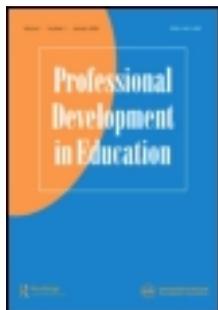


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On: 09 July 2012, At: 06:49

Publisher: Routledge

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Professional Development in Education

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjie20>

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Version of record first published: 06 Jul 2012

To cite this article: Linda S. Behar-Horenstein, Kellie W. Roberts & Mueen A. Zafar (2012): Factors that advance and restrict programme change and professional development in dental education, *Professional Development in Education*, DOI:10.1080/19415257.2012.692701

To link to this article: <http://dx.doi.org/10.1080/19415257.2012.692701>



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Factors that advance and restrict programme change and professional development in dental education

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(Received 27 February 2012; final version received 2 May 2012)

The aim of this study was to explore the effectiveness of a professional development initiative using organisational change research studies to frame the inquiry. Two faculty groups and two student groups participated in a total of four focus group interviews to ascertain their perceptions of a new model of pre-clinical dental education. Using a grounded theory approach, the findings showed that there were individual, structural and resource-related issues that advanced and restricted the successful implementation of the initiative. The exchange of ideas and the development of critical thinking skills, the use of modelling in multidisciplinary clinics, and *just in time* consultation were benefits of the programme, while its reliance on attaining competencies to determine student skill development and continual issues with patient allocation and a sufficient pool of patients were drawbacks. The findings suggest that inviting those involved in the professional development initiative into an investigation of their instructional practices while trying out new ideas in action is key to the processes of institutionalising change and engendering professional development growth.

Keywords: professional development; change; clinical education; qualitative research

Introduction

Scholars of organisational change and professional development (Beer and Nohria 2000, Clegg and Walsh 2004, Kondakci and Van den Broeck 2009) have pointed out the high rate of failure among organisations, citing their inability to adapt to change interventions and cope with change needs as primary reasons. The organisational life and cultural history that shape the way individuals and groups interact also influence their response to change (Pascaris *et al.* 2008). However, change is not a product or a singular event, it is a process (Fullan 1993); and often a sense of cognitive dissonance ensues between the familiar ways of doing things and a shift to a new approach or paradigm (Pascaris *et al.* 2008). Thus, individuals in the organisation are likely to feel conflicted. Not surprisingly, the more that individuals take ownership of the changes, the more successful the initiative will be (Fullan 1993, Guskey 2003). Such implementation is dependent upon many factors, including the participants, planners, infrastructure, the available material and physical

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requirements. Additionally, assessing an organisation's success formatively is one mechanism that helps determine what aspects of the change are progressing, what components need modification, and what may need to be removed from the initial plan (Pascaris *et al.* 2008). Another aspect of the change to be mindful of is the individuals' beliefs about professional development itself. Evans defines professional development as, 'the process whereby people's professionalism and/or professionality may be considered to be enhanced' (2009, p. 295). However, she also calls attention to whether the professional development process is an, 'effective tool for building a culture of developmentalism ... or an externally imposed regime' (2009, p. 302).

Making change in organisations such as professional schools of healthcare in academic settings presents its own unique set of challenges. Schon (1974) suggested that organisations are inherently conservative and that individuals are generally resistant to change. Complex decision-making processes, hierarchical power and authority structures characterise these institutions of higher education. Tenured faculty tend to remain relatively independent of their environment. Change initiatives, whereby efforts are spent trying to get group consensus, time and again seem futile. Academic organisations often work harder to maintain a legacy of 'histories', personal privileges and positionality rather than creating innovative 'futures' (Gumport 2000). However, the modernisation of healthcare schools, declining state resources and the imperative to ensure that clinical educational programmes mirror the reality of dental practitioners necessitate planned curricular change to ensure that these schools provide students with a contemporary education.

Fullan (2008) proposed a theory of action toward successful change. Through extensive studies of schools, businesses and organisations, he has shown that it is possible to achieve change when employees and administrators mutually work together and commit to the same outcomes. However, given the unstable and unpredictable dynamics of change agendas, this process can be partially or entirely interrupted when constituent parties refuse to do the work that will promote the desired outcomes.

This study was based on a redesigned pre-clinical dental educational learning environment (Behar-Horenstein *et al.* 2012, Simpson and Doig 2007) in its second year of implementation. The dental school's previous clinical education model consisted of six clinics that provided specialised care in endodontics, prosthodontics, periodontology, operative dentistry, treatment planning and oral and maxillofacial surgery and diagnostic sciences.¹ The programme had transitioned from a departmental, specialist care model to a multidisciplinary, comprehensive, patient-centred care approach. Previously, students and their patients were required to rotate between six different specialised care clinics for treatment-planned services. A lack of continuity in faculty supervision and mentoring was a key impetus for developing the Together Everyone Achieves More (TEAM) model. The model employs 10 TEAM leaders who, in pairs, work with 16 students in each of the five clinical care groups. These leaders work closely with the students as they progress toward fulfilling competencies and graduation while also supervising all aspects of the students' patients' dental treatment planning and care. The intent of the curriculum changes for this programme was to increase: faculty–student supervision; student performance in the completion of procedures; and efficiency in patient treatment planning and treatment.

The purpose of this study was to explore the effectiveness of a professional development initiative, to develop a grounded theory depicting the similarities and

differences between students' and faculty's perceptions of working together during a change process, and the successes and challenges they experienced, and to offer recommendations that support the implementation of the new clinical education model. However, this study is also informed by the work of Fullan (2008), Grove *et al.* (2009), Guskey (2003), Guskey and Yoon (2009), Hoban and Erickson (2004), Loucks-Horsley *et al.* (2003) and Pascaris *et al.* (2008), whose research on change and professional development considers assessment and ongoing inquiry to be central to individual and organisational growth.

Methods

Participants

Third-year ($n = 80$) and fourth-year ($n = 80$) dental students from a doctoral research-intensive university were asked to participate in the study via email invitations. Of those who responded positively, a sample of three male and seven female third-year students and three male and five female fourth-year students was selected to participate. Fourth-year students were chosen because they were experiencing their second year under this new clinical model of education, while the third-year students were in their initial year.

All of the TEAM leaders ($n = 10$) – faculty appointed or hired following a national search, and who work directly with the student teams in the clinics – were invited to participate. Nine agreed to be a part of the study, including seven males and two females. All non-TEAM faculty ($n = 33$) – specialists who rotate among the TEAM clinics, consulting on treatment planning, diagnosis and patient care – were invited to participate and nine elected to do so, including five males and four females. Pseudonyms are used to conceal the identities of the participants and maintain their confidentiality. To clarify the distinction between student and faculty roles in the results, students are identified by first name only while faculty are referred to as 'Dr' followed by a fictitious surname.

Data collection

One focus group meeting was conducted with each of the designated groups. These meetings, which ranged from 45 minutes to just over one hour, were useful in drawing out participants' perspectives on the effectiveness of the new comprehensive clinical care programme. Student responses in the focus group meetings helped ascertain their: confidence in delivering patient care; stress levels; ability to achieve clinical competencies; receipt of active mentoring and monitoring of their academic achievement; and variety of clinical experiences. Similarly, TEAM leaders' and non-TEAM faculty (hereafter referred to as 'faculty') interviews elicited perceptions of how well the programme promoted their ability to: mentor; demonstrate professional behaviour for students, as well as good dentist–patient relationships and clinical judgment; model critical thinking skills; and show interdisciplinary teaching and communication.

Following the initial data collection and analysis, and at the end of the second year of the programme's transition, a presentation of results was arranged for the TEAM leaders and non-TEAM faculty participants and several members of the dental school's administration. The first author served as both presenter and moderator,

explaining the preliminary findings of the study and facilitating a conversation with the audience, asking for feedback and input. This follow-up meeting gave the faculty participants the opportunity to hear about which aspects of the programme were successful as well as the lingering concerns from students and colleagues. This session also prompted them to share accounts of improvements or changes to the curriculum over the past two years.

The research team for this study comprised a professor and two graduate students from the College of Education of the same institution. The first author possesses a wide experience of teaching professional education faculty and has conducted extensive research in the clinical and classroom dental school learning environments. The focus groups were conducted by the first author, while the graduate students, who were also experienced qualitative researchers, recorded notes to indicate which participant was speaking, and about the non-verbal cues and responses among participants. The researchers conducted debriefing sessions immediately at the conclusion of each focus group meeting. All interviews were audio-taped and transcribed verbatim. The transcribed data were coded by the first author and analysed by the full research team. Additionally, the collected responses and notes recorded during the follow-up meeting with faculty and administration were used to corroborate or refute findings. The study was conducted after receiving the approval from the university's institutional review board (IRB #2008-U-904). Signed letters of informed consent were obtained from each participant prior to the focus group interviews. The small number of participants in the study was connected to the overall study design and purposes. While some methodologists would assert that the small sample was a limitation to generalisability, the authors highlight the particular affordances inherent to in-depth studies that illuminate the complexities of information provided by individuals (Creswell 2012).

Data analysis

This study used the grounded theory approach as described by Charmaz (2006). Each focus group transcription was analysed as a distinct and separate set before proceeding to the next transcription. The analysis involved both initial coding and focused coding. In the initial coding, 'which is provisional, comparative, and grounded in the data' (2006, p. 48), the process is iterative, whereby fragments of data including words, lines, segments and incidents are closely studied. Consistent with Charmaz's approach, two columns were employed, whereby small segments of the original transcription noted in the first column were categorised in the second column using gerunds followed by either a short name or phrase to retain participants' expressions, and specific meanings assigned. The use of gerunds is consistent with process coding as described by Saldana (2009). In that sense, the codes stayed close to the data, revealing the actions and the story from which they were taken. This preliminary stage led to the focused coding stage where selected significant initial codes were tested against extensive data. The constant comparative method was incorporated, which resulted in moving data to better fitting codes and codes to other categories or themes. Some themes coalesced and others expanded in the process. However, at the later stage, an attempt was made to compare the codes that emerged from the different focus groups to set aside themes that were distinct to students, or faculty, or those that were shared by the two groups. This study reports only those themes that were shared by both groups.

Results

The data from each participating group produced a number of themes related to the transition to, and participation in, the new clinical TEAM model. Representative examples of the themes that are shared among the student and faculty groups are presented below.

Exchange of ideas

The TEAM programme brought about a mutual exchange of ideas that led to faculty and student camaraderie and collaboration. Dr Rosenberg opined that one of the programme's advantages was that: 'it gives you an opportunity to allow the student to see what would be the ideal treatment versus what are the alternatives, based upon what the patients are able to afford'. Dr Sommerfeld concurred, pointing out that, 'the student now sees the patient treatment plan as a whole because they can access different specialties at the same time'. Dr Fritz observed that 'the camaraderie of the TEAM has increased' and 'that the students help each other a lot'. Dr Schmidt remarked how the TEAM programme helps students 'resolve conflicts, disputes and disagreements'.

Dr Clippinger cautioned that, 'some things are taught and not always thought ... but hopefully they catch some of this attitude, and the give and take'. Resonating across the faculty group was the message that students 'learn the importance of consulting with experts'. Dr Clippinger also points out: 'you can't know everything about everything, so you come up against something that you are unsure of the diagnosis or weigh your treatment plan, you ... consult the expert that is available'. According to the TEAM leaders, one of the best components of the model is that it provides back-up for the TEAM leader and the students because they have *just in time consultations* with specialists. Also, as Dr Clippinger noted, 'Some of the most rich educational opportunities happen during the comprehensive oral exam' and while it, 'doesn't happen every time and depends on the patients' needs ... it's great because the student is sitting there listening'. These learning moments have been beneficial to the students as they also have the added advantage of increased faculty collaboration. According to Dr Baston, the *just in time consultation* 'opens up opportunities for discussion with the faculty among faculty', away from the patient, regarding current techniques and technologies: 'There are discussions that we have among the faculty that are initiated by something we have seen with the student but now carries beyond that', and provides a teachable moment.

From a student perspective, Jamie observed the convenience of having 'all the disciplines' present in the clinic at one time. From an educational perspective, Chloe stressed the value of listening to different points of view, while Logan felt that the comprehensive training provided 'a stronger' foundation that might 'accelerate your capabilities later'. Students understood the situation, but being able to think in action and making these types of changes caused students to 'think between disciplines'. Max explained that the TEAM model was 'just more applicable to the real world' of general practice.

Dr Benson opined that the programme promoted 'more collaboration with faculty and other departments' and 'allowed [faculty] to work together, especially in front of the students', which gave students the chance to observe how faculty resolve patients' issues quickly with specialists. Dr Sommerfeld remarked that

collaboration among TEAM leaders and specialists, ‘helped the students move through the treatment planning and treatment [more] easily’. Dr Adler surmised the benefits of the programme as: students ‘get more exposure to patients’.

There was little question that the TEAM leaders believed the programme offered students opportunities to see modelling and how faculty interacted with patients and presented information. Dr Clippinger commented:

I really like them to watch us as we relate to the patients as well. How we communicate ... not using a lot of fancy dental terminology ... I like to see them use certain communication techniques.

He also noted how:

I like to talk to the patient eye level to eye level not down, [and] model my respect and acknowledge that it is the patient’s decision ... We are here to educate. And we don’t want to take that away from the patient.

Critical thinking skills

Critical thinking has been defined as: ‘intellectually engaged, skilful and responsible thinking that facilitates good judgment, [and using] the application of assumptions, knowledge, competence and the ability to challenge one’s own thinking’ (Behar-Horenstein and Niu 2011, p. 26). Faculty encouraged students to demonstrate critical thinking skills by asking them to justify their reasoning, defend their treatment plans and explain their thinking. When the students commented on whether they were encouraged to use critical thinking skills and reflective judgement, Noreen stated that: ‘every time we provide treatment to a patient, Dr. “Blank” comes over and the first thing he asks is, “why are you using this material?” He wants to know [if] you have a reason for choosing that material’. Marilyn’s TEAM leader asked students to explain: ‘What did you learn today?’ Logan proffered that sometimes there was a, ‘constant need to readjust or at least defend why you are treating a patient in a certain way’, and on any given day, faculty challenged students to provide a rationale to support their thinking.

Students also felt critical thinking was being fostered. Elise gave the example of an 85-year-old medically compromised patient with Alzheimer’s: ‘We are doing the minimum [care] by [decreasing his] infection though it probably won’t do much of anything’. She continued:

If the patient was 50 years old who didn’t have those same kind of problems, you might have three different options for the patient. You have to think about long term prognosis for teeth; you have to think about their health conditions ... [and] you have to weigh all the factors.

When asked to describe whether the programme promoted teaching critical thinking skills, Dr Schmidt likened critical thinking skills to watching and listening to how and what the professor is thinking. Dr Prescott stated that, as students listen to the professors’ thinking-aloud processes, he might call their attention to another perspective or may say to them: ‘Now let’s back up a little bit and then go forward’. Dr Clippinger, on the other hand, explained that he tried to cultivate students’ critical thinking skills by asking them to: ‘tell me what you saw, tell me what are the

implications of this situation. Okay, here is this situation, but what does it mean, why is it important, what are the long range consequences in this'. Dr Geffken shared that critical thinking really 'comes out in treatment planning' when he tells the students:

When you finish all your data collection write down what you think we should do all the way down the line. Then sequence it for me, then call me back, but until you do that don't come ask me if we ought to do an amalgam in here or composite. You tell me what your treatment plan is.

He engages students in hypothesising about treatment plans by giving them a chance to think through their ideas. When he says, 'If they have done one thing and I say well what if we did this instead', he gets students to reason through and discuss the implications of their planning choices. Pointing out that medicine and dentistry have to be diagnostically based, Dr Clippinger explained how difficult it is for students to come to a diagnosis: 'They want to jump from – there is a hole in the tooth to – we are going to put a filling in'. Students want to do the procedures that seem obvious without thinking through the pros and cons or considering alternative treatment approaches. Moreover, students seem to have lots of difficulty identifying the diagnosis: 'They have to put a name on it ... [and] most of the students have a difficulty with that [and] that is a problem'. Students need to learn how to think through the process of coming up with a diagnosis, 'they have to learn the subjective, objective, assessment, plan (SOAP) format'. Dr Aronwitz stated that he promotes students' critical thinking skills when: 'they have these complex cases on treatment planning and diagnoses by sitting down with them at the end of the session, talking about the cases, having them explain the treatment sequence step by step'.

At times, even though students and faculty are demonstrating critical thinking, patients may reject their thinking. Sowell gave an example of the complexity of a contested treatment plan. The patient presented with a fractured ridge and was dominating the student. The 'student offered treatment options' but the patient rejected all of them. The student comes to the faculty, and the faculty says to tell him: 'that's it. Those are our treatments. We can only do what we can do. Take it or leave it. The student, of course, is very uncomfortable in that situation ... the patient left ...'.

Student skill levels

TEAM leaders have the opportunity to observe students in the clinic every day, making them aware of the students' abilities and progress. Bill reported that he liked having a TEAM member available because they acquire a broad overview of students' skills: 'They know where you are at, what you are struggling with, what your capabilities are'. Jamie pointed out the benefit of talking to both faculty members who are there at the same time to offer their opinion, or to watch them consult with one another. When asked 'is the faculty always available to you?', Jamie replied that they were at the rate of 85–90%. Her classmate Logan concurred and offered his perspective: 'there are many ways to approach the same problem'. Moreover, he felt that, 'The TEAM leader has a better idea of what your strength is to best treat that particular patient' and that, 'when specialty faculty members tell you how to treat a patient, [it is important to recognise] that a particular approach

might work “in their hands, but not in yours””. Marilyn echoed the same sentiment but added that since, ‘The TEAM leader knows my level in terms of treatment planning, ... I will just call him at the very end of the procedure’. The fourth-year students also reported how TEAM leaders assisted them in treatment decision-making. Terri likened the TEAM leaders to her ‘parents’, and stated:

I go to them every day, cry, happy. They know if we are having a bad day or if we need some help on a certain procedure or they are in the office and we can go to them at any point.

In the same light, TEAM leaders themselves observed how the approach fostered getting to know students, ‘so that you are able to learn their strengths and weaknesses and you get to see them progress and develop, and [it is] a big positive’. Dr Fritz agreed, pointing out that TEAM leaders’ nurturing influenced student outcomes. His colleague Dr Rodriguez remarked that, beyond mentoring, faculty also experience parenting students, and helping them ‘grow up Also, mentoring goes beyond demonstrating’. Similarly, Dr Reynolds shared that, ‘we can observe student skills versus personalities, [and] sometime say this patient would be best suited for this student’.

When asked whether the TEAM programme had increased modelling professional behaviour, Elise said: ‘You’ve got checks and balances and you have to be respectful and professional and it’s just natural’. Agreeing, Peter explained that the previous model fostered competition between juniors and seniors, ‘but now it’s much better’. Dr Sommerfeld remarked that there are many opportunities to observe professionalism on a daily basis just by watching the professors interact. He also noted that in the last year student attendance had also improved.

The TEAM leaders said that they believed the programme promotes professionalism. Dr Prescott explained:

They very quickly learn, that has been my observation, that if you help someone else out, you are going to get helped out and it goes back and forth and I think there is a lot more professional cooperation between the students now than before the TEAM programme.

Dr Aronwitz suggested that professionalism was being fostered because students ‘start seeing the patient as a whole’.

Patient treatment

Students believed they were able to provide comprehensive patient care in a timely manner. Bill remarked that they ‘are able to progress the patients through their treatment’ more quickly. Concurring, Rachel explained that the TEAM programme provides students with ‘a realistic expectation of how dental practice is’ and that they were able to ‘give our patients the treatment more quickly’. It provides comprehensive care for the patient, whereas before ‘everything was segregated’. She felt the programme was comforting to patients because it provided opportunities for them ‘to come back to the same clinic’. Having the capacity to complete several procedures in the same day may have, in her opinion, contributed to greater patient satisfaction. Rachel also expressed her appreciation for TEAM leader availability

outside clinic times to consult on a case. Her classmate Marilyn agreed that having specialty faculty circulating resulted in their getting to know their capabilities and ‘accelerates learning’.

Sue, however, expressed her irritation with constant changes in treatment planning that were initiated by different specialists: ‘It can be frustrating to spend three hours on a treatment plan, and to move forward with it [and then] to get it changed’. While she agreed that it should be a dynamic process, she was annoyed when things were dramatically changed ‘and your patient refuses and they are frustrated’.

Students conveyed their view that overall the TEAM programme had an impact on their confidence in the clinic setting and their ability to perform procedures in a very positive manner. Dr Alder remarked that there had been ‘extremely positive interaction between patients and students’ when the TEAM leader was open-minded, although he could not say that this was true all of the time. Jamie suggested that having TEAM leaders monitor student care of patients instilled greater confidence and self-efficacy among students. Elise explained that, ‘seeing more patients with increased frequency in addition to having helped seniors last year [and] seeing these procedures being done’ was critically important. Her classmates, Peter and Terri, agreed. However, Terri pointed out that her level of confidence had improved because juniors were coming to the seniors for advice and guidance. Peter claimed that his confidence was increased because of the representation of faculty across the disciplines being available. Elise suggested that the programme’s flexibility in caring for patients increased her confidence: ‘it’s nice when a patient comes in and the TEAM has allowed us to have the confidence to think outside of just periodontology or just operative’. Continuing, she shared: ‘I was going to do a cleaning today but the decay had progressed more than we thought it would have. I wondered if I could do something other than what we had been planning’.

Overall, students agreed that it had been beneficial to have a variety of faculty available. However, they pointed out that faculty input sometimes was counter to the agreed-upon treatment plan between the student and the TEAM leader. One student explained: ‘but when you have thought through all the options of the treatment plan and then have it changed, it lowers your level of confidence. Is the patient going to trust you the next time?’ Rachel explained that one of her ‘patient[s]’ treatment was significantly slowed down’ by a graduate consultant because they did not provide her with timely feedback.

Patient allocation

Students and faculty alike expressed their frustration with not having a sufficient patient pool to complete competencies. Bill remarked that, ‘Sometimes it is difficult to find cases that are related to particular competencies’. Jamie commented how the use of a ‘bulletin board’ assisted students in finding patients to meet competencies, while others, like Logan, reported that, ‘Some patient coordinators do better than others [with patient assignment]. My patient coordinator is fabulous for a number of reasons’.

Student discussion about patient assignment, taking on extra patients to fulfil competencies and sharing patients with other students hindered their progress. They explained that TEAM leader oversight of patient assignment varied among TEAM clinics. Elise observed some juniors being assigned more difficult patients when, ‘they are still learning how to get into a patient’s mouth and get comfortable talking

with a patient'. On the other hand, as Dadria pointed out, there are times when patients do not return after having been screened. Others explained the difficulties they had in completing periodontal complex phase I competencies. Terri stated: 'I think distribution of patients is a huge problem, it's not [just] something that we can ask and do on our own'.

Elise explained that having an increased patient pool increases learning on complicated procedures:

It comes down to actually sitting down and doing the data collection on that patient. Randomly, some of our classmates just happen to get patients that need a lot of crowns. I happened to get patients that needed a lot of partials and, you know, there is an imbalance based just on random assignment.

She suggested that perhaps this was due to a lack of patients coming into the school for screening and that more patients were presenting with complex issues.

Sharing of patients was common among students who realised that they were short on time and had not completed specific competencies. Dave explained the necessity of this practice from the student's perspective:

If you don't have the patients then it's supposed to be an inter-team kind of thing [because] there's two TEAM leaders and a clinic, you can switch patients. I need this patient for one half day, let me please do this ... that helps in [completing] competencies.

Dr Prescott explained that one of the negative components of the instruction – perhaps not necessarily due to the TEAM programme – was the practice of switching patients back and forth so that students can achieve competencies. This was also conveyed during all of the faculty and student focus groups. However, during the researchers' follow-up presentation to the faculty, the reasoning for this practice seemed to have changed. During this meeting, the faculty commented that this practice of sharing patients was not equivalent to poor comprehensive care. They rationalised that having two or three different students who contributed to a patient's case was a necessity because of the clinic's poor patient pool. They explained that sharing patients was, unfortunately, driven more by the desire to do various procedures and complete competencies than desire to attend to the patients' needs.

Dr Rodriguez pointed out that she was 'getting really good at moving patients around to satisfy requirements' and her feeling that this practice 'is terrible [because] I am not treating the patient comprehensively'. Dr Fritz agreed and cautioned that:

We don't want to let the competencies overtly influence the comprehensive care model. What we are trying to do is teach how to treat the patient comprehensively, not a particular restoration, [but] we have to do some of this moving around with the patients.

Dr Prescott explained that at least this practice was now out in the open because in the old system it was not acknowledged. However, he warned that, 'You know that's counter to what we are supposed to be doing'.

Also related to the concern about patient allocation, students reported that more clinic staff were needed. Specifically, they explained that it was frustrating when a

lack of clinic assistants, or patient coordinators who did not do their jobs, caused the clinics to run less efficiently. Marilyn surmised that the, ‘biggest difference between the TEAMS [clinics] was probably the patient coordinator’. In some regard, this represented an issue that resulted from the lack of timely and correct patient allocations to clinic coordinators and also their lack of skills and willingness to address this matter. Sue owed these difficulties to the patient coordinators’ failure to communicate with students and the miscommunications that occurred. She also pointed out that she was unsure ‘what their responsibilities really are’, while another student believed the problems stemmed from the nature of working relationships. Chloe explained: ‘patient coordinators forget stuff and it helps when your patient coordinator is really organized’. She pointed out that there should be a way to monitor their work. She went on to say: ‘It is very frustrating when you turn to somebody to make a schedule and they turn their back to you and say “why don’t you call them?”’

Competency attainment

Both students and faculty stressed that competency attainment impeded professional development. Competencies were contested because they drove the programme, compromised patient care and highlighted the need for faculty calibration in grading. Several students echoed this sentiment. At times, Bill felt that ‘the patients’ chief complaint [was] pushed to the side because’ students needed to complete initial competencies first. He went on to say that ‘the textbook says you haven’t met all the prerequisites to do that’, while Marilyn suggested that to treat or not treat the patient’s presenting problem was dependent on the TEAM leader. Students differed as to whether the school should only provide comprehensive care or also offer limited care when necessary. Bill remarked that the school did not provide limited care. Rachel expressed her view that the school should provide comprehensive patient care, although she felt that there was also a, ‘time limit on how much time they could give to the comprehensive care of a patient’ and that this issue was not ‘addressed enough’ in the curriculum.

Logan said this matter presented an ethical issue, and asked: ‘Do you put off what their chief complaint is to benefit them elsewhere, or do you treat the chief complaint?’ Meanwhile, Chloe pointed out that a salient difference between dental school pre-doctoral clinics and private practice is that: ‘In private practice you don’t have to wait for the faculty to come back. So with private practice, within 1 or 2 days, you can get to the crown’. Along the same lines, Terri mentioned that she still remained concerned and wondered if she would be able to complete an ample number of prosthodontic procedures in order to graduate. Although she expressed an appreciation for the minimum having been indicated by the department, she still remained concerned because ‘I am not getting assigned pros’.

Ashley explained that she had ‘to take on a lot of extra patients just to survive in periodontology’ but in spite of this she, ‘still doesn’t have all the complex phase I’s that are required and I am still taking on new patients to get that’. As a result of putting in some effort to complete periodontology competencies, she ended up placing ‘pros [prosthodontics] on the back burner’. Dadria surmised that the economy was affecting students’ work: ‘Some people have teeth that are slightly periodontology compromised [and] they would rather take them out than have the cleaning because the cleaning will cost more in the long term’. Another problem Dadria

pointed out was the occasional urgency of placing patients' needs above fulfilling competencies: sometimes patients' 'immediate needs could be taken care of first before they get sent on'. While sacrificing the completion of her competencies, she explained that she had a 'patient and two years later he has a complex medical history, he has all these needs, like abscessed teeth'. As a result she needed to provide limited care first.

Faculty also described the limitations of using competencies to drive programme requirements. Dr Simpson, a non-TEAM faculty, complained that prosthodontics had just continuously 'dumbed down our competencies'. To illustrate the depth of the problem, he explained that, 'We have 25 different steps now throughout fixed and removal competencies, if a student does each one competently once, then they are considered competent', and if 'they have 10 patients and they do 10 impressions, they are going to get it one time'. It seemed evident that there was no agreed-upon standard or practice for defining competency attainment. Along the same lines, the definition of what constitutes a competency still draws ire – as Dr Manov explained, 'it's the department faculty that determine competencies, not us as TEAM leaders and sometimes we get hog tied with that ...', making things difficult, 'and I don't know [if] we should have the authority or not'. Dr Fritz raised the following question: 'How is competence defined?' He asked if competencies meant, 'those practices which students perform with a given set of steps or if it referred to procedural competencies, governed by a set of checkmarks'.

Discussion

Essentially the TEAM programme brought faculty together, and increased opportunities for students to offer alternative treatments and encouraged them to become more competent as practitioners. Programme elements that supported professional development were evidenced by the use of *just in time* consultation, modelling by faculty and teaching in multidisciplinary clinics. All of these elements contributed to promoting the teaching of critical thinking skills, and therefore strengthened the move to this new model of clinical education. Signs of continuous improvement were observed during the second year of the programme, yet several underlying issues continued to hamper its full implementation.

One outcome of the TEAM programme was the collaboration between team leaders, faculty and other departments that helped strengthen the programme. Observing faculty consulting together in the clinic was, in particular, highly regarded by faculty and students. As the findings showed, the students were the direct beneficiaries of this collaboration as they were able to witness and engage in treatment planning. Pascaris *et al.* (2008) mention that change usually happens in a spiral fashion rather than in a linear fashion. For change to be successful, necessary time and effort is required to explain the roles and expectations held by various organisational members involved in the process.

Giving students opportunities to complete multiple procedures at one appointment built the student skill level, accelerated patient care and empowered students. However, despite their best efforts, the programme did not always serve the students' learning because individual time with TEAM leaders was not always available to them. Incidentally, not everyone had positive things to say about the TEAM programme. This is quite acceptable in a change process where some show solid commitment and support to the initiatives while others resist. Some stakeholders

who find traditional organisational values undergoing a change, may oppose moving decision-making control over to those chosen to lead the change process. This is not uncommon and was pointed out when some faculty questioned how TEAM leaders were selected – implying that some were not suitable choices. Pascaris *et al.* advise that: ‘it is essential to recognise that the introduction of new methods and approaches will be unsettling to social systems that inherently protect themselves from the possibility of change’ (2008, p. 48).

Pascaris *et al.* (2008) support self-assessment, with or without external consultation. While internal assessment is necessary to check periodic progress, external assessment can support or vindicate internal claims at the same time while providing transparency of assessment. Overall the TEAM leaders became more cognisant of the students’ skill levels because they had an opportunity to observe them daily. Thus, they knew both their strengths and weaknesses and were able to assign patients more appropriately.

Students were now demonstrating professional behaviour, as opposed to the first year of implementation (Behar-Horenstein *et al.* 2012), and this was indicative of how expectations for student decorum had taken hold. Students going through the TEAM programme worked with and learned from faculty experts across disciplines (i.e. periodontology, operative and prosthodontics). They also began to view patients’ problems holistically. While referring to recent research studies on leadership behaviours and effective change management, Higgs and Rowland (2008, p. 13) mention the important shift from doing change ‘to’ people versus doing change ‘with’ people. In their opinion, the former arouses negative emotions and impedes the change process. Harvey *et al.*, supporting the claim, mention that: ‘over time, change initiatives may contribute to the institution’s operational efficiency, but only if accompanied by the support of insiders (i.e., faculty), whose buy-in may ensure that the changes are lasting’ (2006, p. 161). Grove *et al.* (2009) concur and point out that although faculty may acquire instructional strategies and change beliefs, this process may take years to fully integrate into their instructional practice.

The importance of transparency and sharing information throughout the programme initiative should be underscored. The results of this study were eventually disseminated to the faculty participants many months after the findings were available. A timely presentation to all faculty involved in the programme could have ensured that both the faculty and administration understood the utility of the TEAMS programme as well as the bottlenecks, including competency attainment and patient allocation which circumvented its progress along the way.

Unresolved programmatic issues

Some programmatic issues hindered professional development (Evans 2009, Grove *et al.* 2009, Hoban and Erickson 2004). Problems remained unresolved with respect to patient allocation. Previously, faculty had expressed their concern about having patient care shared among more than one student. However, during the follow-up meeting with faculty, they reasoned that this practice had become a necessity due to the clinic’s poor patient pool and the need for students to complete certain competencies. The authors point out that patient sharing is antithetical to providing patient-centred comprehensive care. Using technology and records that indicate what competencies students still need to complete, the authors believe it is possible

to develop a system for assigning patients that promotes a process of allocation more closely aligned with students' needs. Creating such a system would require, however, cooperation among clinic coordinators who assign patients and some guidelines to ensure that students across the clinics have equal or stratified opportunities to receive the kind of patients needed to complete their competencies.

Another unresolved matter was the issue of competency attainment. The question of who determines the competencies was still unclear. What behaviours and frequency characterise the attainment of a competency and how is it defined? Moreover, the larger issue to consider is why the programme is still driven by competencies rather than standards of care that involve working with each patient as if they were being treated in a private practice. The notion of deconstructing every clinical activity into discrete, gradable behaviours may make teaching more complex and onerous than it needs to be. Additionally, what evidence supports that the competency system leads to training an effective and competent general practitioner rather than a different approach that emphasises adherence to standards of care? Also, how many times does a student need to complete a procedure without error to signify competency? Without calibration across departmental faculty and agreement on frequency, the competency system is a subjective form of assessment.

The notion of providing comprehensive patient care that is dependent on students' attainment of competencies may be contrary to patient care. What happens when students' needs to complete competencies clash with the patient's needs? Thus, a question about ethical care is raised. The pre-clinical education model does not make comprehensive patient care its primary objective, especially in a programme that is driven by competencies and that relies on patient sharing as a normative practice.

Recommendations

To ensure that the programme sustains its current level of success and embraces greater outcomes, we offer the following recommendations:

- (1) Make the results of educational studies transparent to all faculty and invite dialogue.
- (2) Invite the TEAM leaders to meet on a regular basis to explore their thoughts about planning and teaching (Loucks-Horsley *et al.* 2003). Because of the rapidity of changes in technology, it is important to be mindful of designing ongoing professional development opportunities that allow participants to work with change rather than be left behind (Hoban and Erickson 2004).
- (3) Hold regular meetings among faculty working in clinics to brainstorm the specific programmatic, educational and student issues that arise. This practice will enhance collaboration, foster shared decision-making and promote the effectiveness of the overall model.
- (4) Consider whether the competency model is best suited for promoting the clinical education model that aims to provide patient-centred care.
- (5) Emphasise various forms of professional development. For example, the notion of *just in time* consultation is similar to grand rounds, with the exception that it typically engages only one or two pre-doctoral dental students at a time. One way to promote a patient-centric comprehensive care model would be to institute grand rounds for each patient. Although time-consuming, all

students would hear the case and provide input prior to the assigned student beginning treatment. Additionally, by having faculty model critical thinking in the multidisciplinary clinics, these practices will foster professional development among students.

Conclusion

Several components of Loucks-Horsley *et al.*'s (2003) recommendations for effective professional development were evident in this study. First, the study provided opportunities for faculty to examine the teaching practices they used in the clinic. Second, the findings showed that there were numerous opportunities for faculty to collaborate with colleagues and other experts to improve their practice. Third, the administration supported faculty by placing them in leadership roles. Fourth, what faculty and students reported as successes or challenges related to the new clinical education model were inextricably linked with other parts of the dental curriculum. Fifth, the TEAM model was grounded in a system of continuous observations of students and evaluation that was dedicated to improving their learning (Loucks-Horsley *et al.* 2003).

Any study of the successfulness of organisational change or professional development initiatives is influenced by the context in which learning occurs. Observing and documenting participants' reflection on their practice, sharing ideas with colleagues and trying out new ideas will result in deepened learning and in increased ownership of the change process. Future studies should encourage TEAM leaders to engage in a continuous study of their programme, examining its benefits and limitations, and of their own learning practices with the assistance of outside researchers. This practice, albeit time-consuming, would offer insight into the similarities and differences between professional development in this setting and that which occurs in other school settings.

The authors recommend that TEAM leaders be included as the primary agents in this inquiry rather than the recipients because when learning is contextualised and collaborative, it leads to a self-sustaining process of knowledge-building (Bereiter and Scardamalia 1993) and sustained learning. Although the researchers initiated this inquiry, inviting the TEAM and the staff into an investigation of their instructional practices, their assumptions and viewpoints, while suspending judgement, and trying out new ideas in action are key to the processes of institutionalising change and professional development (Hoban and Erickson 2004). Such an endeavour supports self-assessment and ownership.

Finally, this study showed that while adding work responsibilities could have threatened the programme's viability, the faculty undertook this programme with zest and a 'we can do this' attitude, suggesting that the faculty were intrinsically motivated to make changes (Evans 2009). Increasing the work burden on administration and faculty may jeopardise the change process if leaders are unable to provide direction and guidance to others in such initiatives (Pascaris *et al.* 2008). Higgs and Rowland explain: 'there is clear, and growing evidence that the role of leaders in the change process does impact significantly on the success of change' (2008, p. 12). From the follow-up focus group discussion, it became evident that the TEAM leaders had organised regular meetings on their own to discuss issues regarding the programme. Echoing Higgs and Rowland, the TEAM leaders took

ownership for the programme and its success, an action that was both meritorious and indicative of their desire to see the programme thrive.

In conclusion, the exchange of ideas, the development of critical thinking skills and the collaboration among students and between faculty and students were probably the greatest benefits of the change initiative. The greatest hindrance of the continued implementation is its reliance on competencies to determine student skill development and progress towards becoming competent practitioners. Students who participated in this study are likely to have a better understanding of the roles of other dental professionals and the context in which they will be working by having grappled with patient care and professional issues in the TEAM programme. The experiences of the study participants could also make a worthwhile contribution to programmes in other professional schools that are pursuing the same goal and that will, undoubtedly, face similar hurdles.

Note

1. Endodontics focuses on the diagnosis, prevention and treatment of diseases of the dental pulp; prosthodontics is concerned with restoration and maintenance of oral function by the replacement of missing teeth; periodontology is dedicated to the study and treatment of diseases of the periodontium and soft tissues; operative dentistry focuses on diagnosis, treatment and prevention of tooth disease or trauma; treatment planning focuses on diagnosis of tooth problems and developing ways to treat related conditions; oral and maxillofacial surgery and diagnostic sciences focuses on surgical treatment of tooth disease or preparation for artificial devices designed for restoration.

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