Title: Social constructs of curricular change

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Abstract: The adoption of problem-based approaches to teaching and learning in dental and medical education requires educators to consider a significantly different role and responsibilities as teacher. This qualitative study explored how educators experienced and interpreted changes in the merged dental and medical curriculum at the University of British Columbia. Our findings present how educators explained and dealt with change. In-depth interviews provided considerable insight into factors influencing the resistance or acceptance to change. These factors were mediated by the educators’ beliefs about teaching and learning and their understanding of the development and implementation process of change. Findings from this study should help administrators, faculty developers, and educators themselves to understand better how curricular change is experienced, and to plan effective and appropriate faculty development.

Key words: Problem-based learning, curricular change, faculty development, qualitative research
Significant curricular changes continue to take place in efforts to improve the education of medical and dental students. Yet, many schools experience much faculty resistance to change.\textsuperscript{1,2,3} Although organizational and institutional challenges to a student-centered curriculum have been reported,\textsuperscript{4,5,6} the issues affecting faculty reactions and related social constructs have rarely been examined in detail.\textsuperscript{7,8} Why do faculty members resist change if it is meant to improve educational efforts?

Very little is known about how medical and dental educators experience a curricular change that in effect contests their established pedagogical views.\textsuperscript{9,10} The primary focus in the literature is on comparisons between PBL and the traditional curriculum,\textsuperscript{11} curricular design guidelines,\textsuperscript{12} the tutorial process,\textsuperscript{13} tutors’ content expertise,\textsuperscript{14,15} organizational implementation efforts\textsuperscript{16} and learning outcomes.\textsuperscript{17} What may have been overlooked is that challenges and successes of curricular reform or revision may also be influenced by challenges to the established identity and role of the teachers involved,\textsuperscript{18} and that some teachers’ beliefs about teaching may be in conflict with recommended changes.\textsuperscript{19,20}

The purpose of this study, therefore, is to understand how a sample of medical and dental educators at the University of British Columbia made sense of a curricular change from traditional, teacher/discipline centered instruction to case/problem-based learning. Using a qualitative method,\textsuperscript{21} this research examined how educators explain and deal with change and how they frame their experience and make sense of it.

The methodological premise of this study is based on the concept of \textit{social construction}.\textsuperscript{22} The term is used to describe a set of established ideas that support a system of accepted common practices. Sociologists maintain that life experiences are influenced by processes of socialization that shape our beliefs, norms of behavior, and organizations which in turn reflect and reinforce those experiences as common and acceptable. Consequently, to understand how educators interpret their experiences of curricular change and what social factors influence them required a research approach grounded in a philosophical and epistemological orientation concerned with the qualitatively different ways curricular change and the related pedagogy is perceived. Thus, the research approach is based on qualitative methods of analysis and explanation.
that focus on social experience and the complexity, variance, detail and context of the experience. The study sample is generally small but intensely involved through open-ended interviews aimed at obtaining depth and breadth of experiences of the phenomenon under study. 23,24,25,26

**METHODS**

This study focused on the social experience of curricular change and the complexity, variance, detail, and context of that experience.27,28 The study sample was intensely involved through unstructured, open-ended interviews aimed at obtaining depth and breadth of experiences of the phenomenon under study from the participants’ perspective.29 The researcher aimed to understand and describe the meaning participants gave to events and situations in which they were involved. The focus on meaning was central to the *interpretive* approach.30 The intent was not to present how many participants express a particular view or what the majority opinion is—the data were not managed and analyzed in a manner that allows this type of quantification. Instead, the method allowed for a reflective description of multiple and related viewpoints, along with the qualitatively different accounts that influence what was experienced and understood by the participants.31,32

Contact letters were mailed to twenty-five faculty members who had been pre-selected by administration to participate in a series of workshops designed to introduce them to the new integrated medical/dental curriculum. These faculty members were primarily senior, experienced educators, each from a different discipline within the faculties of medicine and dentistry. The letters and a telephone follow-up invited their participation and provided a brief explanation of the purpose of the study and the research design. Twelve of them agreed to participate in the study. Each had a minimum of 10 years of teaching experience. Seven of the participants were clinical and five were basic-science faculty. Each participant gave two open-ended interviews each lasting approximately two hours. The interviews were tape-recorded and transcribed verbatim. The primary author, with formal training in qualitative research methods, conducted all of the interviews and analysis. The secondary authors examined the data and related analysis to validate the findings and to discuss critically the variations in interpretation.
An interview guide helped to begin and if needed to direct the interview. All of the interviews were open-ended, and the interviewer sought direction from the participants to ensure that the ensuing discussion would respect what they considered to be important within the context of the research aims. Also, an open-ended format allowed the researcher to be spontaneous in questioning to explore, probe, and challenge the participants’ viewpoints and underlying beliefs. In qualitative studies of this type,

To begin and focus the interview conversation, the researcher asked a standard question of every participant: Can you tell me what you know about the curricular change that is to take place? The general aim of the first interview was to explore the participants’ experience of the curricular change and their understanding of its educational impact. As the conversation evolved, participants addressed the following questions that the researcher used to prompt discussion when necessary: 1) How did you find out about the change? 2) How will it affect you? 3) What do you think it will mean to you in terms of teaching and learning? The interview then gradually progressed to focus on the participant’s self-perceived role as teacher and their sense of identity and role as teacher, and the following questions were asked: 4) Tell me about a typical course you teach? 5) How do you plan and prepare for what you do? 6) How long have you been teaching? 7) What has your experience as a teacher been like? 8) How would you describe your approach to teaching? 9) How will the change affect how you teach and how students learn? The questions were not asked in a predetermined order, nor did all of them have to be asked, depending upon the depth and breadth of each participant’s response. Reflective fieldnotes guided the researcher’s thoughts as the interview progressed.

To ensure rigor and interpretive accuracy, the second interview began with a verbal summary of the researcher’s analysis of the first interview. At this time, each participant was asked to be critical of the researcher’s interpretations, clarify misunderstandings, and expand on issues that needed further explanation and development. Consequently, analyses of the transcripts were conducted throughout the study to identify and understand key issues as they emerged through a range of conceptually related statements, connected within and across interviews. The statements illustrated each participant’s past educational experiences, assumptions, and beliefs about
the curricular change and what were considered effective teaching and learning methods. Similar issues were grouped to identify a meaning that could be recognized through a specific category. Categories were grouped and sorted to reveal an overarching theme.\textsuperscript{34}

\textbf{RESULTS}

Interpretations of curricular change and understanding of one’s identity and role as teacher were dependent primarily upon a sense of the \textit{legitimacy} of change. Ideas of legitimacy were based upon a history of academic experiences: the participants had inherited and contributed to the development of their discipline as well as departmental and institutional norms and traditions within the university, all of which contributed to their identity as teachers, what it meant to educate, and to examination and certification requirements. As a result, perceptions and interpretations of the new curriculum were based on beliefs of the effectiveness of the traditional one.

Tensions and frustrations began to emerge because, as one individual complained, it was like “trying to fit a square peg into a round hole.” In other words, traditionally, the idea of teaching meant imparting a particular content or process of solving problems, and a way of thinking. Content expertise and professional standing were central to one’s identity as teacher. Past experience as learners, commitment to the mission of the institution within which one taught, and interactions with other teachers, students, administrators, and society, all provide internal and external directions that identified what was normal and expected. It was evident that the participants were evolutionary proponents of the traditional curriculum in which they had been educated and matured and were now educators of. Consequently, they defended it and their identity from the point of view of their belief in its effectiveness. The criterion \textit{effectiveness} mediated judgments of the \textit{legitimacy} of curricular change. Two key themes emerged to frame the boundaries of effectiveness and legitimacy: 1) what it meant to teach and learn, and 2) the development and implementation processes of the change.

\textbf{Conceptions of Teaching and Learning}

A dominant that emerged was that knowledge, as a currency, was the teacher’s to pass on to students. Both dental and medical educators placed greater emphasis on teaching than on learning, not because learning was insignificant, but because it was seen
as a natural outcome of teaching. In this case, teachers judged their credibility and effectiveness by being able to “transmit” their knowledge to students and to answer questions authoritatively, which also meant that they had to know their subject as experts. Examples of their statements on this subject are the following:

“Well what teaching [is] I think, is the active transfer of knowledge or skill from one person to another. The teacher being the transmitter and the recipient being the learner. Learning is a process by which knowledge or skill is developed in an individual partly as a result of their own efforts and partly as a result of knowledge transmitted from [the teacher’s] side.”

“The instructor [must be] sure of the material [and] convey a certain level of authority, not authoritarianism, but authority [and] if someone asks a question out of left field, they can come back and answer it….Particularly in medical class the students look for authority, somebody who knows what they are talking about; they can detect waffling, frequent errors and back-tracking and you lose control of the class.”

“Most of us in this department have invested a huge amount of time in our education and in most cases we are world experts in one small area…we have come here deliberately, we haven’t gone to research institutes, we haven’t gone to drug companies, we [came] to an academic teaching department and the teaching will always be right at the beginning of what we do and what we want to do….We enjoy interacting with young people, we enjoy seeing them succeed…we start off with a cop of raw students and we end up with a cop of well educated people, and there’s a huge sense of achievement and you know that all that they’ve learned has come from us and that’s very rewarding.”

The concept of teacher as a bridge to learning also emerged. Here the teacher’s primary responsibility was one of helping students understand the connections between basic science and clinical practice. The teacher’s credibility stems from the ability to teach students to apply content knowledge in a clinical setting. The teacher’s primary role is to socialize students into the practice of dentistry or medicine. However, this view did not entirely preclude the previous one, in which transmission of content was an essential and efficient component of teaching:

“You still have anatomy, physiology, and clinical medicine to teach and that cannot efficiently be delivered in a PBL system. You have to teach them about cirrhosis and you teach the about neoplasia of the liver rather than have them floundering out there.”
“When I do ward teaching and we are making ward rounds and we are discussing a patient, [students] don’t have the time to run off to the library and run back….I mean I don’t have any difficulty with them going ahead and defining the problem and learning on their own, but [students also] need your experience and knowledge of the field.”

The experience of change was interpreted as a conflict between the old and tested and the new and uncertain. Reconciliation was difficult because the legitimacy of change was not recognized. There was a concern that the new curriculum was essentially seeking to abandon the content and a crucial responsibility to students and to their future patients.

“If you compare our students with those from PBL schools, the only index where PBL students do better than ours do is on what was referred to as the happiness index. In other words, they’re quite happy not knowing what they don’t know.”

“So I feel that in many ways the victims or the people who will be short-changed in this new curriculum will not be the teachers, who may well be frustrated and not as fulfilled as teachers, but rather, the students who I don’t think will end up with as good an education. They need to come out of medical school knowing what are critical important conditions and how to recognize them. The community expects that we will graduate individuals who are safe in the vast majority of clinical situations; I’m worried that PBL might not give you that.”

“... I am not convinced passionately that this [PBL] is going to produce necessarily a better practicing physician and I have not seen any evidence that can prove conclusively that this is going to produce a better physician...”

To convince teachers of the effectiveness of a PBL curriculum required evidence that it worked; this evidence, in most cases, was firmly rooted in the understanding of how learners come to know the content:

“How do you know that these basically self taught kids taught themselves the right stuff? I mean it is the paternalism that won’t go away.” So the minute they graduate and they put on the gown I’ve lost them! I’ve lost them!”

The emergent views of what is considered effective teaching and learning are thus interrelated in a significant way. The consequence of losing what was considered a
significant role of the teacher to that of passive tutor in a PBL-type curriculum eroded professional identity. Compromising the teacher’s role and eroding the teacher’s identity were seen as leading to the compromise of student competency and patient safety.

**Conceptions of the Development and Implementation of Change**

Reservations were also expressed about the commitments that would be required to plan, implement and sustain the new curriculum. Concerns about time began to appear as participants first began to consider how they would be affected by the changes. The new curriculum was seen as an obstacle to fulfilling the various responsibilities the teacher already had, that is, lecturing in other courses and sustaining research endeavors. The time to teach and to learn took on a different meaning in the new curriculum. In the traditional curriculum, time was set aside for teaching in an efficient, effective and logistically sound way. The problem-based curriculum was seen as an inefficient teaching and learning mode:

“The thing that's kind of worrying me is how long it's going to take with me sitting on my hands with presumably answers and guidance, but I have to wait for them to ask. It's going to be like Twenty Questions and I can only answer yes or no. That's what bothers me about problem-based learning is that it's not time-efficient.”

“So there was a feeling among the faculty that the amount of time that was being put into it, both faculty time and student time ... it wasn’t effective and it was detracting from more traditional forms of teaching where the effectiveness could be measured.”

The feeling of being compelled to adopt the new curriculum, regardless of a genuine concern about its effectiveness, also affected how the change was experienced. There was little or no feeling of ownership, thus creating an antagonistic perspective between participants and the initiators of the new curriculum.

“They're imposing it on the faculty.... they're going to do faculty development workshops, I mean give me a break! They don't care if I'm a good teacher or a bad teacher. They don't care if I'm interested--they've politically picked out certain people with certain jobs--it's perfectly obvious. They're making political appointments and all these other things...the director of
faculty development has already been picked and no one knows about it except through the grapevine. I'm...I'm angry about that.”

Thoughts of role change were being affected by participants’ views of the “politics” of change. Viewing curricular change in this way created tensions during the change process. Those who did not see their involvement as effecting the development of change were likely to resist it. However, participants also found it difficult to reconcile their perceived role as teacher with their responsibility to the students and to the institution—their employer.

“If people are forced to teach this way and their fundamental opinion is that this is not the way we should be going, that they’re very happy the way they’ve been doing things the last 30 years, we have a potential risk for a disaster here.”

“Well if the faculty adopts a PBL model I don't have any choice in the matter. You either swim with it or ignore it and since the faculty of medicine is going to go that way, basically like it or lump it, I have to participate and put aside my disagreements and jump into it. If it is imposed, then you can fight it or do it begrudgingly or as I do whenever I’m forced to do anything: I try to find within myself something positive about it that can keep me going. I think it’s probably like a performer who has to act out a role that is very, very foreign to them. I’m not an actor but if you are forced to do this job then you have to minimize your losses…”

The fundamental reasons for supporting change centered on the obligation to the institution. While the issues of what it meant to teach and learn effectively remain central for those resisting changes, a commitment to the workplace was a reason for compliance in practice although not in principle. Moreover, subverting the process by secretly providing lectures during tutorials was seen as compromising the potential negative outcome of the new curriculum:

“I will not revert to teaching in the small group, even if it is more effective, because doing so will not reveal the inadequacies of the new curriculum. I’d like to teach but I wouldn’t want to violate the process...that would disadvantage those students who hadn’t been taught; so when it comes to the examination there won’t be students who do really well because a tutor broke the rules.”
DISCUSSION

The participants in this study interpreted aspects of the new curriculum in ways that fit their understandings of themselves within their personal history and experience of education that they had inherited, worked, and lived in for over ten years. Consequently, when faced with what may be considered as progressive reform, participants encountered a clash between their beliefs and what was seen as unwarranted and unwanted change to an established program within an institution instilled with a history of tradition. Identity and role conflict emerged from disparate expectations. There was a level of discomfort in complying with the expectations of the administrators of change, especially when these expectations were contradictory with personal ones and were thought to be forced. A role conflict emerged between espoused conceptions of teaching and what one was asked to accept. Was one to understand that teaching efforts of ten years or more were insignificant? It was difficult to believe this. The conflict created a power struggle, but not so much for control over change as for control over firmly held beliefs about the meaning of effective education.

Tension is inevitable when faculty are expected to adopt roles and responsibilities as teachers, researchers and employees that are perceived as mutually exclusive.\textsuperscript{35} There is no doubt that faculty-developers, administrators and teachers all express commitment to effective education. However, people may not share a common understanding of what effective means. What is believed to be effective education likely is based on one’s convictions about knowledge, teaching, learning and assessment.\textsuperscript{36, 37} These convictions become critical when one is confronted with issues that are contrary to one’s beliefs. When our notions of truth, authority and evidence come into conflict with others’ ideas or opinions, especially in matters where we hold strong convictions or values, the clash can have unproductive outcomes.\textsuperscript{38}

Introducing significant changes in curriculum and pedagogy that likely challenge prevailing conceptions of the role of the teacher without ensuring proper faculty preparation can result in failure of reform efforts. The findings of this study substantiate this and suggest that reform efforts cannot disregard teachers’ perspectives of change, particularly when issues that are held to be sacrosanct are not addressed adequately.
during the change process. Furthermore, the faculty development process that accompanies curricular change cannot focus primarily on prescriptive aspects of teaching that are task-centered with an emphasis on immediacy and application.\textsuperscript{39,40} Instead, faculty development approaches must provide opportunities for teachers to reflect critically on their professional actions, beliefs and role as teacher.\textsuperscript{41,42} This may help to clarify between disparate expectations. Future research and faculty development must address this more appropriately; that is, from the points-of-view of the educators who will participate in a changing curriculum.\textsuperscript{43,44} Approaching change from educators’ perspectives creates a more informing environment for them, which may reduce their reluctance when considering the legitimacy of change. Successful innovations in education require the full support of the teachers involved because their beliefs, feelings and assumptions are a strong influence on the learning environment.\textsuperscript{45}

References


