

3-31-2015

## A Diverging View of Role Modeling in Medical Education

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<http://dx.doi.org/10.5206/cjsotl-rcacea.2015.1.7>

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### Recommended Citation

Sandhu, G., Rich, J.V., Magas, C., & Walker, G.R. (2014). A Diverging View of Role Modeling in Medical Education. *The Canadian Journal for the Scholarship of Teaching and Learning*, Vol, page numbers.

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# A Diverging View of Role Modeling in Medical Education

## Abstract

Research in the area of role modeling has primarily focused on the qualities and attributes of exceptional role models, and less attention has been given to the act of role modeling itself (Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringa-de Waard, 2013; Wright, 1996; Wright, Wong, & Newill, 1997). A standardized understanding of role modeling in medical education remains elusive (Kenny, Mann, & MacLeod, 2003). This is problematic given that role modeling is pervasively documented as an approach to teaching (Reuler & Nardone, 1994). Our study attempts to fill a void in this body of research by looking at what faculty are thinking, saying, and doing when they say they are role modeling.

Individual semi-structured interviews with faculty members were conducted in the Department of General Surgery at Queen's University, Kingston, Ontario, Canada. Interviews were recorded, transcribed, and analyzed using qualitative methods for themes surrounding teaching and role modeling. Three major themes emerged from the data: (1) faculty members think they are teaching when they are acting professionally; (2) faculty members become aware of teaching opportunities and act on them; and (3) faculty members employ evidence-based teaching methods, but they are incorrectly labeling them as "role modeling." As a whole, our findings should help distinguish between *role modeling* as roles and responsibilities enacted while doing one's job well, and *teaching* as facilitated instruction that helps connect knowledge with action (Clayton, 2006; Fassbinder, 2007).

Contributing to a better understanding of how teaching is separate from role modeling has the potential to improve the scope and quality of teaching, ultimately enhancing the learning experience for trainees.

Les recherches menées dans le domaine de l'imitation de rôles ont porté principalement sur les qualités et les attributs de modèles de rôles exceptionnels et on a fait moins attention à l'acte lui-même d'imitation de rôle (Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringa-de Waard, 2013; Wright, 1996; Wright, Wong, & Newill, 1997). La compréhension standardisée de l'imitation de rôles dans les situations médicales reste évasive (Kenny, Mann, & MacLeod, 2003). Ceci est problématique du fait que l'imitation de rôles est fortement documentée en tant qu'approche pour l'enseignement (Reuler & Nardone, 1994). Notre étude tente de combler un vide dans ce corps de recherche, nous visons à examiner ce que les enseignants pensent, disent et font quand ils affirment qu'ils pratiquent l'imitation de rôles.

Des entrevues semi-structurées ont été menées avec des professeurs du département de chirurgie générale de l'Université Queen's, à Kingston, en Ontario, Canada. Les entrevues ont été enregistrées, transcrites et analysées en utilisant des méthodes qualitatives pour des thèmes liés à l'enseignement et à l'imitation de rôles. Trois thèmes principaux sont ressortis de ces données : (1) les professeurs pensent qu'ils enseignent quand ils agissent de façon professionnelle; (2) les professeurs prennent conscience des occasions d'enseignement et les mettent à profit; et (3) les professeurs utilisent des méthodes d'enseignement basées sur l'évidence, mais ils les qualifient à tort d'« imitation de rôles ». Dans l'ensemble, nos résultats devraient aider à établir la distinction entre *l'imitation de rôles* en tant que rôles et responsabilités adoptés pendant que l'on fait correctement son travail, et *l'enseignement* en tant qu'instruction facilitée qui permet de relier la connaissance avec l'action (Clayton, 2006; Fassbinder, 2007).

La contribution à une meilleure compréhension de la manière dont l'enseignement est séparé de l'imitation de rôles pourrait améliorer la portée et la qualité de l'enseignement pour, en fin de compte, améliorer l'expérience d'apprentissage des stagiaires.

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**Keywords**

role modeling, teaching methods, qualitative, medical education

It has been well documented that the three pillars of medical education are patient-centred care, research, and teaching (Bennet et al., 2000; Blatt & Greenberg, 2007; Cooke, Irby, Sullivan, & Ludmerer, 2006). Educational experiences highlighting the intersection of these three cornerstones help physicians develop a well-rounded approach to their professional responsibilities (Bennet et al., 2000). The focus of this paper will be on teaching, specifically understood as facilitated instruction that helps connect knowledge with action. (Clayton, 2006; Fassbinder, 2007).

There has been rich and continued inquiry into the nature of teaching in health professions (Martens et al., 2009; Pratt, Arseneau, & Collins, 2001; Steinert et al., 2006). At a minimum, this has included qualities of effective teachers, innovative teaching methods, and perspectives on teaching (Martens et al., 2009; Pratt, Arseneau, & Collins, 2001). Research and practice have reinforced this explicit emphasis on effective teaching in medical education (DaRosa et al., 2011; Fluit, Bolhuis, Grol, Laan, & Wensing, 2010; Hatem et al., 2011; Irby, Cooke, & O'Brien, 2010; Taylor, Farver, & Stoller, 2011; Whitcomb, 2003). Furthermore, the importance of effective teaching is also clearly articulated in accreditation standards for Canadian institutions of postgraduate medical education, going so far as to name a dual responsibility for "ethical patient care and excellent teaching" (Royal College of Physicians and Surgeons of Canada, 2013, p. 6). With a better understanding of the nature of teaching in health professions, it may be possible to determine what is considered effective instruction in order to improve teaching.

In keeping with this, medical school faculty members are being asked to teach in innovative ways (Wilkerson & Irby, 1998). Unfortunately, most medical faculty members have little formal training in teaching methods (MacDougall & Drummond, 2005; Taylor, Tisdell, & Gusic, 2007). Thus, faculty members often emulate the professional behaviours of their own preceptors and refer to these actions as role modeling (Egnew & Wilson, 2011; Matthews, 2000; Wright, Wong, & Newill, 1997). Sociologist Robert Merton (1968) stated that "the concept of role model can be thought of as more restricted in scope denoting a more limited identification with an individual in only one or a selected few of his roles" (pp. 356-357). In other words, a role model is an individual who portrays a positive influence and to whom "is attached a whole role-set of expected behavior" (Holton 2004, p. 514). This concept has become part of the fabric of medical education (Holton, 2004).

Research in the area of role modeling has primarily focused on the qualities and attributes of exceptional role models, and less attention has been given to the act of role modeling itself (Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringade Waard, 2013; Wright, 1996; Wright, Wong, & Newill, 1997). The distinction between role models and role modeling is blurred, thus exposing a need for a precise definition of what role modeling entails. This is problematic given that role modeling is pervasively documented as an approach to teaching (Reuler & Nardone, 1994). This study seeks to better define the difference between teaching strategies and role modeling by uncovering what faculty are thinking, saying and doing when they say they are role modeling.

As a whole, our findings should help distinguish between *role modeling* as roles and responsibilities enacted while doing one's job well, and *teaching* as facilitated instruction that helps connect knowledge with action (Clayton, 2006; Fassbinder, 2007).

Looking to the literature to better understand how role modeling is interpreted as teaching in medical education, the researchers found numerous studies investigating the attributes of role models, but little inquiry into what physicians are doing when they role model

(Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringade Waard, 2013; Wright, 1996; Wright, Wong, & Newill, 1997). The discussion is made more complex by the variety of definitions used to explain role modeling, such as “standard of excellence to be imitated” (Wright, 1996, p. 290) to how behaviours, values and attitudes “can be learned or weakened through exposure to significant others” (Matthews, 2000, p. 446). Therefore, a standardized understanding of role modeling in medical education remains elusive (Kenny, Mann, & MacLeod, 2003). In order to add clarity and specificity to this body of research, the purpose of our study is to use Social Cognitive Theory (SCT) as an educational lens to determine exactly what faculty mean when they use the term “role modeling” and, when used in relation to teaching, to better understand how that instructional practice looks.

Because learning through observation is fundamental to role modeling (Mann, 2011), SCT will be used as a lens to explore role modeling interactions between faculty and residents. SCT describes the process of acquiring knowledge through observing others in social interactions (Bandura, 1986; 2001). From an SCT perspective, learning can be viewed as a dynamic relationship among cognition, behaviour and the environment (Bandura, 1986). We find the principles central to SCT helpful in better understanding the distinction between role modeling and teaching. In exploring role modeling, we will focus on what physicians are thinking, saying and doing in a specific learning context by applying this novel use of SCT.

## **Method**

### **Site and Participants**

The study was conducted in 2011 with nine faculty members in the Department of General Surgery at Queen’s University, Kingston, Ontario. Queen’s University is a medical doctoral institution with a small residency training program. All faculty participants are male and have on average 18 years of teaching experience (range = three to 28 years). No faculty members refused to be interviewed. The Health Sciences Research Ethics Board approved the study.

Through purposeful sampling, the General Surgery residency program was selected because of its size and duration of training. As a mid-size, five-year training program, General Surgery is reflective of the average size and length of residency programs at Queen’s University. Because General Surgery trainees are exposed to a small group of faculty educators for the length of their training, the importance of quality teaching is magnified.

### **Data Collection**

Qualitative methodology was used to better understand how attending staff defined and enacted role modeling in their daily practices. Each faculty member voluntarily participated in an individual semi-structured interview, focusing on their recollections of individual role modeling experiences within their current medical program. Participants were asked open-ended questions that allowed them to express and elaborate upon individual interests and experiences in relation to role modeling. Medical researchers not directly involved in this project reviewed questions for integrity purposes. A copy of the interview guide used can be found in the Appendix.

## Data Analysis

With the permission of the participants, all interviews were audio recorded. The recordings were transcribed verbatim and checked by participants for accuracy. All interview transcripts were thematically analyzed through in an iterative and dialogical manner by the research team. This approach permitted individual experiences to emerge while looking for patterns in the data. These patterns were subsequently interpreted using SCT.

## Results

All participants in our study possessed an existing understanding of role modeling with faculty feeling that this was a part of their daily practice. Individual notions of role modeling, however, varied. Participants recalled thoughts, actions, and context to explain role modeling. The use of SCT components allowed us to better understand the behaviours of faculty when they say they are role modeling. The following three major themes emerged from the data: (1) faculty members think they are teaching when they are acting professionally; (2) faculty members become aware of teaching opportunities and act on them; and (3) faculty members employ evidence-based teaching methods, but they are incorrectly labeling them as “role modeling.” The following excerpts highlight what faculty are thinking, saying, and doing when they use the term role modeling.

### **(1) Faculty Members Think They Are Teaching When They Are Acting Professionally in Their Medical Practice Without the Use of Any Purposeful Enacted Teaching Strategies to Reinforce Learning.**

(a) Role modeling is in keeping with acting professionally and doing your job well.

“It’s just that, the way I conduct myself as a surgeon.” (Dr. C)

A pronounced initial finding was that faculty feel that role modeling is the same as acting professionally and doing one’s job well. Dr. C’s statement above illustrates how role modeling is a by-product of conducting oneself in a professional manner. Going about one’s daily roles and responsibilities as a physician naturally conveys a way of being to all observers and it is not necessarily tailored for the learning of trainees. Dr. J reinforces this idea when he says, “role modeling [is] demonstrating a way of behaving in a professional manner that works for me.” Similarly, Dr. D emphasizes, “I think it’s mainly what you do, who you are and how you do things.” Through these examples, we repeatedly hear from faculty that role modeling is a projection of one’s professional identity.

In the following example, Dr. G conveys the unconscious and habitual nature of his actions while acting as a professional, “I don’t think anybody ever says, ‘watch me, I am about to role model.’ I think role modeling is a continuous process that is done without conscious thought or conscious action.” This statement points to the expression of innate qualities and behaviours that have become ingrained in faculty after years of training and experience. By virtue of working in a teaching hospital, faculty are aware of the presence of trainees; however, they are unaware of the precise moments when they are being observed. Therefore, faculty are likely to behave professionally, but may not be tailoring teaching to the specific needs of learners. Dr. H

explains, “in the moment, or as things are unfolding, I am not consciously [thinking], is someone learning something from what I am doing right now?” It is possible that this illustrates professional interactions where faculty can be cognisant of their role as physicians, but not necessarily as educators.

(b) Learning from role modeling requires trainees to know their learning needs.

“It’s just an observational thing that they’re picking up.” (Dr. C)

Similar to Dr. C’s statement, Dr. G describes the need for trainees to be active learners in role modeling encounters when he says, “role modeling is where a trainee observes actions and interactions of their supervisor and chooses to either accept those as something he or she would like to do or not do in the future.” There is a strong suggestion that as faculty go about their daily practice, trainees should seek out opportunities to observe faculty to help close a knowledge gap or further develop one’s own professional identity.

(c) Faculty members do not know what trainees have taken away from the role modeling encounter.

“So, the residents, I hope they learn from all this experience.” (Dr. A)

In keeping with Dr. A, Dr. H questions what knowledge trainees have gained through observing him role modeling. He describes a situation where he was breaking bad news to a patient and trainees may have been observing the encounter. Dr. H states, “I’m hoping [the trainees] are getting something out of that interaction.” The faculty and trainee may ‘see’ the same encounter in very different ways because their prior knowledge and experiences influence how they perceive events. Therefore, the role model cannot possibly know precisely what the trainee has gained through observation. It is also possible that Dr. H may have limited training in teaching strategies thereby limiting the way he describes the educational event.

In a teaching hospital, trainees observe faculty as they carry out their daily responsibilities. For trainees to learn from observing role models, trainees must know their learning needs and recognize behaviours that fulfil their learning goals. However, since faculty are focused on doing their job professionally, they cannot know for certain what trainees have attended to or taken away from the encounter.

## **(2) Faculty Members Become Aware of Teaching Opportunities and Act on Them.**

While consciously going about professional activities, faculty are aware of the possibility that trainees may be watching, but are often unaware of the precise moments when they are being observed. Once a faculty member becomes cognisant of an on-looking trainee, he transitions from role modeling, or acting professionally, to teaching. In other words, the faculty member becomes mindful of his additional role as teacher and his behaviour shifts to embody both physician and educator in order to meet the trainee’s expectation of learning. Dr. H eloquently illustrates this transition in awareness, whereby he alters his behaviour upon becoming aware of trainees and their learning needs:

You're consciously going about your professional activities in a way that someone else that may be in your presence can take away some information about how they may want to behave in a similar professional environment. I don't see it being very different than if no one else was there. But, in the presence of someone you may want to highlight certain things, or discuss something in more detail to hopefully pass on some educational information.

In this example, Dr. H becomes involved in facilitating the trainee's learning by emphasizing and discussing relevant information. Therefore, purposeful teaching requires an active role on the part of the educator, as well as effective methods for conveying knowledge to learners. In the following section of this paper, we will explore how faculty are teaching when they claim they are role modeling.

### **(3) Faculty Members Employ Evidence-Based Teaching Methods to Convey Knowledge to Trainees, but Are Incorrectly Labeling Their Methods "Role Modeling."**

Teaching is a deliberate process whereby educators purposefully connect knowledge with action when responding to a learner's needs (Enerson, Johnson, Milner, & Plank, 1997). The goal of teaching is to facilitate the learner's integration of new knowledge with existing knowledge in order to foster deep and sustained skills, attitudes and ways of thinking (Enerson, Johnson, Milner, & Plank, 1997). The following examples illustrate faculty taking deliberate actions to facilitate learning experiences for trainees yet not recognizing those actions as teaching strategies.

First, we will begin to construct a deeper understanding of teaching by unpacking a complex example, which has been incorrectly referred to by Dr. H as role modeling. The following excerpt should be read as one continuous passage, with the subheadings inserted by the authors to help identify specific teaching strategies.

<p><b>[Demonstration]</b> <b>[Gradual release]</b></p>	<p>One of the things residents probably hate about being in my operating room is that I really demand a higher skills set. I don't know if that really qualifies as role modeling, but I am showing them how to do something. Or pushing them to do something a certain way to sort of teach them a higher level of technique. And certainly, when we do a complicated case, I have to take over the case from the residents, but I keep them as engaged as possible. I don't just say, 'okay, hold this and watch'. I try to slow things down and make sure whoever I'm working with has a good concept of the anatomy and what we're doing. Sometimes I even stop the case and say, 'okay, what are the next steps? What do you have to be conscious of?' I'm conveying to them how to think about it, go about it, and deal with issues that arise as part of the operation.</p>
<p><b>[Questioning]</b> <b>[Think aloud]</b></p>	

It is evident from this example that Dr. H is purposefully taking actions to convey a deep level of understanding to trainees. Active approaches to instruction that are supported by research and influenced by one's personal educational philosophy are better known as evidence-based



teaching methods (Enerson et al., 1997). In this example, Dr. H employs a variety of distinct teaching methods, such as demonstrating, gradual release, questioning, and think aloud; however, he is incorrectly describing his teaching as role modeling. In the next section, we will define and discuss the four most prevalently mentioned teaching methods referred to by participants and provide examples of their use in context.

## **Demonstration**

“We show them how and then we coach them through.” (Dr. A)

Demonstration involves explicit explanation of learning objectives, followed by the faculty member carrying out the process showing as many sequential steps as possible (Ontario Ministry of Education, 2002). Based on the trainee’s experience and knowledge, the faculty member prepares the learner to observe the upcoming skills. Complementing this focus, the faculty member sharpens the trainee’s attention on the process by reducing extraneous influences.

Dr. B describes an encounter with a junior resident where demonstration is clearly used as a teaching method:

Before we go to see a patient, I’ll ask the resident how they would examine the patient, what they would expect to find, and the mechanism by which [they would proceed]. Then we would go in and see the patient. I walk him or her through the [patient’s] examination and demonstrate where you feel [the hernia], where you put your hand.

Prior to entering the patient’s room, Dr. B collaborates with the trainee to establish learning objectives for the upcoming demonstration. Then he proceeds to demonstrate a hernia examination for the trainee, paying special attention to how the trainee should place his/her hand on the patient. Therefore, by co-constructing learning objectives and showing the trainee what to do, Dr. B actively addresses the trainee’s learning needs.

## **Gradual Release**

“Allow them to do the more simple steps and gain some experience and confidence, until they are doing all of the components [and achieve] independence.” (Dr. F)

A faculty member employing gradual release initially establishes a network of support for a trainee. Over time, as the learner demonstrates increased competency, the faculty member progressively removes levels of support until the trainee is successful at working independently. During gradual release, the intensity, magnitude, frequency, or duration of support is continually manipulated by the educator (Ontario Ministry of Education, 2002). The learner moves from close, direct observation with step-by-step instructions to gradually removing scaffolds so the trainee has increasingly greater autonomy with indirect supervision. Dr. F concisely illustrates his use of gradual release defined in this case as assisting a resident to formulate a plan of action for their own individual autonomy in the following example:

The first time [trainees are] exposed to [a surgical procedure] I will do most of the technical parts. Then I allow them to do the more simple steps to gain some experience and confidence. Eventually, they are doing all the components that are necessary to complete the task. The final stage is independence, doing it in our absence, and then starting to teach others.

The process of gradual release is first demonstrated by the faculty through enacting the procedure, then focusing on basic actions, next on developing a representation of the procedure, then developing a means of evaluating the procedure for themselves, and lastly withdrawing supervision. With increasing knowledge, ability, and confidence, the goal of gradual release is for the trainee to transition from an active observer to an independent practitioner. The faculty member actively facilitates this transition.

### **Questioning**

“I’m going to ask you this, this and this.” (Dr. A)

Questioning is the process whereby a faculty member queries trainees in a way that probes critical thinking and the formation of logical conclusions based on core knowledge (Ontario Ministry of Education, 2002). Faculty members ask questions which require trainees to think on a deeper level. Dr. D describes his use of questioning during rounds:

I ask questions that make residents think in terms of understanding the physiology and anatomy, and try to encourage them to approach clinical problems in a logical way. As we’re going through cases, I’m asking questions, and having them interpret key scenarios and images. Somewhat putting them on the spot, but hopefully in a constructive way.

Dr. A goes one step further and warns trainees, “You’re going to be with me next week. I’m going to ask you this, this and this. And you’d better be ready.” Questioning purposefully moves beyond role modeling in that it guides trainees’ thinking while fostering deep and sustained critical thinking skills.

### **Think Aloud**

“I take the instruments and say, ‘Okay, this is how you do this.’” (Dr. B)

Think aloud is a process whereby educators “talk-through” a thinking/decision making process or a clinical skill that is new to the trainee or has been identified by the faculty as an area of weakness (Ontario Ministry of Education, 2002). Through this teaching method, trainees gain insights into how a faculty member formulates a decision by listening to him vocalize a thought pattern. Thinking aloud tends to make the task less difficult by externalizing internal cognitive thought processes so that the problem becomes a linear step-by-step series of smaller events.

Dr. E captures a teaching moment using think aloud when he describes, “talking someone through an operation. Yesterday, we were doing a laparoscopic operation where I’m guiding [the trainee] through, but you’re still letting them do it.” In this example, Dr. E sequentially

verbalized steps and decision-making points for the learner. This allows the trainee to listen, understand the process for a complex situation, and perform skills accordingly.

Think aloud forces the faculty member to vocalize internalized ideas so that the trainee understands the faculty member's train of thought. It helps reduce guessing and decoding involved in a process that was not verbalized, something that is commonplace during role modeling (Egnew & Wilson, 2011).

In the previous section, we aimed to highlight the purposeful nature of teaching and provide language with which to talk about instructional methods taken up by faculty.

## **Discussion**

The aim of this study was to determine what faculty meant when they used the term "role modeling" and when used in relation to teaching, to better understand how that instructional practice looks. The results of our study indicate that some faculty believe that being observed while professionally conducting clinical practice is sufficient, in and of itself, to be included as teaching; other faculty, on the other hand, are purposefully teaching, but refer to instructional practice as role modeling. As a whole, our findings help distinguish between the confusion and misuse of the term *role modeling* as it relates to roles and responsibilities enacted while doing one's job well, and *teaching* as facilitated instruction that helps connect knowledge with action (Clayton, 2006; Fassbinder, 2007). The main conclusion is that both of these terms add to the confusion and misuse of the term "role modeling" as a teaching method.

Research in the area of role modeling has primarily focused on the qualities and attributes of exceptional role models, and less attention has been given to the act of role modeling itself (Elzubeir & Rizk, 2001; Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringade Waard, 2013; Wright, 1996; Wright, Wong, & Newill, 1997). The distinction between role models and role modeling is blurred, and exposes a need for a precise definition of what role modeling entails. This confusion is problematic given that role modeling is pervasively documented as an approach to teaching (Reuler & Nardone, 1994). To provide evidence that might better define the difference between teaching strategies and role modeling, this study sought to clarify what faculty members mean when they refer to their role modeling by using the SCT lens of uncovering what faculty are thinking, saying, and doing when they say they are role modeling.

As previously mentioned, SCT describes the process of acquiring knowledge through observing others in social interactions (Bandura, 1986). SCT is traditionally used to understand learning interactions from a trainees' perspective (Bandura, 2001; Mann, 2011); however, in keeping with the focus on educators, more specifically, what faculty are thinking, doing and saying, SCT was used to explore the relationship between cognition and behaviour without minimizing the impact of the environment. This facet of the SCT triadic relationship is not discussed simply because it is beyond the scope of this study.

In the context of postgraduate medical education, we have found that when faculty say they are role modeling, they are doing so as a professional behaviour, but not necessarily as a teaching method. In many cases, however, professional behaviour of role modeling does not automatically transform into purposeful teaching and could be attributed to a gap in pedagogical knowledge. It was observed that faculty carried out their professional responsibilities as physicians with the mindset that trainees are present and could be watching at any point in time. In a teaching hospital, role modeling has value as a means of social learning (Mann, 2011;

Murray & Main, 2005). There is a lot that can be learned from observing physicians behaving professionally (Cruess, Cruess, & Steinert, 2008); however, observation by itself makes it difficult for faculty to determine what learning has occurred. This is due to the fact that what the learner has chosen to attend to and take away is unknown to the faculty member. Furthermore, we learned that faculty believe that the onus is on the learner to identify gaps and areas of personal growth, find educational opportunities, and extract appropriate knowledge. The speculation around learning in this educational encounter increases the possibility for miscommunication and misdirected educational opportunities. In order to account for the learning that has occurred and to enhance the learning experience for trainees, faculty need to move beyond role modeling and facilitate learning experiences for trainees using explicit teaching methods (Egnew & Wilson, 2011).

Role modeling cannot be considered “teaching” because faculty are not purposely facilitating learning experiences that are based on trainees’ learning needs. Effective teaching would involve two components: (1) faculty developing specific learning objectives that meet learners’ needs, and (2) taking deliberate evidence-based actions to facilitate learning experiences for trainees (Enerson et al., 1997; Taylor, Farver, & Stoller, 2011).

Interestingly, when faculty are cued by the attention of trainees, faculty members adopt an additional role as educator by recognizing that trainees have unique learning needs that must be addressed. By doing so, faculty move beyond role modeling and begin employing evidence-based teaching methods. Faculty members assume an active role as an educator with responsibility for steering a learning experience (Bandura, 1986).

We have found that faculty in this study taught using demonstration, gradual release, questioning, and think aloud, but these same individuals were incorrectly referring to their practice as role modeling instead of identifying those instructional strategies as purposeful and active approaches. Although faculty recognized their additional role as educators and carried out teaching responsibilities, their educational efforts were not being fully recognized because they used incorrect terminology to describe their actions.

By making physician educators aware of their current teaching behaviours and by providing them with the language to describe their actions, faculty are better able to conceptualize their approach to teaching. Backed with the ability to name and understand specific teaching methods – demonstration, gradual release, questioning, think aloud – faculty may be better able to hone in on these strategies in an effort to teach to the specific needs of learners. This will strengthen their identity as physician educators, ultimately enhancing the learning experience for trainees. In this way, cognition and behaviour are intimately related (Bandura, 1986).

If pedagogical principles for faculty were enhanced with formal faculty training, it is possible that greater ownership of roles as educators would occur and with that increased breadth of teaching would be communicated and applied. Through embracing the additional roles and responsibilities associated with being an educator, faculty would be dissatisfied with the unintended consequence of referring to their teaching as role modeling because it minimizes their deliberate efforts and actions. It would be advantageous for faculty if they became more aware of their teaching behaviours as this awareness would add value and clarification to their profession as a medical educator.

There are several limitations to the present study that should be considered. First, this study explored how role modeling was enacted in one program, at one institution, with a small sample of faculty. Acknowledging that our participants represent a small portion of the

postgraduate medical education program community at Queen's University, we recognize that our results may not generalize to the population as a whole. Second, all faculty participants were male and this underrepresentation of female faculty in the General Surgery program may reveal a gender-bias in our findings. Subsequent research involving more programs at a variety of sites will address this limitation. Without minimizing the shortcomings of this study, we believe that the present data provides rich, detailed accounts of faculty experiences, revealing what faculty are doing when they say they are role modeling.

The results of the present study indicate that faculty are using a variety of evidence-based teaching methods, but are incorrectly referring to their teaching as role modeling. An important focus of future research should be to determine if role modeling and teaching are similarly understood in other residency programs and institutions. Future research can be divided into two areas of interest. One area should focus on the effectiveness of language when faculty are made aware of pedagogical principles, practices, and language. The other specific area of interest should investigate why faculty members are using incorrect terminology to describe their teaching and to explore the consequences of doing so for the various stakeholders; including faculty educators, trainees, the residency program, and the postgraduate medical education program.

### **Conclusion**

Based on our study, which explored what faculty are thinking, saying and doing when they say they are role modeling, we have found that there is a distinction between role modeling and purposeful teaching. This has important educational implications. First, there is a need to refrain from using role modeling synonymously with teaching as this inaccurately conveys the breadth of teaching that is occurring. We advance that role modeling is aligned with positive professional behaviour, whereas teaching is about facilitated instruction that helps connect knowledge with action. Second, developing a handbook detailing effective evidence-based teaching methods in medical education, similar to the Royal College of Physicians and Surgeons of Canada CanMEDS Assessment Tools Handbook (Bandiera, Sherbino, & Frank, 2006), would be a valuable resource for physician educators. Such a tool would provide faculty members with the language to describe their teaching practice as well as introduce them to new teaching methods. As faculty begin to view purposeful teaching as separate from role modeling, the scope and quality of teaching will improve and the learning experience for trainees will be enhanced.

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## **Appendix**

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### **Faculty Interview Questions**

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1. You use the term “role modeling.” Could you explain what you mean by role modeling?
  2. What happens when you are role modeling? For example, what are you saying and doing when you are role modeling?
  3. Can you tell me about a recent experience where you were role modeling?
  4. In what contexts do you use role modeling?
  5. With which learners do you use role modeling?
  6. What makes role modeling an effective strategy for you?
  7. Is role modeling a strategy that you consciously/deliberately implement or is it a role that you naturally assume?
    - a. If conscious/deliberate, in which situations do you role model?
    - b. If not deliberate, how is the intended effect of role modeling evaluated?
  8. Are there situations where role modeling may not be the best strategy?
  9. How do you teach when there are different levels of learners?
  10. Can you tell me about strategies that you use to teach non-medical expert CanMEDS competencies?
  11. Can you tell me about strategies that you use to teach medical expert competencies?
  12. What strategies do you use to help residents in difficulty?
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