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Student Learning Outcomes Poster Session for CSB/SJU Joint Board of Trustees Meeting, December 5th, 2014

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Developing Critical Thinking Skills In Psychology

Pamela L. Bacon
Associate Professor & Psychology Department Chair

Introduction

Psychology majors and alums are presented with daily opportunities to utilize the critical thinking skills they developed at CSB/SJU. Whether they are reading a newspaper article, serving their community on a School Board or a non-Profit, making decisions about their health care, caring for others, or identifying how best to use their resources, people constantly encounter summaries of research studies and conclusions about research studies. Developing students’ ability to critically evaluate research and the conclusions drawn from the research is one of the main CSB/SJU Psychology Department learning goals.

Starting in 2011, I began changing the way I taught my courses so that the main goal of every course regardless of the target audience or level of the course was to develop students’ critical thinking skills. I shifted the focus of my courses from only covering content to also developing critical thinking skills using examples from everyday life (e.g., radio news reports, magazine articles, and newspaper articles) and also from the psychological literature. Students practiced these skills in a variety of assignments and in class activities that were appropriate for the students’ current training in psychology.

Most research methods courses lend themselves naturally to developing critical thinking skills, so I already had a number of critical thinking activities to use in this course. Content courses like introductory psychology and social psychology typically emphasize mastering content in social psychology, I also emphasize critical thinking and quantitative reasoning skills in this course.

Goal: To determine if focusing on critical thinking in psychology leads to changes in students’ critical thinking skills across the semester.

Method

Participants

Pam Bacon’s spring 2012 Introductory Psychology (N = 30), research methods (N = 16), and social psychology (N = 30) courses completed the in-class assessment on the first and last day of class.

Materials

Critical thinking was assessed using Lawson’s (1999) Critical Thinking in Psychology test. This 8-item test was developed to measure students’ ability to read about a fictional study and then critique the researcher’s conclusion. Students must describe what the problem is with the researcher’s conclusion and then explain why it is a problem. The researchers used Penningroth et al.’s (2007) scoring system, which assigns one point for identifying the problem and one point for the explanation. Because one of the items combined the identification and explanation, it was only worth one point; the others were worth two points, for a total of 15 points possible.

Procedure

Each response was typed and given a code. The two researchers who coded the responses were blind to whether it was a pre-test or post-test responses and blind to whether it was from an introductory, research methods, or social psychology student.

Results

Research Methods Pre-Test and Post-Test Averages

Research methods is a required 200 level course taken by sophomore and junior psychology majors.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>4.94</td>
<td>8.53</td>
</tr>
</tbody>
</table>

*Paired t-test results: t(16) = -5.45, p < .001, d = 1.3, r² = .65.

Social Psychology Pre-Test and Post-Test Averages

Social psychology is a 300 level course typically taken by junior and seniors who are psychology majors or minors. In addition to teaching course content in social psychology, I also emphasize critical thinking and quantitative reasoning skills in this course.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>4.82</td>
<td>7.86</td>
</tr>
</tbody>
</table>

*Paired t-test results: t(27) = -6.38, p < .001, d = 1.2, r² = .60.

Introductory Psychology Pre-Test and Post-Test Averages

Introductory psychology fulfills the social science requirement in the Common Curriculum. This may be many students’ only exposure to using the scientific method to answer social science questions.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>2.67</td>
<td>6.17</td>
</tr>
</tbody>
</table>

*Paired t-test results: t(29) = -7.00, p < .001, d = 1.3, r² = .63.

Conclusion

Students demonstrated substantial growth in critical thinking scores in research methods, social psychology, and introductory psychology across the semester. The gains were particularly large for first year students in introductory psychology.

First years showed much higher gains on the post-test than the sophomores in introductory psychology. This finding highlights the importance of developing the skills when students are developmentally ready to learn them.

One troubling finding was that the senior psychology majors did not have higher critical thinking pre-test scores than the sophomores in introductory psychology. This finding suggests that the gains made in research methods are not built upon in upper division content courses. Based on these assessment results, the Psychology Department has made changes to introductory psychology labs and is reviewing and incorporating best practices in teaching critical thinking into all courses.

References


Learning Goals and Accumulation Grading in Calculus I

Here is a sample of learning goals from my calculus I class in Fall 2014.

### D-level goals

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: I can solve Related Rates problems.</td>
<td>A (1)</td>
</tr>
<tr>
<td>A2: I can write δ-ε proofs for quadratic functions.</td>
<td>A (1)</td>
</tr>
</tbody>
</table>

### C-level goals

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: I can identity the relationship between a function's value and its limit.</td>
<td>A (1)</td>
</tr>
<tr>
<td>C2: I can find derivatives using the definition of derivative.</td>
<td>A (1)</td>
</tr>
<tr>
<td>C3: I can sketch f, f', or f'' given a graph of f.</td>
<td>A (1)</td>
</tr>
</tbody>
</table>

### B-level goals

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1: I can use the Product Rule.</td>
<td>B (1)</td>
</tr>
<tr>
<td>B2: I can use linear approximation.</td>
<td>B (1)</td>
</tr>
<tr>
<td>B3: I can find extrema.</td>
<td>B (1)</td>
</tr>
<tr>
<td>B4: I can determine intervals of concavity.</td>
<td>B (1)</td>
</tr>
<tr>
<td>B5: I can use FToCI.</td>
<td>B (1)</td>
</tr>
<tr>
<td>B6: I can use FToCII.</td>
<td>B (1)</td>
</tr>
</tbody>
</table>

### A-level goals

<table>
<thead>
<tr>
<th>Learning Goal</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: I can write δ-ε proofs for linear functions.</td>
<td>A (1)</td>
</tr>
<tr>
<td>A2: I can write δ-ε proofs for quadratic functions.</td>
<td>A (1)</td>
</tr>
</tbody>
</table>

### Accumulation Grading

#### Issues with Traditional Grading

- Grades lack intrinsic meaning.
- Students are expected to learn the course content at the same pace. Consider:
  - Student 1 gets 85% on all four exams.
  - Student 2 gets 100% on the first exam, 90% on the second, 80% on the third, and 70% on the fourth.
  - Student 3 gets 40% on the first exam, 100% on the second, 100% on the third, and 100% on the fourth.
- Grading does not give students feedback on how to improve.
- Grading is too "high stakes."
- Students encouraged to "bluff" for partial credit.
- Cramming is rewarded.
- There is not enough accountability to learning.

#### Accumulation Grading

- All grading is binary: students either get 100% on the assignment, or they get 0% on the assignment.
- Students are given multiple chances to demonstrate mastery of Learning Goals.
- Students must "tag" an answer with a Learning Goal in order to get credit for it (metacognitive benefits?).
- Students must demonstrate mastery over time.

### Example

![Example Image](image)

### Benefits of Accumulation Grading

- Grades are based on what students know, rather than what they do not know.
- Students are allowed many chances to demonstrate mastery of material.
- Accountability: there is no substitute for learning the most important topics.
- Grades based on how much they know at the end of the semester.

### Assessment

#### Results

- **Traditional Lecture** classes have average normalized gains of 0.29–0.30 on CCI.
- **Interactive Engagement** classes have average normalized gains of 0.24–0.26 on CCI.
- Recent courses at CSBSJU (B indicates my class):
  - Initial: 09 03 01 02 14 01 01 03 10 10 20 20
  - Final: 14 02 14 01 03 01 00 00 01 02 15 14

#### Bibliography

- J. Epstein, The Calculus Concept Inventory—measurement of the effect of teaching methodology in mathematics, Notices of the AMS, 60(8), 2013, 1018–1026.

### Author Information

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bbenesh@csbsju.edu

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**Grades are based on what students know, rather than what they do not know.** Students are allowed many chances to demonstrate mastery of material. Accountability: there is no substitute for learning the most important topics. Grades based on how much they know at the end of the semester.
Assessment and Evaluation in Nursing

Are nursing students achieving the learning outcomes for the major?

1. Provide quality and safe nursing care across the levels of prevention.
2. Apply transformational leadership principles in the coordination and delivery of health care.
3. Apply principles of global citizenship to advocate for and improve health care.

<table>
<thead>
<tr>
<th>Example Methods of Evaluation</th>
<th>Expected Performance Level</th>
<th>Responsibility for completing</th>
<th>Time Frame</th>
<th>Actual Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical performance</td>
<td>Clinical assessment rubric: mean 3.5 or higher on a 1-4 Likert scale.</td>
<td>NRSG 395 (capstone) course faculty</td>
<td>Annually in Spring; report to faculty in Fall</td>
<td>TBA; data collection begins spring 2015</td>
</tr>
<tr>
<td>Educational Benchmark, Inc. alumni survey and employer satisfaction</td>
<td>Mean of 5.0 or higher on EBI on items related to transformational leadership</td>
<td>Assessment and evaluation committee</td>
<td>Annually in Summer; aggregate data and report every three years.</td>
<td>TBA; data collection begins summer 2015</td>
</tr>
<tr>
<td>Student exit survey at graduation</td>
<td>Mean of 3.5 or higher on questions related to global citizenship</td>
<td>Assessment and evaluation committee</td>
<td>Annually in Spring; report to faculty in Fall</td>
<td>TBA; data collection begins spring 2015</td>
</tr>
</tbody>
</table>

Additional Evidence
- National licensure exam (NCLEX) results
- Graduation and job placement rates
- Course evaluations
- Practice improvement and other targeted course projects
Assessing Student Learning in the Music Department

A Range of Strategies are used:
Quantitative-Qualitative / Objective-Subjective

ETS Major Field Test Results
A standardized test taken by all music majors before graduation. Currently used by 138 schools nationwide.

<table>
<thead>
<tr>
<th>Overall Score</th>
<th>Listening Comprehension (Sub-Score)</th>
<th>Music Theory Sub-Score</th>
<th>Music History Sub-Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Score (/200)</td>
<td>Percentile Rank</td>
<td>Raw Score</td>
<td>Percentile Rank</td>
</tr>
<tr>
<td>Average for all 5,557 students who have taken test 2006-2013</td>
<td>147</td>
<td>48.5</td>
<td>47</td>
</tr>
<tr>
<td>CSB/SJU Average 2006-2013</td>
<td>159</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>CSB Average 2010-2013</td>
<td>162</td>
<td>95</td>
<td>63</td>
</tr>
<tr>
<td>CSB/SJU Average 2006-2009</td>
<td>156</td>
<td>83</td>
<td>57</td>
</tr>
</tbody>
</table>

Conclusions:
1) The percentile rankings show that CSB/SJU students are doing very well in comparison with a broad range of students from other schools. (However, the data would be more telling if the comparison was with our close peers.)
2) CSB/SJU student scores have increased in recent years.

Music students perform before a jury of faculty at the end of each semester. They complete a form that asks for a self-assessment of their progress. The applied instructor adds comments after the performance. This is an excerpt from one such form.

Student Self-Assessment at the End-of-the-Semester Jury
1. What goals did you achieve in the course of this semester?
   I improved the breath support that I use and I increased my range. I played a lot of lyrical pieces this semester and my expression improved. I focused on the phrasing and breathing.
2. Are skills or understandings gained this semester demonstrated in your jury performance?
   In the etude, I am required to interpret the piece to find phrasing and breathing. Also this piece challenges me to focus on clarity of attacks and tone throughout.
3. List unanticipated learning outcomes (if any) gained this semester.
   This semester I realized that instead of just playing the notes on a page, I am starting to think about what they are doing. I pay more attention to the chords that I am outlining melodically, or where I fit in harmonically.

Instructor’s Comments
Excellent progress in tonal development and phrasing! Works diligently on any areas of concern and continuously progresses at a fast rate.

Student’s level of repertoire and technique is (circle one)

Conclusions:
1) The percentile rankings show that CSB/SJU students are doing very well in comparison with a broad range of students from other schools. (However, the data would be more telling if the comparison was with our close peers.)
2) CSB/SJU student scores have increased in recent years.

Departmental Assessment Plan

Different content areas within the music department assess their curriculum, strengths and weaknesses, and student learning every five years on a rotating schedule.

This is an excerpt from the most recent Composition Assessment Report prepared by the music composition instructors.

Overall Assessment of Student Work in Composition Projects 2005-2010
(Likert scale of 1-5 = poor-exceptional, where 3 = fully meets expectations for an undergraduate composer in a B.A. program.)

<table>
<thead>
<tr>
<th>Invention of basic material</th>
<th>Development elaboration</th>
<th>Structure/organization</th>
<th>Musicality</th>
<th>Creativity</th>
<th>Overall (average of above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average of all MUSC 357 students</td>
<td>3.55</td>
<td>3.05</td>
<td>3.00</td>
<td>3.38</td>
<td>3.37</td>
</tr>
<tr>
<td>Average of Comp Majors only in MUSC 357 (and 359)</td>
<td>3.72</td>
<td>3.27</td>
<td>3.27</td>
<td>3.72</td>
<td>3.56</td>
</tr>
</tbody>
</table>

Notable student achievements during the assessment period
[Three composition students] completed musical compositions as honor theses and were awarded departmental distinction when they graduated. [One other] did not quite complete the honors thesis document, though his song cycle was successfully performed.

[Five students] have entered orchestral compositions in the Duluth Symphony’s annual student composition contest. [One student’s] piece, The Singing Bone, won in 2005-2006 and was performed by the Duluth Symphony on their Young Person’s series.

This is our music.
The Air We Breathe: Continual Assessment for Meaningful and Enduring Learning

Terry Johnson, Jeanne Cofell, Catherine Bohn-Gettler
Education Department

Education Department

Tier Levels

Tier 3: Capstone
Demonstrate a synthesis of professional standards in practice in professional communities

Tier 2: Pedagogy
Objective: Immersion in discipline-specific professional practice at appropriate licensure levels

Tier 1: Foundations
Objective: Immediate and practical experiences, some with at risk students, interact in professional communities, develop knowledge frameworks for clinical integration with P-12 students

External Factors

Assessment Planning and Instruction

Coursework

State Licensure Requirements (SEPs, TPA, MTEL, etc.)

Conceptual Framework

Liberal Arts Mission

Benedictine Values

K-12 Needs

Tier Levels

National Accreditation Expectations

Student Learning Outcomes

Representative Outcomes

EDUC 390: Ethics in Human Relations: Ethics in the News
• The student will identify and effectively describe ethical issues or concerns within some life situation
• The student will identify, describe, and take seriously different ethical perspectives in the life situation considered
• The student will provide reasonable arguments for the position taken in regard to the ethical concern and ground arguments in a systematic ethical perspective

EDUC 355 - Social Studies Pedagogy: Modified Teacher Performance Assessment
• The student will apply knowledge of content, students, pedagogy, assessment, and theory when developing and teaching curriculum materials
• The student will analyze and use assessment data and reflection to evaluate overall effectiveness & plan future instruction

EDUC 310 - Educational Psychology: Team Teaching Project
• The student will plan and teach a lesson incorporating a performance assessment
• The student will demonstrate, and reflect on, the use of behavioral, cognitive, and motivational principles during teaching
• The student will design and use a performance assessment rubric, and reflectively evaluate its effectiveness

Reflect, Review, Modify (if necessary)

Assess (collect evidence)

Analyze and Evaluate

EDUC 310 - Educational Psychology: Team Teaching Project

EDUC 355 - Social Studies Pedagogy: Modified Teacher Performance Assessment

EDUC 390: Ethics in Human Relations: Ethics in the News

The student will plan and teach a lesson incorporating a performance assessment

The student will demonstrate, and reflect on, the use of behavioral, cognitive, and motivational principles during teaching

The student will design and use a performance assessment rubric, and reflectively evaluate its effectiveness
Motivating Students: How to Influence Expectancy—the Effort to Outcome Link

Communicate, Communicate, Communicate

- Clearly define all grade points and graded assignments at the beginning of the course.
- Empower grading: Share the criteria (e.g., scoring rubric) and expectations for success.
- Post grades for all assignments for clarity.

Incentives

- Offer tips and incentives for students to perform well (e.g., in-class games or prizes).
- Consider opportunities such as offering students to shop one quiz.
- Offer self-study resources such as tutorials or online forums.

Assess Class Difficulty

- Be cautious with grading curves that stress the number of top grades (in any case, be clear about curves).
- Offer a variety of learning tools for students to use (e.g., books, videos, enrolled chats, tutorials, interactive online practice sets).

Increase students’ confidence/self-efficacy

- Offer grading curves that are fair and predictable.
- Offer a variety of learning tools that are useful (e.g., online homework, tutorials, and interactive practice sets).

Decrease students’ perceptions of goal difficulty

- Offer a variety of learning tools that are meaningful (e.g., resources provided by peers or online forums).
- Offer a variety of learning tools that are realistic (e.g., resources provided by peers or online forums).

Motivating Students: How to Influence Instrumentality—the Outcome to Reward Link

Communicate, Communicate, Communicate

- Clearly define all grade points and graded assignments at the beginning of the course.
- Empower grading: Share the criteria (e.g., scoring rubric) and expectations for success.
- Post grades for all assignments for clarity.

Evaluate

- Be very clear about all grading policies and explain how performances on homework, assignments, quizzes, exams, and projects are evaluated.
- Be sure that all grading curves fairly test the topics outlined and test students’ skills or topics that are not clearly defined and identified in course materials.

Incentives

- Offer tips and incentives for students to perform well (e.g., in-class games or prizes).
- Consider opportunities such as offering students to shop one quiz.
- Offer self-study resources such as tutorials or online forums.

Assess Class Difficulty

- Be cautious with grading curves that stress the number of top grades (in any case, be clear about curves).
- Offer a variety of learning tools for students to use (e.g., books, videos, enrolled chats, tutorials, interactive online practice sets).

Increase students’ perceived control of their learning environment

- Offer grading curves that are fair and predictable.
- Offer a variety of learning tools that are useful (e.g., online homework, tutorials, and interactive practice sets).

Decrease students’ perceptions of goal difficulty

- Offer a variety of learning tools that are meaningful (e.g., resources provided by peers or online forums).
- Offer a variety of learning tools that are realistic (e.g., resources provided by peers or online forums).

Motivating Students: Valence

Create Classroom Incentives

- Engage students to work together to share strategies.
- Use the variety and choice techniques listed under perceived control of the learning environment.
- Offer a variety of learning tools for students to use (e.g., books, videos, enrolled chats, tutorials, interactive online practice sets).

Communicate, Communicate, Communicate

- Clearly define all grade points and graded assignments at the beginning of the course.
- Empower grading: Share the criteria (e.g., scoring rubric) and expectations for success.
- Post grades for all assignments for clarity.

Evaluate

- Be very clear about all grading policies and explain how performances on homework, assignments, quizzes, exams, and projects are evaluated.
- Be sure that all grading curves fairly test the topics outlined and test students’ skills or topics that are not clearly defined and identified in course materials.

Incentives

- Offer tips and incentives for students to perform well (e.g., in-class games or prizes).
- Consider opportunities such as offering students to shop one quiz.
- Offer self-study resources such as tutorials or online forums.
Hypothesis: Using accounting software to help students learn the accounting cycle in a beginning accounting course will enhance learning.

Solid Footing, a supplemental accounting software program and text by Dan Wiegand, is used in the first third of the class (through Exam 1) to help introduce the accounting cycle.

Research Question
Is there a statistical difference in student performance when using software to teach the accounting cycle in our introductory accounting course, versus no software?

Study Design
Subjects:
This study examines learning outcomes (exam scores and exam grades) for over 1000 undergraduate students in a beginning accounting course at a Midwest liberal arts institution over a period of 13 years and all under the direction of the same accounting professor:

- 494 students over the six-year period 2001-2006 (pre-software group)
- 576 students over the seven-year period 2007-2013 (post-software group)

Performance Measurement:
Performance is measured based on raw exam scores and exam grades for three exams that have remained nearly identical for the full period under study.

Initial Results
Exam 1: Significant increase in exam scores for the post-software group, consistent with expectations
Exam 3: Significant decrease in exam scores for the post-software group.

Exam Score Results
Exam 2: Significant decrease in exam scores for the post-software group.

Exam Grade Results
Exam 2: Significant decrease in Exam 2 grades for the post-software group.

Interpretations
The significant improvement in student performance for Exam 1 is consistent with predictions, and supports the accounting software in improving students’ learning outcomes.

The decrease in exam scores for Exam 2 and Exam 3 and the exam grade for Exam 2, while not predicted, is in concert with the belief that the accounting software enhanced learning outcomes initially, and once removed, may have negatively impacted the learning environment.

Study Limitations
Exam 1 results may be related to having additional learning resources (an additional text and the software) and not simply to the student using the software.

Exam 1 results may be related to having additional learning resources (an additional text and the software) and not simply to the student using the software.

The accounting software
Students can use the software program so they read their text to view examples of journal entries, postings, and financial statement preparation.

The final project is full preparation of journal entries and financial statements for one accounting cycle, where all student entries are done using Solid Footing.

Students then use Solid Footing to complete their own journal entries, postings, and financial statements as they work through their homework.

Raw Data
<table>
<thead>
<tr>
<th>Exam</th>
<th>Before</th>
<th>After</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1 Mean Exam Scores</td>
<td>64.7</td>
<td>66.7</td>
<td>0.001</td>
</tr>
<tr>
<td>Exam 2 Mean Exam Scores</td>
<td>67.3</td>
<td>64.8</td>
<td>0.003</td>
</tr>
<tr>
<td>Exam 3 Mean Exam Scores</td>
<td>95.3</td>
<td>92.3</td>
<td>0.016</td>
</tr>
</tbody>
</table>

* p < .05   ** p < .01

Mean Exam Scores

Mean Grades

Before After Before After
Exam 1 64.7 66.7 ** 2.87 2.93
Exam 2 67.3 64.8 ** 2.69 2.53 *
Exam 3 95.3 92.3 * 2.52 2.42

* p < .05   ** p < .01

Mean Exam Scores
Mean Grades
Are Students Achieving Higher Level Thinking in a upper level Biology course?

Barbara May
Biology Department

What do we want our students to learn?

At what level do we expect student learning?

Bloom's Taxonomy

- Comprehension: Compare and contrast the different, major groups of microorganisms. How does their basic structure and cellular differences relate to their differences in function?
- Comprehension: Describe the evolutionary process for a prokaryote. How does horizontal gene transfer impact its evolution? This includes the processes of reproduction and horizontal gene transfer.
- Comprehension: Identify and predict mechanisms for microbial control. How do antibiotics work?
- Comprehension: Identify and practice key research skills utilized in the field of microbiology.

What are the learning goals for a Microbiology course at these different levels of learning?

Higher level thinking:

- Apply microbiology concepts to predict and evaluate the impact that microorganisms have in our everyday lives and on the planet. This will include their role in infectious disease, nutrient cycles, evolution, and ecosystem structure.
- Identify, practice and apply the basic process of scientific inquiry with the following:
  - Evaluate experimental data and apply this data to our understanding of microbiology.
  - Predict the outcome of scientific experimentation.
  - Design experiments to test your predictions.
  - Apply microbiology concepts to current issues.

Do students have an understanding of the concepts?

Comprehension assessment:

- In class concept maps
- In class comparative tables
- In class application: scenarios that require content knowledge

Formative assessment:

Summative assessment:

Multiple choice and short answer exams/quizzes

How do we assess learning in Microbiology?

At what level do we expect student learning?

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Formative assessment:

Summative assessment:

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How do we assess learning in Microbiology?
Conclusion:
• ESSS students demonstrated acceptable to exceptional Inquiry and Analysis skills, which correspond to a level consistent with the greater professional community.
• Students recognize the value of undergraduate research in enriching their educational experience and feel supported as they engage in the process.
• All undergraduate research projects involved experimental designs and pertained to natural science related topics.

Department Response:
• Continue to emphasize Inquiry and Analysis skills in the curriculum and encourage students to engage in undergraduate research.
• Encourage more social science and humanities research using non-experimental designs (example: develop new course intended to emphasize survey-based research).

Assessment Method #1: Student Achievement Data
Inquiry and Analysis: Mean Content Area Scores for 4 ESSS Courses

<table>
<thead>
<tr>
<th>Area of Evaluation</th>
<th>Mean Score (± St. Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic selection/Research question</td>
<td>2.5 out of 3 (± 0.53)</td>
</tr>
<tr>
<td>Existing knowledge, research, and/or views</td>
<td>2.5 out of 3 (± 0.53)</td>
</tr>
<tr>
<td>Research design</td>
<td>2.1 out of 3 (± 0.54)</td>
</tr>
<tr>
<td>Analysis and Discussion</td>
<td>2.5 out of 3 (± 0.46)</td>
</tr>
</tbody>
</table>

Assessment Method #2: Student’s Perception of Learning Inquiry and Analysis: Survey of Graduating Seniors

<table>
<thead>
<tr>
<th>Area of Evaluation</th>
<th>N = 14</th>
<th>Mean Score (± St. Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived opportunity to engage in undergraduate research in the ESSS department</td>
<td>n = 14</td>
<td>3.72 out of 4 (±0.47)</td>
</tr>
<tr>
<td>Curriculum prepared students for their undergraduate research</td>
<td>n = 7</td>
<td>3.57 out of 4 (±0.53)</td>
</tr>
<tr>
<td>Importance of undergraduate research in overall academic development</td>
<td>n = 7</td>
<td>3.43 out of 4 (±0.5)</td>
</tr>
<tr>
<td>Undergraduate research experience helped develop important professional skills</td>
<td>n = 7</td>
<td>3.57 out of 4 (±0.53)</td>
</tr>
<tr>
<td>Supervision and support they received in conducting the research was helpful and adequate</td>
<td>n = 7</td>
<td>3.57 out of 4 (±0.53)</td>
</tr>
</tbody>
</table>

Assessment Method #3: Graduate’s Perception of Learning Inquiry and Analysis: Survey of Recent Graduates
** To be completed 2017-2018

<table>
<thead>
<tr>
<th>Area of Evaluation</th>
<th>N = 14</th>
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</tbody>
</table>

Assessment Method #4: Third Party Evaluation
Accepted Conference Abstracts [Presentations (Student Presenters)]
(*) Projects awarded Undergraduate Research Awards

<table>
<thead>
<tr>
<th>Year</th>
<th>Scholarship &amp; Creativity Day</th>
<th>Northland Chapter of the American College of Sports Medicine</th>
<th>American College of Sports Medicine National Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>16 (25)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>5 (17)</td>
<td>2 (7)</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>8 (19)</td>
<td>7 (14) (3*)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>2013</td>
<td>8 (25)</td>
<td>5 (16)</td>
<td>4 (7)</td>
</tr>
<tr>
<td>2014</td>
<td>14 (17)</td>
<td>7 (13) (2*)</td>
<td>0</td>
</tr>
<tr>
<td>2015</td>
<td>TBD</td>
<td>TBD</td>
<td>2 (4) Abstracts in Review</td>
</tr>
</tbody>
</table>

Conclusion:
• ESSS students demonstrated acceptable to exceptional Inquiry and Analysis skills, which correspond to a level consistent with the greater professional community.
• Students recognize the value of undergraduate research in enriching their educational experience and feel supported as they engage in the process.
• All undergraduate research projects involved experimental designs and pertained to natural science related topics.
Student Learning Outcomes
Office of Academic Review and Curricular Advancement
By: Megan Lampel, Zainab Oke, Emily Schroeder, Katherine Thao, Anya Winkler
College of Saint Benedict and Saint John’s University

Senior Leadership Development by Major

Purpose
Assess data from freshman and senior surveys to explore student learning outcomes at CSB/SJU.

Methods
- Used data from 2011-12, 2012-13 senior surveys and corresponding freshman in 08, 09, 10 freshman surveys
- Coded data for JMP analysis
- Selected five questions that best represented student learning outcomes
- Aggregated freshman responses from all three years and repeated the process for senior responses
- Completed data analysis

Senior Ethical and Moral Development by Campus

Figure 1:
- Seniors of all majors similarly reported they developed leadership skills throughout their time at CSB/SJU
- 74% of seniors reported they developed their leadership either “quite a bit” or “very much”

High School GPA by Senior College GPA

Figure 2:
- Positive linear relationship between High School GPA and College GPA

Senior Critical and Analytical Thinking by Campus

Figure 3:
- The figure above shows the overwhelming majority of CSB and SJU students reported their ethical and moral principles were developed over the course of their college education

Senior GPA by Hours Spent Preparing for Class

Figure 4:
- CSB and SJU students were both likely to report they developed critical thinking and analytical skills
- Seniors on both campuses reported they developed both critical and analytical thinking skill over the course of their college education

Figure 5:
- Positive relationship between college GPA and the amount of time spent preparing for class
Re-designing a Major: Management (MGMT) to Global Business Leadership (GBUS)

Dr. Sanford Moskowitz (chair, GBUS Department)
Dr. Lisa M. Lindgren (chair, Assessment Committee, GBUS Department)

Background
We, the faculty of the MGMT/GBUS Department, underwent Program Review during 2009 and 2010. As a result of that process, we fundamentally changed the major and minor. We additionally changed the name of the major/minor and the department from Management to Global Business Leadership.

The new major and minor are focused on two major goals: make sure that each major and minor is grounded in key concepts and skills in business, and ensure that each major and minor has a global awareness and understanding of operating in a global business environment.

The New Curriculum
A hallmark of the new curriculum is the Sophomore Experience. Sophomores take 16 credits of classes in a cohort group that provide a solid grounding in qualitative and quantitative subjects and that also require students to demonstrate effective communication and group skills.

The topics in the Sophomore Experience (required of all majors and minors):

- GBUS 210: Strategic Environment of Business, Intercultural Management, Creativity and Innovation in Organizations
- GBUS 240: Finance, Using Excel, Data Analysis

A required course of all majors and minors:

- GBUS 300: Global Enterprise

All majors must additionally take:

- Three of four core courses: GBUS 311 (Human Resources), GBUS 321 (Marketing), GBUS 341 (Operations & Supply Chain), GBUS 361 (Law & Business)
- 4 credits of GBUS electives
- 4 credits of internship or student leadership experience
- GBUS 381 (Advanced Global Strategy)

Learning Goals and Assessment Plan
As a part of the Program Review process, we committed to five major learning goals and a multi-year plan to assess student learning against these goals. The learning goals for majors/minors are as follows:

GBUS Learning Goals:
1. Effective global leadership skills
2. Effective communication
3. Effective collaboration
4. Critical thinking
5. Intellectual depth of knowledge
6. Ethical problem solving
7. Effective decision making
8. Recognize opportunities for innovation, create responses
9. Demonstrate global mindset

The multi-year plan for assessment:
- 2012 – 2013: Goals 1.5: GBUS 2XX
- 2013 – 2014: Goals 1.3, 4: GBUS 300
- 2014 – 2015: Goals 1.2, 5: GBUS 381
- 2015 – 2016: Goals 1.2, 3, 4, 5: GBUS 2XX, 381
- 2016 – 2017: Goals 3, 4: GBUS 300, all core (this is our self-study year for the next program review)

Assessment Results

The first cohort of the new major were sophomores in the 2012 – 2013 academic year and are graduating this year. We captured assessment data during their sophomore and junior years, and will capture data during the spring semester of their senior year (Spring 2015).

The faculty members of the department wrote a detailed rubric for each of the learning goals. The rubric defined what attainment of that goal would be described as at three different levels of mastery: novice, intermediate, and mastery (1 to 3). It is hoped that students progress from lower to higher levels of mastery as they progress through the program.

The rubric was used to assess writing and critical thinking skills (Goals 1.1 and 1.3) in the fall of sophomore and spring of junior years, and progress was noted at all levels (average, above average, and below average).

In addition to the change in numbers, there was a shift in the types of study abroad programs being considered. While the London, Greco/Roman, and Australian programs remained popular with our students, an increasing number were considering more “challenging” programs such as Chile, India, and China.

Global Internships
GBUS majors have participated in or will be participating in internships globally:
- China
- London
- India
- Bosnia/Herzegovina
- Chile

Global Courses
In addition to courses that our students may take for credit at our global study-abroad partner institutions, CSB/SJU students may take GBUS elective classes in:
- Doing Business in Asia
- Doing Business in Europe
- Doing Business in Latin America (2013)
- Doing Business in Africa (2016)

Globally-Experienced Faculty
The GBUS faculty at CSB/SJU have very rich global experience:
- Prof. Jean Didier – Studied in Europe, led a London study-abroad program
- Dr. Bob Guzick – Traveled to Bosnia/Herzegovina, oversaw summer internships there
- Prof. John Hasselberg – Extensive experience in Nordic countries and China, teaches Doing Business in Europe
- Prof. Wendy Klepert – Multiple trips to India, teaches Doing Business in Asia
- Dr. Lisa Lindgren – Business experience in Europe and Australia, Latin America focus, will teach Doing Business in Latin America
- Dr. Paul Marsalk – Extensive experience in China
- Dr. Sanford Moskowitz – Extensive business and academic experience in Europe and China
- Prof. Kingshuk Mukherjee – Native of India, very extensive business experience in Europe, Asia, and Africa
- Prof. Marjorie Newhouse – International banking background, traveled to India
- Dr. Deborah Pemberton – Extensive international business experience, expertise in Asia
- Prof. Steve Schwarz – International business experience, native of China, extensive international academic work
### Tracking the Development of Philosophical Dispositions

**By: Charles Wright, Ph. D.**

Department of Philosophy

with the assistance of:

Abraham Lauer, SJU 2013; Joshua St. George, SJU 2013; Bryan Van Der Heiden, SJU 2014

- Definition of *disposition*: tendency or propensity to respond to philosophically salient situations by adopting a particular stance, orientation or attitude.
- The CSB|SJU Philosophy Department believes that our curriculum and pedagogy should foster or elicit certain philosophical dispositions.

#### Four Target Dispositions

1. Comfort with ambiguity (CA)
2. Charitable Reading (CR)
3. Resisting the urge to settle for quick and easy answers (RQA)
4. Pleasure in the struggle with difficult ideas (PDI)

### Comfort With Ambiguity

- Developing comfort with an inescapable feature of the human condition – that it is possible to understand some kinds of issues more fully without ever being able to establish a single final and correct answer.

- Sample Stem: It bothers me when different perspectives on an issue all seem equally valid. (R) (7 items total)

### Charitable Reading

- The practice of considering an author’s ideas in their strongest and most convincing form, of trying to understand an idea or argument from the perspective of someone who would accept it as true.

- Sample Stem: When an author’s writing contradicts my own thinking, my impulse is to read it again more carefully. (7 items)

### Resisting the Urge to Settle for Quick and Easy Answers

- A disposition to look past first impressions and commonsense conclusions to search for underlying assumptions, unfamiliar perspectives, and their own unexamined ideas.

- Sample Stem: – I feel like people who disagree with me make me look more seriously at perspectives I’d otherwise dismiss. (6 items)

### Pleasure in the Struggle with Difficult Ideas

- Philosophical ideas challenge conventional perspectives on truth, reality, and the good. Making sense of them is as a result frequently difficult for students.

- Sample Stem: If I have to struggle to understand a subject, learning just becomes a chore. (R) (6 items)

### Comparison of Alpha Values

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sample 2009†</th>
<th>Sample Spring 2011</th>
<th>Sample Spring 2013*</th>
</tr>
</thead>
<tbody>
<tr>
<td>α</td>
<td>N</td>
<td>α</td>
<td>N</td>
</tr>
<tr>
<td>CA</td>
<td>.458</td>
<td>11</td>
<td>.604</td>
</tr>
<tr>
<td>CR</td>
<td>.565</td>
<td>9</td>
<td>.565</td>
</tr>
<tr>
<td>RQA</td>
<td>.654</td>
<td>9</td>
<td>.466</td>
</tr>
<tr>
<td>PDI</td>
<td>.589</td>
<td>7</td>
<td>.790</td>
</tr>
</tbody>
</table>

†Combines two samples: April 2009, students in philosophy classes & October 2009, students with no experience in philosophy.

*Using only the 26 stems kept after data reduction.

### Spring 2013 Pilot Sample from CSB/SJU Student Body

<table>
<thead>
<tr>
<th>PHIL</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>&gt;6</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>266</td>
<td>151</td>
<td>43</td>
<td>12</td>
<td>8</td>
<td>20</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>%</td>
<td>50.4</td>
<td>28.6</td>
<td>8.1</td>
<td>2.3</td>
<td>1.5</td>
<td>3.8</td>
<td>1.9</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Note: Scores for each scale are the sum of response values for all of the stems associated with each scale.

Note: Spring 2013 pilot sample, using only 26 stems kept after data reduction.