Curriculum Evaluation of Ethical Reasoning and Professional Responsibility

Carole R. Christie, M.Coun.; Denise M. Bowen, M.S.; Carlene S. Paarmann, M.Ed.

Abstract: This exploratory study evaluated curricular content and evaluation mechanisms related to ethics and professionalism in the baccalaureate dental hygiene program at Idaho State University. Competency-based education requires enhanced student preparation in ethical reasoning, critical thinking, and decision-making. Graduates must integrate concepts, beliefs, principles, and values to fulfill ethical and professional responsibilities. Methods included 1) development of five supporting competencies defining ethics and professionalism to provide a framework for curricular evaluation; 2) assessment of all course content and evaluation methods for each supporting competency; 3) evaluation of students' clinical performance based on professional judgment grades; and 4) survey of junior (n=30) and senior (n=27) students' attitudes about dental hygiene practice related to ethics and professionalism. Results revealed that most courses include content and evaluation related to at least one supporting competency; however, authentic evaluation is weak. Clinical instructors rarely relate evaluations to ethical principles or values. Surveys showed significant differences between junior and senior students' attitudes about ethics and professionalism in six of thirty-four areas (the six were laws and regulations; communication and interpersonal skills; problem solving; professional activities/programs; integrity; and safe work environment). This article shares one approach for evaluating curricular content and evaluation methods designed to develop student competence in ethical reasoning and professionalism. Based upon the study’s findings, recommendations are made for curricular enhancement via authentic evaluation and faculty training.

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Key words: ethics, competency-based education, critical thinking, evaluation, competency-based evaluation, dental hygiene education, authentic evaluation, professionalism, professional responsibility, student attitudes

Submitted for publication 8/29/02; accepted 12/6/02

Contemporary dental education and accreditation standards mandating that “graduates be competent in critical thinking and problem solving related to comprehensive patient care” reflect a genuine need to enrich students’ preparation in ethical reasoning, critical thinking, and decision-making. Accreditation standards for dental and dental hygiene programs require competency-based curricula and evidence that graduates perform to the level of competence identified. To fulfill ethical and professional responsibilities in practice, dental hygiene graduates must be able to integrate key concepts, underlying beliefs, fundamental principles, and core values, as defined in the Code of Ethics for Dental Hygienists. These values include individual autonomy and respect for human beings, confidentiality, societal trust, nonmaleficence, beneficence, justice and fairness, and veracity. The Principles of Ethics and Code of Professional Conduct of the American Dental Association identifies five of these—autonomy, nonmaleficence, beneficence, justice, and veracity—as ethical principles fundamental to the foundation of its code. Graduates must possess the ethics, values, skills, and knowledge necessary to begin autonomous practice. Curricular reform is needed to ensure competence of today’s dental hygiene graduates and to meet challenges created by a variety of societal changes.

Evaluation mechanisms also must be developed to measure each defined program competency. As evidenced by this review of dental and dental hygiene literature, the body of knowledge about teaching ethics and critical thinking is growing; however, educators continue to question how to teach—and particularly how to effectively evaluate—critical thinking in the clinical learning environment. These skills are difficult to measure quantitatively. Competence, according to competency-based education experts, is a multifaceted construct consisting of knowledge, experience, professional judgment, and problem-solving ability. Competence stems not only from accumulated knowledge and experience, but also from reflection, intellectual maturity, self-confidence, self-sustaining professional values, and in certain professions including dentistry and dental hygiene, a repertoire of procedures that will serve the needs and achieve the goals of most patients.
Our exploratory study assessed the curriculum content and evaluation methods related to ethical reasoning and professional responsibility in the baccalaureate dental hygiene curriculum at Idaho State University. The outcomes of the project were intended to help develop recommendations for curricular enhancement through faculty training and improved evaluation of student competence.

A Growing Body of Knowledge About Teaching Ethics and Critical Thinking

Competency-based education is based in part on higher expectations of student learning and educational outcomes from the public, academia, professionals, and employers.10 Graduates need to be able to think critically in today’s complex health care environment.11 This era is a tumultuous time in the health care industry with expansion of managed care, insurance constraints, governmental regulations, compliance requirements, and consumer demands.9,11 Additionally, health care continues to experience explosions in technology and science, such as genomics. With all of these factors significantly affecting health care delivery, ethics has become the bridge between morals and values, patient needs, effectiveness of treatment options, and efficiency of delivery. State legislatures, accrediting agencies, and professional organizations are taking active roles in examining the competency of graduates of health care educational programs, and consumers of health care are becoming better informed and more sophisticated as care recipients.11,12 Consumers expect graduates to be competent.11,13

Competency-based education supports integration of knowledge and clinical skills with interpersonal and problem-solving skills.14 Bebeau and Thomas demonstrated that dental students “not only benefit from ethics instruction but value it.”15 Bebeau also reported that “a separate ethics course can promote desired ethics outcomes.”16,17 Although most oral health educators would concur that an ethics course alone cannot create ethical graduates, ethics courses provide foundational principles and key concepts needed to analyze ethical issues and think critically in patient care situations.18,19 Dental educators place importance on allocating curricular time to ethics instruction; 91 percent of the responding schools offered at least one ethics course in 2000.19 Zarkowski and Graham advocate combining ethics and the law into one component of “professional responsibility instruction” to embrace the full scope of accreditation standards and contribute to the full spectrum of professional responsibility.20 In contrast, Bebeau advocates the separation of ethics instruction from jurisprudence in order to strengthen the ethics component.16

Clearly, ethical reasoning and professional responsibility remain important concerns to dental and dental hygiene educators. In a study of academic integrity, Beemsterboer reported that, when values are in conflict, students value “being well-off financially” or “getting a job you enjoy” more than “being honest and trustworthy.”21 Most educators and practitioners would assert that honesty and trustworthiness are critical to the foundation of dental and dental hygiene practice. Feil et al. report that ethical lapses related to clinical examinations, such as delaying treatment to “bank” or “reserve” the patient for the exam or providing treatment to satisfy the test requirements rather than the patient’s treatment plan, clearly place patients at risk of advancing disease.22 Yet, requirement-driven dental and dental hygiene curricula continue to present graduating students with this moral dilemma. Elder suggests that educators teach students about their “native tendency to see the world from a self-serving perspective” and place critical thinking skills at the heart of ethics instruction, so students can learn that ethical reasoning means doing what is morally right, even in the face of selfish desires.23 Tankersley discusses a student’s perspective that a requirement-driven curriculum fosters determination of patients’ treatment based upon student self-interest.24 She further asserts that cheating in class or on assignments can be a significant outcome of highly competitive and intellectually challenging professional education; however, cheating is not only an ethical but a moral issue in patient care. Tankersley concurs with Elder that students need to be taught how to place moral values ahead of personal interests. Nash astutely relates ethical issues to quality of education in dentistry stating, “without justice, courage, self-respect, liberalty, and honesty, our efforts to educate a professional will be to little avail. Without the thirst for truth, quality will not prevail.”25

Chambers and Glassman argue that ethics, values, and professionalism cannot be measured in contexts that differ from those that the graduate will encounter following the educational program.8 Authentic evaluation assesses independent performance
in real world situations similar to practice; therefore, test cases, community program participation, research projects, portfolios, and ratings of professional judgment are needed to assess competence.9 Mitchell et al.26 advocate use of a broader range of “action-oriented” assessment tools such as objective structured clinical examinations (OSCE), as developed by Harden and Gleeson.27 The nursing literature identifies numerous valid and reliable instruments such as Rest’s Defining Issues Test (DIT),28,29 the Nursing Dilemma Test (NDT),30 and the Moral Judgment Interview31 to measure ethical behavior.32 Bebeau et al. describe several evaluation methods used in dental education to monitor student progress, assign course grades, and evaluate program effectiveness including Rest’s DIT, the Dental Ethical Sensitivity Test,33 essays, role playing, attitudinal surveys, class attendance, and quality of class participation.15,18

Nash believes that learning to be a professional is among the most important aspects of dental education.34 It is essential that dental and dental hygiene educators help aspiring colleagues apply their new skills with integrity because the profession’s commitment to ethical conduct is the foundation of society’s trust and confidence. Oral health educators need to continually evaluate curricular effectiveness and outcomes and to apply the findings to improve competence of graduates in ethical reasoning, critical thinking, and professionalism.

### Methods

Because of the exploratory nature of this project, a variety of methods were used to gather data. First, a draft of competencies defining the domain of ethics and professionalism was developed by the faculty member responsible for teaching the ethics course in the dental hygiene curriculum. This draft was presented for discussion to the full-time dental hygiene faculty (n=9) at Idaho State University in October 2000. The document was subsequently revised, edited, and ultimately agreed upon by the faculty as the competency statement and supporting competencies to define this domain in Competencies for the Dental Hygiene Graduates of Idaho State University. A major competency, as defined by DeWald and McCann, is the ability to perform or render a complex procedure or service.3 Major competencies can be further subdivided into supporting competencies, defined as specific abilities needed to attain each competency. The adopted document defined one major competency and five supporting competencies related to ethics and professionalism (Table 1). This document served as the framework for subsequent curricular exploration.

Next, curriculum content and evaluation mechanisms were assessed for all courses throughout the baccalaureate dental hygiene curriculum to determine if subject matter was included for all competencies identified. All faculty members received an open-ended survey asking them to list, for each of these five supporting competencies, all didactic presentations, learning activities (classroom, laboratory, preclinical/clinical, and extramural), and evaluation methods (assignments, tests, etc.) employed in each course they taught to junior and senior dental hygiene students. During the 2001 spring semester, the responses were compiled, and the ethics professor conducted individual interviews with each faculty member to further explore their survey responses. An interview approach was used to gain a

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<th>Table 1. Framework for curricular evaluation of ethics and professionalism competencies as adopted by ISU dental hygiene faculty</th>
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<td><strong>DOMAIN</strong></td>
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<td>Competency #1</td>
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<td>Supporting Competencies</td>
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deeper level of insight and richer perspective about the type of teaching and evaluation perceived by faculty to produce an ethical and professional graduate.

Based upon all of the information collected, a new ethics and professionalism competency document was created listing courses, teaching and evaluation methods, and core values for each of the five related competencies. Core values were assigned based upon the American Dental Hygienists’ Association Code of Ethics for Dental Hygienists (which requires autonomy and respect, confidentiality, societal trust, nonmaleficence, beneficence, justice and fairness, and veracity).

Additionally, students’ clinical performance in these areas was evaluated based on “case management” (i.e., professional judgment) grades issued by clinical faculty members for each clinical case treated over the course of the three semesters that include clinical course work (i.e., spring of junior year and fall and spring of senior year). Case management grades are based upon a five-point rating scale, and clinical faculty members have the option to write a comment related to grades issued. All of these corresponding written faculty comments were analyzed to determine whether their evaluation of students’ professional judgment was related to the core values and ethical principles taught in the curriculum.

Lastly, junior and senior dental hygiene students were surveyed to determine their attitudes about practice situations related to each of the five ethics and professionalism competencies and core values. Survey items were based upon standards of professional responsibility to elicit students’ opinions or feelings about how they would respond to various moral, ethical, or professional situations encountered regularly in practice. A five-point Likert rating scale was used with 5 = strongly agree and 1 = strongly disagree. The instrument was pilot-tested with a small sample of recent graduates and reviewed by a panel of faculty members for content validity. Based upon the minimal suggestions provided, the instrument was revised and edited prior to administration.

One of the faculty members involved in this exploratory project administered the written survey to students as a class assignment and assured them of confidentiality and anonymity. Students used scantron answer sheets and self-assigned identification numbers, and results were tabulated by the university’s computer center. This survey was administered to junior students at the end of their first year in the curriculum, which corresponds to the end of their first semester of providing services for patients in the clinical setting. The survey was also administered to graduating seniors at the conclusion of their education. This project was exempt from Institutional Review Board approval because Idaho State University does not require submission of classroom exercises designed as practicum or curriculum evaluation; however, all research involving students outside of the classroom must be submitted for review.

Results

The results revealed that thirty of the thirty-four (88.24 percent) didactic, laboratory, preclinical, clinical, and extramural courses in the current curriculum include content related to ethical reasoning and professional responsibility. Evaluation of ethics and professionalism also has been incorporated into most classes, with twenty-eight of the thirty-four (82.35 percent) courses allocating some portion of the course grade to assessment of this domain. Authentic evaluation, designed to measure students’ performance in the context of situations they will encounter after graduation, was incorporated into eight of the thirty-four (23.53 percent) dental hygiene courses. Professional judgment grades issued to students in their clinical courses averaged 95.4 percent for students in their junior year and 92.35 percent and 91.02 percent in the following fall and spring semesters, respectively, during their senior year.

In all of these clinical courses, faculty members had the option to write comments related to their evaluations of professional judgment and case management. Their comments were related to core values or ethical principles in seventy-six of the 375 (20.27 percent) annotations made during the three semesters analyzed. For example, a faculty member commenting on patient confidentiality without reference to core values noted “Professionalism—be careful what you say about patient’s medical history in earshot of others.” Another faculty member related a confidentiality infraction to core values by stating, “Confidentiality was violated when you loudly discussed the patient’s medical history. This might also affect his trust in you.”

In spring 2001, junior (n=30) and senior (n=27) students were surveyed regarding their attitudes about ethics and professionalism. Frequency distributions were constructed to summarize demographic data describing respondents to the survey. Juniors ranged in age from eighteen to thirty-nine years, with 77.8 percent between the ages of eigh-
teen and twenty-four; seniors ranged in age from eighteen to forty years and older, with 61.9 percent between the ages of eighteen and twenty-four. Most juniors were never married (51.9 percent); however, 33.3 percent were currently married and 11.5 percent had children. The largest group of seniors was currently married (61.9 percent) and 28.6 percent had children. The majority of students in both classes had no previous practice experience (juniors = 59.3 percent; seniors = 71.4 percent).

Table 2 presents a summary of teaching and evaluation methods included in the dental hygiene curriculum to address one of the five ethics and professionalism supporting competencies, as well as core values assigned to those supporting competencies and related student survey questions. This integrated approach was used to explore curriculum content, evaluation mechanisms, and student opinions related to all five supporting competencies.

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<tr>
<th>Supporting Competency 1.5</th>
<th>Course</th>
<th>Method of Evaluation</th>
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<tr>
<td>Graduates must provide a safe work environment.</td>
<td>DENT 307</td>
<td>OSHA/Infection Control Written Case-Based Examination</td>
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<td>Post-Exposure Role Play Exercise Observation/Evaluation</td>
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<td>Written Case Study Assignments of Medically Compromised Patient Cases</td>
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<td>Related Core Values:</td>
<td>DENT 316</td>
<td>Latex Allergy Internet Literature Review and Cased-Based Assignment</td>
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<td>Societal trust</td>
<td>DENT 317</td>
<td>Written Radiology Safety Competency Examination</td>
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<td>Nonmaleficence</td>
<td>DENT 320</td>
<td>Case-Based Calculations of Safe Dosages of Local Anesthetic Assignment</td>
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<td></td>
<td>Post Exposure Protocol Role Play Observation/Evaluation and Evaluation Case Reviews</td>
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<td>DENT 406</td>
<td>Americans with Disabilities Empathy Exercise Observation/Evaluation</td>
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<td>Wheelchair Transfer Demonstration with Student Partners Observation/Evaluation</td>
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<td>DENT 408</td>
<td>Risk Management and Communication Case-Based Essay Examination</td>
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<td>DENT 411</td>
<td>Evaluation of Mock Post-Exposure Reporting Form</td>
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<td>Laboratory and/or Preclinical/Clinical Evaluations</td>
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<td>DENT 316L</td>
<td>Latex Allergy Questionnaire and Interview Evaluation</td>
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<td>DENT 319L</td>
<td>Criteria on Evaluation Forms for Mercury Hygiene with Amalgam Placement and for Latex Allergy with Rubber Dams Evaluation of Mock Record of Services Entries for All Lab Procedures</td>
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<td>DENT 313C</td>
<td>Infection Control/Unit Set Up Observation/Evaluation Daily Clinical Evaluation Forms with Criteria for Infection Control and Patient Management</td>
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<td>DENT 314C, DENT 403C</td>
<td>Clinical Management Evaluation Criteria for Each Patient Appointment</td>
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<td>DENT 404C</td>
<td>Clinical Progress Committee Meetings for Students Who Demonstrate Unsafe Practice with Follow-Up Case Management Evaluations</td>
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<td>DENT 405</td>
<td>Safety Criteria on Evaluation Forms for Amalgam Polishings, Marginations, and Pit and Fissure Sealants Ergonomics Videotape for Self Assessment of Clinical Performance</td>
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<td>DENT 410</td>
<td>Indian Health Service Extramural Clinical Performance Evaluation</td>
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<td></td>
<td>DENT 411C, DENT 412C</td>
<td>Criteria on Daily Evaluation Forms for Use of Safe Dosages of Local Anesthetic, Protective Devices, Biohazard Disposal, Mercury Hygiene, and Infection Control Criteria on Daily Evaluations of Asepsis and Patient Management</td>
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Student survey responses were compared using the Mann-Whitney U test. Analysis showed significant differences between junior and senior students’ opinions about ethics and professionalism in six of the thirty-four items describing how they would respond to situations commonly encountered in practice. Because of the exploratory nature of this curriculum evaluation project, a confidence level of p = 0.10 was pre-established. Junior and senior students’ attitudes differed significantly in relation to 1) their feeling familiar enough to apply laws and regulations governing dental hygiene in patient care (p = .087); 2) their perceived ability to record all required components of patient care in the record of services (p = .077); 3) the importance they placed on informing their supervisor/instructor when making a mistake that could potentially affect others (p = .001); 4) their belief in the fundamental importance of community service activity (p = .040); 5) their perceived honesty and openness with peers (p = .059); and 6) the value placed on being consistently cognizant of ergonomics (p = .043). Twenty-eight of the survey items showed no significant difference (p = 0.10) between the opinions of junior students and senior students about ethics and professionalism in dental hygiene practice.

Discussion

Analysis of curriculum content and evaluation indicated that the vast majority of faculty members value the importance of developing student competence in ethical reasoning and professional responsibility despite the fact that the dental hygiene curriculum at Idaho State University includes a separate ethics and jurisprudence course. Particularly notable is the fact that more than eight out of ten courses allocate at least some percentage of the course grade to assessment of ethical reasoning, critical thinking, decision-making, and/or professional responsibility.

Yet, as indicated in the literature review, student competence in this domain is difficult to evaluate effectively. These competencies cannot be measured in contexts that differ from actual situations that graduates will encounter in practice. Various authentic evaluation methods, including test cases, case presentations, research projects, participation in community programs, objective structured clinical examinations (OSCE), and portfolios, best evaluate values and professionalism. Exploration of the dental hygiene curriculum at Idaho State University revealed weakness in authentic evaluation; therefore, faculty training in related assessment strategies is being implemented. Portfolio evaluation also will be used to improve qualitative assessment of student competence in ethical reasoning and professionalism. Additionally, exit interviews will be conducted to determine students’ opinions about their preparation and competence in this domain. Data will be collected to evaluate these curricular enhancements.

One of the strengths of the curriculum is that assessment of professional judgment is included in the clinical evaluation system for each patient receiving care. The fact that these grades averaged over 90 percent each semester might indicate that faculty members are not as discerning and critical as one would hope in evaluating this affective domain. This observation is based on the myriad comments made by faculty members about inappropriate professional judgment without a corresponding grade deduction in case management. Also, our clinical faculty members report informally that students verbalize excuses or argue about poor case management grades as they learn the clinical system, thereby convincing clinical instructors that their professional judgment was acceptable in the context of their efforts to complete clinical requirements. Beemsterboer concludes that students today are willing to be dishonest to obtain better grades or to succeed in the professional program.21

Informal feedback from our faculty members also indicates that senior students are more prone than junior students to debate professional judgment grades in an attempt to avoid a deduction. Class averages declined slightly over the course of the curriculum, perhaps because ethical reasoning and professional judgment become more complex as the student is able to treat more complex cases. Faculty training will emphasize the need to critically evaluate this domain with increasing expectations for students as they develop competence. Suggestions will be provided to link professional judgment to core values and ethical principles to assist the student in developing critical thinking, ethical reasoning, and professionalism.

When issuing case management grades, faculty members are encouraged to provide corresponding verbal and written comments to students to foster ethical reasoning and critical thinking in patient care. Although there was no way to assess discussions between students and clinical faculty members, written annotations were provided infrequently. And even when written suggestions were made, they seldom were related to core values, ethical principles,
or standards of professional responsibility. For example, the comment might read “asepsis” without relating the incident to patient “safety.” One aspect of authentic evaluation that creates difficulty for faculty members is its subjectivity relative to other forms of evaluation. One cannot escape the subjectivity required for evaluation of professional judgment, critical thinking, and decision-making in patient care. Informal discussions with students indicate that case management grades are perceived to be subjective and personal. Training faculty to consistently link comments regarding students’ performance in this area to important core values and ethical principles taught throughout the curriculum could potentially reduce the students’ and evaluators’ discomfort with subjectivity and heighten students’ acceptance of this aspect of authentic evaluation.

Surveys of junior and senior students’ attitudes regarding ethical and professional responsibilities in dental hygiene practice indicated significant differences in only six of the thirty-four areas assessed. Senior students were more likely to perceive themselves as being familiar with laws and regulations governing dental hygiene than junior students. The seniors also perceived themselves as better able to apply the laws and regulations in patient care than did the junior students. This finding would be expected because the bulk of information regarding dental jurisprudence is presented in the senior year of the curriculum.

Senior students also perceived that they were more capable of thoroughly recording all required components of patient care in the record of services than did junior students. This skill requires applying what has been learned in one context to another and drawing on experience from a repertoire of patient cases. Junior dental hygiene students, as beginning learners, show some ability to synthesize and integrate information in clinic and to recognize clear cases where guidelines must be adjusted. They do not, however, possess the background and experience necessary to use professional judgment independently and make choices required to record comprehensively all patient interactions, analysis of diagnostic data, treatment details, complications, and other pertinent information applicable to each individual case. Junior students are documenting services rendered and developing competence in this skill; however, clinical instructors frequently suggest additions to chart entries, especially when newly learned procedures are performed or exceptional circumstances arise.

It is not surprising that junior students placed more value on the importance of informing their instructor when making a mistake that potentially affects others than did senior students. The essence of developing student competence is founded upon new graduates being able to function independently in practice. The fact that seniors at Idaho State University are less dependent upon clinical supervisors as they approach graduation potentially exemplifies success in promoting independence. This finding could be explored further through exit interviews with graduating seniors.

Senior students also valued the fundamental importance of community service activities to promote the dental hygiene profession more than junior students did. Although juniors are engaged sporadically in volunteer service activities, senior students have had the opportunity to plan, implement, and evaluate community programs and to conduct service activities in which the junior students participate. One would expect the seniors to have a higher level of appreciation for the impact of service on the profession, based upon their acquired knowledge, skills, and experience.

Senior students perceived themselves as being honest and open with peers more than did junior students when asked for their opinions, perhaps because they possess greater knowledge and skills upon which peer evaluations are based. Novice and beginning learners also rely more on extrinsic feedback from the faculty, whereas more competent learners might rely more on self- and peer-assessment.

The junior students believed they consistently were aware of ergonomics more than seniors did. One might postulate that practitioners acquire bad postural habits as their focus shifts away from the fundamentals toward the more complex aspects of patient care. Some seniors also might be concerned more with the product than the process of care.

The fact that twenty-eight of the thirty-four survey items showed no difference in junior and senior student opinions regarding ethics and professional responsibility in dental hygiene practice could be because students responded based upon what they thought they should say rather than what they might actually do when confronted with ethical challenges in practice. The students also lacked the breadth of practical experience upon which to base their responses. In the future, use of a standardized evaluation instrument like the Dental Sensitivity Test would more accurately assess differences in indi-
individual students’ ability to recognize ethical issues often hidden in professional practice problems.

Conclusions

This multifaceted exploratory study of the ethics and professionalism component of the dental hygiene curriculum at Idaho State University revealed several strengths and weaknesses. Strengths include the diffusion of ethics content throughout nearly all aspects of the curriculum; the faculty’s commitment to evaluating ethical reasoning, critical thinking, and decision-making as a portion of the grade in the vast majority of courses; authentic evaluation of student competence in ethics and professionalism in clinical and community-based courses; and the perceived development of independent problem-solving skills as students progress through the curriculum.

Areas to improve include the need for broader and more diverse methods of authentic evaluation; faculty training in assessment of ethical reasoning and professional responsibility including methods for relating evaluations of professional judgment to core values, ethical principles, and professional responsibilities; adoption of a practical ethical decision-making model that can be reinforced and applied in all aspects of the curriculum; and implementation of portfolio evaluation and exit interviews to enhance assessment of student competence in these domains. Although there are reports of successful implementation of these strategies, their adoption is not universal.

Overall, this exploratory project provided insight into pluses and minuses in the existing ethics component of the dental hygiene curriculum at Idaho State University. Perhaps it helped motivate faculty to implement these additional educational strategies as well.

REFERENCES