

Dental Students' Reflections on Their Community-Based Experiences: The Use of Critical Incidents

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Abstract: Dental schools are challenged to develop new learning methodologies and experiences to better prepare future dental practitioners. The purpose of this study was to gain insight into the community-based experiences of dental students as documented in their critical incident essays and explore what learning outcomes and benefits students reported. Following two required community-based clinical rotations, each student wrote a reflection essay on a self-defined critical incident that occurred during the rotations. Rotations took place in settings such as a public health clinic, special needs facility, hospital, or correctional institution. Essays for two classes of students were content-analyzed for recurring themes and categories. Students were confronted in their rotations with a wide range of situations not typically encountered in dental academic settings. Their essays showed that, as a result of these rotations, students developed increased self-awareness, empathy, communications skills, and self-confidence. Critical incidents challenged assumptions and stereotypes, enhanced awareness of the complexities of dental care, and raised complex ethical dilemmas. The essays also illustrated a heightened sense of professional identity and enabled students to appreciate the role dentistry can play in impacting patients' lives. We concluded from the study that community-based dental education that includes a process for reflection holds promise as an educational strategy to facilitate the personal and professional development of future dentists.

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Key words: community-based dental education, reflection, critical incidents

Submitted for publication 12/30/02; accepted 2/28/03

Calls to make curricular changes in the way health professionals are educated have been voiced for more than a decade.¹⁻⁸ Higher education must not only seek to develop a clinically competent practitioner but also one who is knowledgeable about community health issues and possesses an ethic of service and social responsibility. In today's evolving social, economic, and health care environment, a traditional curriculum that confines students to lecture halls and clinics is viewed as increasingly inadequate to train competent graduates to meet the health care needs of the population.

The competencies for the new dentist distributed by the American Dental Education Association and of the Commission on Dental Accreditation include a wide range of competencies concerned with patient- and community-centered care.^{9,10} These competencies were developed to ensure that graduates who enter the practice of dentistry are equipped to provide quality care to diverse groups of patients in diverse settings. They include but are not limited to providing empathic, patient-centered care and oral health promotion; assessing patient goals, values, and concerns; and managing a diverse patient popula-

tion, including special care patients. Competencies also include developing the requisite skills to function in a multicultural work environment; ethical reasoning; and self-assessment. These competencies challenge dental schools to explore and develop new learning methodologies and experiences to better prepare future dental practitioners.

In response to calls for change, increasing numbers of health professions educational programs including dental schools have integrated community-based education into their curricula.^{7,11-17} Community-based education holds great promise for training students how to function as health professionals in the real world.^{7,11,16-20} This type of experiential education offers students first-hand knowledge of people and communities and introduces them to the complexities of professional life and nuances of patient care beyond the classroom and school clinics.^{16,21} Community-based experiences provide a valuable setting for students to place their roles as health professionals into the larger social context and apply what they are learning in schools to actual situations.⁷ They broaden students' understanding of the multiple determinants of health, develop their patient communication skills, and enhance their capacity for and interest in working with underserved populations.^{2,7,13,22}

Experiences alone however are not sufficient to develop such knowledge and skills. A central component of community-based education is reflection.^{7,13,15,16} In the absence of reflection, a service experience will merely constitute an event.²³ Reflection as a mode of inquiry is therefore key to gain meaning and education from a service experience.²⁴ Students will learn most by thinking about and analyzing their experiences, gaining new knowledge, and drawing lessons. By reflecting on their experiences, students develop personally and professionally.²⁴ According to Schon, when the practitioner engages in reflection, "new satisfactions that open to him are largely those of discovery—about the meaning of his advice to clients, about his knowledge in practice, and about himself."²⁵

Reflection can take place through writing or speaking about service experiences. One particularly useful and common reflection tool is the critical incident analysis.^{26,27} For an experience to qualify as a critical incident, it could be positive or negative as long as it is meaningful, provokes thought, and raises professional and personal issues.²⁸ First described by Flanagan, this type of analysis enables students to

write about and reflect on an experience/incident that occurred in a practice setting.²⁹ Incidents are, therefore, snapshot accounts of views, thoughts, and feelings with respect to an experience that carries a particular meaning for the observer. In the health professions, incidents have been used in nursing to examine the role of the nurse and as catalysts for nursing students to learn from and make sense of their experiences.^{26,28}

To date, there is a paucity of research describing students' experiences and reflections as documented in their own words regarding community-based dental education. This study attempts to fill the void. We analyzed students' reflection/critical incident essays to seek insight into their community-based experiences and explore what learning outcomes and benefits students reported. Information gained from this study can enhance understanding of and appreciation for community-based dental experiences, reflective learning, and the use of critical incidents in dental education.

Methods

The participants in this study were 160 senior students who were within ten to twelve months of program completion at the University of North Carolina (UNC) School of Dentistry. The Dentistry in Service to Communities (DISC) program at the university provides students the opportunity for community-based clinical educational experiences. Specifically, students are required to participate full-time in two extramural summer rotations, each lasting four weeks. Rotations occurred at sites of the student's choice. Students can choose from almost 150 possible options including sites within the United States and abroad. One rotation must be in a public health facility that can include such settings as a community health center, a correctional institution, or a Native American health clinic, while the other rotation must be in a hospital or special needs facility such as a nursing home. A preceptor who has a faculty appointment at the School of Dentistry is located at each site. During the rotation, students deliver "hands-on" dental care and are likely to get exposed to a wide range of patients from a variety of backgrounds including people of color and economically disadvantaged, homeless, aged, disabled, incarcerated, or institutionalized individuals.

At the end of the rotation period, each student is required to write a three-to-five-page reflection essay about a self-defined critical incident that occurred during the rotation. It is emphasized that critical incidents are not about dental procedures. Rather they are concerned with specific events or situations that have significant meaning for the student. Students are directed to briefly describe the when and where of the incident and reflect on the personal and professional implications flowing from it. Specifically, students are asked to describe their thoughts and feelings about the incident, how things can be done differently, how the incident related to the student's professional responsibilities, and what conclusions can be drawn from the experience. At the beginning of the fall semester, essays are submitted to the director of the extramural program. Essays are not graded.

For this study, reflection essays were collected for two classes of senior students (1998, 2000; N=160). The sample represented approximately 25 percent of all UNC students. To protect confidentiality, no identifiable information such as names and demographic characteristics were attached to the essays. We used qualitative content analysis, which is oriented towards summarizing, coding, categorizing, and interpreting data.³⁰

In brief, the four members of the research team independently read through each essay to obtain an overall understanding of the texts and assess the general credibility of the data. Credibility of data was ensured based on the contextual information provided by students concerning their incidents and the focus placed on the personal and professional implications of the incidents, as consistent with the assignment instructions. The primary investigator (MM), who is experienced in conducting qualitative research and is not affiliated with the DISC program, prepared a summary of the essays that included the documentation of commonly repeated themes and excerpts from the essays to support the themes. Next, a more comprehensive content review of the data, which included line by line analysis and coding of essays, was conducted by the investigator. The investigator then met with members of the research team to discuss and refine a list of emerging themes and their meanings. As result, three major themes that appeared to recur throughout the data were identified: personal and professional growth; enhanced awareness; and commitment to service. The primary investigator then

analyzed the essays again to probe for common sub-themes or categories as well as rare points of view. Categories were then identified for each major theme according to the frequency with which they appeared and their relevance to the thematic area. Following this stage, the research team consulted and agreed on the final list of categories. For this paper, we include only those categories that appeared in 20 percent or more of the essays.

The primary investigator prepared preliminary drafts of the manuscript synthesizing the major themes, categories, and related interpretations. Research team members provided feedback on the drafts, particularly assessing whether interpretation of the study findings is plausible and grounded in the data. The final draft synthesized the feedback of the research team.

Results

Table 1 highlights major themes and categories. These were consistent across different practice and patient types. The frequencies listed in the table indicate the number of essays in which a specific category appeared.

A typical essay touched on a variety of personal and professional issues. Some students had difficulty selecting only one critical incident to write an essay about, for, as they observed, there were several experiences that could be classified as critical. Students recognized the value of their incidents, describing them as "awakening," "unforgettable," "memorable," and "transformative."

Table 1. Themes and categories from reflection essays (N=160)

Themes and Categories	Number of Essays (%)
Theme 1: Personal and professional growth	
Caring	104 (65%)
Self-awareness	88 (55%)
Communication	86 (54%)
Challenged assumptions and stereotypes	38 (24%)
Self-confidence	32 (20%)
Theme 2: Enhanced awareness	
Complexity of patients' lives	105 (66%)
Ethical dilemmas	56 (35%)
Complexity of dental care	48 (30%)
Theme 3: Commitment to service	
Providing quality care	42 (26%)
Making a difference	32 (20%)

Theme 1: Personal and Professional Growth

Caring. The concept of caring was a recurring theme in the essays. Students cited the importance of developing a heightened empathy for the needs and situations of patients. They pointed out that a necessary, but sometimes forgotten, component of dental care is to recognize that there is a person, a human being “behind the patient you are treating.” In one case, a student learned to accept inmates as human beings, seeing them as “real people instead of simply inmates serving time for real crimes.”

Some students considered an “effective dentist” to be one who not only performs competent technical care, but also listens to, understands, and relates to patients. According to one student: “We truly have to imagine ourselves in the shoes of the person we are treating in order to best help them.” Others identified core values that they felt should characterize interaction with patients, including compassion, respect, empathy, and being nonjudgmental. Students repeatedly observed that dentistry is about people—people a dentist cares for—and that interpersonal aspects of care need to be considered an important outcome of the delivery of dental care itself. “Good dentistry does not stop at the procedure. There is a person involved whose emotions and feelings must be taken into account, even if the patient is a child. Our job is not just to deliver care, but to deliver it in the best manner possible,” wrote one.

Students also commented on how providing empathetic care resulted in their experiencing enjoyment and satisfaction, with recognition that such care not only teaches us about our common humanity, but is also “essential for my enjoyment of dentistry.”

Self-awareness. Students felt that reflecting on their critical incidents helped them to know themselves better, both personally and professionally. They gained insight into various personal characteristics, including motivations, prejudices, professional responsibilities, and limitations. Students reflected on what had initially motivated them to choose dentistry and on the profession’s overall purpose. For many, the critical incidents were viewed as a broadening experience, providing meaning for, or in some cases confirming, the decision to be a dentist. As one student put it, “It’s not just about teeth” but also about getting “to know and help people.”

Some students felt that their critical incident experience exposed prejudices. A student’s comment on this issue speaks for the majority: “On occasion,

I find myself stereotyping my patients/patient’s family and worrying that my judgments may interfere with their treatment. In instances like these, I fear my preconceived notions prevent me from doing my best in helping patients improve their oral health.” Other students had occasion to ponder their responsibilities and obligations as health care professionals, especially those related to providing quality and ethical care to different sectors of the population, not just those with whom they feel comfortable. One student stated, “I realize now that everyone deserves your compassion and no one deserves your judgment.”

Students also commented that their experiences uncovered areas of limitation with respect to different aspects of dentistry. Reflecting on lessons learned from a difficult patient encounter, a student observed, “Not only is there a wealth of knowledge and didactic and clinical dentistry that I have to gain, there is also much to be learned about interaction between doctor and patient, doctor and staff, and patient and staff.”

Communication. More than half of the students referred to difficult situations involving communication. Students found themselves having to deal with a wide range of personalities and temperaments, including a “problem patient” or a “disgruntled employee.” One student concluded, “From this rotation, I learned that working as a dentist in the real world is not simple.”

There were also first-time experiences, such as communicating distressing news. In one case, a student, alongside a preceptor, had to tell a young cancer patient that he needed a full mouth extraction. The student wrote, “This experience confronted me with a type of situation that was certainly more complex than anything I have experienced in dental school. I know that often as health professionals we will have to give people news that they don’t necessarily want to hear. I think it is important in these situations to be compassionate while also remaining objective and professional. . . . The next time I am in a situation where I am dealing with a lot of difficult emotion and have to deliver bad news, I think I will be able to handle it a little better.”

There were also reflections on the nuances and rewards associated with communication. Students came to recognize that communication amounted to more than just effective speaking; it also involves building rapport, listening, and gaining trust. Some students discussed realizing that every person has a “story” to tell and that taking the time to listen to

and connect with people, whether it be a patient or staff, is a valuable communicative skill to learn.

In the following patient encounter, a student is reporting on his experience with a medically compromised patient who is in the clinic for an extraction. The patient has just taken a nitroglycerin tablet after experiencing tightness in his chest: "After he took his nitroglycerin he began to feel better but Dr. X wanted me to stay with Mr. M to monitor how he was doing. I did not know it at the time, but this was the most important incident during my entire rotation experience. So for the next two hours Mr. M and I talked about everything. We connected immediately when I told him that my dad also had heart bypass surgery. I then talked about what my dad went through and he knew first hand what I was talking about. After talking about his surgery, he talked about the tragic death of his 21 year old son. He then told me that his wife has battled cancer and thankfully she is in remission presently. . . . I began to admire this patient for his courage to face what life has brought his way. We then talked about my favorite subject, sports. . . . Before I knew it about 2 hours had passed, Mr. M felt a lot better and we extracted the tooth."

The student proceeded to discuss the lessons learned from the experience: "Mr. M taught me that the ability to develop rapport with patients is very important. The key is to keep asking questions until both the patient and you share a similar interest or hobby. Patients also want someone to talk to about their health problems and they appreciate it when health professionals listen attentively. The experience I'll take with me from this case isn't the extraction, but to treat the patient as a person first, then treat the tooth."

Challenged assumptions and stereotypes. Some students observed that they had entered their community rotation having constructed certain inaccurate and unconscious beliefs about various patient populations, including those with HIV/AIDS. These students viewed their critical incident experience as a catalyst not only to recognize, but also to challenge these assumptions and stereotypes. One excerpt illustrates this viewpoint: "I realized a long time ago that it is impossible to tell who has HIV/AIDS by looking. Nevertheless, I was stunned to treat a lady that had HIV and Hepatitis B infections. She was such an attractive lady! Long blonde hair, beautiful designer clothes, manicured/pedicured nails, great jewelry. I was told her husband brought this home to her. What struck me as unusual was that I did not feel the familiar 'fright' with treating her. It has been so strong with all other HIV patients that I

have treated. I did not feel resentment that she was putting me at risk. I realized that I was thinking that her HIV wasn't so bad. Somehow, I thought it was cleaner. How bizarre. . . . Is it only those who have been unfortunate and unsuspecting victims of this disease that I feel genuine concern, sympathy, compassion, and regret for? Are those that acquired this disease through risky behavior of their own doing not so worthy of my support? I am not sure, but I will continue to examine my feelings."

Self-confidence. Students discussed how meeting difficult situations resulted in their becoming more confident. Having successfully treated an AIDS patient, one student observed, "From this experience, I was forced to understand and make a reality decision about something I had only experienced on paper, i.e., treatment of an AIDS patient. . . . I will admit that I initially had some hesitation, but after my nerves settled and reality set in, I feel really comfortable with treating AIDS patients."

One African-American student gained confidence as a result of being told by a patient for the first time that he did not want to be treated by a black dental student. Having reflected on the incident, the student wrote, "Dentistry is not immune to the biases of the rest of the world, but I feel prepared to face them and handle each situation effectively."

Theme 2: Enhanced Awareness

Complexity of patients' lives. The entries indicate an emerging awareness about the complexity of patients' lives. Students became aware that the problems associated with dental care, such as rampant decay, are much more complicated than what they initially perceived. Essays indicate that some of the students developed a heightened awareness of such problems as unmet dental need, health disparities, and access to dental care faced by vulnerable populations. "I have seen a third world country and it's right here inside the United States," wrote one student. Students also obtained greater insight into the macro-level challenges, both societal and structural, that confront many populations. Unemployment, lack of education, and racism were cited as some of these challenges.

The growing awareness is illustrated by the following example: "This was my first experience with a large number of children of low socioeconomic status. It was really sad to see the stress of their lives on these kids' faces. One nine-year-old boy asked me if I had ever seen a shootout in my neighbor-

hood. I was so naive that I thought he was talking about a basketball tournament! I quickly realized he was referring to the prevalence of guns and violence in his own neighborhood. Again I was caught in a situation where I did not know the right thing to say. It is frustrating to know that I cannot change these children's neighborhoods or family situations. The best I could do was to remain positive, caring, and encouraging."

Interestingly, this same student then indicated that he is having second thoughts about earlier dental career choices as a result of this experience. "In fact, it [the experience] was so personally satisfying that I began to second-guess my previously solid decision to pursue a career in orthodontics. . . . Due to the nature of the specialty, however, I may not have the opportunity to work with a lot of children of lower socioeconomic status in desperate need of dental care."

Ethical dilemmas. Some students were also presented with complex ethical dilemmas; the most frequently cited involved professional standards. Students described situations where patients, particularly poor ones, were not adequately informed of their treatment options. These situations sensitized the students to the ethics of treating patients, especially those unable to pay for services. One such experience involved a dentist at a public health setting who extracted teeth on a patient without first adequately educating the patient concerning his options. The student was surprised to learn of the double standard, confirmed by the dentist who commented that "in private practice, I would never have pulled those teeth." The same student questioned the dentist's approach, stating that "in my opinion, at the very least, the patient should have had his options explained to him more genuinely and thoroughly."

Complexity of dental care. The students' reflections illustrated their emerging awareness that dental care involves much more than simply treating teeth. One student, having established a friendship with two medically compromised patients who were war veterans and inspired by their life stories, reflected, "It would have been so easy to just treat Mr. J and Mr. H for what they needed [dentures] and let them go on their way, but these men needed more than just teeth. They needed a personal touch to the treatment, and for that, all of us are better for it."

Essays were filled with poignant accounts of students' interactions with patients. Interactions included bonding with a physically compromised elderly patient, gaining the trust of a frightened and crying child, and bringing a smile to a disabled

adolescent. Such interactions gave students a different view of what dental care and the attendant dentists' responsibilities entail.

In the following example, a student reflects on dealing with a dying patient and the new perspective she has gained on the broad role of the dentist: "This elderly gentleman, who was 55 years of age, sat down in the chair very quietly. After reviewing his chart I saw that he had cancer and began to ask how his treatment was going. He told me that the treatment has been stopped and that he had 3-6 months to live. I sat in my chair shocked for a moment because I could not believe that someone with that little time left to live was concerned with getting dentures fabricated. After talking with him I learned that he had been edentulous for approximately ten years. He said that he wanted to die in comfort and 'enjoy his food during his last days on earth.' This statement was very touching for me as a dentist. I know as a dentist how important teeth were for a person's overall health and function in everyday life. However, I never thought that I would be the person, a dentist, who would make a difference for a dying person. This experience made me realize further what an important role I would play in people's lives, and the difference I would make in their well being, both physically and mentally."

Theme 3: Commitment to Service

Providing quality care. The following sentiment was frequently repeated: "I will provide quality care for all my patients." This sentiment held regardless of the students' likes or dislikes for the patient and the patient's circumstances. For example, some students blamed the parents for their children's disruptive behavior, while others questioned the patient's lifestyle or were at odds with the patient's values and priorities about dental care. These strongly felt sentiments, however, did not appear to undermine the students' desire to provide quality care "no matter what."

Some considered providing quality care as a moral imperative and professional duty. The following excerpt captures this point: "Do we have the right as health care providers to say 'well this patient does not live by my moral values so therefore this patient deserves inferior care?' I really don't think we have that right. I can surely disagree with a patient's lifestyle from a moral perspective, but I am still obligated as a health care professional to provide that patient with the option of obtaining the best care possible. It is difficult to be nonjudgmental. However, health care professionals must strive to be this way."

Making a difference. Having gained insight into the daily struggles of their patients, some students voiced a desire to make a difference in the lives of their patients and/or their communities. A number of such desires were expressed, including: 1) wanting to specialize in pediatric dentistry “to reach the lower socioeconomic pediatric population”; 2) visiting elementary schools to “talk with children and hopefully provide some information to the parents”; 3) educating pregnant women and mothers of very young children on the importance of oral health care; 4) providing voluntary treatment to residents of nursing homes; 5) “incorporating care for those less fortunate in my dental practice”; 6) helping to get medication for orphans with HIV/AIDS; and 7) sponsoring a child.

Having been exposed to unmet dental need, one student stated, “I learned that there is a greater need out there than I anticipated. And no matter how small a difference I make, it is still a difference. Knowing that I could potentially help prevent the severity of decay that some patients have is enough to make me try to make that difference.”

Atypical Findings

Not all essays described positive learning outcomes and benefits associated with community-based experiences. A small number (N=10) spoke negatively, at times judgmentally, about patients or the patient’s parents. For example, upon seeing one parent bring his “uncooperative” and “screaming” son through the waiting room, a student said, “I found myself thinking what kind of parenting skills do we have here? He is dragging his child through the door like a dog.” Some students went so far as to blame the parents for their child’s poor dental health. After observing decay in the child’s anterior teeth, a student commented, “What’s wrong with this parent? Is he stupid? Has he never looked at his son’s teeth?” Some essays suggest prejudicial attitudes towards groups of people. According to one student, for example, “Most disabled veterans probably are bitter and have some despair with regards to their disability.” Some made unfavorable comments about the patients’ or their parents’ limited knowledge of oral health.

Discussion

Health professional schools, including dental schools, face the challenge of teaching students not

only the requisite clinical knowledge and skills but also competencies related to patient- and community-centered care. While there has been a growing trend in dental education to employ community-based education as a means to better prepare students to assume their role as competent and caring health professionals, information with which to assess student learning outcomes has been insufficient. Our findings suggest that community-based education that includes a process for reflection, which in this study was facilitated by critical incident analysis, holds promise as a curricular strategy to help students attain educational competencies and develop time-honored values and attitudes that are central to any caring profession.

Students in the study reported a broad range of learning outcomes and benefits. The findings are consistent with previous investigations of reflective learning.^{11,18,19} Students expressed that they gained self-awareness as they explored the intricacies of the dental world. They also reported increased empathy, communication skills, and self-confidence. Incidents provoked some students to probe and question faulty assumptions and stereotypes. Essays illustrated an emerging awareness of the social determinants of health and the challenges and struggles regularly encountered by different populations. Some students expressed a desire to make a difference both inside and outside their chosen field of dentistry. Students learned about the prevalence of ethical issues and became oriented to a host of ethical dilemmas that arise during a dental visit. The incidents also reminded many students why they had chosen dentistry as a profession in the first place, cultivating for some a heightened sense of dental professional identity. For others, incidents enabled them to appreciate the important role dentistry can play in impacting people’s lives.

The critical incident analysis also facilitated the use and development of reflective skills. Through reflection and self-assessment, students gained insights into their process of becoming a dentist. For example, students analyzed previously unexamined personal attitudes and behaviors that affect patient care. Fostering reflective skills should constitute a key element in health professions education.^{6,7,25,26} This prescription is not confined to health professions schools because reflection is also fundamental to life-long professional growth.³¹

We also found that a group of students made disturbing comments about patients. Although these comments were atypical, they may represent attitudes

of a larger group of students who did not, or were unwilling to, express themselves more fully. Our findings suggest that programs to address prejudice among dental students should be incorporated into dental training at the earliest possible stage. Delay in implementing such programs reflects a lack of understanding of how provider bias contributes to problems of access and disparities.³²

The selected incidents may appear ordinary and typical, but for the student, they proved significant. The reflection essays illuminated nuances not typically captured by surveys, such as feelings and thoughts when dealing with a dying patient, or the emotional connection made with the patient, which, according to the students, made the practice of dentistry a more rewarding and satisfying experience.

Essays were also filled with empathic emotions. Some students, for example, felt “sad” and “depressed” as they encountered their first case of early childhood caries, while others experienced “compassion” and “understanding” as they delivered care to their first AIDS or special needs patient. Such emotionally laden experiences can help students appreciate the fact that dentists have to deal, and at times struggle, with complex webs of emotion in rendering care to their patients.

The breadth and depth of the incidents, as recounted by students, show the value of community-based clinical rotation. It is noteworthy that most students went well beyond the scope of their instructions, which was to simply reflect on their critical incidents; they also provided a rich account of their views, feelings, and attitudes about their community rotation experience in general. These accounts suggest that students found that their community-based experience was a meaningful and rewarding learning endeavor. This assessment held across the different clinical settings, even for rotations that were viewed as difficult and/or challenging. Findings also reveal that students were satisfied with having worked in the “real world.” For many, this real world proved an eye-opening experience, aiding the process of personal and professional development. Students confronted complex situations and grappled with issues not typically encountered in dental school. “No amount of coursework prepared me for this type of situation,” wrote one student. Another commented, “It was a wonderful opportunity to get away from the dentistry in an academic situation and to see a little bit of dentistry in the real world.”

To be sure, community-based rotations cannot satisfy all educational needs of a student. As our study

shows, however, they can play a role in enhancing the educational and professional development of a dental student.^{11,33} For this role to be fully realized, i.e., for community service experience to facilitate meaningful learning, the experience must include a formal opportunity for reflection. Without a reflection component, it is difficult to make an explicit connection between the experience and the student’s learning.^{7,24} Writing or talking about one’s experiences, such as uncovering one’s prejudices, can stimulate insights that would otherwise remain dormant.²⁴

As evidenced by the essays, reflection motivated many students to go beyond the superficial examination of situations and to want to learn more about an issue and explore inner thoughts and feelings about different events and people. Given the benefits of reflective activities, it would be worthwhile to examine whether these activities, when also incorporated into the dental school clinic environment, would lead to similar student outcomes as those realized in a community-based setting. In either dental school or community settings, faculty members would be well advised to consider critical incident analysis as they design a reflection process and integrate it into the curriculum. It is clear that this educational tool assisted students in this study to learn from their experiences.

Several limitations in connection with the results of this study merit mention. First, interpretation of qualitative data is inherently subjective, as analysts look for general themes and categories. To reduce individual interpretive biases, multiple researchers analyzed the data. Bias was also reduced because it was evident that themes and categories recurred in the data. Second, it is possible that students may have provided socially desirable responses. The scope of this limitation, however, was minimal, as essays were confidential and not graded, and the majority of students provided full and detailed information about incidents. Third, time elapsed between essay and incident occurrence could have introduced recall bias.

Conclusions

Dental schools are challenged to develop new learning methodologies and experiences to better prepare future dental practitioners. Reflection essays on self-defined critical incidents allowed us to gain insight into the community-based learning experiences of our students. Students encountered a wide

range of situations that may well appear later in their professional lives. We highlighted the learning outcomes and benefits students reported. By providing “real world” experience, community-based dental education combined with reflection helps cultivate the skills, knowledge, values, and attitudes that are needed for a dentist to succeed in today’s dynamic health care environment. Further research is required to systematically assess whether community-based education combined with reflection indeed contributes to positive educational outcomes as described in this article and influences students’ actual postgraduation attitudes and practice behaviors.

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