

PRAC Assessment Grant Final Report

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Project title: Assessing the Humanistic Culture and Learning Environment of the Indiana University School of Dentistry

Project dates: June 1, 2012 – May 30, 2013

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Background

A standard of all accredited dental education programs is a “stated commitment to a humanistic culture and learning environment that is regularly evaluated (Accreditation Standards for Dental Education Programs, Standard 1-3, 2010).” The Commission on Dental Accreditation (CODA), the accrediting body of Indiana University School of Dentistry (IUSD), intends for schools to “ensure collaboration, mutual respect, cooperation, and harmonious relationships,” as well as to “support and cultivate the development of professionalism and ethical behavior (Accreditation Standards for Dental Education Programs, Standard 1-3, 2010).” On November 14, 2011, to support compliance with this standard, the Faculty Council of IUSD approved the values of integrity, competency, learning, respect, and excellence to serve as Guiding Values for all educational programs. These values were chosen by the students, staff and faculty from a survey developed by members of the IUSD Faculty Council.

Approval of the Guiding Values was an important step in the school’s commitment to promoting a humanistic culture and learning environment. Moreover, the Guiding Values further align IUSD with IUPUI’s Principles of Undergraduate Learning (PUL), for the Dental Hygiene (DH) and Dental Assisting (DA) programs, and Principles of Graduate and Professional Learning (PGPL), for the Doctor of Dental Surgery (DDS) and Graduate programs.

A critical component in complying with the CODA humanistic environment standard is providing evidence of regular assessment of the school’s stated commitment to a humanistic culture and learning environment. Therefore, the intended outcomes of this initiative are to:

1. Develop and pilot an instrument
2. Develop an assessment plan
3. Analyze assessment data
4. Create action plans based on assessment data to promote humanism in deficient areas
5. Evaluate outcomes of action plans and the need for additional corrective action
6. Continue implementation of ongoing assessment plan

Summary of Intended Outcomes and Project Accomplishments

The initial phase of the “Assessing the Humanistic Culture and Learning Environment of the Indiana University School of Dentistry” project ran from June 1, 2012 – May 30, 2013 and was funded by a Program Review and Assessment Committee (PRAC) grant. Although several aspects of the assessment methods changed from the original proposal, all of the intended outcomes were accomplished. This section provides a summary of the project’s intended outcomes and accomplishments.

Developing an Assessment Instrument

Intended Outcome (from proposal)	Project Accomplishment	Outcome met
Develop and pilot an instrument to assess the humanistic culture and learning environment of IUSD	Conducted an extensive literature review to determine the most appropriate instrument to measure the humanistic culture and learning environment of IUSD	Yes

A review of the literature was conducted to inform the creation/selection of an instrument to measure the humanistic culture and learning environment of IUSD. A small group of faculty and staff reviewed instruments measuring constructs such as civility, multicultural competence, empathy, and workplace climate. Initially, an instrument was created by combining the Nursing Incivility Scale (Guidroz, Burnfield-Geimer, Clark, Schwetschenau, & Jex, 2010), the Jefferson Scale of Physician Empathy (Hojat et al., 2001), and the Multicultural Competence Change Scale (Caban, 2010). Beta testing of the instrument elucidated two primary concerns: 1) at 94 questions, the instrument, comprised of the three subscales and a demographics section, was perceived as too long, and 2) although validation data existed for the three subscales individually, there was concern regarding how well the instrument as a whole measured humanistic culture and learning environment, specifically as it related to IUSD’s Guiding Values. It was determined that a single instrument might be better suited to meet the unique needs of this project. An additional review of the literature was conducted, and ultimately, study investigators determined that the Dental School Learning Environment Survey (DSLES) (Henzi, Davis, Jasinevisius, Hendricson, Cintron, & Isaacs, 2005) was the most appropriate choice to fit the needs of the school. Factoring into the decision was that both pilot and validation data were available for the

instrument, it was specifically designed to assess the dental school learning environment, it measured student perceptions, and its subscales mapped to the IUSDs Guiding Values and the IUPUI PULs and PGPLs. Permission was granted by one of the instrument designers, William Hendricson, to use the DSLES for this project.

Development of an Assessment Plan

Intended Outcome (from proposal)	Accomplishment	Outcome met
Develop an assessment plan	Developed an assessment plan for the ongoing evaluation of IUSD’s humanistic culture and learning environment	Yes

Based on the subscales of the DSLES, the IUSD humanistic culture and learning environment assessment plan focused on measuring the following outcomes:

IUSD will:

1. Provide opportunities to modify the learning environment (flexibility).
2. Provide opportunities for social and academic interactions (peer to peer interactions).
3. Provide experiences to support positive affective perceptions of the school’s environment (emotional climate).
4. Express concern and support for students, faculty and staff (supportiveness).
5. Provide structured activities relevant to the teaching, learning, and practice of dentistry (meaningful experience).
6. Provide a coherent educational experience within the curricula (organization).
7. Encourage development in a variety of activities within and outside the teaching, learning, and practice of dentistry (breadth of interest).

The learning environment survey will be implemented annually, and the results will be used to develop and implement faculty, student, and staff enrichments in deficient areas. The plan was separated into three phases: Phase I – survey of students, Phase II – annual survey of students and faculty, Phase III – annual survey of students, faculty, and staff on a continual basis.

Analysis of Assessment Data

Intended Outcome (from proposal)	Accomplishment	Outcome met
Analyze assessment data	Conducted descriptive data analysis of student responses to the DSLES	Yes (Phase I - student data only)

During the first phase of the project, the DSLES was distributed to all students in all academic programs at IUSD using Qualtrics Survey Software. Students responded to each DSLES item on a 4 point scale, with scores closer to 4 indicating a more positive environmental factor and scores closer to 1 indicating a less desirable one. Descriptive analysis of the assessment data was conducted using SPSS Statistics 20. Means for each item were calculated, as well as means for each subscale and a composite mean for the entire instrument. Means closer to 4 indicated a more positive environment, whereas means closer to 1 indicated a less desirable one.

Action Plan Creation

Intended Outcome (from proposal)	Accomplishment	Outcome met
Create action plans based on assessment of data	Created action plans based on assessment of student data	Yes (Phase I – student data only)

The assessment data indicated that students rated IUSD's Flexibility the lowest of all the subscales, 2.32/4.0. The items rated as less desirable in the Flexibility subscale were: incorporating new teaching methods, shaping the academic program to needs and preferences, and curricular and administrative policies are flexible.

The following action plans were created in order to address the deficient areas:

- **A1:** Implement faculty enrichments focused on incorporating new teaching methods.
- **A2:** Review current elective structure in order to give students more flexibility to shape the program to meet their academic needs
- **A3:** Review and increase visibility of curricular and administrative policies

Evaluation of Outcomes

Intended Outcome (from proposal)	Accomplishment	Outcome met
Evaluate outcomes of action plans and need for additional action	Developed plan for evaluating outcomes of action plans and need for additional action	Yes (Phase I – student data only)

The Office of Academic Affairs (OAA) provides oversight for the assessment of IUSD’s humanistic culture and learning environment, and is responsible for assigning action plan implementation and oversight to the appropriate academic areas. Oversight for **A1**: implementing faculty enrichments focused on incorporating new teaching methods was given to the Office of Faculty Affairs (OFA). The OFA has provided three faculty enrichments focused on implementing new teaching methods:

- Interprofessional Education, Dr. Laura Romito, IU School of Dentistry, February 1, 2013
- Online Teaching and Learning, Tom Janke and Dr. Lisa Contino, IUPUI Center for Teaching and Learning, March 1, 2013
- Competency Assessment, Tom Janke and Dr. Lisa Contino, IUPUI Center for Teaching and Learning, June 3, 2013

The incorporation of new teaching methods will be reassessed annually on the DSLES, and longitudinal data will be compared in order to identify any shifts in student perceptions related to this environmental factor.

The IUSD programs have lockstep curricula, requiring that future courses build upon past courses and program years build upon one another. Thus, the IUSD curricula are not as flexible as undergraduate Liberal Arts curricula may be. One area of the DDS curriculum that does allow for student choice and flexibility is the Intramural Electives program. The IUSD Curriculum and Assessment Committee (CAC) in conjunction with the OAA were charged with **A2**: reviewing the current electives structure. Upon review, several recommendations were made for improving the school’s current elective structure, resulting in the following outcomes:

- Opened appropriate electives to all DDS students in order to provide students in years 1-3 the opportunity to modify their learning experiences earlier in the curriculum.

- Created clearly identifiable elective tracks - patient care, teaching and learning, research, and service - in order to increase student awareness of the opportunity to tailor their Intramural Electives experience to meet their individual needs and preferences.
- Implemented a standardized pre- and post- elective reflection assignment to cultivate student awareness of educational goals, achievement of learning objectives, and how the experience supported their personal needs and preferences.
- Shifted from a clock hour requirement, to a credit hour based system in order to encourage students to focus more on the elective experience rather than counting hours to fulfill a requirement.
- Created policy encouraging students to take electives from more than one track in order to provide an Intramural Electives experience that is able to suit the diverse needs and preferences of our students.

The OAA and CAC worked together to implement the recommendations and will reassess the outcomes as part of its ongoing Curriculum Management Process. Student perceptions on their ability to shape their academic program to their needs and preferences will be reassessed annually on the DSLES, and longitudinal data will be compared in order to identify if the environmental factor is shifting from less desirable to more positive.

The OAA, Office of Admissions and Student Affairs (OASA) and the Chief Compliance Officer were assigned **A3**: oversight of reviewing and increasing the visibility of curricular and administrative policies. Upon review, several recommendations were made and changes implemented:

- Conduct student focus group in order to identify specific policies perceived by students as inflexible
- Compile all curricular and administrative policies into a single document and publish document in an accessible place for all students, faculty, and staff

Similar to the other items, student perceptions on the inflexibility of curricular and administrative policies will be reassessed annually.

Continued Implementation of Ongoing Assessment Plan

Intended Outcome (from proposal)	Accomplishment	Outcome met
Continue implementation of ongoing assessment plan	Developed plan for the implementation of the ongoing assessment plan	Ongoing

The DSLES will be administered and assessment data will be analyzed annually. Phases II and III of the assessment plan will be implemented in the Summer/Fall of 2013. Action plans and outcomes will be reviewed annually by the groups responsible for oversight.

Methods

The assessment plan (Table 1) for measuring the humanistic culture and learning environment of IUSD was divided into three phases:

Table 1. Assessment Plan			
Phase	Group surveyed	Initial Survey Date	Assessment cycle
I	All IUSD students	February 15, 2013	Ongoing annually
II	All IUSD faculty	August 1, 2013	Ongoing annually
III	All IUSD staff	August 15, 2013	Ongoing annually

In Phase I, students had the opportunity to share their perceptions of the humanistic culture and learning environment of IUSD by responding to questions on the DSLES. In Phases II and III, IUSD faculty and staff will have the opportunity to do the same.

This method of data collection varied slightly from the method outlined in the original PRAC grant proposal. Originally, it was proposed to have students, faculty, and staff complete self-assessments, reflecting on how their personal behavior might impact the humanistic culture and learning environment of the school. Additionally, peer, supervisor, and subordinate assessments would have provided a 360° assessment of the individual's humanistic behavior. Individuals would have met with the person responsible for their academic unit to discuss the 360° assessment and create action plans for correcting deficient areas. Aggregate data from the self, peer, supervisor, and subordinate assessments would have been analyzed to determine institutional deficiencies and to inform plans for corrective action.

Upon a reassessment of logistics, resources, and the intended outcomes of the project, it was decided to shift the focus from the individual’s behavior to the institutional climate. Instead of focusing on collecting 360° assessments of individuals to inform personal action plans, the perceptions from students were collected in order to inform broader action plans intended for more impactful institutional change.

The Dental School Learning Environment Survey

The DSLES consists of 55 items divided into 7 subscales, measuring: flexibility, student to student interaction, emotional climate, supportiveness, meaningful experience, organization, and breadth of interest (Table 2). Respondents were asked to use a 4-point scale – seldom, occasionally, fairly often, and very often – to respond to how often they have experienced a particular environmental factor at the school. A fifth option was available if there was insufficient information available to choose one of the other four.

Table 2. DSLES Subscales		
Category	# of Items	Subscale Description
Flexibility	6	Opportunities for faculty and students to modify the learning environment together
Student to student interaction	6	Extent to which students mix socially and academically
Emotional climate	8	The way in which students’ experience affects their perceptions of dental education
Supportiveness	9	Degree of concern expressed and support provided by faculty for students
Meaningful experience	10	Extent to which structured learning activities are perceived to be relevant to the practice of dentistry
Organization	9	Degree of coherence of educational experiences within the curriculum
Breadth of interest	7	Extent to which students are encouraged to develop a variety of activities within and outside regular coursework

Each environmental factor measured on the DSLES was mapped to the closest corresponding IUSD Guiding Value. Similarly, items were also mapped to the IUPUI PULs and PGPLs. Some of the DSLES subscales mapped to more than one IUSD Guiding Value, PUL, or PGPL. The mapping process provided insight into how perceptions of IUSDs learning environment may positively or negatively influence the promotion of the IUSD Guiding Values and the achievement of the IUPUI PULs and PGPLs (Table 3).

Table 3. Corresponding DSLES Subscales, IUSD Guiding Values, PULs, and PGPLs			
DSLES Subscale	IUSD Guiding Value(s)	PUL(s)	PGPL(s)
<ul style="list-style-type: none"> Flexibility 	<ul style="list-style-type: none"> Learning 	<ul style="list-style-type: none"> Integration and Application of Knowledge Intellectual Depth, Breadth, and Adaptiveness 	<ul style="list-style-type: none"> Demonstrating mastery of the knowledge and skills expected for the degree and for professionalism and success in the field
<ul style="list-style-type: none"> Student to student interactions 	<ul style="list-style-type: none"> Integrity Respect 	<ul style="list-style-type: none"> Core Communication and Quantitative Skills Values and Ethics Understanding Society and Culture 	<ul style="list-style-type: none"> Communicating effectively to others in the field and to the general public Behaving in an ethical way both professionally and personally
<ul style="list-style-type: none"> Emotional Climate 	<ul style="list-style-type: none"> Respect Excellence 	<ul style="list-style-type: none"> Values and Ethics Understanding Society and Culture Core Communication and Quantitative Skills 	<ul style="list-style-type: none"> Communicating effectively to others in the field and to the general public Behaving in an ethical way both professionally and personally
<ul style="list-style-type: none"> Supportiveness 	<ul style="list-style-type: none"> Respect 	<ul style="list-style-type: none"> Understanding Society and Culture Values and Ethics 	<ul style="list-style-type: none"> Behaving in an ethical way both professionally and personally
<ul style="list-style-type: none"> Meaningful experience 	<ul style="list-style-type: none"> Competency Excellence 	<ul style="list-style-type: none"> Core Communication and Quantitative Skills Critical Thinking Integration and Application of Knowledge 	<ul style="list-style-type: none"> Demonstrating mastery of the knowledge and skills expected for the degree and for professionalism and success in the field Thinking critically, applying good judgment in professional and personal situations Communicating effectively to others in the field and to the general public
<ul style="list-style-type: none"> Organization 	<ul style="list-style-type: none"> Learning 	<ul style="list-style-type: none"> Integration and Application of Knowledge Intellectual Depth, Breadth, and Adaptiveness 	<ul style="list-style-type: none"> Demonstrating mastery of the knowledge and skills expected for the degree and for professionalism and success in the field
<ul style="list-style-type: none"> Breadth of interest 	<ul style="list-style-type: none"> Integrity Learning 	<ul style="list-style-type: none"> Core Communication and Quantitative Skills Values and Ethics Integration and Application of Knowledge Intellectual Depth, Breadth, and Adaptiveness 	<ul style="list-style-type: none"> Demonstrating mastery of the knowledge and skills expected for the degree and for professionalism and success in the field Communicating effectively to others in the field and to the general public Behaving in an ethical way both professionally and personally

Survey Administration – Phase I

The DSLES was administered using the Qualtrics Survey Software. The survey was sent electronically to 663 students in the DA, DH, DDS, and Graduate programs. A sample size calculation for descriptive studies determined that 62 respondents were necessary for 95% confidence that mean responses were valid estimations of the student population, with a standard error of +/- .25 and a standard deviation of 1.00. The standard deviation was determined by reviewing national validation data of the DSLES (Henzi et al., Appraisal of the Dental School Learning Environment: The Students' View, 2005).

Of the 663 surveys distributed, 81 students completed the survey for a 12.22% response rate (Table 4). The highest response rate (15.57%) came from the DDS students, while the lowest response rate (4.35%) came from the DA students. The 12.22% response rate is sufficient for 95% confidence that the mean responses (+/- .25) to the survey items are valid estimations of the student population.

Table 4. Survey Response Rates				
Program	Surveys Sent	Surveys Completed	% of Program	% of Total Responses
Dental Assisting	23	1	4.35	1.23
Dental Hygiene	113	7	6.19	8.64
DDS	411	64	15.57	79.01
Graduate	116	9	7.76	11.12
Total	663	81	12.22	100

Analysis of Survey Data – Phase I

Descriptive statistical analysis was conducted on student responses to the DSLES using SPSS Statistics 20. Means and standard deviations were calculated for each item. Means were also calculated for each subscale and a composite mean was calculated for the entire instrument. Items with reverse scaling, i.e. items phrased in the semantically opposite direction, were recoded prior to analysis. For reporting purposes, all items are phrased positively, with higher scores indicating a more positive environmental factor. Additionally, any responses of insufficient information did not factor into the analysis.

A scale was developed to interpret the results of the DSLES based on the 4-point response scale (Table 5). A midpoint of 2.50 was identified as indicating neither a positive nor a less desirable environment. Mean responses from 2.51 – 4.00 were determined to indicate a more positive environment, and responses from 1.00 – 2.49 were determined to indicate a less desirable environment.

Table 5. DSLES Results Interpretation Scale	
Environmental descriptor	Response range
More positive (2)	3.26 – 4.00
(1)	2.51 – 3.25
Neither positive nor less desirable (0)	2.50
(-1)	1.75 – 2.49
Less desirable (-2)	1.00 – 1.74

Results

The results of the data analysis suggest that students viewed 6 of the 7 learning environment categories (subscales) as positive (Table 6). Students rated Student to Student Interactions the highest (3.20/4.00) and Flexibility (2.32/4.00) the lowest. A composite mean of 2.77 was calculated for the entire instrument, suggesting that students generally perceive the learning environment of IUSD positively.

Table 6. Dental School Learning Environment Survey Summary		
# of Items	Subscales	Mean
6	Flexibility	2.32
6	Student to Student Interactions	3.20
8	Emotional Climate	2.77
9	Supportiveness	2.80
10	Meaningful Experience	2.69
9	Organization	3.08
7	Breadth of Interest	2.53
55	Composite Mean	2.77

The Flexibility subscale was rated the lowest (2.32/4.00) by IUSD students (Table 7). The items contributing the most to the lower rating were:

- Students are able to shape their academic program to fit their individual needs and preferences (1.70/4.00).
- Curricular and administrative policies are flexible (2.12/4.00).
- Faculty try out new teaching methods and materials (2.19/4.00).

The highest rated item on the Flexibility subscale was:

- Assignments are given out well in advance so students can plan their time accordingly (3.10/4.00).

Table 7. Flexibility Subscale Summary		
Item	DSLES Environment Factor	Mean
1	Faculty try out new teaching methods and materials.	2.19
2	Students are able to shape their academic program to fit their individual needs and preferences.	1.70
16	The environment of the school allows for interests outside of dentistry.	2.53
18*	Curricular and administrative policies are flexible.	2.12
30	Assignments are given out well in advance so students can plan their time accordingly.	3.10
39	Students participate in decisions that affect their academic life at the school.	2.27
	Mean Flexibility Subscale	2.32

*Item reversed for reporting purposes

The highest rated subscale on the DSLES contained items on Student to Student Interactions (3.20/4.00) (Table 8). The three highest scoring items were:

- There are not tensions among students that interfere with learning (3.50/4.00).
- Students in the school get to know each other well (3.26/4.00).
- Students in the school are not distant with each other (3.25/4.00).

Table 8. Student to Student Interaction Subscale Summary		
Item	Topic	Mean
7*	Students in the school are not distant with each other.	3.25
15	Students in the school get to know each other well.	3.26
22	Students gather together in informal activities.	3.10
31	Students spend time assisting each other.	3.00
48*	There are not tensions among students that interfere with learning.	3.50
52	Students are reluctant to share with each other problems they are having.	3.11
	Mean Student to Student Interaction Subscale	3.20

*Item reversed for reporting purposes

The remaining 5 subscales – Emotional Climate, Supportiveness, Meaningful Experience, Organization, and Breadth of Interest – were all rated positively by the students. The Organization subscale was rated the highest of the remaining 5, and was rated second highest overall (3.08/4.00) (Table 12). The items viewed most positively were:

- Instructors outline course objectives at the beginning of their courses (3.74/4.00).
- Classes progress systematically from week to week (3.26/4.00).
- There is consistency between stated course objectives and what is actually taught (3.32/4.00).

The breadth of interest subscale was rated lowest of the remaining 5 subscales, and second lowest overall (2.53/4.00) (Table 13). The items contributing most to the lower rating were:

- Courses develop skills in formulating and testing hypotheses, and drawing conclusions (2.26/4.00).
- Faculty foster an understanding of the psychological dynamics of being ill (2.26/4.00)
- Students have time for recreation (2.32/4.00).
- Faculty try to get students interested in the broad social context of oral health care (2.45/4.00).
- Students do not have difficulty finding time for family and friends (2.45/4.00).

The results for the emotional climate, supportiveness, and meaningful experience subscales are summarized in Tables 9 – 11.

Table 9. Emotional Climate Subscale Summary		
Item	Topic	Mean
5*	The educational experience does not make students feel depressed.	2.76
23*	The educational experience does not make students feel angry.	2.63
27*	Students' anxiety does not hinder them from achieving up to their full potential.	2.72
33*	Students do not talk about leaving school.	3.39
41*	Students are comfortable around the faculty.	3.17
43*	Competition for grades is not intense.	2.64
46*	The educational experience does not make students feel anxious.	2.24
50	The educational experience makes students value themselves.	2.63
	Emotional Climate Subscale	2.77

*Item reversed for reporting purposes

Table 10. Supportiveness Subscale Summary		
Item	Topic	Mean
11*	Faculty are not reserved and distant with students.	3.18
13*	Students do not hesitate to express their opinions and ideas to the faculty.	2.70
20	Faculty and administrators give personal help to students having academic difficulty.	2.83
26	Student complaints are responded to with meaningful action.	2.14
28	Faculty exhibit enthusiasm for the subject matter of their special field.	3.00
29	The school takes an interest in the personal welfare of the students.	2.46
36	When giving criticism or answering a question, faculty are genuinely interested in helping the student.	3.14
47	Faculty are helpful to students seeking advice not directly related to academics.	2.54
49*	Faculty do not regard their teaching responsibilities as a burden.	3.25
	Supportiveness Subscale	2.80

*Item reversed for reporting purposes

Table 11. Meaningful Experience Subscale Summary		
Item	Topic	Mean
9	Students feel that they are learning what they need to learn in order to become competent dentists.	3.13
12	Exams emphasize understanding of concepts rather than memorization of facts.	2.46
17	The educational experience tends to make students feel a sense of achievement.	2.77
19	Students are called upon to actively put methods and ideas to use in new situations.	2.53
24*	The relationship b/w basic science and clinical material is clear.	2.95
35*	Courses do not emphasize memorization of trivial details.	2.19
37	Students can see the relationship between what they are studying and the kinds of patient care situations they will meet when they graduate.	2.87
40	Courses emphasis interdependence of facts, concepts, and principles.	2.94
45*	Courses are not dull and tedious.	2.47
55	The educational experience tends to make students feel confident of their academic abilities.	2.63
	Meaningful Experience Subscale	2.69

*Item reversed for reporting purposes

Table 12. Organization Subscale Summary		
Item	Topic	Mean
4	Instructors outline course objectives at the beginning of their courses.	3.74
6	The emphasis given a particular content on an exam is in proportion to the emphasis given that content in the course.	2.76
10	Classes progress systematically from week to week.	3.36
14*	Course assignments are not vague and ambiguous.	2.92
21	Instructors explain what students should get out of their courses, and why the material is important.	3.03
25*	Students do not have difficulty integrating course material into a cohesive whole.	2.95
42*	Students are certain as to what will be expected of them on examinations.	3.01
51	Examinations provide a fair measure of student achievement.	2.64
54*	There is consistency between stated course objectives and what is actually taught.	3.32
	Organization Subscale	3.08

*Item reversed for reporting purposes

Table 13. Breadth of Interest Subscale Summary		
Item	Topic	Mean
3	A background in the behavioral sciences is seen as important in the development of a dentist.	2.85
8	Faculty emphasize personal as well as technical aspects of health care.	3.10
32	Faculty try to get students interested in the broad social context of oral health care.	2.45
34*	Students do not have difficulty finding time for family and friends.	2.45
38*	Students have time for recreation.	2.32
44	Courses develop skills in formulating and testing hypotheses, and drawing conclusions.	2.26
53	Faculty foster an understanding of the psychological dynamics of being ill.	2.26
	Breadth of Interest Subscale	2.53

*Item reversed for reporting purposes

Discussion

The results suggest that, in general, students at IUSD view the learning environment positively (composite mean 2.77/4.00). A comparison to other national administrations of the DSLES revealed that students at IUSD rated the 7 subscales of the DSLES higher than the average of the other 4 cohorts (Table 14) (Henzi, Davis, Jasinevisius, Hendricson, Cintron, & Isaacs, 2005).

Table 14. Comparison of DSLES Scores: IUSD to Other National Administrations					
Subscale	2013 IUSD All Yrs All Programs	2003 1st Yr DDS Program	2003 3rd Yr DDS Program	1993 All Yrs DDS Program	1990 All Yrs DDS Program
Flexibility	2.32*	2.40	2.39	2.05	2.27
Student Interaction	3.20*	2.43	2.47	2.60	2.74
Emotional Climate	2.77*	2.22	2.46	2.66	2.58
Faculty Support	2.80*	2.48	2.36	2.27	2.38
Meaningful Experience	2.69*	2.66	2.62	2.35	2.20
Organization	3.08*	2.56	2.56	2.48	2.62
Breadth of Interest	2.53*	2.68	2.60	2.08	2.12
Total	2.77*	2.49	2.49	2.37	2.39

*IUSD score is higher than the average of the 4 other national administrations of the DSLES

Of the 7 subscales, only one, Flexibility, was perceived by students to be less desirable. The item that rated lowest on the subscale was students' perceived ability to shape their academic program to their individual needs and preferences. As mentioned previously, the IUSD academic programs have lockstep curricula, which allow for less flexibility than programs in other disciplines. The primary way for students in our DDS program to shape their academic program to their individual needs and preferences is through our Intramural Electives courses. Based on the assessment data from the DSLES, an action plan was created to review the school's current elective structure in order to provide greater flexibility for students to shape their program to their individual needs and preferences. Several recommendations were made from the review resulting in the following outcomes:

- Opened appropriate electives to all DDS students in order to provide students in years 1-3 the opportunity to modify their learning experiences earlier in the curriculum.
- Created clearly identifiable elective tracks - patient care, teaching and learning, research, and service - in order to increase student awareness of the opportunity to tailor their Intramural Electives experience to meet their individual needs and preferences.
- Implemented a standardized pre- and post- elective reflection assignment to cultivate student awareness of educational goals, achievement of learning objectives, and how the experience supported their personal needs and preferences.
- Shifted from a clock hour requirement, to a credit hour based system in order to encourage students to focus more on the elective experience rather than counting hours to fulfill a requirement.

- Created policy encouraging students to take electives from more than one track in order to provide an Intramural Electives experience that is able to suit the diverse needs and preferences of our students.

The IUSD Curriculum and Assessment Committee (CAC) and the Office of Academic Affairs (OAA) were responsible for implementing the recommendations for program improvement, and will reassess the outcomes as part of its ongoing Curriculum Management Process. Student perceptions on their ability to shape their academic program to their needs and preferences will be reassessed annually on the DSLES, and longitudinal data will be compared in order to identify if the environmental factor is shifting from less desirable to more positive.

Two additional environmental factors rated lower on the Flexibility subscale by students were implementation of new teaching methods and the flexibility of curricular and administrative policies. The Office of Faculty Affairs (OFA) used the assessment data to develop an action plan to implement faculty enrichments focused on incorporating new teaching methods. Similarly, the OAA, OASA, and the Chief Compliance Officer created an action plan to review and increase the visibility of curricular and academic policies. Several outcomes resulted from the actions plans. First, three faculty enrichments focused on new teaching methods were planned for the spring 2013 semester:

- Interprofessional Education, Dr. Laura Romito, IU School of Dentistry, February 1, 2013
- Online Teaching and Learning, Tom Janke and Dr. Lisa Contino, IUPUI Center for Teaching and Learning, March 1, 2013
- Competency Assessment, Tom Janke and Dr. Lisa Contino, IUPUI Center for Teaching and Learning, June 3, 2013

Second, a focus group with current IUSD students is being planned for the spring 2013 semester to identify curricular and administrative policies perceived as inflexible. The policies identified by students will then be reviewed by a group of stakeholders consisting of faculty, administrators, and staff in order to make improvements. Lastly, all IUSD curricular and administrative policies will be compiled and categorized in a user-friendly format that can be readily accessed by IUSD students, faculty, and staff. The intent of this process is to increase awareness and visibility of the policies, thereby possibly decreasing feelings that policies are inflexible. The outcomes of the action plans will be reassessed

annually on the DSLES, and longitudinal data will be compared in order to identify if the environmental factors are shifting from less desirable to more positive.

It is encouraging that the other 6 subscales were all rated positively by the students. This suggests that IUSD is cultivating an environment that:

- Provides opportunities for students to mix socially and academically (student to student interactions).
- Supports experiences that positively impact the non-intellectual (affective) perceptions of students (emotional climate).
- Expresses concern and support for students by its faculty and administrators (supportiveness).
- Provides structured learning activities relevant to the practice of dentistry (meaningful experience).
- Provides a coherent educational experience within its curricula (organization).
- Encourages development in a variety of activities within and outside the practice of dentistry (breadth of interest).

Additionally, the students' positive ratings on the Student Interactions, Emotional Climate, Supportiveness, Meaningful Experience, Organization, and Breadth of Interest subscales may suggest that the IUSD learning environment positively influences the promotion of the school's Guiding Values and the achievement of the IUPUI PULs and PGPLs. For example, an environment that encourages positive Student to Student Interactions (3.20/4.00), may also promote the values of integrity and respect, and facilitate the achievement of the PULs of Core Communication and Quantitative Skills, Values and Ethics, and Understanding Society and Culture, as well as the PGPLs of communicating effectively to others in the field and to the general public and behaving in an ethical way both professionally and personally. Additional research is needed to investigate the relationship between the learning environment and the promotion of IUSD's Guiding Values and achievement of the IUPUI PULs and PGPLs.

Conclusion

The adoption of the Guiding Values for all academic programs by the IUSD Faculty Council was an important foundational step in the school's stated commitment to a humanistic culture and learning environment. The School's stated commitment will be regularly evaluated by an annual surveying of students, faculty and staff using the DSLES instrument and modifications thereof. The first phase of the assessment plan involved surveying students, and provided important pilot data that informed actionable plans for program improvement.

It is recommended for Phases II and III of the assessment plan to modify the items of the DSLES to measure faculty and staff perceptions of IUSD's humanistic culture and learning environment. Every effort will be made to maintain the integrity of the DSLES and an item for item correlation with the original student version. Descriptive statistical analysis will be conducted on the faculty and staff data, and the collection of this data will allow for additional inferential statistical analysis between the student, faculty, and staff groups.

The ongoing assessment of IUSD's humanistic culture and learning environment will provide valuable evidence to support compliance with national accreditation standards. Additionally, data from the DSLES survey will inform action plans for program improvement. Lastly, with additional research, it will provide insight into how the school's learning environment may contribute to the promotion of the IUSD Guiding Values and achievement of the IUPUI PULs and PGPLs.

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Appendix I: Acronyms

CAC – IUSD Curriculum and Assessment Committee

CODA – Commission on Dental Accreditation

DA – Dental Assisting

DDS – Doctor of Dental Surgery

DH – Dental Hygiene

DSLES – Dental School Learning Environment Survey

IUPUI – Indiana University – Purdue University Indianapolis

IUSD – Indiana University School of Dentistry

OAA – IUSD Office of Academic Affairs

OFA – IUSD Office of Faculty Affairs

PGPL – Principle of Professional and Graduate Learning

PRAC – IUPUI Program Review and Assessment Committee

PUL – Principle of Undergraduate Learning

Appendix II: The Dental School Learning Environment Survey (DSLES)

DENTAL SCHOOL LEARNING ENVIRONMENT SURVEY (DSLES)

DIRECTIONS

- (1) Read each item carefully.
- (2) Think about how often you have experienced the behavior, attitude or policy described in the item.
- (3) Determine your response by choosing one of the categories of frequency given below.

Choose the category that most closely approximates your perceptions.

SELDOM - this happens rarely, if at all.

OCCASIONALLY- this happens once in a while.

FAIRLY OFTEN - this happens fairly regularly.

VERY OFTEN - this happens very frequently.

- (4) Mark your answer on the bubble-in answer using the following choices: If your choice is SELDOM, MARK A

If your choice is OCCASIONALLY, MARK B

If your choice is FAIRLY OFTEN, MARK C

If your choice is VERY OFTEN, MARK D

Please try to respond to every item.

If you feel that you have INSUFFICIENT INFORMATION to respond to an item, MARK E.

Your year in dental school: DS 1

DS 2 DS 3 DS 4

Other – please describe:

DENTAL SCHOOL LEARNING ENVIRONMENT SURVEY (DSLES)

A = SELDOM

B = OCASIONALLY

C = FAIRLY OFTEN

D = VERY OFTEN

E = INSUFFICIENT INFORMATION

1. Faculty try out new teaching methods and materials.
2. Students are able to shape their academic program to fit their individual needs and preferences.
3. A background in the behavioral sciences is seen as important in the development of a dentist.
4. Instructors outline course objectives at the beginning of their courses.
5. The educational experience makes students feel depressed.
6. The emphasis given a particular content area on an exam is in proportion to the emphasis given that content in the course.
7. Students in the school are distant with each other.
8. Faculty emphasize the personal as well as the technical aspects of health care.
9. Students feel that they are learning what they need to learn in order to become competent dentists.

10. Classes progress systematically from week to week.
11. Faculty are reserved and distant with students.
12. Exams emphasize understanding of concepts rather than memorization of facts.
13. Students hesitate to express their opinions and ideas to the faculty.
14. Course assignments are vague and ambiguous.
15. Students in the school get to know each other well.
16. The environment of the school allows for interests outside of dentistry.
17. The educational experience tends to make students feel a sense of achievement.
18. Curricular and administrative policies are inflexible.
19. Students are called upon to actively put methods and ideas to use in new situations.
20. Faculty and administrators give personal help to students having academic difficulty.
21. Instructors explain what students should get out of their courses, and why the material is important.

22. Students gather together in informal activities.
23. The educational experience makes students feel angry.
24. The relationship between basic science and clinical material is not clear.
25. Students have difficulty integrating course material into a cohesive whole.
26. Student complaints are responded to with meaningful action.
27. Students' anxiety hinders them from achieving up to their full potential.
28. Faculty exhibit enthusiasm for the subject matter of their special field.
29. The school takes an interest in the personal welfare of the students.
30. Assignments are given out well in advance so students can plan their time accordingly.
31. Students spend time assisting each other.
32. Faculty try to get students interested in the broad social context of oral health care.
33. Students talk about leaving school.

34. Students have difficulty finding time for family and friends.
35. Courses emphasize memorization of trivial details.
36. When giving criticism or answering a question, faculty are genuinely interested in helping the student.
37. Students can see the relationship between what they are studying and the kinds of patient care situations they will meet when they graduate.
38. Students are so preoccupied with their studies that they lack time for recreation.
39. Students participate in decisions that affect their academic life at the school.
40. Courses emphasize the interdependence of facts, concepts, and principles.
41. Students are uncomfortable around the faculty.
42. Students are uncertain as to what will be expected of them on examinations.
43. Competition for grades is intense.
44. Courses develop skills in formulating and testing hypotheses, and drawing conclusions.
45. Courses are dull and tedious.

46. The educational experience makes students feel anxious.
47. Faculty are helpful to students seeking advice not directly related to academic matters.
48. There are tensions among students that interfere with learning.
49. Faculty regard their teaching responsibilities as a burden.
50. The educational experience makes students value themselves.
51. Examinations provide a fair measure of student achievement.
52. Students are reluctant to share with each other problems they are having.
53. Faculty foster an understanding of the psychological dynamics of being ill.
54. There is lack of consistency between stated course objectives and what is actually taught.
55. The educational experience tends to make students feel confident of their academic abilities.

Thank You For Completing the DSLES

Dental School Learning Environment Survey (DSLES)

Items with reverse scaling (see “DSLES Scoring” below) are indicated by “R” and highlighted.

DSLES Categories (Subscales)	# Items	Items within category
Flexibility	06	1, 2, 16, 18R, 30, 39
Student to student interaction	06	7R, 15, 22, 31, 48R, 52R
Emotional climate	08	5R, 23R, 27R, 33R, 41R, 43R, 46R, 50
Supportiveness	09	11R, 13R, 20, 26, 28, 29, 36, 47, 49R
Meaningful experience	10	9, 12, 17, 19, 24R, 35R, 37, 40, 45R, 55
Organization	09	4, 6, 10, 14R, 21, 25R, 42R, 51, 54R
Breadth of interest	07	3, 8, 32, 34R, 38R, 44, 53
Total	55	

Synopsis of DSLES Categories

Category (subscale)	Subscale description
Flexibility	Opportunities for faculty & students to modify the learning environment
Student to student interaction	Extent to which students mix socially and academically
Emotional climate	The way in which students’ experience affects their perceptions of dental education
Supportiveness	Degree of concern expressed & support provided by faculty for students
Meaningful experience	Extent to which structured learning activities are perceived to be relevant to the practice of dentistry
Organization	Degree of coherence of educational experiences within the curriculum
Breadth of interest	Extent to which students are encouraged to develop a variety of activities within and outside regular coursework

DSLES Scoring		
DSLES Response Options	Positive Statement	Negative Statement (Reverse Scoring)
Seldom (A)	01	04
Occasionally (B)	02	03
Fairly Often (C)	03	02
Very Often (D)	04	01
Insufficient Information (E)	No score assigned	No score assigned

Scoring Ranges:

Typical means for each subscale range from 1.50 to 3.50. Higher scores indicate a more positive and supportive learning environment and lower scores indicate an environment that is potentially less desirable.

Suggested Format for DSLES Report

School name: XYZ Dental School; Freshman students N =				
DSLES Subscales	Mean: Your School	Stand Dev: Your School	Mean: All SPP	Stand Dev: All SPP Schools
Flexibility	1.77	.48	1.96	.40
Student to student interaction				
Emotional climate				
Supportiveness				
Meaningful experience				
Organization				
Breadth of interest				
Total	2.38	.59	2.09	.44

NOTE: "Total" is a mean of the seven subscale scores.