



## The hidden curriculum in radiology residency programs: A path to isolation or integration?



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### ABSTRACT

**Purpose:** In this qualitative case study involving five academic Radiology centres across Canada, the authors seek to identify the *hidden curriculum*.

**Methods:** A qualitative case study methodology was used for its potential to explore and provide rich descriptions and allow for the in-depth analysis of multiple data sources that include official institutional documents, surveys, observations and interviews (including undergraduate students, postgraduate, radiologists, imaging scientists, residents, faculty and administrators). This study relied on 48 interviews and involved primary data analysis by the core research team, and a secondary analysis by external examiners.

**Results:** The results revealed that in four of the five major centres studied, a hidden curriculum of *isolation* prevailed, reinforcing an image of the radiologist as an independent operator within an organization dependent upon collaboration for optimal performance. The fifth site exhibited a hidden curriculum of collaboration and support, although the messages received were conflicting when addressing issues around teaching.

**Conclusions:** The authors conclude by noting two possibilities for medical imaging departments to consider that of *isolation* or that of *integration*. They examine the implications of each and propose a way forward that situates Radiology as the crossroads of medicine. As such, the need for a new, generative metaphor reasserts the importance of recognizing the role and function of scholarship in teaching and learning contexts across Canada.

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### 1. Introduction

In 2006, an interdisciplinary partnership formed between the Schulich School of Medicine & Dentistry and the Faculty of Education at Western University, Ontario, Canada, to optimize the role and function of educational scholarship in one medical imaging department through curriculum development, faculty development and a program of scholarship in teaching. Curious about the ways in which educational scholarship was institutionalized elsewhere, we embarked upon a national study at five academic medical facilities across Canada. Several predominant themes emerged from that study. In this paper, we focus on *one* of the key themes: ‘the hidden curriculum’.

We begin by recalling a resident’s laments about the misconceptions surrounding radiology that may be hurting the profession.

Ellen,<sup>1</sup> an interviewee, recounts the common responses that followed an announcement of her intention to pursue radiology: “You’re going to be in a dark room! You’re never going to see patients! You’ll only ever work by yourself! How boring will that be? Would you ever really impact patients’ lives?” The image of the radiologist as a doctor who sits alone in a dark room reading films all day is a persistent problem for the profession. At a time when the need for radiologists (and their expertise) is growing exponentially, this image may hinder radiology departments’ attempts to recruit talented physicians. It may also present a barrier to good relations between radiologists and professionals in other departments. Lastly, there is some concern that radiology work could be “outsourced” to doctors elsewhere if radiologists are not perceived as a vital and integrated part of a hospital’s staff. Given such concerns, we reviewed the data to ask the critical question,

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<sup>1</sup> The identity of participants and centres in this study are confidential. Only pseudonyms are used.

what implicit messages about professionalism are transmitted to radiology residents? In other words, we sought to identify the *hidden curriculum*.

The *Association of Faculties of Medicine of Canada's* recent report, "The Future of Medical Education in Canada (FMEC)" [1], lists as one of its goals, to "ensure that the hidden curriculum is regularly identified and addressed by students, educators, and faculty throughout all stages of learning" (6). The FMEC defines the hidden curriculum as "'a set of influences that function at the level of organizational structure and culture,' affecting the nature of learning, professional interactions, and clinical practice" (6). The hidden curriculum "is pervasive and complex and can be deeply instilled in institutional cultures" (23) and is transmitted through the ways in which people communicate and act as professionals. Anderson [2] explained that the hidden curriculum is evident in "[h]ow we exchange information with each other and our clinical colleagues, the language we use, our intellectual honesty, and the respect we have for one another" (22).

The pervasive and unstated nature of the hidden curriculum makes it difficult to identify from within the institutional culture. Thus, it is helpful to utilize the perspective of someone from outside the institution to identify and name the practices that keep the hidden curriculum going. The *Scholarship in Radiology Education* research initiative was created to provide this kind of valuable outside perspective. Having completed a pilot study at our home institution, the researchers, an interdisciplinary team that included a radiologist and two educational researchers, embarked on a nationwide study to assess institutional scholarship [3] and to identify promising practices that might serve as a model for national collaborative innovations in radiology education leading ultimately to improved patient care.

## 2. Methods

A qualitative case study method was selected for its potential to provide rich description of the 'bounded system' [4] and its ability to allow an in-depth analysis of multiple data sources. Data sources included:

- official texts (e.g., institutional records, Royal College of Physicians and Surgeons' documents, CanMeds documents),
- a structured survey developed by the researchers and administered to undergraduate and postgraduate students, radiologists, and imaging scientists,
- semi-structured interviews with radiology faculty, administrators and residents focusing on the nature of mentoring and teaching,
- observation and field notes from meetings, educational series, conferences, and needs assessments.

Invitations to participate in the study were issued to all Canadian academic institutions with Medical Imaging Departments. Of these, five were selected to reflect optimal diversity of programs. This study relied on 48 interviews with radiology residents, faculty, and administrators across the five centres as the primary data source. Additional data sources provided context and allowed for the use of triangulation of data to establish trustworthiness of the findings.

## 3. Analysis

A preliminary analysis was conducted by the core research team using a constant comparative method. Data were coded according to themes that emerged, and pattern matched. Because the core research team had previously analysed data in a pilot study at one institution, they sought to ensure that we retained the

complexity of the data, including data that were contradictory. Thus, a secondary 'goal free' [5] analysis was conducted to notice "something that everyone else has overlooked, [or bring] a novel overall perspective" (59). Treating the data as texts, three doctoral level candidates in the educational research field independently reviewed the research data as external evaluators, blind to any previous analysis conducted by the core team. Table 1 offers a sample of the evidence that led to the themes.

## 4. Results

Specific to the focus of this paper, the data revealed that four of the five programs exhibited a *hidden curriculum of isolation*. In other words, the hidden curriculum reinforced the image of the radiologist as a doctor who works alone in a dark room, engaging in minimal professional communication or collaboration. The isolation was evident in the residents' feelings that they lacked guidance in learning the practice of radiology, as well as lacking mentors within their departments. The curriculum of isolation was also evident in the lack of protected, dedicated time provided to faculty for teaching. The fifth program exhibited a hidden curriculum of collaboration and support, although even in this setting faculty received mixed messages about the value of teaching within their department.

### 4.1. A culture of isolation or support

One of the challenges of radiology education today is the growth of imaging technologies and the proliferation of new techniques. Residents today must learn more than their predecessors did just a decade ago. Residents reported feeling overwhelmed and lacking guidance in how to tackle the volume of material that they need to learn. Many residents reported struggling with the mammoth task of how to learn what radiologists need to know. They grappled with basic questions, such as *Which books do I read? In what order? How will I know if I really understood what I read, or if I need to seek out additional sources?* Often faculty dismissed these questions as evidence of the resident's intellectual limitations. Residents were, in effect, told that they needed to resolve these issues on their own.

In one program (Site 3), residents and faculty reported that a culture of support, rather than isolation, dominated. At this site, residents received regular guidance in the form of daily informal feedback, a verbal assessment at the midway point in each month-long rotation, and written feedback at the end of each rotation. Every 6 months residents met with the program director to review their progress. In providing regular assessment, the faculty demonstrated a commitment to support resident's learning.

The culture of support was evident throughout the department at Site 3. Junior residents utilized the knowledge of senior residents, and senior residents looked to younger faculty. Residents and faculty alike spoke of the importance of providing and receiving emotional support, as well as technical support, from their colleagues and mentors.

### 4.2. The role of mentoring

The isolation embedded in the hidden curriculum was evident when we asked radiologists who their mentors were. At four of the sites that we visited, residents did not identify anyone from their residency programs as providing significant mentorship. Two programs (Sites 4 and 5) assigned residents to mentors, but the programs did not provide any specific expectations about the kinds of support that mentors should provide. Some program coordinators indicated that they were reluctant to set up a formal mentoring program because they felt that mentoring should happen informally and that a formalized mentoring relationship was artificial.

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