University of Kentucky Community-Based Field Experience: Program Description

Judith Skelton, Ph.D.; M. Raynor Mullins, D.M.D., M.P.H.; Alan L. Kaplan, Ph.D.; Karen P. West, D.M.D, M.P.H.; Timothy A. Smith, Ph.D.

Abstract: Community-based field experiences (CBFE) provide students with exemplary experiential learning opportunities. The purposes of this paper are to describe the University of Kentucky College of Dentistry (UKCD) CBFE and report the results of a two-year, self-report survey that assessed the primary course goal, students’ perceptions of change in knowledge and skills related to nineteen areas of patient care (n = 90, 100% return rate), and their overall rating of the program. Knowledge and skill data were analyzed using the non-parametric binomial test for comparing proportions. A significant (.05 level) majority of students reported increases in knowledge in all areas to which they were exposed. Descriptive frequencies summarizing the results of the total CBFE experience indicate that the majority of students felt it was a positive experience. The CBFE continues to be a meaningful element in the UKCD curriculum as it provides students with a relevant, authentic educational experience.

Program Rationale

Community-based field experiences (CBFE) play an increasing role in many health professions education programs, including dental education. In December 1999, the Journal of Dental Education devoted an entire issue to community-based education and the issues connected with this educational methodology. Community-based dental education was examined from a variety of viewpoints, including financial, legal, management, feasibility, and design; however, little attention was given to the theoretical educational underpinning of CBFE or to student perceptions as an outcome.

Community-based field experiences are one way of providing student dentists with experiential learning opportunities. Experiential learning theory stems from the work of Dewey and was elaborated by Kolb. The basic premise is that students need the opportunity to integrate knowledge and skills through experience, practice, and reflection. Educational literature shows that “knowledge is no longer viewed as a reflection of what has been given from the outside; it is a personal construction in which the individual imposes meaning” by making connections between new information and existing knowledge or schema.

CBFE provide students with an immersion experience into the professional community they will be entering, which is an experience that cannot be replicated in the educational institution. Unlike most artificial learning experiences within an educational institution, CBFE offer students “real life” experiences that include all the complexities of professional practice they will face upon graduation. The authenticity of CBFE meets the criteria of cognitive learning and motivation theorists who advocate an increased focus on authentic, relevant, and challenging experiential learning opportunities. Experiential learning opportunities have a positive impact on self-confidence, motivation and skill development, student role socialization, clinical competence, and clinical decision-making.

The student outcomes of community-based field experiences cited in the dental literature include social consciousness and sensitization; increased experience in practice management; increased experience in the private practice setting; including managing many patients per day; augmenting
experiences in specialized patient care such as pediatrics, dentistry in the institutional setting; geriatrics, and dental care for disabled persons. Experts in the field consider obtaining general experience in how to function as professionals in the real world invaluable to the neophyte student dentist. 

The purpose of this paper is to describe the University of Kentucky College of Dentistry’s community-based field experience and report the results of two years of post-experience surveys used to assess the primary goal of the course and students’ perceptions of the change in their knowledge and skills related to fundamental areas of dental patient care.

Program Description

In 1970 the University of Kentucky College of Dentistry (UKCD) Division of Public Service began offering students an opportunity to participate in a community-based field experience. Since then the program has gone through a number of refinements:

- Partial class to Full class
- Voluntary to Required
- Private practices only to Diverse sites
- Assigned settings to Student-selected settings
- Unpaid to Subsistence and/or room and board

The current course is for six credits and begins in the late fall of the third year and ends in the fall of the fourth year. The third-year fall start time is necessary to select externship sites and obtain the necessary preceptor faculty appointment and affiliation agreements. The actual CBFE occur over the late spring and summer months. The rotations conclude when all students return to UKCD at the beginning of the fall of their fourth year. Class meetings are scheduled during the spring of the third year before students leave for their rotations to clarify course expectations.

The initial purposes of the CBFE program were limited to increasing students’ skills in patient communication, clinical competence, and practice management. Over the years the goals have expanded to include elements of quality assurance, community service, research, and specialty practice. The current primary and secondary educational goals are as follows:

**Primary goal:** The student dentist will gain experience and proficiency in patient care.

**Secondary goals:**
- begin the development of written career goals and plans;
- assess dental practice management and quality assurance systems;
- assess his or her community’s health care delivery systems, community-based agencies, and resources; and
- learn by participation in a service-learning project.

The format of the course accomplishes these goals in a unique way. The course begins in the fall with a discussion session involving the entire class to introduce the goals and objectives. The first course assignment is an information request. Students are asked to report their career goals and indicate if they have a site preference for their externship. The course director works with each student to complete site selection, identify a preceptor, and obtain the required agreements and appointments. If students do not have any preferences, faculty offer suggestions, and a match is made.

Preceptors are private practitioners in Kentucky, faculty in dental institutions throughout the world, and practitioners in federal and state facilities. Preceptors in private practices become UKCD voluntary faculty and sign an educational agreement. Faculty in other institutions or practitioners in public health facilities, such as other dental schools, federal or state correctional institutions, Native American health clinics, migrant health centers, or public health clinics, agree to provide students with educational opportunities that will allow them to meet the course goals. An affiliation agreement between UK and the site, addressing responsibility, compliance, and liability issues, is required.

The distribution of students at the sites changes from year to year depending on participants’ career goals; however, for the last two years the distribution has been: 59 percent in private practices (including specialties), 32 percent in specialty areas of educational institutions, and 9 percent in other clinics (public health, Army, prison, migrant). These percentages reflect those students who elect to split their rotations between two different sites.

The course director manages the course with assistance from two other faculty and support staff. Significant time is spent identifying and contacting sites and obtaining either a voluntary faculty appoint-
ment or an institutional affiliation agreement. Over the years that the CBFE has been in existence, a network of practitioners has been developed so that the course director has knowledge about many private practices in the state. This network greatly facilitates placement of students into practices that provide a positive learning experience. Voluntary faculty appointments involve credentialing, verifying professional standing, and certifying insurance coverage. Placement of students in institutional settings is usually based on the students’ desires to gain knowledge of a particular specialty or work in a specific part of the country. Responsibility for identification of the site is shared between the student and faculty. Personal contact with facility directors initiates the process. Institutional agreements must then be obtained; this process requires several months because it usually involves review by attorneys and approval by deans and medical center administrators.

Student financial support for CBFE is variable depending on the type and location of the site. For out-of-state or institutionally based clinical settings (community clinics, hospitals, dental schools, etc.), student dentists may or may not be funded; this is determined on an individual basis. Compensation for student dentists in the U.S. Public Health Co-Step Program or military clinics is based on federal Co-Step and military policies. In-state funding for practice sites is based on their distance from their College of Dentistry; students receive $155-225 per week. Kentucky has regional Area Health Education Centers (AHECs) that provide part of this weekly support funding for students who work in eligible practice or clinic settings. Eligibility is determined by the AHEC. For these placements AHEC provides a subsistence of up to $25 per week and housing payments up to $70 per week plus one round-trip reimbursement of mileage expenses. The remainder of the amount ($155-225) is supported by the preceptor. Students placed with a private, community-based dentist for a non-AHEC designated assignment receive similar weekly compensation paid entirely by the dentist preceptor.

Several scheduling iterations have been tried over the last few years. Currently, in the third year, classroom and in-school clinical instruction at UKCD concludes at the end of May. After a one week break, students begin their CBFE. The class is split into two groups, with half rotating out into the community sites and half remaining in UKCD clinics where they provide patient care. After six weeks the whole class has a two-week vacation, then returns for six more weeks, switching into either the UKCD-based clinical rotation or their selected CBFE. In early fall, a series of small group sessions is held for debriefing, reflection, and evaluation.

Although activities vary greatly from community-based site to site, in all cases students learn through a combination of activities such as: patient care, observation and reflection on interoffice communication patterns which are recorded in a journal, directed study of practice management systems, participation in a community service project, and identification of community health needs and health care delivery systems in their communities. In addition to these activities, students are asked to complete a post-experience survey instrument that requests an assessment of changes in their knowledge and skill levels.

Outcomes of Student Survey

Survey Design

A self-report survey instrument was given to all students enrolled in the course for the summers of 1999 and 2000. Surveys were distributed to students during their first class meeting after returning from the CBFE. They were asked to complete the surveys and return them during that class meeting.

Students were asked to evaluate their change in clinical knowledge and clinical skills in nineteen patient care areas (see Table 1). These patient care areas, approved by consensus of faculty participating in the course, were initially identified in feedback from past student and preceptor assessment of student performance. A four-point scale was used with the following definitions: 1 = No change in my clinical knowledge/skill; 2 = Minimal increase in my clinical knowledge/skill; 3 = Good increase in my clinical knowledge/skill; 4 = Major overall increase in my clinical knowledge/skill. An option of “N/A” indicated minimal or no experience in an area. Data were analyzed using the nonparametric binomial test for comparing the proportion of students responding 2, 3, or 4 to those students responding 1. The final survey question asked students to self-rate the total CBFE experience on a 7-point scale with 7 being the highest rating. Descriptive frequencies were used to summarize this data.
Survey Results

The return rate for the survey was 100 percent because students were required to complete the survey as a course requirement. Table 1 summarizes change in students’ perceptions of their knowledge and skills for the same nineteen areas of dentistry. If students did not have any or minimal experience in an area, they answered N/A. N/A responses were excluded; thus, the number of students (n) varied for each item. Columns 1 and 3 of Table 1 report the mean percentage of students who had an experience and felt it resulted in improved knowledge and skills respectively.

The binomial test of significance was conducted on these percentages to determine if there was any difference in the probabilities that students reported an increase in knowledge and skills versus no change. If the test is not significant, it means that just as many students reported no change in knowledge or skills (indicated by a rating of zero) as those who reported an increase (indicated by a rating of 2, 3, or 4). If significant, it means that a majority of students reported at least a minimal increase in knowledge or skills. A significant (.05 level) majority of students reported increases in knowledge in all areas to which they were exposed except orthodontics; a significant majority reported increases in clinical skills in all areas except orthodontics, removable partial dentures, and implants. These were three areas in which few students had relevant experiences; however, in two other areas in which less than 50 percent of the students reported having a relevant experience (complete dentures and cast restorative dentistry), a significant majority reported an increase in skills. For three areas—treatment planning, medical history assessment, and oral facial pain management—the survey did not include questions related to skills because previous data indicated that students did not perform fine motor skills related to these areas while involved in CBFE.

The final question of the survey asked students to rate their overall CBFE on a scale of 1-7 with 1 being the lowest and 7 being the highest. The combined mean rating for 1999 and 2000 was 5.97 (n = 90). Over two-thirds of the students (sixty-two) rated the experience as 6 or higher. No students rated it as 1 or 2; three students rated it as 3; six rated it as 4; and nineteen as 5. Thus eighty-one students (90 percent) rated the experience as above the mid-point of the rating scale.

Discussion

Student-reported perceptions of their increases in knowledge and skills provided supportive indicators for the CBFE. Although the distribution of experiences varied, students overwhelmingly felt that their CBFE activities contributed to their knowledge

Table 1. Self-reported increases in knowledge and skills related to patient care

<table>
<thead>
<tr>
<th>Practice Areas</th>
<th>Total N - % increase in knowledge</th>
<th>Total N - % increase in skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Management (adult)</td>
<td>97***</td>
<td>97***</td>
</tr>
<tr>
<td>Patient Management (child)</td>
<td>93***</td>
<td>91***</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>98***</td>
<td>98***</td>
</tr>
<tr>
<td>Treatment Planning</td>
<td>95***</td>
<td>NA+</td>
</tr>
<tr>
<td>Dental Radiology</td>
<td>92***</td>
<td>90***</td>
</tr>
<tr>
<td>Medical History Assessment</td>
<td>86***</td>
<td>NA+</td>
</tr>
<tr>
<td>Emergency Care</td>
<td>95***</td>
<td>92***</td>
</tr>
<tr>
<td>Simple Restorative (amal, comp)</td>
<td>96***</td>
<td>96***</td>
</tr>
<tr>
<td>Nonsurgical Periodontal Therapy</td>
<td>86***</td>
<td>86***</td>
</tr>
<tr>
<td>Endodontics</td>
<td>94***</td>
<td>89***</td>
</tr>
<tr>
<td>Oral Surgery</td>
<td>92***</td>
<td>89***</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>90***</td>
<td>90***</td>
</tr>
<tr>
<td>Orthodontics</td>
<td>59.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Complete Denture Prosthetics</td>
<td>85***</td>
<td>74**</td>
</tr>
<tr>
<td>Removable Partial Prosthetics</td>
<td>79***</td>
<td>66.0</td>
</tr>
<tr>
<td>Cosmetic Dentistry</td>
<td>96***</td>
<td>94***</td>
</tr>
<tr>
<td>Orofacial Pain Management</td>
<td>78**</td>
<td>NA+</td>
</tr>
<tr>
<td>Complex Restorative (cast restorations)</td>
<td>88**</td>
<td>74**</td>
</tr>
<tr>
<td>Complex Restorative (implants)</td>
<td>80**</td>
<td>58.0</td>
</tr>
</tbody>
</table>

** p < .01  ***p < .001
+Data not collected for this question
and skills in the patient care areas surveyed. Literature suggests when students feel positive about their knowledge and skill abilities, they are more likely to stay engaged and motivated to learn more about their field. This survey outcome further supports the rationale for CBFE.

A limitation of the survey results is that not all students had the same experiences; in some cases students reported having minimal or no experience in a patient care area (as reflected in the smaller number for post-experience data). In addition, the authors recognize that the information provided in this report is self-reported data and is not a specific measure of student knowledge or skill, but rather an indication of the students’ perceptions of their increase in knowledge and skills. There are no data to indicate that the students’ assessment is accurate or inaccurate, indicating an area of need for future investigation.

Summary

Current learning theories suggest that authentic and relevant experiential educational opportunities lead to an increase in skill development, self-confidence, and motivation. Community-based field experiences (CBFE) are exemplary experiential educational opportunities because students are placed in real-life settings and work with real patients who have real needs and require real interventions.

The University of Kentucky College of Dentistry CBFE provides students with opportunities to observe and function in practice settings that are more authentic representations of “real life” than the college’s traditional student clinical settings. Management of the program requires the course director to facilitate student selection of and placement at sites that meet their career goals. By giving students an opportunity to participate in alternative dental settings, UKCD seeks to broaden and deepen students’ knowledge and skills for their future professional settings. The results of a two-year, two-class study supported previous informal and anecdotal findings that CBFE provides the environmental setting that allows UKCD students to receive meaningful learning experiences in fundamental areas of patient care. The outcomes of the students’ self-assessment suggest that students’ benefit substantially from this program.

REFERENCES