Summarise the main findings with attention to the evaluation questions, purpose of the evaluation, programme theory and intended audience
17	Strengths, limitations and future directions	Discuss both the strengths of the evaluation and its limitations. These should include (but need not be limited to): (1) consideration of all the steps in the evaluation processes; and (2) comment on the adequacy, trustworthiness and value of the explanatory insights which emerged In many evaluations, there will be an expectation to provide guidance on future directions for the programme, policy or initiative, its implementation and/or design. The particular implications arising from the realist nature of the findings should be reflected in these discussions
18	Comparison with existing literature	Where appropriate, compare and contrast the evaluation's findings with the existing literature on similar programmes, policies or initiatives
19	Conclusion and recommendations	List the main conclusions that are justified by the analyses of the data. If appropriate, offer recommendations consistent with a realist approach
20	Funding and conflict of interest	State the funding source (if any) for the evaluation, the role played by the funder (if any) and any conflicts of interests of the evaluators

Insurance:

During the term of this Agreement each Party shall maintain in full force and effect general liability and professional liability insurance for a minimum of five million collars any one occurrence. Each Party shall provide the other Party with evidence of insurance upon request.

Governing Law and Jurisdiction:

The Parties hereby agree that this Agreement shall be governed by, and construed in accordance with the laws of the Province of Ontario.

The Parties hereby acknowledge that the Courts of the Province of Ontario, Canada, shall have exclusive and preferential jurisdiction to entertain any complaint, demand, claim or cause of action whatsoever arising out of this Agreement. The Parties hereby agree that if either of them commences any such legal proceedings, they will only be commenced in the Courts of the Province of Ontario, Canada, and hereby irrevocably submit to the exclusive jurisdiction of said Courts.

Amendment to Agreement:

Amendment to this Agreement shall be effective only if made in writing and signed by authorized officials of all Parties.

Authority:

Authorized officials of both McMaster and the Collaborating Institution shall indicate acceptance of this agreement by providing their signatures below. One copy of this agreement with original signatures must be returned to McMaster University.

<< Signatures follow immediately on the next page. >>

Appendix F: Interview Questions (First and Last Set of Questions)

Final Set of Questions

Note: This final set of questions was the result of ongoing refinements after I conducted eight interviews and transcribed the audio recordings. The details in the questions were simplified (from the initial questions below) to encourage a relaxed and productive discussion.

Introduction:

Thank you for agreeing to take part in this study.

Participant consent form?

I'm conducting a realist evaluation. This is a theory based evaluation which seeks to study "what works for whom - in what circumstances - and in what respects, and how?" The idea is that nothing works the same in every situation. I'm going to ask you questions about your involvement with coaching, and then I'm going to talk about some of the theories that are underpinning peer coaching, and to get your opinion on them. I'm not looking at Big T Theories like Marxism, but small pet theories that may make a difference in coaching.

First, I want to ask a few background questions about you and your experience of peer coaching:

1. How long have you been teaching? What types of teaching environments?
2. Can you describe what it was like to engage in peer observation of teaching?
3. What was the process that was used?
4. What was the style of feedback that you received?
5. What was the impact of you being involved?
6. What changed as a result of this experience? (with you? Your skill?)
7. Have you had the opportunity to observe someone else?
8. What was your experience of the format? Experience?
9. Was it what you expected it to be?
10. Can you see yourself doing this again? Using coaching for other issues (such as dealing with time management? Career goals? Other issues related to work?
11. For someone else?
12. Any environments that it wouldn't work?
13. The focus at McMaster University appears to be observation of teaching but can you see it expanding for other topics that could impact faculty (time management, dealing with their team, etc).

Appendix F: Interview Questions (First and Last Set of Questions)

Last Set of Questions

Logic of Peer Coaching (*to remain transparent with interviewee*). There are several theories that could influence peer coaching:

14. Faculty gain from the experience of being in a peer coaching relationship. There is the underlying assumption that this is a good idea and that faculty benefit from having an appreciative conversation with a peer about their self-directed teaching goals. With feedback and reflection, faculty will become more engaged, improve their teaching skills and have greater confidence and satisfaction in their professional practice.

    - How did the conversation influence the experience?
    - Does coach and coachee learn from each other?

15. Another idea is that people are more motivated and learn best when they identify their own skill gap and they set their own goals.

    - Can you tell me what you think about this idea? Is this your experience?
    - If so, what influence does it have with the overall results?

16. Coaching encourages both coach and coachee to learn in a mutual process of feedback and reflection.

    - Can you explain if this was what happened to you? Why or why not?
    - If so, what impact does it have on you? On peer coaching?

17. There is an idea that where people work and their professional practice (aka children of our discipline and academic tribe) influences their experience of peer coaching.

    - What are your thoughts about this idea?
    - From your experience, how does professional environment make a difference to peer coaching?

Appendix F: Interview Questions (First and Last Set of Questions)

Initial Set of Questions

Note: This is the original set of interview questions which as described in Chapter 6, seemed overwhelming to the participants (and to me!). The questions were continually refined until the final set (see above) were used.

Thank you for agreeing to take part in this study.

Participant consent form?

Are you familiar with realist evaluation?

Realist evaluation is a theory-based methodology created by Pawson and Tilley. It seeks to study "what works for whom - in what circumstances - and in what respects - and how?" The realist mantra "Nothing works unconditionally in all circumstances" This type of evaluation is suited to studying highly context-dependent programs within healthcare education. More targeted faculty development programs /interventions can be created once we identify the factors which contribute to a peer coaching program and understand how and in what circumstances faculty benefit from peer coaching and what mechanisms invoke change in participants. So today I will ask you questions that have been created from reviewing the literature, educational theories, documents from within McMaster University, and feed back from stakeholders.

This interview may be different as the goal is to come away with a better mutual understanding – you are learning as much as you are giving to the research. Realist evaluation relies on a teacher – learner cycle where we both learn from each other.

I would like to discuss some preliminary program theories -- not looking at big T theory like Marxism or Feminism, but small T or pet theories. Looking for causal links and what are the important pieces to coaching and the impact they make. I want to share these ideas with you and hear what your experience has been. A realist evaluation tries to avoid the false sense of knowing. This is like detective work –looking for comparative evidence. We don't know what we are going to find before we start. It looks for 'how it worked, not did it work'. It is like looking below the surface of an iceberg.

I will share some ideas with you in the form of program theories, and I'd like to hear about your peer coaching experience in relation to these theories - looking at mechanisms and contexts that could have contributed to the outcomes. I am testing the hypotheses in relation to your first hand experiences.

Appendix F: Interview Questions (First and Last Set of Questions)

Any questions?

I'd like to ask you a few background details about you and then I tell you some of the proposed program theories that relate to peer coaching. You can confirm, falsify, modify – basically 'refine' what has been suggested.

Background Questions:

1. Which faculty?
2. Teaching responsibilities . How long have you been teaching? What types of teaching environments are you most likely to be in?
3. What coach training have you received?
4. Tell me about your involvement in peer coaching. (have you been a peer coach? Or been coached? Both? Neither?)
5. How do you think peer coaching has impacted the way you teach? Are a faculty member? Anything else?
6. How do you think the program you attended has affected the way you experienced peer coaching?
7. Let me ask you about any changes you see in your own personal practice

The logic of a peer coaching intervention is that faculty gain from the experience of being in a peer coaching relationships and there is an underlying assumption that this is a good idea and that faculty benefit from having a conversation with a peer about their self directed teaching goals. With feedback and reflection, faculty will become more engaged, improve their teaching skills and have greater confidence and satisfaction in their professional context.

If we unravel this statement to examine the 'mechanisms' that could possibly impact the outcome of peer coaching, there are a few that have an underlying theories at work. I'd like to share four with you and encourage you to suggest others.

#1 Having an appreciative conversation with a peer is the key component to the coaching. The **social learning theory** (stems from Bandura's **Social Learning Theory**) suggests that people learn from one another, via observation, imitation, and modeling. Additionally, feedback and reflection are also components of coaching. What are your thoughts and experiences?

8. How does the conversation influence the experience?

9. Does coach and coachee learn from each other?

#2 Learners who identify their own gaps and set their own goals in coaching that are meaningful to the individual, will encourage the intrinsic motivation to learn (**Adult learning theory – Andragogy and Self regulated learning**)- Coaching becomes a process between two learners and less about the expert telling the protégé. Theories suggest that adults need to be involved in planning and own evaluation. Can you tell me what you think about this idea? Is this your experience?

10. Does this actually happen? If so, what influence does it have with the overall results?

#3 Coaching encourages both coach and coachee to learn in a mutual process of feedback and reflection (underpinned by **reflective practice theory** (Schon) reflection in action). Can you explain if this was what happened to you? Why or why not?

11. Does reflective practice happen in peer coaching?
12. If so, what impact does it have on the activity? Person?

#4 I'm interested in understanding how professional context impacts the use and experience of peer coaching. As an example, I noticed that there were differences of opinion amongst the different professions at the Peer Observation of Training. We are children of our disciplines. There is some discussion about where people work and how their professional practice influences their experience of peer coaching (**Lave & Wenger's Theory of community of practice and Trowler's Academic Tribe) .** What are your thoughts about this idea that professional identity may have an impact?

13. How does professional environment make a difference?

Any additions? Questions?

Thank you!

Appendix G: Participant Information Sheet

Participant Information Sheet

Research Project Title: The Impact of Peer Coaching on Clinical Faculty within Health Professions Education: A Realist Evaluation on Peer Observation as a Form of Faculty Development

Local Principal Investigator: Dr. Alan Neville (neville@mcmaster.ca)
Primary Thesis Supervisor: Rev. Dr. David Taylor (dcmt@liverpool.ac.uk)

Principal Investigator: Roberta Preston (roberta.preston@dal.ca)

Invitation
You are being invited to participate in a research study. Before you decide whether to participate, please take time to read the following information carefully. Please contact me if you have questions. I would like to emphasise that you do not have to accept this invitation and should only agree if you want to take part.

Purpose
The purpose of the research is to conduct a realist evaluation to better understand the impact of peer coaching on clinical faculty within health professionseducation. The aim of this research is to gather ideas and opinions which will help explain who, when and what contexts (Pawson and Tilley, 1997) impact peer coaching. This research is being conducted to fulfil the thesis requirements of my doctoral studies at the University of Liverpool, England. In addition, the research activity will add to the knowledge within the faculty development community.

Rationale for Your Participation
You are being asked to take part in the study because of your involvement in Peer Observation of Teaching at McMaster University.

Do I have to take part?
No. Your participation is voluntary and even if you begin participation, you are able to withdraw anytime without explanation or penalty. If you choose not to participate, no data related to you or your work will be used or reported in the research study.

What will happen if I take part?
If you choose to take part, I will interview you either by phone or Skype for 30-45 minutes at your convenience. I will ask your permission to audio record the conversation which will be later used to transcribe and analyse. If you prefer, I will manually record your answers. The data gathered will be used to compile an analysis to share with the Peer Observation of Teaching Committee at McMaster University and the faculty at the University of Liverpool, England. Specifically, the data being collected for this analysis will include:

- The results of the one-on-one meetings in which anonymous, individual thoughts and opinions on the goals and outcomes of the peer observation teaching program will be gathered. I will be asking questions about the impact of the program and peer coaching on your professional practice and teaching experience. After collating and analysing the data, I will share the results with the Peer Observation of Teaching Committee which could be used to further develop the program.
- My own notes and observations on comments and feedback about the realist evaluation process.
- Public meeting minutes, policy and process documents, and research generated from within McMaster University.
- Anonymous quotes and notes/observations on process.

All data will be gathered prior to March 31st, 2018 after which time participation in the study will end and no further data will be gathered.

Appendix G: Participant Information Sheet

Benefits
The main benefits of participating in this study will result from having a reflective conversation about peer coaching and the impact it has on your teaching practice. Additionally, you will have the opportunity to experience and contribute to a realist evaluation, a form of evaluation that is increasingly used in healthcare and education settings. Your input will be used to improve the Peer Observation of Teaching Program and will add to the wider topic of peer coaching of faculty, both at McMaster University and other universities. There is no financial benefit from participating in the research.

Risks and Expenses
Although it is not anticipated that you will experience any significant risks, harm or expenses from participation in this study, you may feel mildly uncomfortable with some of the questions you will be asked. The questions will address your thoughts, opinions and experiences in teaching students, being coached, coaching peers, and how these may be related to your own professional context. If you feel uncomfortable at any time, you may choose to end your participation in the study and your answers will not be saved. Should you experience any discomfort as a result of your participation, please inform me or the contacts listed below. This research is separate from my paid employment.

What if I have a problem/complaint?
If you are unhappy, or if there is a problem, please feel free to let me know by contacting me. If you remain unhappy or have a complaint which you feel you cannot come to me with, then you should contact the Local Principle Investigator.

Will my participation be kept confidential?
Data collected from the surveys will be completely anonymous and you will not be identified in any written publication resulting from the study. In order to ensure your confidentiality, I will assign you a random participant code. If you agree to permit our interview to be audio- recorded, your participant code will be used if your data is used in future publications. Only my doctoral thesis supervisor, Rev. Dr. David Taylor, at the University of Liverpool, England and I will have access to any survey/interview data or potentially identifiable information. The Reverand Dr. David Taylor is the Reader in Medical Eduation at the University of Liverpool School of Medicine and the Director of the Postgraduate Programmes in Medical Education. He is a Principal Fellow of the Higher Education Academy and a Fellow of the Academy of Medical Educator. Files shared between the two universities will be encrypted and password protected. The data collected is purely for research purposes. Data will be stored on my assigned work desktop and on my laptop which I will keep with me. Both computers password protected. Hard copies of any notes and audio files will be kept in locked offices.

I will not disclose to any third party that you participated in this study. Any data you generate will be kept anonymous. Anonymous data generated from participants in this study will be stored for five years in secured computer storage.

What will happen to the results of the study?
Anonymous results will be compiled and reported within the University of Liverpool to fulfil the doctoral requirements. The final products of the research and report will be shared with the Program for Faculty Development and the Peer Observation of Teaching Program Committee to help improve peer coaching at McMaster University. Participant data will be made unidentifiable, which means that not only are names removed, but potentially identifying characteristics and demographic information will also be stripped from any shared data. You have the opportunity to read the interview reports before the data is analysed so you can request amendments if necessary. Additionally, if you would like to be debriefed once the research is complete, please indicate this preference in the Consent Form.

What if I stop taking part?

Appendix G: Participant Information Sheet

Participation in this study is voluntary and you can withdraw from participation for whatever reason at any time without negative consequences to you. If you choose to withdraw, all data you have provided will be destroyed unless you give permission to keep the data.

Ethics Review
This study has been reviewed by both the Hamilton Integrated Research Ethics Board (which oversees McMaster University's Faculty of Health Science research) and the University of Liverpool's Ethics Committee (which oversees the doctoral programme). If you have any questions regarding your rights as a research participant, you may contact the Office of the Chair of the Hamilton Integrated Research Ethics Board (HiREB) at 905 521-2100 ext. 42013

Please keep/print a copy of the Participant Information Sheet for your reference. Please contact me and/or HIREB with any question or concerns you may have either before, during or after the study takes place.

Roberta Preston	Oct 21, 2017	
Researcher	Date	Signature

Appendix H: Participant Consent Form

PARTICIPANT CONSENT FORM

Title of Research Project: The Impact of Peer Coaching on Health Profession Faculty: A Realist Evaluation on Peer Observation as a Form of Faculty Development

	Please initial if you agree
1. I confirm that I have read and have understood the information sheet dated October 21, 2017 for the above study. I had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected and without any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.	
3. I understand and agree that my participation will be audio recorded and I am aware of, and consent to, your use of these recordings for the analysis of information for this research study.	
4. I understand that I have the opportunity to read the interview report related to my interview before the data is analyzed. I can ask for amendments if necessary.	
5. I understand that, under the Data Protection Act, I can ask for access to the information I provide and I can also request the destruction of that information if I wish.	
6. The information you have submitted will be published as a report; please initial if you would like to receive a copy.	
7. I agree for the data collected from me to be used in future research and understand that any such use of data would be reviewed and approved by a research ethics committee.	
8. I understand that my responses will be kept strictly confidential. I give permission to the members of the research team to have access to my anonymised responses.	
9. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.	
10. I understand and agree that once I submit my data, it will become anonymised and I will therefore no longer be able to withdraw my data.	
11. I agree to take part in the above study.	

Appendix H: Participant Consent Form

Participant Name	Date	Signature
Roberta Preston		
Name of Person taking consent	Date	Signature
Roberta Preston		
Researcher	Date	Signature

Principal Investigator:
Roberta Preston
roberta.preston@dal.ca

Student Researcher:
N/A

October 21, 2017

Appendix I: Table of CMO Configurations

	CMO #	Context	Mechanism	Outcome
Informal Relationship	CMO 1	Faculty have multiple responsibilities and significant time pressures	Value and appreciate support from colleagues	Some faculty seek informal relationships rather than participate in formal coaching partnerships
Learning from each other	CMO 2	Facilitated and ongoing conversations	Builds trust	Benefits both coach and coachee who learn from each other
Trust & Safety	CMO 3	Supportive and safe work environment	Feelings of trust and belief that peers are interested in their success	Results in openness to learning and feedback
	CMO 4	Minimal power/ hierarchy differential between coaching partners	Perceived less threatening	Collegiality and mutually beneficial discussions
Voluntary Process	CMO 5	Voluntarily working in coaching pair	Sense of being personally connected with colleagues	Improves workplace environment and cohesion
	CMO 6	Freely working with peers	Generates informal and open dialogue	Less threatening environment to learn
Setting Learning Goals	CMO 7	Coachee generates goals before coaching meeting/observation	Attention is focused on pre-determined specifics	Coachee values process specifically related to their personal needs
	CMO 8	Multiple competing goals, (personal, professional and institutional goals)	Coachee takes responsibility for achieving these multiple goals	Sharpens performance in specific and targeted areas
	CMO 9	Feedback is related to goals predetermined by coachee	Agendas align and coach addresses specific goals	Coachee remains open to feedback and coaching process
	CMO 10	Coachee incorrectly identifies own learning gaps	Lacks insight and self awareness	Results in missed learning opportunities
Reflection	CMO 11	Observing peers teach	Teaching rises to forefront of mind	Results in reflection of own teaching skills (for both coach and coachee)
	CMO 12	Observing peers teach	Internalizes observation and triggers awareness of new options	Both coach and coachee learn and improve teaching skills

	CMO 13	Coaching a peer	Opens mind to reflect	Style of teaching changes as a result
Feedback	CMO 14	Giving and receiving feedback with colleagues	Opens self to being vulnerable	Results in empathy for own students and better feedback skills
Culture	CMO 15	An environment that encourages life long learning for everyone	Activates sense of humility and realism of what teaching is really like	A culture where asking for help or correcting a colleague is acceptable
	CMO 16	Institution promotes culture of learning and feedback amongst faculty	Opens faculty to give and receive feedback	Normalizes activity and shifts feedback culture
	CMO 17	Collegial culture where peers engage in everyone's success	Fosters belief that people in professional circle care about each other's progress	Results in positive professional connection with group
Reputation of Coach	CMO 18	Speaking with someone viewed as expert in professional field	Produces feelings of validation, recognition and encouragement	Results in growth in confidence
Problem Based Learning	CMO 19	Content experts who are not skilled in PBL (or any student centered teaching methods)	Approach does not come naturally	Variable results whether faculty learn to give/receive feedback to improve PBL methods
Transparent Process	CMO 20	Misrepresenting (or changing) the purpose of observation	Triggers feelings of mistrust and fear	Greater apprehension and resistance to coaching
Voluntary Program	CMO 21	Coaching is voluntary	Fosters belief and trust in the benefits of coaching	Fewer internal barriers to volunteering
	CMO 22	Coach and coachee participate voluntarily, on a equal footing	Spirit of mutual assistance is evoked	Becomes a space for learning
Mandatory	CMO 23	Coaching is mandatory requirement for new faculty	Individuals are aware of requirement before they sign up as faculty	Junior faculty appreciate help they receive and not left alone to struggle
Leadership Influence	CMO 24	Leadership encourages faculty to bring forward their challenges and learning needs	Stimulates freedom and security to discuss issues that are unique and different	Faculty development can create programming that may have not previously been considered

Appendix J: Program Theories and Research Questions

Research Question: What is the impact of peer coaching on clinical faculty within health professions education as a form of faculty development?

Program Theory 1: An appreciative and supportive relationship with a trusted peer is key to success in the coaching experience. (Social Learning Theory)

- How can the relationship influence the coaching experience?
- In what ways does the coach and coachee both learn from each other?
- What is necessary for people to learn from one another in peer coaching?

Program Theory 2: Participants, who identify their own performance gaps and set their own learning goals for the coaching experience, will have greater intrinsic motivation to learn. (Adult Learning Theory)

- How does goal setting impact peer coaching outcomes?
- What impact does setting own learning goals have on motivation in peer coaching?

Program Theory 3: Peer coaching encourages learning in both the coach and coachee through a process of mutual feedback and reflection. (Theory of Reflective Practice)

- Does reflective practice occur for both the coach and coachee?
- How does reflection contribute to the peer coaching experience?
- What does feedback contribute to peer coaching?

Program Theory 4: The context of where people work and their professional practice, influence the experience and impact of peer coaching. (Community of Practice)

- What difference does the professional environment/culture make to the experience of peer coaching?
- In what way does professional identity impact peer coaching?
- What influence can McMaster University have on the Community of Practice?

REFERENCES

Ammentorp, J., Jensen, H. I., & Uhrenfeldt, L. (2013). Danish health professionals' experiences of being coached: a pilot study. *Journal of Continuing Education in the Health Professions*, *33*(1), 41–47.

Archer, M. S. (1995). *Realist social theory: The morphogenetic approach*. Cambridge: Cambridge University Press.

Archer, M. S. (2007). *Making our way through the world: Human reflexivity and social mobility*. Cambridge University Press.

Argyris, C., & Schon, D. A. (1974). *Theory in practice: Increasing professional effectiveness*. Jossey-Bass.

Association for Supervision and Curriculum Development (n.d.) Retrieved from: http://www.ascd.org/

Astbury, B & Leeuw, F. (2010) Unpacking Black Boxes: Mechanisms and Theory Building in Evaluation. *American Journal of Evaluation*. 31(3) 363-381.

Bacon, T. & Spear, K. (2003) *Adaptive coaching: The art and practice of client-centred approach to performance improvement.* Davis-Black Publishing.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Barab, S. A., Barnett, M., & Squire, K. (2002). Developing an empirical account of a community of practice: Characterizing the essential tensions. *The Journal of the Learning Sciences*, *11*(4), 489-542.

Beckman, T. J. (2004). Lessons learned from a peer review of bedside teaching. *Academic Medicine*, 79(4), 343-346.

Beerkens, E. (2008). University policies for the knowledge society: Global standardization, local reinvention. *Perspectives on Global Development and Technology*, 7(1), 15-36.

Bell, A. and Mladenovic, R. (2008). The benefits of peer observation of teaching for tutor development. *Higher Education* *55*(6):735-752 ·

Bell, M. (2002). Peer observation of teaching in Australia. *Learning and Teaching Support Network,* Generic Centre, UK.

Bhaskar, R. (2008) *A Realist Theory of Science*. London: Routledge.

Bhaskar, R. (2014). *The possibility of naturalism. A philosophical critique of the contemporary human sciences.* (4th ed.). London: Routledge.

Bing-You, R. G., Paterson, J., & Levine, M. A. (1997). Feedback falling on deaf ears: residents' receptivity to feedback tempered by sender credibility. *Medical Teacher*, *19*(1), 40-44.

Blaxter, L., Hughes, C., & Tight, M. (2006). *How to research*. Berkshire.

Blitz, J., De Villiers, M., & Van Schalkwyk, S. (2018). Implications for faculty development for emerging clinical teachers at distributed sites: a qualitative interpretivist study. *Rural and Remote Health*, 18(2), 4482.

Booth, A. (2014). Literature Searching for Realist Synthesis. [*Wiki*]. Retrieved from: http://realistsearch.pbworks.com/w/page/88622804/FrontPage

Booth, A., & Carroll, C. (2015). Systematic searching for theory to inform systematic reviews: is it feasible? Is it desirable? *Health Information & Libraries Journal*, *32*(3), 220-235.

Booth, A., Harris, J., Croot, E., Springett, J., Campbell, F., Wilkins, E. (2013). Towards a methodology for cluster searching to provide conceptual and contextual “richness” for systematic reviews of complex interventions: case study. *BMC Medical Research Methodology* 13:118

Boud, D., & Walker, D. (1998). Promoting reflection in professional courses: The challenge of context. *Studies in Higher Education*, 23(2), 191–206.

Brockbank, A., & McGill, I. (2007). *Facilitating Reflective Learning in Higher Education*. McGraw-Hill, UK. 2nd Edition.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27-40.

Brydges, R., & Butler, D. (2012). A Reflective Analysis of Medical Education Research on Self-Regulation in Learning and Practice. *Medical Education*, 46(1), 71-9.

Centre for Advancement in Realist Evaluation and Synthesis (CARES) (2016a, 8th and 9th March). *Realist Methodology Design and Implementation: an Exploratory Workshop,* University of Liverpool.

Centre for Advancement in Realist Evaluation and Synthesis (CARES) (2016b, August 8-11). *3rd Annual Realist Methodology Summer School,* University of Liverpool.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.

Clark, A. (2015, July 17). *Critical realism & realist evaluation: An overview for everyone. [Video File]. Retrieved from* https://www.youtube.com/watch?v=8Y3oVV5KxeU.

Clark, A. M., Lissel, S. L., & Davis, C. (2008). Complex critical realism: Tenets and application in nursing research. *Advances in Nursing Science, 31*(4), E67–E79.

Coghlan, D., & Brannick, T. (2005). *Doing action research in your own organization*. 2nd ed. London, UK: Sage.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge.

Cohen, L., Manion, L., & Morrison, K. (2011). Research methods in education (7th ed.). London, UK: Routledge.

Cox, E. (2012). Individual and Organizational Trust in a Reciprocal Peer Coaching Context. *Mentoring & Tutoring: Partnership in Learning*, *20* (3), 427-443.

Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research. 3*(2), 95-108.

Cruess, R. L., Cruess, S. R., & Steinert, Y. (2018). Medicine as a community of practice: Implications for medical education. *Academic Medicine, 93*(2), 185-191.

Dalkin, S. M., Greenhalgh, J., Jones, D., Cunningham, B., & Lhussier, M. (2015). What's in a mechanism? Development of a key concept in realist evaluation. *Implementation Science*, *10*(1), 49

Davis, S. (2015, Oct 30). An Introduction to Critical Realism: Health and Social Sciences Research Training Workshops Leeds Beckett University. [Video file]. Retrieved from https://www.youtube.com/watch?v=_S6_Zl_0wc8&t=144s

Denzin, N.K.(1970). *The Research Act: A Theoretical Introduction to Sociological Methods*. Chicago, USA: Aldine Publishing Company.

Finn, K., Chiappa, V., Puig, A., & Hunt, D. P. (2011). How to become a better clinical teacher: a collaborative peer observation process. *Medical Teacher*, *33*(2), 151-155.

Gormally, C., Evans, M., & Brickman, P. (2014) Feedback about teaching in higher ed: Neglected opportunities to promote change. *Life Sciences Education*, 13, 187-199.

Gosling, D. (2002). Models of peer observation of teaching. *Generic Centre: Learning and Teaching Support Network*, 8(10), 08.

Greenwood, D. J., & Levin, M. (2007). *Introduction to action research: Social research for social change.* (2nd ed.). London, UK: Sage.

Guba, E. G. & Lincoln, Y. S. (2008). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin and Y. S. Lincoln (Eds.), *The Landscape of Qualitative Research*. Thousand Oaks, CA: Sage Publications.

Hallett, C. (1996) Learning through reflection in the community: the relevance of Schon's theories of coaching to nursing education. *The School of Nursing Studies*, The University of Manchester, Manchester, U.K.

Hammersley-Fletcher, L., & Orsmond, P. (2004). Evaluating our peers: is peer observation a meaningful process? *Studies in Higher Education*, *29*(4), 489-503.

Hooker, T. (2013). Peer coaching: A review of the literature. *Waikato Journal of Education, 18* (2).

Jackson, P. (2004). Understanding the experience of experience: A practical model of reflective practice for coaching. *International Journal Of Evidence Based Coaching And Mentoring*, *2*(1), 57-67.

Jackson, S. F., & Kolla, G. (2012). A New Realistic Evaluation Analysis Method: Linked Coding of Context, Mechanism, and Outcome Relationships. *American Journal of Evaluation*, 33(3), 339–349.

Jagosh, J. (2017, January 25). Introduction to Realist Evaluation and Synthesis [Video File]. Retrieved from https://www.youtube.com/watch?v=QrneOfFXzx0

Jagosh, J., Tilley, N., & Stern, E. (2016). Realist evaluation at 25: Cumulating knowledge, advancing debates and innovating methods. *Evaluation*, 22(3), 267-269.

Jamal, F., Fletcher, A., Shackleton, N., Elbourne, D., Viner, R., & Bonell, C. (2015). The three stages of building and testing mid-level theories in a realist RCT: a theoretical and methodological case-example. *Trials*, 16(1), 466.

Jawitz, J. (2009). Learning in the academic workplace: The harmonization of the collective and the individual habitus. *Studies in Higher Education, 34*(6), 601-614.

Johnston, L., & Campbell, K. (2018). Protocol for a longitudinal mixed methods realist evaluation of holistic needs assessment and care planning for people affected by cancer. *BMC Health Services Research*, 18(1), 563.

Knowles, M. (1973). *The Adult Learner: A Neglected Species*, Gulf Pub. Co., Houston.

Kovacs, L., & Corrie, S. (2016). What can realist evaluation tell us about how coaching interventions work? *Coaching Psychologist*, *12*(2), 59–66.

Ladyshewsky, R. K. (2006). Building cooperation in peer coaching relationships: understanding the relationships between reward structure, learner preparedness, coaching skill and learner engagement. *Physiotherapy,* London, (1), 4.

Ladyshewsky, R. K. (2010). Building competency in the novice allied health professional through peer coaching. *Journal of Allied Health*, *39*(2), e77-e82.

Ladyshewsky, R.K. (2017). Peer coaching as a strategy to increase learning and development in organisational life – a perspective. *International Journal of Evidence Based Coaching and Mentoring*. Vol. 15 (1).

Laidley, T.L. & Braddock, C.H. (2000). Role of adult learning theory in evaluating and designing strategies for teaching residents in ambulatory settings. *Advances in Health Sciences Education 5,* 43–54.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Linsley, P.,Howard, D., Owen, S. (2015). The construction of context-mechanisms-outcomes in realistic evaluation. *Nurse Researcher* 22, 3, p.28-34.

Mann, K. V., Gordon, J., & MacLeod, A. (2007). Reflective practice in health professions education: A review of the literature. *Advances in Health Science Education*, *14*, 595-621.

Manzano, A. (2016).The craft of interviewing in realist evaluation. *Evaluation*., *22*(3), 342–360.

Marchal, B., Van Belle, S., Van Olmen, J., Hoerée, T., & Kegels, G. (2012). Is realist evaluation keeping its promise? A review of published empirical studies in the field of health systems research. *Evaluation*, *18*(2), 192-212.

McEvoy, P., & Richards, D. (2003). Critical realism: a way forward for evaluation research in nursing?. *Journal of Advanced Nursing*, *43*(4), 411-420.

McGarth, A (2016, December 9) *Bhaskar's 'critical realism' and multiple levels of reality*. [Video file]. Retrieved from: https://www.youtube.com/watch?v=6SPUklxrQmU

Mcleod, P & Steinert, Y. (2009) Peer coaching as an approach to faculty development. *Medical Teacher. 31*, 1043-1044.

McMaster University (2011) *Faculty of Health Sciences: Teaching Portfolio: Guidelines for creating & maintaining your portfolio. Retrieved from:* https://fhs.mcmaster.ca/facultyrelations/documents/TeachingPortfolioJan2012-1.pdf

McMaster University (2012a). *Policy and regulations with respect to academic appointment, tenure and promotion.* Retrieved from: http://www.mcmaster.ca/policy/faculty/Appointments/Tenure_and_Promotion_January%202012.pdf

McMaster University (2012b). *Tenure and Promotion Workshop: Guidance for Faculty Members: Tenure and Permanence.* Unpublished.

McMaster (2013). *MacPherson Institute Website*. Retrieved from https://teaching.mcmaster.ca/.

McMaster University (2014a) New Faculty Guide. Removed from website.

McMaster (2014b). Peer observation of teaching. Retrieved from: https://fhs.mcmaster.ca/facdev/documents/AboutPeerObsTeach-POT.pdf

McMaster University (2014c). Teaching Stream Faculty Committee Report. Retrieved from: https://www.mcmaster.ca/vpacademic/documents/2014%20Teaching-Stream%20Faculty%20Committee%20report.pdf

McMaster (2017a) Recommendations to improve course and teacher evaluations. Retrieved from:

https://www.mcmaster.ca/vpacademic/documents/Course_Teacher_Evaluation_Phase_2017_Aug_23_revs.pdf

McMaster University (2017b). University Administration Proposes Expansion of the Teaching Stream. Retrieved from: https://www.mcmaster.ca/vpacademic/documents/University_Admin_Proposes_Expansion_of_Teaching_Stream.pdf

McMaster University (2018). Self-Directed Learning from the Continuing Health Sciences Education. [Website] Retrieved: https://chse.mcmaster.ca/

McMaster University (n.d) *Peer observation of teaching*. Retrieved from: https://fhs.mcmaster.ca/facdev/peer_coaching_observation_and_mentoring.html

McMaster University, (n.d.. a). University Teaching Program (UTP). Retrieved from: https://fhs.mcmaster.ca/facdev/utp.html

McNiff, J., & Whitehead, J. (2005). *All you need to know about action research*. London, UK: Sage.

Moon, J. (2000). *Reflection in learning and professional development: Theory and practice*. London: Kogan Page.

Moon, J. (2001). PDP working paper 4: Reflection in higher education learning. *Higher Education Academy*.

Moore, C., Westwater-Wood, S., & Kerry, R. (2016). Academic performance and perception of learning following a peer coaching teaching and assessment strategy. *Advances in Health Sciences Education*, 21(1), 121-130.

Moses, J. & Knutsen, T. (2007). *Ways of knowing: Competing methodologies in social and political research*. Basingstoke, UK: Palgrave Macmillan.

Nanninga, M., & Glebbeek, A. (2011). Employing the teacher-learner cycle in realistic evaluation: a case study of the social benefits of young people's playing fields. *Evaluation*, 17(1), 73-87.

O'Keefe, M., Lecouteur, A., Miller, J., & McGowan, U. (2009). The colleague development program: A multidisciplinary program of peer observation partnerships. *Medical Teacher*, 31(12), 1060-1065.

Orr, C. J., & Sonnadara, R. R. (2019). Coaching by design: exploring a new approach to faculty development in a competency-based medical education curriculum. *Advances in Medical Education and Practice*, *10*, 229.

Otten, M. (2009). Academicus interculturalis? Negotiating interculturality in academic communities of practice. *Intercultural Education*, 20(5), 407-417.

Pallas, A. M. (2001). Preparing education doctoral students for epistemological diversity. *Educational Researcher*, 30 (5), 6-11.

Pawson, R. (1996). Theorizing the Interview. *The British Journal of Sociology, 47*(2), 295-314.

Pawson, R. (2006a). Digging for nuggets: How 'bad' research can yield 'good' evidence. *International Journal of Social Research Methodology*, 9(2), 127-142.

Pawson, R. (2006b). *Evidence-based policy: a realist perspective*. Sage.

Pawson, P. (2013). The Science of Evaluation: A Realist Manifesto. London, United Kingdom: SAGE Publications, Ltd.

Pawson, R. (2018). The Realist Foundations of Evidence-Based Medicine: A Review Essay. *Evaluation*, 24(1), 42–50.

Pawson, R. & Tilley, N. (1997). *Realistic Evaluation*. London, United Kingdom: Sage Publications Ltd.

Pawson, R., & Tilley, N. (2004). *Realist evaluation: The magenta book guidance notes*. London: Cabinet Office. Retrieved May, 12, 2008.

Pearson, M., Hunt, H., Cooper, C., Shepperd, S., Pawson, R., & Anderson, R. (2015). Providing effective and preferred care closer to home: a realist review of intermediate care. *Health & Social Care in the Community*, *23*(6), 577-593.

Plank, D. N. (2011). Minding the gap between research and policymaking. In C. F. Conrad & R. C. Serlin (Eds.), *The Sage Handbook for Research in Education: Pursuing ideas as the keystone of exemplary inquiry* (2nd ed.), 43-57. Thousand Oaks, CA: Sage Publications.

Porter, S. (2015). Realist Evaluation: An Immanent Critique. *Nursing Philosophy,* 16, 239-251.

Porter, S., & O'Halloran, P. (2012). The use and limitation of realistic evaluation as a tool for evidence- based practice: a critical realist perspective. *Nursing Inquiry*, 19(1), 18-28.

Punton, M.; Vogel, I. and Lloyd, R. (2016) Reflections from a Realist Evaluation in Progress: Scaling Ladders and Stitching Theory, CDI Practice Paper 18, Brighton: IDS.

Regan-Smith, M., Hirschmann, K., & Iobst, W. (2007). Direct observation of faculty with feedback: an effective means of improving patient-centered and learner-centered teaching skills. Teaching and Learning in Medicine, 19(3), 278-286.

Rice, G. (2012). Formative dialogues in teaching. *Journal of Chiropractic Education*: *Spring*. *26*, (1), 62-67.

Rizvi, F. (2009). Towards cosmopolitan learning. Discourse: Studies in the Cultural Politics of Education, 30(3), 253-268.

Roxå, T., & Mårtensson, K. (2009). Significant conversations and significant networks–exploring the backstage of the teaching arena. *Studies in Higher Education*, *34*(5), 547-559.

Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field methods*, *15*(1), 85-109.

Salomon, G. (1991). Transcending the qualitative-quantitative debate: The analytic and systemic approaches to education research. *Educational Researcher, 20*(6), 10-18.

Sandars, J. (2009). The use of reflection in medical education: AMEE Guide No. 44. *Medical Teacher*, *31*(8), 685-695.

Sargeant, J., Mann, K., & Ferrier, S. (2005). Exploring family physicians' reactions to multisource feedback: perceptions of credibility and usefulness. *Medical education*, *39*(5), 497-504.

Sargeant, J. M., Mann, K. V., Van der Vleuten, C. P., & Metsemakers, J. F. (2009). Reflection: a link between receiving and using assessment feedback. *Advances in Health Sciences Education*, *14*(3), 399-410.

Sayer, A. (2010). *Method in social science*. (2nd ed.) Abingdon: Routledge.

Schön, D. A. (1991). The Reflective Practitioner: How Professionals Think in Action. London: Routledge.

Schreurs, M., & Grave, W. (2010). Faculty development. In (Ed.), *Lessons from Problem-based Learning* : Oxford University Press.

Schwellnus, H., & Carnahan, H. (2014). Peer-coaching with health care professionals: What is the current status of the literature and what are the key components necessary in peer-coaching? A scoping review. *Medical Teacher*, 36(1), 38-46.

Scott, D. & Morrison, M. (2007). *Key ideas in educational research*. London, UK: Continuum Books.

Siddiqui, Z. S., Jonas-Dwyer, D., & Carr, S. E. (2007). Twelve tips for peer observation of teaching. *Medical Teacher*, *29*(4), 297-300.

Slaughter, S. (2001). Problems in comparative higher education: Political economy, political sociology and postmodernism. *Higher Education, 41*(4), 389-412.

Steinert, Y. (2010). Faculty development: From workshops to communities of practice. *Medical Teacher*, 32(5), 425-428.

Steinert, Y. (2011). Commentary: Faculty development: The road less traveled. *Academic Medicine*, 86(4), 409-411.

Steinert, Y. (2014). Faculty Development: Future Directions. *Faculty Development in the Health Professions*, 42.

Steinert, Y., Mann, K., Anderson, B., Barnett, B. M., Centeno, A., Naismith, L., & ... Dolmans, D. (2016). A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. *Medical Teacher*, *38*(8), 769-786.

Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. *Medical Teacher*, *34*(6), 483-503.

Sturman, N., Régo, P., & Dick, M.L. (2011). Rewards, costs and challenges: the general practitioner's experience of teaching medical students. *Medical Education*, *45*, 722–730.

Suri, H. (2011). Purposeful sampling in qualitative research synthesis. *Qualitative Research Journal*, 11(2), 63-75.

Suri, H. (2013). *Towards Methodologically Inclusive Research Syntheses: Expanding Possibilities*. Routledge.

Swinglehurst, D., Russell, J., & Greenhalgh, T. (2008). Peer observation of teaching in the online environment: an action research approach. *Journal of Computer Assisted Learning*, *24*(5), 383-393.

Tilburt, J., & Geller, G. (2007). The importance of worldviews for medical education. *Academic Medicine, 82*(8), 819-822.

Trowler, P. (2005). Academic tribes: their significance in enhancement processes. *Proceedings of Utvecklingskonferensen 2005 i Karlstad*.

Unluer, S. (2012). Being an Insider Researcher While Conducting Case Study Research. *The Qualitative Report*, 17(29), 1-14.

Vidmar, D. (2005). Reflective peer coaching: Crafting collaborative self-assessment in teaching. *Research Strategies*, *20*(3), 135-148.

Vos, S. S., & Trewet, C. B. (2012). A comprehensive approach to preceptor development. *American Journal of Pharmaceutical Education*, 76(3), 1–7.

Waddell, D.L. & Dunn, N. (2005) Peer coaching: The next step in staff development. *The Journal of Continuing Education in Nursing. 36* (2), 84-9.

Walsh, A. (2014). *Peer Observation of Teaching Project, Faculty of Health Sciences. Forward with Integrity Faculty Development.* Internal McMaster University document: unpublished.

Weber, K. (2006). From nuts and bolts to toolkits: Theorizing with mechanisms. *Journal of Management Inquiry*, *15*(2), 119-123.

Wenger, E. (2010). Communities of practice and social learning systems: the career of a concept. In C. Blackmore (Ed.), *Social Learning Systems and Communities of Practice.* (179-198). London: Springer-Verlag.

Wenger-Trayner, E., & Wenger-Trayner, B. (2014). Learning in a landscape of practice: A framework. In Learning in *Landscapes of Practice* (pp. 27-44). Routledge.

Wenger-Trayner, E., Fenton-O'Creevy, M., Hutchinson, S., Kubiak, C., & Wenger-Trayner, B. (Eds.). (2014). *Learning in landscapes of practice: Boundaries, identity, and knowledgeability in practice-based learning*. Routledge.

Westhorp, G. (2014) Realist impact evaluation: An introduction. London: Overseas Development Institute. 1-12.

Westhorp, G., Prins, E., Kusters, C., Hultink, M., Guijt, I., & Brouwers, J. (2011). Realist evaluation: An overview report from an expert seminar with Dr. Gill Westhorp. *Wageningen, The Netherlands: Wageningen University Research Centre for Development Innovation in collaboration with Learning by Design and Context, international cooperation.*

Wilson, J. P. (2008). Reflecting-on-the-future: A chronological consideration of reflective practice. *Reflective Practice, 9(2), 177-184.*

Wong, G., Greenhalgh, T., Westhorp, G., & Pawson, R. (2012). Realist methods in medical education research: what are they and what can they contribute? *Medical Education*, *46*(1), 89-96.

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013). RAMESES publication standards: realist syntheses. *BMC Medicine*, *11*, 21.

Wong, G., Westhorp, G., Manzano, A., Greenhalgh, J., Jagosh, J., & Greenhalgh, T. (2016). RAMESES II reporting standards for realist evaluations. *BMC Medicine*, *14*(1).

Yin, R. K. (2018). *Case study research and applications. Design and methods*. Los Angeles.