Outcomes Assessment of Dental Hygiene Clinical Teaching Workshops


Abstract: Faculty development courses related to acquiring clinical teaching skills in the health professions are limited. Consequently, 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 methodology. The goal of these workshops was to promote a problem-solving learning atmosphere for dental hygiene faculty to acquire and share sound clinical teaching strategies. To determine the value of the annual workshops on clinical teaching and evaluation, a web-based qualitative program assessment was developed using software by Survey Tracker. Four open-ended questions were designed to elicit perceptions regarding what significant changes in teaching strategies were achieved, what barriers or challenges were encountered in making these changes, and what strategies were used to overcome the barriers. The assessment was sent to dental hygiene educators representing thirty-eight dental hygiene programs who had participated in two or more of these workshops. Twenty-eight programs provided collective responses to the questions, and the narrative data were analyzed, using a qualitative methodology. Responses revealed that programs had made productive changes to their clinical education curricula and the information gained from the workshops had a positive effect on clinical teaching.

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Clinical education is the core of dental hygiene curricula. However, health professions faculty typically receive minimal formal training in the area of clinical teaching. In fact, a significant portion of dental hygiene clinical teaching is provided by practicing clinicians who are hired on a part-time basis to guide students’ learning experiences in the clinical environment and assess students’ progress toward competency. Experienced clinicians usually have extensive instrumentation skills and patient management experience that have become part of their unconscious brain; in other words, they can routinely perform professional tasks without actively thinking about the component parts. While these same experienced practitioners may assume that being a skilled clinician affords them the ability to teach, they often are surprised that explaining complex skills to the novice student is complicated. Thus, teaching assessment skills, instrumentation principles, and other patient treatment procedures to students becomes a challenge for experienced practitioners who enter the academic environment with no formal teaching-learning theory or practice as a foundation.

Trends in health professions education suggest that the quality of teaching skills has a significant effect on student learning outcomes. Consequently, faculty continue to search for instructional best practices that promote effective teaching and student learning. Further, innovative technologies are allowing faculty to develop active learning strategies that enhance critical thinking. As a result, traditional teaching methods (e.g., lectures, passive demonstrations) are seen as less effective by students, educational specialists, and many health professions educators. The health care education literature provides substantial information related to teaching and learning in the form of observational opinion studies (i.e., student perceptions of faculty teaching styles), teaching methodologies, professional development approaches, and anecdotal teaching tips. Similarly, the dental education literature includes studies addressing constructive faculty teaching characteristics, effective teaching methodologies, faculty development, and curriculum design to address current trends and best practices in health professions education. Recently, a collaborative review of the effects of faculty development on
teaching effectiveness in dental education offered the first in a series of future articles that will provide comprehensive information to assist dental schools and allied dental programs in “designing professional growth opportunities for their faculty.”4 Finally, a review of the dental hygiene education literature reveals minimal information directly related to faculty development in clinical teaching. Thus, there appears to be a gap regarding how novice and experienced clinical faculty actually obtain theoretical foundations related to teaching psychomotor and affective skills, as well as participate in practical applications of clinical teaching methods.

In response to this perceived need, the Department of Dental Hygiene at the University of Texas Health Science Center at San Antonio has conducted a series of clinical teaching workshops to provide training and information on a variety of topics related to clinical education. Since 2000, the workshops have been offered annually in two- to three-day formats, depending on the theme. Workshop sessions have varied each year, based on a structured needs assessment elicited from workshop participants. Topics in this faculty development series have ranged from competency-based education, psychomotor skill diagnosis, strategies for promoting critical thinking, and formative and summative feedback and evaluation to community-based learning, documentation of student behaviors, team building, conflict management, and effective communication skills. The overall purpose of these workshops was to provide clinical faculty with the skills and confidence to engage their students in a problem-solving learning atmosphere that promotes clinical competence. Presenters have used a variety of formats to disseminate information and promote critical thinking among workshop participants, including case studies, small group activities, panel discussions, and presentation of video scenarios and trigger tapes depicting clinical teaching and evaluation.

Many workshop participants have reported, anecdotally, that skills and information gained have been incorporated into their schools’ clinical education curricula and their own teaching styles. Consequently, a program assessment format was designed to elicit further information regarding changes that have occurred. The goal of this program assessment was to determine the effects of this series of faculty development workshops on clinical teaching in participating dental hygiene education programs.

Methods

Qualitative assessment methods were used to determine whether dental hygiene programs made changes in their clinical education and/or teaching methods as a result of sending clinical faculty to two or more of the annual clinical teaching workshops. Qualitative inquiry frequently is used to gain insight into people’s experiences by examining what people do, how they perceive their environment, or how they believe and feel about their experiences.39-42 This program assessment used a qualitative case study format to describe the effects of faculty development programs designed to stimulate change in educational practices. Narrative data were collected to discover the processes that had been adopted or redesigned in dental hygiene clinical education programs and verify the outcomes derived from these changes. Results from this assessment were used to reinforce current workshop strategies and guide future design of faculty development programs to meet participants’ needs.

To determine the value of the annual workshops on clinical teaching and evaluation, a web-based qualitative program assessment was developed, using software by Survey Tracker. An initial pilot assessment was emailed to five dental hygiene programs that sent clinical teaching faculty to two or more of the annual clinical teaching workshops. The purpose of this step was to gain feedback on the clarity of the assessment questions only, rather than provide actual program responses to the questions. Suggestions made from these pilot programs were used to refine and finalize the program assessment questions that were used in the final assessment process. These five programs in the pilot assessment were not included in the distribution of the final program assessment to avoid any conflict of interest.

A “purposeful sampling” method is used in a qualitative approach to deliberately select individuals who may be able to provide rich narrative information regarding their experiences or opinions related to the questions or issues being assessed.39-42 Purposeful sampling for this program assessment means that subjects were selected because they attended two or more of the annual clinical teaching workshops offered from 2000 to 2004.39 Because many programs sent multiple faculty members (six to eight), the intent was for faculty from the same dental hygiene program to provide a collective response to the as-
essment questions regarding changes they made to their programs as a result of attending the workshops. Email addresses were confirmed, and the online assessment was sent to workshop participants from schools meeting these criteria (142 workshop participants from the thirty-eight dental hygiene programs). The program assessment questions were distributed to the participating dental hygiene programs one time with no additional follow-up.

Four open-ended questions were designed to elicit the perceptions and experiences of workshop participants. The assessment questions were:

1. What was the most significant change you made to your teaching as a result of attending the dental hygiene clinical teaching workshops?
2. In what way was this change significant to you personally or to your program?
3. When you applied the information from the workshop to your teaching situation, what barriers or struggles did you encounter?
4. How did you resolve these barriers? (Describe what you tried and whether the issues are now successfully resolved, partially resolved, or not resolved.)

The narrative data were analyzed to determine major themes that evolved under each of the assessment questions. Individual sentences were selected as text units or units of analysis. Text units were formatted from the verbatim narrative responses provided through Survey Tracker. Each of the text units was coded into broader subject categories and these categories organized into major themes. Major themes, with their supporting narrative data, were organized under the corresponding assessment questions. These are reported in the next section of this article.

### Program Assessment Results

Workshop participants representing twenty-eight of the thirty-eight programs surveyed provided collective responses to the four open-ended questions. Analysis of narrative data provided under each question indicated that changes had been made to clinical education methods on various levels and the information gained from the workshops had a positive impact on clinical teaching techniques for both novice and experienced faculty members. Table 1 shows the assessment questions with corresponding themes that emerged from the narrative responses. Subsequently, each of these themes is presented with supporting narrative data.

### Significant Changes Made in Clinical Teaching

**Improvement in Competency-Based Clinical Teaching and Evaluation.** One of the critical points in the workshops focused on redesigning clinical programs to reflect competency-based concepts. Workshops emphasized decreasing the time spent in summative evaluation or grading and increasing the time in formative evaluation or providing nongraded corrective feedback. Respondents noted that they had “changed to competency-based clinical teaching.” Other programs instituted “less grading of simple procedures such as calculus detections, thus having the students learn from repeated experience without the stress of grades.” Faculty comments suggested that the workshops provided support or rationale for instituting change, such as: “We were just in the
middle of revisiting our clinical evaluation process and we felt very confident in going ahead with it after attending the conference. We improved the wording of the competencies to truly reflect what the students were learning.” Still others focused on the actual clinical evaluation procedures and indicated that they changed “the way we write up our clinical observations and how we do evaluations vs. competencies.” Attendees commented that ideas presented in the sessions on competency-based evaluation have “removed some of the mystery surrounding evaluations and decreased the stress level for faculty.” They were made more aware that “evaluation is based on competency vs. number of requirements” that students completed.

Competency-based concepts also were incorporated into the preclinical teaching phase by several programs. Programs integrated more formative evaluations into the preclinical lab sessions that provided students with feedback on their skill progression, but did not assign grades to these assessments. Thus, “students have formative/summative evaluations which give them a longer time to learn a skill before being evaluated for a grade. This encourages the students to continue to do their best and not get discouraged.”

**Improvement in Diagnosis of Clinical Skill Acquisition.** The purpose of workshop sessions on clinical skill diagnosis and corrective feedback was to provide clinical faculty with practical teaching ideas and strategies for working productively with students. Participants reported that “specific solutions were offered. By attending the seminar, I was able to brainstorm with other educators to help find answers.” Following the workshop sessions, participants stated that they started “diagnosing instrumentation problems early on in preclinic and continuing that diagnosing in the clinic with more advanced students.” To assist faculty with providing corrective feedback during skill diagnosis in clinic, verbal and nonverbal communication skills were discussed that either facilitated teaching or detracted from the learning atmosphere. Positive and negative nonverbal body language was demonstrated during workshop sessions through role playing and videotapes of actual teaching scenarios.

After returning to their home campuses, participants reported “being [more] aware of postures [body language] of instructors when helping students in the clinic.” Further, verbal skills were addressed from the perspective of providing both reinforcing and corrective feedback to students, as well as docu-

menting clinical behaviors for future reference and decision making. Responses supported that faculty liked “giving positive feedback to students—this is just one of the many significant changes we made influenced by your seminar.” Other changes reported were choosing words more carefully and becoming “much more aware of how I phrase feedback and I listen much more carefully.” One personal introspection regarding changing clinical teaching and evaluation included recognition of the student’s responsibility for learning: “I have made a sincere attempt to more accurately reflect expectations of students’ performance. I have encouraged students to be realistic in their own expectations—moving toward competence—and to be more forgiving of themselves if they are not initially successful. I am allowing students to take responsibility for their own performance and not trying to take credit for their success or failure.”

**Reinforcement of Current Clinical Teaching Practices Through Networking.** Participants reported that one of the most significant outcomes from these workshops was the networking that occurred among faculty from across the United States and Canada: “I met some people near my area. I am in a remote area and it is hard to find other DH educators to visit with.” Faculty shared ideas, explored solutions to problems, and discussed common issues in small and large group sessions. Many felt that the discussions reinforced their current clinical systems: “We attended as a faculty . . . and felt very good about what we were doing.” Others stated that the “workshop proved we were already on target. It was nice to receive affirmation.” When faculty from an institution came as a group, they found that “it was a great reinforcement that as a department we are on the right track.”

**Barriers to Changing Clinical Education Programs**

**Resistance to Change.** Despite positive results from the workshops, faculty, clinic coordinators, and program directors who attended the sessions found that changing existing systems was challenging. The most common issue was faculty and administrative resistance to change. Respondents reported that faculty colleagues expressed fear over loss of control in evaluation. Further, faculty lacked appropriate communication skills when working with students in the clinic. Clinic coordinators were concerned about lack of faculty calibration during teaching and evaluation
sessions because faculty held differing clinical teaching philosophies and values, which were not always consistent with concepts advocated in the workshops. When making a change to a more nongraded system, one program reported “discomfort of faculty with not considering numbers of requirements and considering the long-term consequences of the changes since none of us had used this kind of system previously.” Some faculty who were comfortable in their current roles resisted more interaction with students during the clinical process. One said, “I’m the lead instructor for three other instructors who teach preclinic, and some faculty wanted to remain as checkers instead of one-on-one instructors using each teaching moment.” In some cases, pressure on faculty to learn new procedures and teaching techniques resulted in “resistance to change by uncalibrated instructors. New paradigms can be difficult to embrace initially.” Some programs reported that when they initiated faculty development activities following attendance at a workshop, “instructors didn’t really think activities were necessary (the old roll the eyes look when we said we were going to do them). But once the activity was completed, a great discussion also took place.”

**Time Limitations.** Another significant barrier reported was the identification of increased time needed for faculty to observe and document student performance. “I encountered struggles with the faculty over the amount of paperwork required of my clinic,” said one participant. “We in health care for the most part are by nature doers and not necessarily documenters. This provided a daily opportunity for them to do so. Once they saw the results, I had no problem.” Implementing a student-centered learning approach also can cause changes in faculty ratios in clinic: “It takes a lot more time to evaluate the process; therefore, it requires more faculty in order to meet the needs of the other students.”

**Resolving Barriers to Change**

Workshop participants were asked to provide ideas they used to resolve the barriers that arose when implementing changes to their clinical teaching programs. Resolutions included regular faculty meetings to discuss the changes, documenting observations of student behaviors, attending additional clinical workshops, and participating in faculty calibration activities. Several programs examined their teaching philosophy and reported that they “created a teaching philosophy for the preclinic course with input from all preclinic faculty that term . . . having a written list of expectations of the students created by the faculty and a list of what the students can expect from the preclinic faculty. This has been partially successful in creating a climate of supportive teaching.” Others focused on the teaching-learning environment: “We have become more hands-on in clinical teaching. In other words, it is not all about finishing a patient and meeting their time deadline; it is about preparing our students for entry-level dental hygiene.” One program discovered that the “establishment of a non-threatening environment and respectful attitude encourages students to risk failure. Implementation of a self- and faculty evaluation form [document] of affective domain characteristics helped identify specific areas for improvement, so students could effectively set attainable goals.” Over time, resistance to change lessened “based on the success of the grading system . . . based on when they [faculty] saw how the students were behaving.”

Finally, programs seemed to be more successful in implementing and managing change when the administrators were supportive and encouraged these changes. “I asked them to try the new approach of less grading to see if it was feasible in our institution,” said one participant. “I think my enthusiasm for the activities and facilitating with each group as they were attempting them helped them to see the value.” Thus, administrative support appears to be an essential component for implementing changes in clinical teaching programs.

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**Discussion of Program Assessment Outcomes**

The purpose of this qualitative program assessment was to determine if the clinical teaching workshops provided meaningful experiences for the participants that led to changes in program clinical teaching and evaluation methods. In addition, the assessment sought to confirm the anecdotal information received from past attendees indicating that positive changes were made in their dental hygiene programs as a result of attending these sessions. Qualitative methods encourage incorporation of the author’s perceptions and observations as an essential part of the analysis and discussion. Thus, this discussion reflects our interpretation of the assessment results, as well as a review of course evaluations associated with the workshops.
Responses suggested that the faculty development workshops provided meaningful information regarding the theoretical basis for competency-based clinical education, including formative and summative evaluation, effective student feedback, and diagnosis of clinical skill deficiencies. Participants seemed to appreciate the practical application of the teaching methods discussed and incorporated many of the suggestions into their daily teaching and evaluation activities. Further, many programs found that the handout materials provided at each work session offered specific tools for effective communication with students, strategies for diagnosing psychomotor and affective issues in clinic, and skills involved in documenting student behaviors. These materials were found useful by both experienced and novice faculty members.

The use of trigger tapes and video scenarios that demonstrated the application of clinical teaching tools provided some of the most powerful learning sessions. Faculty members engaged in active discussions regarding the concepts presented, shared additional ideas for successful clinical teaching, and problem-solved a wide variety of clinical teaching issues. Similar to student learning, faculty members appeared to gain more satisfaction from participation in active tasks that required them to apply the principles or skills being discussed. The workshops provided a rich environment for all levels of faculty to think critically about clinical teaching techniques and to practice these skills on simulated cases.

Responses also supported the importance of bringing professional educators together in a common forum to share teaching techniques, clinical teaching and evaluation forms and materials, and new approaches to clinical education. Faculty members from schools across the country were invited to present new clinical teaching strategies that they had tried and discuss their related results—both positive and negative. These sessions were organized as panel discussions or individual and group presentations. Consequently, participants were able to gain from the experiences of colleagues, ask clarifying questions, and share practical tips. In addition, the workshops provided a forum for professional presentations devoted exclusively to clinical education. This aspect often helped participants justify travel to the workshop and contributed to their own professional teaching portfolio.

Limitations

While valuable qualitative information was gathered through this open-ended assessment, a limitation of qualitative assessments is that the results cannot be generalized to broader populations; rather, they provide insight into people’s feelings, opinions, and experiences for that particular event only. Open-ended assessments tend to provide richer data accumulation, but often are time-intensive to complete. Thus, in the future, a more formal study will be designed to include a mixed methodology such as focus groups, personal interviews, and objective questions relating to the subject areas presented in the workshops.

Implications and Future Directions

Approximately one-third of the workshop participants returned each year to attend the latest program and share their triumphs or challenges with colleagues. The annual workshops offered participants the opportunity to incorporate practical approaches, introduce new ideas, and test student-centered teaching skills in their own clinical programs. Subsequent attendance allowed further refinement and discussion among colleagues. Participants indicated on final course evaluations that they recognized and appreciated the attention given to their desires for specific subject areas each year. This finding reinforces the importance of designing workshop content and activities for future courses that address the needs expressed by the participants. Clinical faculty members seemed to benefit from a continuum of annual workshops as opposed to singular presentations. Moreover, programs reported that they were able to incorporate new methods or refine current teaching activities as a result of attending. Thus, this assessment provides a basis for a more substantial effort to measure the effects of professional development on clinical faculty teaching skills in the future.

This program assessment provided the Department of Dental Hygiene with important information about the effects of program content and methods presented at the annual clinical teaching workshops. The results have been used to refine and broaden the scope of topics addressed, engage dental hygiene faculty across the United States and Canada in sharing experiences and teaching strategies, and establish an ongoing resource to support excellence in clinical teaching and learning. Both the continuing participation from dental hygiene faculty in these workshops...
and the responses to the program assessment suggest a need for substantive professional development related to clinical teaching in which detailed information is delivered and a forum for sharing information and exchanging ideas is provided.

As dental hygiene educators respond to changes in educational methodologies and incorporate new patient treatment modalities into their educational programs, faculty members are expected to continually update clinical systems and advance their own teaching skills. Further, novice and experienced clinicians who enter clinical education will need a venue for initial learning and professional development related to effective clinical teaching. Thus, offering structured faculty development workshops that specifically target clinical teaching, learning, and evaluation methods is one approach to addressing the professional development needs of dental hygiene educators.

REFERENCES

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