

# A Model for Cultivating Dental Hygiene Faculty Development Within a Community of Practice

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*Abstract:* There is a need to explore approaches in faculty development that will foster change in actual teaching practices. The literature suggests that there should be more deliberate use of theory in faculty development research. This study addressed this gap in the literature by exploring social learning theory in the context of communities of practice and applying this theory to a dental hygiene faculty development program. The purpose of the study was to determine if participation in a community of practice helped dental hygiene clinical instructors implement new teaching strategies by providing ongoing support for their learning. In addition, the study explored whether the level of participation in the community changed over time. A retrospective self-assessment questionnaire consisting of four open-ended questions was administered to a group of clinical dental hygiene instructors at the end of the 2010 academic year. The narrative data were analyzed thematically using qualitative methodology. The results indicated that participation in the community of practice helped clinical instructors make effective changes in their teaching practices by optimizing social learning opportunities. The responses also revealed that instructors became more comfortable participating in discussions as they identified with other members of this unique community.

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The literature recognizes that effective faculty development programs are necessary to improve teaching practice and support professional growth.<sup>1-16</sup> However, attendance at didactic sessions may have little effect in changing the teaching practices of participants.<sup>17</sup> Most faculty development initiatives are formal programs such as workshops and seminars,<sup>1,9,16</sup> in which there is little opportunity to help faculty members implement new knowledge and teaching skills in the workplace. Therefore, there is a need to explore approaches that will foster change in actual teaching practices on an ongoing basis.

Haden et al.<sup>7</sup> reported a scarcity in the literature on outcomes of faculty development initiatives in dental schools. The Best Evidence in Medical Education Collaborative (BEME)<sup>1</sup> has provided the most comprehensive systematic review of the effectiveness of faculty development and served as an important resource in our study. Haden et al.<sup>7</sup> described BEME as “an international organization of health professions

educators who share a mission to move the education of care providers from opinion-based education to evidence-based education.”

In the BEME review published in 2006, Steinert et al.<sup>1</sup> pointed out that research on faculty development is undertheorized and suggested there should be more deliberate use of theory in faculty development research. Educational theory helps us to understand how people learn, recognizing that different theoretical models may be more appropriate in certain learning situations. The literature indicates there is little information as to how participants in faculty development programs actually learn.<sup>4,5</sup> Therefore, more research into how people can best learn to become more effective educators would be of great value. Our study addresses the gap in the literature by exploring social learning theory in the context of communities of practice and applying this theory to a dental hygiene faculty development program.

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## What Is a Community of Practice, and How Does It Work?

Social learning theory examines how people learn from others. This theory may be explored from such perspectives as psychology, sociology, and social psychology—all of which agree that we learn from other people in all our social relationships.<sup>18</sup> The community of practice provides a situated framework for social learning to take place. Wenger described the learning that occurs in a community of practice as a social process in which people share their experiences and knowledge in free-flowing ways that foster new approaches to problems.<sup>19,20</sup>

At least three elements are required to define a community of practice of clinical dental hygiene instructors. First, members of this community share a sense of joint enterprise.<sup>19,21,22</sup> This is not just a gathering of people with random interests. As dental hygiene educators, they come together in the context of common purpose and shared interests. Their purpose is to educate dental hygiene students and this goal is understood by the community.

Second, members of this community meet in a context that reinforces mutual engagement.<sup>19,22</sup> Members participate and form relationships with each other, and it is through these relationships that common understanding of their shared experiences occurs. Dental hygiene instructors have a common purpose in educating students and form relationships with each other based on this mutuality.

Third, members of this community have a shared repertoire of experience.<sup>19,22</sup> Dental hygiene instructors come together in the community to share stories of their experiences in the clinic. Storytelling becomes a shared learning experience between the listeners and the storyteller.<sup>23</sup> Each member of the community understands the premise of the storyteller's experience because he or she has a special shared interest with the storyteller. In turn, members add their perspectives to the story by reflecting on their own experiences. This commonality within the community of practice allows members to engage in effective rhetoric. The community of practice provides opportunities for instructors to discuss clinical teaching problems and share best teaching practices.<sup>22,23</sup> Capturing the knowledge gained by storytelling and making it available to each other are ways of cultivating the knowledge that already exists

within the community of practice. Narratives, discussions, and debates support a learning environment that builds the collective wisdom of the community.<sup>19,22</sup>

Most dental hygiene educators are excellent practitioners; however, they do not have any formal training in education prior to becoming clinical instructors.<sup>2</sup> Instead, they rely on individual experiences in the clinic with students and patients as their “education” for learning how to teach. They must transform each clinical experience into knowledge of what did or did not work; this new knowledge is then applied to future similar experiences. This process is contextual and experiential in nature.<sup>24</sup> Brief discussions among clinical instructors allow for some social learning, but the potential for tapping into the larger body of existing knowledge of the community is often lost. Therefore, although the community of practice exists, it is unlikely to achieve its full potential unless efforts are made to intentionally optimize the social learning opportunities within the community.<sup>22</sup>

An organization must find ways of bringing the community together so that discussion among its members can occur. Through participation and mutual engagement in the community of practice, the individual gains knowledge from the multiplicity of experiences of community members.<sup>19,22</sup> In the case of the clinical instructors, they learn how others actually teach in the clinic based on real-life experiences.<sup>25,26</sup> As a result, an instructor returns to the clinic with knowledge derived from both personal experience and the clinical experiences of other instructors. In return, the community itself is shaped as knowledge of new experiences is introduced to the community and interpreted by its members. The sharing of experiences by members of the community contributes to its collective knowledge and transforms it over time.<sup>18,19,22</sup> This dynamic community influences the learning environment for everyone and serves to benefit the entire institution.

The 2004 report of the American Dental Education Association (ADEA) President's Commission on Mentoring recognized the value of mentoring programs and encouraged dental schools to foster mentorship within their institutions.<sup>27</sup> Vanchit et al.<sup>28</sup> reiterated the need for “programs focused on long-term development of future faculty members within our dental schools including mentoring programs.” Mentoring can be burdensome and challenging for the mentor,<sup>3</sup> but mentorship within a community of practice is a less onerous task. The cultivation of a community of practice provides a type of informal

mentorship in which the flow of knowledge does not follow the traditional mentor-protégé structure, but consists of a shared and nurtured learning experience among all community members.<sup>19,21,22,29</sup> The community of practice supports an equal relationship built on respect and recognition that learning is a mutual experience. Novice instructors learn from the more experienced instructors, but they also contribute to the others' learning. Participants feel valued as they receive recognition for their contributions to the overall knowledge of the community. As instructors become more confident within the community and as they identify with their mentors, their own identities transform.<sup>21,29,30</sup> The possibility of viewing themselves as future experienced mentors becomes more real as their participation in the community of practice increases. As dental and dental hygiene schools deal with increasing faculty shortages,<sup>31-36</sup> mentorship can play an important role in professional growth and career advancement.<sup>37-40</sup> This, in turn, contributes to the retention of existing faculty members and their overall satisfaction with the workplace.<sup>41</sup> Nurturing faculty members within a community of practice becomes a valuable tool in this process. This article describes a study conducted to determine if the cultivation of a community of practice within the clinical teaching section at the Dalhousie University School of Dental Hygiene had an effect on the teaching practices of its participants.

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## Methods

The project was submitted for human ethics review to the Health Sciences Research Ethics Boards at Dalhousie University, and approval was granted on March 10, 2010. A literature search was conducted on PubMed, CINAHL, ERIC Collection, Academic Premier Search, and The Cochrane Library. The following key words were searched: faculty development, dental hygiene education, community of practice, mentorship, continuing education, clinical teaching, qualitative research, faculty shortage, and social learning. Abstracts were reviewed; if deemed relevant, full-text articles were retrieved. In addition, the *Journal of Dental Education* and the *Canadian Journal of Dental Hygiene (CJDH)* were searched separately for relevant articles. The primary investigator also hand-searched information derived from attendance at the 2009 Annual Dental Hygiene Clinical Educators Workshop held in San Antonio, Texas.

In September 2009, faculty members from the Dalhousie University School of Dental Hygiene attended a presentation titled "Faculty of Dental Hygiene: A Community of Practice." After the presentation introduced the concept of community of practice, faculty members engaged in discussion and agreed that dental hygiene clinical instructors met the necessary elements of a distinct community of practice. The newly defined community was supportive of a faculty development initiative that would focus on improving clinical teaching practices. Instructors were told that the faculty development program would consist of three components: 1) attendance at a series of seminars aimed at effective teaching strategies; 2) application of new teaching strategies in the clinic; and 3) attendance at a thirty-minute meeting (called a "huddle") prior to each assigned dental hygiene clinic to share teaching strategies and problem-solve with other instructors.

Seven of the participants had been teaching in the clinic for more than ten years; their clinical teaching assignments ranged from one to three days per week in both first- and second-year dental hygiene clinics. Two of the instructors had approximately five years of experience and taught two days per week in both first- and second-year dental hygiene clinics. There were two new instructors who had taught in the second-year dental hygiene clinic for less than two years. All clinical dental hygiene instructors held a bachelor's degree; one also held a master's in education degree, while another was studying for a master's in education. The participants included one assistant professor and one lecturer (both of whom taught didactic courses in dental hygiene in addition to their clinical teaching); the remainder were instructors, who taught only in the clinic setting. All instructors assumed the same role while supervising patient care in the clinic.

## The Seminar Series

A total of eleven clinical instructors out of a possible fourteen attended at least two of the three seminars. There was recognition that participants may not be able to attend all of the seminars, so each session was videotaped and could be viewed at any time. Both novice and more experienced clinical instructors attended the seminars, bringing with them different levels of teaching experience. The seminars consisted of three two-hour sessions spread over a four-month period. Each session began with a short didactic presentation. The rest of the ses-

sion was interactive and included role-playing and group discussions. Participants had an opportunity to share experiences related to the seminar topic and to discuss barriers to implementing the new teaching strategies. During each session, the participants chose one or two new strategies to practice in the clinical setting. A revised clinical teaching assessment form<sup>42</sup> obtained from a 2009 workshop in San Antonio was used to remind the clinical instructors of their learning objectives (Table 1). The seminar sessions were conducted as follows.

**Seminar 1.** This session began with an introduction to adult learning theory that included background information on experiential learning theory. Its purpose was to provide instructors with some understanding of how students learn, especially in the clinic setting. Other topics were derived from the educational framework for analyzing teaching developed at the Stanford Faculty Development Center for Medical Teachers.<sup>43</sup> In addition, teaching strategies learned from the clinical teaching workshops in San Antonio were integrated into the subject

matter. Topics included establishing a supportive learning climate<sup>43</sup> and providing effective feedback and evaluation.<sup>42,43</sup> General rules for constructive feedback<sup>42,43</sup> included the following: focus on learner behavior rather than character; provide “just in time” feedback; use specified clinical criteria; have learner self-assess; and develop corrective plan with learner. The importance of providing a good role model for students to emulate was also emphasized. At the end of the session, participants were encouraged to choose one or two teaching strategies they would work on in the clinic over the next few weeks.

**Seminar 2.** Participants were asked to share their learning objectives from the previous session and identify any difficulties in meeting them. All community members were invited to help resolve any unmet objectives and share their own experiences. As a prelude to the second session, the instructors participated in a role-playing session that demonstrated the difference between an expert approach and a guided approach to teaching. In accordance with guidelines endorsed by the ADEA Commis-

**Table 1. Clinical teaching assessment form**

Teaching Strategy	Learning Objective
<b>1. Establish a Supportive Learning Environment</b>	
Acknowledge learners’ challenges.	
Display enthusiasm and effort.	
Help learner to view learning challenges as positive learning opportunities.	
Focus on learner behavior rather than character.	
<b>2. Encourage Critical Thinking</b>	
Use guided questions to help students problem-solve.	
Have students self-assess—DON’T TELL!	
<b>3. Teaching Clinical Psychomotor Skills</b>	
Focus on “back to basics” approach.	
Use psychomotor teaching strategies such as demonstrations and tactile interactions.	
Provide “just in time” teaching.	
Accommodate different learning styles.	
<b>4. Feedback and Evaluation</b>	
Have students evaluate performance using criteria.	
Teach one or two general rules per clinic session.	
Focus on learner behavior rather than character.	
Use “I” messages.	
Be specific—use criteria in the manual.	
<b>5. Managing the Clinic Session</b>	
Focus on one or two problems.	
Help students set clinic goals based on their learning needs and level of competence.	

*Source:* Form adapted from workshop reported in Wallace J. A decade of excellence in clinical teaching strategies and skills. Proceedings of the 10th Annual Dental Hygiene Clinical Educators Workshop, May 14–15, 2009, San Antonio, Texas.

sion on Change and Innovation in Dental Education, there was a strong emphasis on teaching strategies that encouraged critical thinking<sup>44</sup> through a guided approach to teaching. It was recognized that critical thinking skills are essential to the development of future dental and dental hygiene practitioners and that educators need to learn teaching methods that promote these skills.<sup>14,45-47</sup> Student self-assessment and the use of guided questioning by instructors to coach students through problems were emphasized as important strategies in developing critical thinking.<sup>14,42,45</sup> In addition, other strategies for effective teaching<sup>42</sup> were discussed, including the following: acknowledging the learner's problems, using guided questioning, encouraging the learner to actively participate, encouraging reflection and self-evaluation, providing positive reinforcement and constructive feedback, being enthusiastic, and helping the learner to view challenges as positive learning opportunities. At the end of the session, instructors chose one or two learning objectives to work on in the clinic.

**Seminar 3.** This session began with a review of previous learning objectives, and again there was an opportunity for problem-solving and discussion. This last session focused on learning how to teach psychomotor skills.<sup>42,48</sup> It emphasized the “back to basics” approach<sup>42,48</sup> for identifying instrumentation problems and for teaching proper technique. This approach was based on the understanding that correct patient/operator positioning, instrument grasp, and finger rests must be established for proper instrumentation to occur. Instructors learned that “back to basics” is an important teaching strategy when helping students with instrumentation problems. Other strategies for teaching psychomotor skills<sup>42</sup> included how to correctly observe students to identify problems, how to teach using tactile interactions, and how to do a proper demonstration. At the end of the session, instructors chose one or two new teaching strategies to implement in the clinic setting.

## The Clinic Huddle

In between the seminar sessions (time lapse of approximately one month), all participants met for thirty minutes prior to each assigned dental hygiene clinic in what was called a clinic huddle. Clinic huddles were not new to the School of Dental Hygiene, but they had not been used as a venue for faculty development. They were previously used for administrative purposes such as student assignments or clinic updates.

In the context of a community of practice, the clinic huddle became a forum for dialogue and problem-solving among participants. The huddle created an opportunity to reinforce concepts discussed in the seminars and served as a constant reminder to implement newly learned teaching strategies. During the huddle, instructors participated in the shared interest of implementing new teaching strategies in practice. The challenges they encountered as clinical instructors were mutual and specific to them as a defined group. Their participation in the huddle provided them an opportunity to solve these problems and learn best teaching practices from each other. During the huddle, members of the community were asked to share their learning objectives and identify any barriers in applying new teaching strategies. The community as a whole was encouraged to help resolve these barriers. There was usually one individual designated to keep discussion on track, but the huddles were kept informal. Faculty members participated freely in discussions or chose to be peripheral participants who observed and learned from the experiences of others.<sup>30</sup>

## Qualitative Data Collection and Analysis

The literature review supported the use of qualitative methods as an approach worth pursuing to understand the learning experiences of participants in the faculty development program.<sup>1,49,50</sup> To address the credibility of the study, the primary investigator searched for a comparable project that assessed the outcomes of faculty development initiatives on effective clinical dental hygiene teaching strategies. The Department of Dental Hygiene at the University of Texas Health Science Center at San Antonio conducted a series of clinical teaching workshops to address clinical teaching methodologies and reported the outcomes assessment of these workshops in 2008.<sup>47</sup> Questions from the Texas study were used to formulate the questions for this study. Since there were no previous studies that addressed faculty development and the use of social learning theory, the last two questions were modified to gain insight into this experience. The following four retrospective open-ended self-assessment questions were asked of the participants:

1. What (if any) changes did you make to your clinical teaching?
2. What (if any) were the barriers to making these changes?

3. In what ways (if any) did your participation in the community of practice help you overcome these barriers to change?
4. In what ways (if any) has your level of participation in the community of practice changed over time?

The intent of the retrospective self-assessment was to determine if the clinical instructors perceived any changes in their teaching strategies and whether their participation in the community of practice helped them overcome any barriers to change. The questionnaire also explored whether the instructors perceived changes in their participation in the community of practice. Retrospective self-assessments of change are considered to be a reasonable and valid method of program evaluation.<sup>51,52</sup>

During the last academic week of dental hygiene clinics, participants in the community of practice were asked to voluntarily answer the four questions. The questionnaire took approximately thirty minutes to complete. The participants completed the questionnaire in a location convenient to them and then placed the sealed envelope with their consent form and completed questionnaire in the office of the administrative assistant for the School of Dental Hygiene. The administrative assistant collected the questionnaires, ensured that consent forms had been signed, and transcribed the responses verbatim. Numerical assignment of the responses was used to ensure anonymity.

The narrative data gave the investigators rich insight into the participants' experience. Steps were taken to identify the themes as accurately as possible by having each of the investigators blindly review the responses and identify themes. Data were placed into categories based on shared characteristics, and these categories were organized into major themes. The investigators then met as a group to review their findings and determine the themes for analysis.

The major themes, with supporting narrative data, were organized under each of the open-ended questions. Existing knowledge of the theoretical framework of communities of practice was brought into the analytical process to refine emerging interpretations of the study. The investigators were aware of the potential for imposing their interpretations on the instructors' responses, so in order to be as true as possible to the participants' intentions, direct quotes were used to support the themes identified.<sup>50</sup>

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## Results

Twelve of a possible fourteen clinical teaching instructors responded to the questionnaire. One questionnaire had to be discarded because there was no informed consent form attached. Therefore, the responses from eleven questionnaires were reviewed. Analysis of the narrative data indicated that all participants had incorporated new teaching strategies into practice. The findings suggested that participation in the community of practice supported the instructors' learning and helped them make effective changes in their teaching. The narrative data provided insight into the instructors' experience as they participated in the community of practice. The responses suggested that as participation within the community of practice increased, instructors began to feel more confident and comfortable in the community as a whole. Many of these comments reflected a sense of belonging to a special group that shared common interests and challenges. There were a number of major themes that emerged from the narrative responses, presented here by question topic.

### Changes Made to Clinical Teaching

**Encouraged students to think critically.** Nine of the eleven instructors indicated they had employed new teaching strategies to foster critical thinking. The seminars stressed the importance of allowing students to work through problems rather than providing immediate answers to questions. The responses clearly indicated that most of the instructors had incorporated strategies such as guided questioning to coach students through problems. Some of these comments were the following: "Not 'jumping in' answering student questions; encouraging them to investigate or research the answers"; "I tried to change how I responded to DHs' questions. I'd try to get the DH to think through his or her question more"; "After the course, I was determined not to give the answer, I tried to encourage the student to tell me how things went or how did they do, not just give the answer"; "I incorporated the guided questioning technique into my clinical teaching. It is not always a natural teaching skill for me and I found myself constantly analyzing my responses to the students"; and "Trying to get the student to answer questions and to think [critically] with minimal input from me."

The seminars also emphasized that student self-assessment is a valuable tool in the development of critical thinking skills. Instructors were aware that the criteria for clinical competencies were clearly defined in the clinic manual for the purpose of self-assessment, but instructors did not always require students to do this. They indicated that it was sometimes easier to simply tell the students how they performed. Four of the eleven instructors made a commitment to be more vigilant about having the students assess their own clinic performance. Comments included the following: “I tried to have students self-evaluate their clinic performance”; “Allowing more opportunities for the students to self-evaluate”; “I asked the students to tell me how they think they did in clinic”; and “Although my teaching experience was quite brief, I found the study club taught several very helpful strategies. One of the most important strategies for me was giving feedback to the students [to encourage] self-assessment or evaluation.”

**Developed objective terminology.** The use of objective terminology that focused on learner behavior was emphasized during the seminars. Instructors practiced using “I” messages when giving feedback to students.<sup>42,43</sup> These messages help to create a positive learning environment because students understood that it is their actions and not their character that is being corrected. Four of the eleven instructors indicated they had practiced using more objective terminology when interacting with the students. Some of their comments were the following: “I made a few changes in my teaching. I used the ‘I’ messages, relaying back to students what I observed through the practice session”; “My ability improved as I became consistent and repetitive with each clinic rotation. Sometimes the focus was simply to use ‘I’ messages. We learn like our learners with consistency and support”; and “The teaching strategies influenced my ability to communicate effectively and objectively with the clinical learner. This process encouraged critical thinking and positive growth for both myself and the student.”

**Improved feedback.** The seminars emphasized the need for specific feedback that focused on the strengths or weaknesses of the student’s performance.<sup>42,43</sup> Four of the eleven instructors indicated that they had worked at improving the feedback they gave to students. Participants’ comments included the following: “Became more specific when it came to giving feedback to students so they would know exactly where they did well and where they could

improve”; and “Also I tried to give feedback that would help the student view learning challenges as positive opportunities instead of negative feedback from instructors.”

**Managed the clinic session better.** Various strategies were discussed during the seminars to help instructors manage the clinic sessions better. Three of the eleven instructors commented: “I tried to focus on one or two each clinic session”; “I asked students to set goals at the beginning of each session”; and “I also started using objectives for each clinic practice session because I found it kept the students focused and kept me focused. It kept us all on time by focusing on only a few objectives.”

## Barriers to Making Changes

**Session management challenges.** Seven of the eleven instructors indicated that high student-instructor ratios, tending to students’ and patients’ needs, and arduous paperwork created time constraints and made it difficult to implement new teaching strategies. Participant comments included the following: “Time [limited]; being pulled in many directions at once”; “If ratios are high and it is very busy on the clinic floor, the ‘new’ teaching techniques sometimes would not be incorporated as well”; “The barriers were more challenging: time management, ratios, client and student needs”; and “The barriers were time, patients’ needs, local anesthetic elapsing, patients very sensitive to scaling.”

**Behavior change takes practice.** Three instructors recognized that learning and implementing new teaching strategies were ongoing processes and required practice. Comments included the following: “Old habits die hard. Easiest to do what is familiar”; “It is an acquired art”; and “Initially learning the language of effective teaching was a barrier. With practice I was able to recognize appropriate situations to apply effective teaching strategies.”

## Ways the Community of Practice Helped in Overcoming Barriers

**Mentorship in the community.** Nine instructors noted the discussion during the huddles and seminars provided opportunities to problem-solve and learn from each other. They found that the community not only resolved barriers to change, but also reinforced sound practices. Several instructors commented on the positive effect of knowing their problems were similar to others’ and they appreciated

the opportunity of being able to validate their teaching practices. Comments included the following: “Overall, I believe I gained confidence in teaching and in dealing with difficult situations. To outline strategies or simply listen to others’ experiences, I gained a lot of insight and this helped my confidence each time I stepped into the teaching role as I was able to incorporate the teaching strategies that I learned”; “After hearing a few of my concerns about clinic, my community of practice reinforced that I was on the right track—others identified with my problems and barriers”; “Participation in the preclinic huddle—trying to make it more of an opportunity to reflect on our clinical experiences, rather than just the student’s progress”; “This year it was the huddles that were held before every clinic that were very beneficial”; “I found the problem-solving that took place each week during huddle really helped identify students who needed extra help”; “Gave me strategy tools and helpful ideas [to help me] teach in a positive, effective manner. A teaching environment should be positive”; and “I was finding out that others had the same issues. Some of the instructors I have had the privilege to teach with are so encouraging and often I needed affirmation that I did the right thing.”

**Improved communication among clinical faculty members.** Three instructors commented specifically on the improved communication within the community. Examples of comments were the following: “Community of practice was excellent for communication. Participation on a weekly basis was the best form of communication in a very long time”; “Communication within the community of practice was the key component in the reduction of the barriers. Supporting each other within the learning process and recognizing that there is strength when all members practice the same language and techniques. The positive effects become more normal and contagious”; and “As a part-timer the huddles keep you ‘connected,’ therefore increasing consistency with the students even when there are high [student-faculty] ratios.”

## Change in Participation in Community of Practice Over Time

Many of the comments on this question and the previous question had an overlapping theme that acknowledged how the participants identified with other members of the community. Instructors expressed more confidence in knowing that their teaching practices were similar to others and that

other instructors had the same kinds of challenges in the clinic. Instructors commented that their participation changed in the community of practice as they became more comfortable discussing issues with their colleagues.

Examples of comments were the following: “I have learned to open up more about issues I have come across. Happy to find I am not the only one with such issues. I receive and give encouragement”; “It made me feel more confident that other instructors are having the same issues in the clinic and that we are learning from each other. Everyone has something to bring from their own clinical experiences”; “Over time my level of participation has increased in a number of ways”; “For myself, more knowledge means more comfort and more participation”; “I felt starting out this term, I was worried about speaking out and [expressing] my point of view, but I soon realized my opinion was important regarding the students, so I found it was important to speak up. I soon realized my knowledge in this area was respected”; and “I did feel more comfortable sharing personal clinical experiences when given the opportunity to do so.”

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## Discussion

The use of qualitative methodology in this study provided excellent narrative to describe the effects of participation within a community of practice on teaching practices.<sup>1</sup> Prior research on the theoretical framework of communities of practice was brought into the analytical process to refine emerging interpretations of the data.

The BEME review suggested that approaches to faculty development that utilize learning theory need to be further explored.<sup>1</sup> Our study addressed this gap in the literature by looking specifically at dental hygiene faculty development within a social learning framework of communities of practice. This model helped instructors implement new knowledge by providing ongoing support for their learning. In this case, participation in the community of practice during seminars and clinic huddles provided the instructors the opportunity to work through problems and learn from each other. Participation in the clinic huddles served as a constant reminder and reinforcement for change in teaching practices. Results of the study indicate that the participants made changes to teaching practice and acknowledged that discussions within the community of practice helped them overcome barriers to change.



In the BEME review, experiential learning was recognized as a key feature that contributes to the effectiveness of a faculty development program.<sup>1</sup> Instructors in our study had an opportunity to apply and practice what was introduced in a seminar to the clinic setting. Learning in a real-life context such as the clinic provided the best learning environment<sup>53</sup> for the instructors. The immediate relevance and practicality of applying new teaching strategies in the clinic were key elements<sup>1,54</sup> that contributed to the effectiveness of this faculty development program. Instructors responded that they used a variety of strategies to foster critical thinking. The use of guided questioning became an important tool in this process.<sup>42</sup> The instructors recognized that often their first reaction to a student inquiry was to immediately answer the question and that it was a challenge to implement guided questioning. The persistence of practicing guided questioning in the clinic and then reporting to other members of the community eventually led to changes in practice. Other changes made in teaching practice included the use of objective terminology and improved feedback.<sup>42,43</sup> Interestingly, the responses indicated that the instructors recognized the need to continue practicing these strategies in the clinic or risk reverting to old behaviors.

The BEME review also identified peer interaction as a key feature that contributed to the effectiveness of faculty development.<sup>1</sup> This is exemplified in a community of practice in which mentorship becomes a democratic exchange of ideas among peers. Faculty development programs that feature more expert-led mentorship can be challenging because of the discomfort of an unequal relationship.<sup>16</sup> However, belonging to a community of practice builds collegiality<sup>3</sup> by creating opportunities for instructors with varying degrees of experience and work commitment to form more democratic relationships with each other. The novice instructor learns from the more experienced instructor, yet the novice also contributes to the community. Since the learning experience is shared, all participants feel valued for their contributions. In our study, the instructors appreciated the support from the community and took comfort in knowing that others had the same problems in clinic or resolved them in the same manner. They identified the ability to share experiences and problem-solve with others as the way the community helped them implement changes in their teaching practice. Instructors commented generally on the positive experience of participating in the community of practice. Many identified improved communication among faculty

members as a positive outcome. This reinforced collegial relationships and created a more positive work environment. Research has recognized that a positive environment is an important factor in faculty retention,<sup>27,41</sup> so initiatives to promote collegiality should be considered.

While the participants in our study had indicated during the introductory seminar a cognitive understanding of the definition of a community of practice, participation in the huddles provided the opportunity for them to experience a community of practice in action. Their responses suggested the experience increased their feeling of being part of the community of dental hygiene clinic instructors. They identified with each other and reaffirmed their challenges as clinical instructors. Many of their comments were quite passionate and in some cases suggest relief in knowing that others have had the same experience. The responses also revealed that instructors became more comfortable participating in discussions as they identified with other members of this special community. The literature on communities of practice suggests that participants often have a change in identity as they become more familiar with and active in their community. Very often, they begin to identify with more experienced members of the community.<sup>19,30</sup> Therefore, not only does the community help instructors improve their teaching practices, but it also has the potential to play a role in their future career aspirations. This possibility is supported in research that has found mentorship can contribute to professional growth and career advancement.<sup>8,27,37-39</sup> Hence, the cultivation of communities of practice may contribute to the recruitment and retention of future faculty members.

This study provided valuable insight for a specific case, but had some limitations. Response bias may not have been preventable given the small sample population and the participants' familiarity with the primary investigator. The sample size and limitations of the qualitative assessment do not allow the generalization of results to broader populations. However, the investigators attempted to provide a detailed description of this learning model for its possible replication in the future. Critics of qualitative methodology have concerns about the potential for investigator bias, so frameworks for ensuring rigor in this form of work were necessary<sup>50</sup> and measures were taken to monitor bias and subjectivity. Most importantly, the investigators used direct quotations to confirm that the findings reflected the participants' experiences and ideas. The elimination of sample

bias<sup>50</sup> was also taken into consideration. The instructors in the community varied in rank, experience, and years of service, but contributions from all members were considered valid and used in the analysis. While the results are encouraging, it is recognized that behavior modification is an ongoing process. In the future, a long-term study with more rigorous design and mixed methodologies to capture the complexities of faculty development interventions should be used.<sup>1</sup>

## Conclusions

This study provided a model for initiating a faculty development program within the framework of a community of practice. In order to cultivate the community of practice, it was important that members first defined their community. While the learning in the community was informal, it was structured in a way to make it intentional. Creating forums for engagement and providing a focus for discussion helped to optimize social learning opportunities. The results of the study indicate that participation in the community of practice helped to bring about changes in teaching practices and some members' participation increased as they became more confident sharing ideas with their colleagues. Responses indicated that instructors were comforted by the knowledge that their colleagues used similar teaching strategies and experienced many of the same challenges in clinic. This experience helped to validate their membership within the community of dental hygiene clinical instructors. The community provided ongoing support for instructors at all stages of their careers and added to the vitality of the faculty. Hence, the cultivation of this community of practice extended beyond the acquisition and implementation of new knowledge. This model thus contributed to a more collegial and positive work environment.

Cultivating communities of practice can contribute to academic communities that value teaching and learning. The community of clinical dental hygiene instructors at Dalhousie University plans to continue using this model as a framework for their learning. If the interest remains, the community will be able to sustain itself. However, communities grow and change over time, and the needs of the community must be met in order to maintain it. The effort is worthwhile since a nurtured community of practice will strengthen its collective knowledge and have the potential to provide these communities with the educational leadership of tomorrow.

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