

Annual Assessment Report

Department: Psychology
Academic Year: 2016-2017
Date of Submission: 9/15/17
Department Chair: Ronald See

I. Response to the previous year PRC's recommendations

Item: Method of assessment not informative	Response: It was helpful for the department's needs.
Item: Information not necessarily relevant to psychology	Response: This conclusion is only possible because the data demonstrate that psychology majors do indeed participate in extra-curricular activities. If psychology majors did not participate, then our department would have concluded that an addressable issue existed because we expect our majors to participate in these activities.
Item: Method of assessment not direct	Response: All potential methods of assessment are lacking in direct measurement, particularly given limited resources.
Item:	Response:
Notes: Responses are based on discussion in a department meeting (3/3/17) after discussing the PRC's responses with Eileen McMahan.	

II A. Program Learning Outcome (PLO) assessment

If your department participated in the ILO assessment you may use this section to report on your student learning in relation to the assessed ILO. The assessment data can be requested from the Dean of Curriculum and Educational Effectiveness.

Program Learning Outcome	Scientific Thinking, Methods and Skills: Recognize the creative aspects of theory construction, experimental design, application and collaborative work in psychology, and demonstrate such creativity in their own disciplinary work.
Who is in Charge /Involved?	Brenda Smith oversaw the process, and all other department members conducted assessments(Katie Mukai, Steve Rogers, Ron See, Carmel Saad, and Andrea Gurney). Katie and Brenda researched definitions, descriptions, and means of assessing scientific creativity. Steve, Ron, Carmel, Andrea, Katie, and Brenda evaluated student papers. All members

	discussed the means of assessment before assessment began, the ensuing results, and how to close the loop (See excerpts from department meetings, 8/22/16 to 9/1/17, Appendix A).
Direct Assessment Methods	A creativity rubric from http://www.aacu.org/value/rubrics/creative-thinking (See Appendix B for rubric, dimensions assessed, and benchmarks) was adapted to focus on 3 dimensions: Problem Solving, Embracing Contradictions, and Innovative Thinking, with four developmental levels of Beginning, Developing, Accomplished, and Professional. These levels were chosen to get the full range of performance, as a very few students might perform at a professional level. Next, all department members assessed evidence of creativity in scientific thinking, methods, and skills in student papers from PSY 198, Capstone Senior Research in Psychology II. To obtain an adequate sample size, all student papers from 2013 to 2017 were included ($N = 25$). For each paper, individual ratings from department members were averaged for each dimension on the rubric.
Indirect Assessment Methods	
Major Findings	<p>The <i>a priori</i> benchmark for Solving Problems was 90% at or above the Accomplished level, and 63% of evaluated papers were at or above that level. In contrast, the benchmarks for Embracing Contradictions and Innovative Thinking were exceeded. We expected 50% of papers to exceed the Developing level for Embracing Contradictions, but 68% actually exceeded that level. In addition, we expected 65% of papers to exceed Developing level for Innovative Thinking, but 68% exceeded that level.</p> <p>In Fall 2014, pedagogical changes were made to the PSY 197/PSY 198 sequence, resulting in weekly student discussion of progress on their projects. Although changes in scientific creativity were not necessarily expected as a result, we were curious to see if these changes had any effect on creativity. The ratings were separated into two groups: 2013-2014 and 2015-2017. The Embracing Contradictions dimension showed an increased percentage of students performing at or above benchmark (63% and 71%, respectively).</p>
Closing the Loop Activities	<p>The department members discussed these results at their 9/1/17 department meeting. The Solving Problem result was surprising, as we expected that this metric would be the easiest dimension for students to accomplish (as indicated by the benchmark of 90% at or above the Accomplished level). However, having completed the assessment task, we realized that the type of problem solving that we were interested in in this course is not typically reported in the final paper. If we assess this aspect of scientific thinking in the future, we use a reflection assignment in which students will evaluate their problem solving processes for their research projects.</p> <p>The results for the Embracing Contradictions and Innovative Thinking were gratifying and support the goals of our training</p>

psychology majors in these key areas.

The department members discussed possible places and ways to improve students' learning on all three dimensions, specifically where in their courses existing assignments might be adapted. The research on fostering scientific creativity, presented by Brenda, suggests that active learning, critical thinking, and multiple experiences practicing creativity in authentic environments are important in this process. All majors must take one lower division (Experimental Psychology) and two upper division psychology laboratory courses (from Cognitive, Psychology of Learning, Clinical Neuropsychology, Sensation and Perception, Behavioral Neuroscience). The upper division courses provide ample opportunities for all three of these types of learning. Carmel has committed to adding small group discussions for the lab exercises in Experimental Psychology (PSY 13). This would provide earlier and additional experiences to practice scientific creativity. These discussions will focus on reasons for the results obtained in the lab exercises and possible scientific limitations for particular lab exercises. The literature on scientific creativity suggests that all three types of learning occur in social settings, where students are encouraged to think imaginatively and creatively.

Collaboration and Communication

To reiterate: Brenda and Katie researched the psychological research on scientific creativity and discussed their findings with each other during September, 2016. Carmel provided some sources that Brenda and Katie used. Katie also presented much of this information to department members in the 10/14/17 department meeting. The department discussed the issues that this research raised: Lack of agreement on a definition of creativity; lack of measures of scientific creativity; problems with evaluating processes or products of creativity. Brenda adapted the rubric that Katie had identified earlier and brought that to the department meeting for evaluation on 12/2/16. Department members tried out the rubric and then sent revisions to Brenda, which she incorporated before full implementation. The revised rubric was sent out to all department members for evaluation of sample papers, with a deadline at the end of spring semester 2017. The department members assessed all papers from 2013-2016 by the end of the semester. By August, the 2017 papers had also been assessed and ratings from the department members returned to Brenda. She then collated the data, calculated the frequencies, and presented the data to all department members on 9/1/17, when we engaged in extensive discussion of the evidence, the ramifications, and follow up based on the results. After Brenda wrote the draft of the annual report, it was sent via email for feedback from department members, and that feedback was incorporated into the final report.

or/and

II B. Key Questions

Key Question	
Who is in	

Charge/Involved?	
<u>Direct Assessment Methods</u>	
<u>Indirect Assessment Methods</u>	
Major Findings	
Recommendations	
Collaboration and Communication	

III. Follow-ups

Program Learning Outcome or Key Question	
Who was involved in implementation?	
What was decided or addressed?	
How were the recommendations implemented?	
Collaboration and Communication	

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IV. Other assessment or Key Questions related projects

Project	
Who is in Charge /Involved?	
Major Findings	
Action	
Collaboration and Communication	

V. Adjustments to the Multi-year Assessment Plan (optional)

Proposed adjustment	Rationale	Timing

VI. Appendices

- A. Prompts or instruments used to collect the data
- B. Rubrics used to evaluate the data
- C. Relevant assessment-related documents (optional)

Appendix A: Excerpts from Dept Minutes Documenting Assessment Discussions

8/22/16

A. Assessment for upcoming year

- Brenda is in charge of the PLO of scientific thinking, methods, and skills; we will be continuing to talk about how we will be assessing that.
 - We'll talk about this during the September 16 meeting, so everyone should be brainstorming.

9/16/16

B. Assessment for the upcoming year (Brenda)

- Concerning the annual assessment, want to look at creativity under scientific disciplinary skills—outcome: students to recognize creativity and ability to be creative; PSY-111, 197, 198 need large sample size to analyze creative literature reviews.
- Look at either one class (PSY-111) or the other (PSY-197/198).
- Construct a rubric to follow. Suggestions: Katie to look at what studies are out there measured on creativity; Carmel, Ron & Brenda look at aspects of what is creative. Can begin looking at previous years' class papers.
- Re-visit in November meeting. Have a rubric constructed by December and begin assessing in January.

10/14/16

C. Update about Creativity Assessment from Katie

- Are we looking for a particular domain or component of creativity?
- Divergent vs. Convergent method of creativity
- One research study looked at consensual assessment—creativity in the product
- How structured do we want to be? How do we define creativity?
- Look at the science; easier to rate product vs. process; no self-report to assess creativity.
- Katie will follow up and look into what kinds of creativity or definitions of creativity.
- Create rubric after Carmel, Brenda and Ron meet to discuss.

12/2/16

D. Assessment for 2016-2017 (led by Brenda)

- a. Brenda has created a potential rubric for us; everyone should look them over and give feedback, as we want them to be a useful tool in the PLO assessment.
- b. We need to get our comments to Brenda by end of next week (12/9).

1/20/17

E. Any updates on assessment (led by Brenda)

- a. Brenda has updated the assessment rubric; we need to give her feedback by the end of last week
- b. Brenda is thinking that we should include 5 years' worth of PSY-197/198 students, which would give us data from 25 students. This should give us a sufficient sample size.
- c. At this point, we're thinking of looking through the rationales/introductions of the senior research manuscript that these students have turned in.
- d. Brenda is suggesting that we pair up on papers so that we can generate an "average score" for each paper.

3/3/17

Updates on assessment

- e. Ideally, we want to have all of the papers reviewed and our ratings tabulated (amongst our group members) by mid-summer
- f. We should send Brenda a summary of our forms that way she can start writing the report

4/28/17

F. Updates on Assessment

- a. Steve, Carmel, and Katie have read over the PSY-198 papers assigned to them, given their individual scores, and have met as a group to discuss and finalize scores for each paper.
- b. Andrea, Ron, and Brenda are planning on reading papers and meeting sometime next week.
- c. We will need to go over the 3 current PSY-198 students' papers once they're turned in.

9/1/17

- a. Finalize annual assessment for 2016-2017 (refer to Brenda's data)
 - i. Issues with assessment instruments
 - 1. Two groups of faculty conducted the assessment. Some difficulties encountered in assessing the caliber of student research papers. In general, one group reported a lower mean than other group, but this did not appear significant so we won't report the separation of both groups.
 - a. Students were pretty good at problem-solving (within the literature).
 - b. More recent groups were better at embracing contradictions; met benchmark.
 - c. Innovative Thinking; exceeded benchmark.
 - ii. In the future, we may use different dimensions/instruments in assessing. Not easy to find available assessment tools.
 - iii. Brenda will provide a write-up for submission.

Appendix B: Assessment Rubric for Scientific Creativity, Westmont Psychology Department, 2016-2017

PLO: Scientific Thinking, Methods and Skills: Recognize the creative aspects of theory construction, experimental design, application and collaborative work in psychology, and demonstrate such creativity in their own disciplinary work.

	Beginning (1 pt)	Developing (2 pts)	Accomplished (3 pts)	Professional (4 pts)
<p>Solving Problems Student shows problem solving skills that indicate a creative approach and solution to problems</p>	Successfully reproduces an appropriate exemplar; or considers only a single approach to solve a problem	Successfully adapts an appropriate exemplar to fulfill the assignment requirements; or considers and rejects less acceptable approaches to solving a problem	Successfully adapts an appropriate exemplar with some creative elements; or selects from among alternatives to develop a logical, consistent plan to solve a problem 90%	Creates an entirely new object, solution or idea that is appropriate to the domain; or develops a logical, consistent plan to solve problem and recognizes consequences of solution and can articulate reason for choosing the selected solution
<p>Embracing Contradictions Student shows ability to recognize, consider, and evaluate contradictory, divergent, and alternative views of a concept, theory, or experimental findings; and presents a nuanced view without over-simplification</p>	Acknowledges (mentions in passing) alternate, divergent, or contradictory perspectives or ideas	Includes (recognizes the value of) alternate, divergent, or contradictory perspectives or ideas in a small way, but does not present the implications 50%	Incorporates alternate, divergent, or contradictory perspectives or ideas in an exploratory or over-simplified way	Integrates alternate, divergent, or contradictory perspectives or ideas in a nuanced way without over-simplification
<p>Innovative Thinking Student shows a novel or unique approach, interpretation, or question for the senior research project; he or she goes beyond minimal parameters of assignment, introducing new materials and forms, topics, or ideas and solutions; connects, synthesizes, or transforms disparate ideas, research or theories imaginatively and appropriately</p>	Recognizes existing connections among ideas or solutions; reformulates collection of available ideas; presentation may be disorganized or polished but not imaginative; stays strictly within the guidelines of the assignment	Novel ideas or approaches may be present but they seem stuck on, excessive, out of place, or not integrated effectively; or considers new directions or approaches without going beyond the assignment guidelines; or connects ideas or solutions in novel ways but not necessarily appropriately 65%+	Creates a novel or unique idea, question, format, or product but there are some lapses in execution; or incorporates new directions or approaches to the assignment in the final product; or synthesizes ideas or solutions into a coherent whole	Extends a novel or unique idea, question, format, or product to create new knowledge or knowledge that crosses boundaries; or actively seeks out and follows through on untested and potentially risky directions or approaches to the assignment in the final product; or transforms ideas or solutions into entirely new forms

Rubric includes range from beginning to professional (post-graduate); benchmarks in red

	Solving Problems	Embracing Contradict'ns	Innovative Thinking	Yr	Avg
SL	2.7	2.0	1.8	2013	2.1
YV	3.0	1.8	2.5	2013	2.4
JS	2.0	2.0	2.0	2013	2.0
KM	3.5	2.5	3.5	2013	3.2
AT	3.0	1.5	2.0	2014	2.2
EP	3.0	1.8	2.0	2014	2.3
MK	2.0	2.0	2.0	2014	2.0
MMC	3.0	2.5	3.0	2014	2.8
JM	3.7	2.8	2.8	2015	3.1
JV	2.7	2.3	2.0	2015	2.3
VK	3.7	2.8	2.5	2015	3.0
ZJ	2.0	1.3	1.5	2015	1.6
AS	3.0	2.0	2.0	2015	2.3
BH	2.0	2.0	2.5	2015	2.2
CT	2.5	3.0	2.5	2015	2.7
EC	3.0	2.0	3.0	2015	2.7
JL	1.7	1.5	1.3	2016	1.5
JP	2.0	1.3	1.5	2016	1.6
TT	3.3	2.3	2.0	2016	2.5
AK	2.0	2.0	2.0	2016	2.0
CS	3.0	2.5	3.0	2016	2.8
DB	3.0	2.0	2.5	2016	2.5
BE	2.5	1.8	2.4	2017	2.2
JC	1.8	1.8	1.8	2017	1.8
KK	2.7	2.1	2.4	2017	2.4

All Years

Frequencies

	Solving Problems	Embracing Contradict'ns	Innovative Thinking
1-1.5	0.0	4.0	3.0
1.6-2.5	10.0	18.0	17.0
2.6-3.5	13.0	3.0	5.0
3.6-4.0	2.0	0.0	0.0

All Years

	Percentage at or above	Solving Problems	Embracing Contradict'ns	Innovative Thinking
	0	1	1	1
Beginning	1	1.0	1.0	1.0
Developing	2	0.9	0.7	0.8
Accomplished	3	0.5	0.0	0.2
Professional	4	0.0	0.0	0.0
Benchmark	90% 3+	50% 2+	65% 2+	
Actual	0.48	0.68	0.80	

2013-2014

	Percentage at or above	Solving Problems	Embracing Contradict'ns	Innovative Thinking
	0	100%	100%	100%
Beginning	1	100%	100%	100%
Developing	2	100%	63%	88%
Accomplished	3	63%	0%	25%
Professional	4	0%	0%	0%
Benchmark	90% 3+	50% 2+	65% 2+	
Actual	0.63	0.63	0.88	

2015-2017

	Percentage at or above	Solving Problems	Embracing Contradict'ns	Innovative Thinking
	0	100%	100%	100%
	1	100%	100%	100%
	2	88%	71%	76%
	3	41%	6%	12%
	4	0%	0%	0%
Benchmark	90% 3+	50% 2+	65% 2+	
Actual	0.41	0.71	0.76	
