

Psychology Department
Annual Progress Report, 2005 - 2006

Program Improvement (PI) Goals

#1: Clarify Departmental Educational Objectives and Developmental Learning Objectives for Faculty and Students	2
#2: Improve Students' Writing Performance	4
#3: Improve Quality of Senior Research Projects	6
#4: Reduce Plagiarism in Students' Work	7
#5: Across Laboratory Courses, Decrease Unintentional Redundancies and Increase Planned Generalization of Knowledge and Skills	8

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This "annual" progress report provides an update to the 5-year progress report of the Westmont College psychology department. This particular report covers the department's assessment efforts from Spring, 2005 through Spring, 2006. The program improvement (PI) goals on which we have been working originated in the department's self-study that was completed May, 2000. At that time, two program improvement goals were identified for specific focus. Then in 2003-2004, two more program improvement goals were added; and in 2004-2005, a fifth goal was identified. See the following pages for a description of each goal and the progress in each.

**Program Improvement (PI) Goal 1:
Clarify Departmental Educational Objectives and Developmental Learning Objectives for Faculty and Students**

Review of Goal Rationale and Strategies:

It is considered reasonable to expect a certain level of knowledge and skill of the students enrolled in a particular course. The professors' perception was that, in upper division courses, incoming students' educational backgrounds and skill levels were often highly variable. Related to this was the apparent perception of students that they did not have to generalize knowledge and skills learned in one course to other courses.

A variety of programming and pedagogical strategies (inputs) were identified and instituted in Fall, 2000. These continue: Two common texts were selected in the general psychology course: a primary text and the *APA Publication Manual*. In addition, a common set of topics to be covered and similar writing assignments were agreed upon. Finally, a set of writing skills was defined that all students should attain. These guidelines were and are communicated to all instructors of General Psychology course sections.

A second set of strategies for accomplishing PI Goal 1 focused on the structure of the major. Prerequisites were added for a number of upper division courses, and department members agreed on the class ranks at which certain courses should be taken in order to clarify progress through the major and what knowledge and skills would be expected for what courses.

A handout summarizing this information is given to all prospective majors and discussed with them in advising sessions. In addition, the departmental educational objectives are included in course syllabi and discussed explicitly with the students as further attempts to educate students about these objectives and the students' responsibilities in the learning process.

In the upper division courses, the *APA Publication Manual* was added to the list of required texts, and other, relevant supplementary texts (e.g., *Experimental Methods*, *Statistics*), and readings were added to the list of recommended texts. In 2002, handouts describing MSEXcel and SPSS procedures began to be distributed in laboratory courses where these applications are used.

In addition, instructors experiment with new assignments to improve student learning of psychological content and skills, writing skills, critical thinking, and scientific thinking. If these assignments 'work', they are communicated to the other department members, and a decision is made about whether to adopt the assignment department-wide. Plagiarism exercises, peer review of papers for APA styles, evaluating students' understanding of the coherence of psychology as a discipline, and statistical assignments are examples of experimental assignments that have been introduced in various sections of General Psychology.

Outcomes thus Far:

Instructors' Impressions. Students have gradually become better prepared for tasks in their upper-division courses.

Dimensions along which students have improved include

- APA writing (correct citations, formatting; content is organized properly),
- statistics (knowledge of appropriate descriptive and inferential statistics,
- methodology (experimental and correlational designs), and
- computer skills (spreadsheet and word processor familiarity, graphing, SPSS).

In the laboratory courses, less review is required, so fewer lab sessions are lost.

When advising students, instructors report that fewer students expect to take the junior level laboratory courses without first completing the prerequisites, Statistics (MA 005) and Experimental Methods (PSY 013).

Student Comments. In addition, comments from students have declined, as well as indifferent attitudes, about not knowing or remembering how to use required software or statistics. Instead, student comments are more likely to be acknowledgement that they received an instructional handout on SPSS or MSExcel in an earlier class or appreciation for new, more efficient ways of using software (e.g., changing chart data without reconstructing the whole graph in MSExcel).

Transcript Audit of Graduates. The transcript audit of 1994-2005 was continued in order to assess whether timing of prerequisites is appropriately and sequencing is occurring properly as students are advised of the department's major and minor expectations.

Missing Laboratory Course Prerequisites. One hundred percent of our graduating majors in 2003 and 2004 completed the appropriate prerequisites before taking a laboratory course. This perfect record was continued in 2005, but in 2006, 1 student (8%) did not take Statistics before completing Psychology of Learning.

Completion of a Sophomore Level Lab after an Advanced Lab. In 2003, 7% ($N = 1$) of our graduating majors and in 2004, 12% ($N = 2$) of our graduating majors completed a sophomore-level laboratory course after completing a junior/senior level laboratory course. In 2005, the percentage dropped back to 7% ($N = 1$), and in 2006, it dropped to 0.

Completion of Statistics and Experimental Psychology after the Sophomore Year. The percentage of graduates who took Statistics after their sophomore year was 0 and 6%, respectively, in 2003 and 2004. In 2005, it was again 0%, but in 2006, 15% ($N = 2$) of graduates took Statistics after their sophomore year. The figures for Experimental Psychology were also low in 2003 and 2004--0 and 12%, respectively. In 2005, the percentage dropped back to 7%, but in 2006, they again increased--to 30% ($N = 4$).

Completion of Statistics Course Before or Concurrently with Experimental Psychology Course. Although this sequencing problem was a bigger issue before 2000, it continues. In 2003 and 2004, there were 2 students who took Experimental Psychology before they had taken Statistics, with 1 additional student taking the courses concurrently. In 2005, the concurrent enrollment increased to 3 students (21% of graduating majors), and this number remained the same in 2006 (23%). This may have been due to a miscommunication between the Mathematics department and the Psychology department about the existence of places being held for psychology majors in the Statistics courses.

Pre/Post Quizzes. One way of measuring whether students retain information that they have learned is to test them at the beginning and end of a semester. One experiment in this area was in the History and

Systems of Psychology (PSY 111) course, where the instructor quizzed students weekly about historical facts that a psychology graduate would be reasonably expected to know. Results of this pre/post quiz were less than satisfying in the two years (2004, 2005) in which it was tried, with the majority of students doing only marginally better on the second quiz. Although this may be due to the detailed nature of the questions, it seems more likely that students are simply purging what they know once they have been tested on it.

Term Papers & Journals. Another attempt to encourage students to engage deeply and in a sustained manner with the material is the term paper assignment in the History and Systems of Psychology (PSY 111) course. Students are required to write on a specific historical event in the primary history of psychology. They must place this event in its historical context, describe the contributions of relevant psychologists to this event, and describe and evaluate its impact on the history of the discipline.

In past semesters, the instructor has had difficulty getting students to begin the project early enough in the semester to produce papers of sufficiently high quality to achieve the goal of the assignment. In spite of requiring outlines and thesis statements, most of the students did not begin serious work until it was too late. After the fact, several students commented that they wished they had started earlier.

In Spring, 2006, the instructor required students to keep a cumulative, electronic journal related to their project and other course readings. Each week, all entries, with the newest ones appended, were emailed to the instructor. Some weeks there were specific, term paper-related assignments; some weeks, the instructor provided feedback.

Requiring work to begin on this project in the first week of classes and having specific assignments related to the term paper had the effect of improving average paper quality, and there were fewer off-topic papers. Although a few students complained about having to start their projects so early and in such a structured manner, these complaints disappeared as the semester continued.

What Have We Learned?

The evidence suggests that positive changes are occurring as a result of the department's efforts to clarify its educational objectives and developmental learning objectives for both faculty and students.

Many of the strategies the department is using are working: Advising students of course prerequisites and timing of courses; admitting students only to courses for which they have the prerequisites; communicating expectations that students be able to apply their knowledge from one course to another.

On the other hand, we are not achieving all of our goals: students are still taking courses out of sequence or with poor timing, and they still "learn and purge" despite our efforts to the contrary.

What Do We Do Next (Closing the Loop)?

At a recent set of department meetings (May, 2006), the faculty discussed the timing of PSY 013, Experimental Psychology, which is presently offered in the Spring semester. The question was whether moving it to the Fall would have more benefits than costs in terms of timing and sequencing issues, since this is one of the critical gateway courses for the major but occurs midway through a student's career. It appears that moving the course to the Fall would have more than just timing and sequencing benefits for students. It may also allow the department to let the PSY 013 students to use the subject pool, and more importantly, the department could then require PSY 013 as a prerequisite for all of the laboratory courses.

In addition, two of the faculty members will update the suggested 4-year plan, specific to each of the 3 tracks in the major: B.S., B.A., and Neuroscience. In the Fall, these 4-year plans will be available to students, so that we have another way of communicating expected course sequencing to students.

Finally, the department discussed the "learn and purge" syndrome. Students aren't actually forgetting (purging) the material that they learn but they are encoding it in such a way that they have difficulty

accessing it again after the test. Although it was acknowledged that this phenomenon is the result of a systemic problem, one that we are unlikely to change, there were a number of suggestions that resulted from the discussion. First, we can learn to talk about the process of learning with consistent language in our classes; to frame the educational process in such a way that it becomes clearer to our students that learning and purging should be the exception rather than the rule. Second, we can write our tests in such a way that they emphasize the continuity and cumulative nature of the information from one chapter test to another. Presently, our multiple choice questions in particular do not allow this but if we modify these or write our own, we can draw analogies, compare and contrast, and so on across chapters and previously tested material. We could also dedicate a certain number of questions on each of the chapter tests to cumulative testing.

PI Goal 2: Improve Students' Writing Performance

Review of Goal Rationale and Strategies:

Another element in accomplishing the departmental educational objectives was to improve students' writing performance. Faculty found that most students generally performed poorly on writing assignments at any level of the program and on many dimensions, including the following:

- basic writing skills such as grammar and clear, meaningful communication;
- ability to distinguish among writing genres and choose the appropriate one for psychology assignments;
- familiarity with and use of APA writing style (scientific style of communication) and APA editorial style (formatting guidelines); and
- ability to evaluate, analyze, and synthesize information from a number of sources.

Programming and Pedagogical Strategies (Inputs)

Again the department began a program of improvement by focusing first on General Psychology, so for this course, writing assignments were developed that explicitly required basic writing skills and the APA styles.

In addition, assignments were regularized across the laboratory courses so that students would be practicing a common set of writing skills.

Since it was not clear what was the cause of existing deficiencies, a number of strategies were applied:

- Require readings in the *APA Publication Manual* in General Psychology sections
- Review writing skills and the APA styles in General Psychology sections
- Provide summaries of the APA styles on the department web site
- Provide good and poor examples of the writing expected (All courses)
- Provide practice writing in multiple, short assignments throughout the semester (All courses)
- Require readings that describe how to write using APA style (writing style) and how to analyze, evaluate, and synthesize (based on Bloom's Taxonomy) (Research)
- Require peer review of drafts of papers (General, Research)
- Provide feedback on papers (All courses)

In 2004, the department began to strongly encourage transfer and AP students to audit General Psychology as a way to refresh their memories about psychology and, more importantly, to learn and practice the APA styles. In addition, junior and senior majors have been working as reviewers of papers which has allowed more explicit feedback on APA styles.

Outcomes thus Far:

Instructors' Impressions. In General Psychology, students are about as poor as they've always been on their first papers, with deficiencies in all the skill areas listed in the *Rationale* section, above. By

the end the semester, however, nearly all students show improvement in writing and formatting skills.

In the upper division courses, students are better writers than they have been in the past. There are fewer instances of information organized into the wrong section in lab reports, and fewer formatting errors. These improvements are also occurring in History & Systems (PSY 111) and Senior Research (PSY 197/198). In these latter courses, however, instructors are still not seeing much analysis, critique, or evaluation in students' papers, and there are still more APA formatting errors than there should be in papers of experienced writers.

Peer Review. As one means of improving students' writing, one instructor in General Psychology has been experimenting with peer review. The process applied in this instructor's sections evolved from a writing workshop in which a Religious Studies professor described how he trains students to write theologically.

In the previous version of this assignment, students were not convinced that this was a useful assignment, so a more convincing rationale was constructed. In addition, more students had had or had heard about the peer review process in the Religious Studies professor's course so peer review has become part of the academic culture.

With this new rationale, the Spring, 2006, students in General Psychology used turnitin.com to correct APA formatting style in two of their peers' papers. Students approached the assignment seriously, but there were technology problems, and some students forgot to do the assignment, so they did not provide much help to their classmates. In a review of the assignment, the students generally found the assignment helpful for themselves in reviewing and relearning APA formatting style and for seeing other models of APA writing, but they would have preferred to have a hard copy of the papers that they were to review to reduce the reliance on technology.

Writing Grades.

General Psychology. In the General Psychology sections that use a standard grading criterion as the students get additional practice, scores on students' papers improve from the first paper assignment to the last. In one section, for instance, students' scores increased 2 to 8 points from the first to the last assignment.

Child Development. In the Child Development course, Spring, 2006, instruction was given regarding APA style. An ungraded draft was returned to students with feedback. When the final paper was turned in, approximately 75% of the students failed to completely comply with APA standards for writing. When students were given an opportunity to rewrite, 90% opted to make corrections, and 85% of the rewritten papers complied with APA standards.

What Have We Learned and What Do We Do Next (Closing the Loop)?

Instructors are seeing improvement in students' writing styles over the course of the semester, although student grades don't always show it.

Establishing a common grading criterion and having instructors maintain a consistent writing standard across writing assignments in a given course are both helpful in collecting better data and assessing more accurately whether we are accomplishing our goal of teaching our students to write better.

PI Goal 3: Improve Quality of Senior Research Projects

Review of Goal Rationale and Strategies:

As the department worked on improving the General Psychology course, it also became clear that the

students in the Senior Research course (PSY 198) were not performing at the ideal level for a well-educated psychology major.

The department members acknowledged that accomplishing the goal of improving students' performance so that it corresponds with their ideal of beginning-level professional work, would require a change in the course larger than those implemented within the course thus far. After some discussion, it was agreed that the research requirement would be changed from a 1-semester, 4-unit course to 2 2-unit courses taken in separate semesters. In addition, pilot studies would be strongly encouraged, and students would be required to submit their projects to the Institutional Review Board (IRB).

Outcomes thus Far:

Instructors' Impressions. Students seem less harried and rushed with the new course. They also seem to be taking the research tasks more seriously. There is a noticeable improvement in the quality of research questions being developed among the 2-semester students. More students are also interested in taking research and fears about how awful the experience might be are no longer expressed.

Students' Perceptions. Students were asked about their experiences during the 2005-2006 year. They are very positive about the 2 2-unit semester change in the course and about the requirement to submit their research proposal to the Institutional Review Board for approval. On a set of surveys that were administered after each course segment, 100% of students responded that the IRB application was realistic and helpful to complete, that multiple rough drafts were useful in their thinking processes, and that the 2-semester course sequence was positive to highly positive.

Participation in the Student Research Symposium. As the result of a decision last Fall to require participation in the Student Research Symposium, this year's senior research students were required to present at the symposium, and all except one did so. The psychology department was represented by 12 students this year, its best representation ever. Four presenters were senior research students; 8 were neuroscience students from Dr. Fikes' lab.

What Have We Learned and What Do We Do Next (Closing the Loop)?

Students are more interested in research again, seem to be enjoying the course more in its new format, and find the requirements of the course helpful and useful.

Other options for research participation include individual research, major honors, and group research. These opportunities grow out of an interest in an individual professor's research or a research project begun as a class project or by another student. The benefits of this type of research include working collaboratively, involvement for a larger group of students, and learning to work more independently in a less structured environment. One question is whether (and then how) to promote more of this type of self-directed research.

**PI Goal 4:
Reduce Plagiarism in Students' Work**

Plagiarism is a problem among all ranks of students. Since 2004, the department has been using the College policy on plagiarism. The primary focus is on General Psychology, although developmental steps were defined in the May, 2004, program review proposal.

Programming and Pedagogical Strategies (Inputs)

The following strategies were identified as ways to help reduce plagiarism in our courses, although not all have been implemented.

- In General Psychology, instructors:
 - a) Put a standard statement about plagiarism in their syllabus (all) and discuss consequences with students

- b) Teach what plagiarism is, how students can avoid plagiarizing and how they can detect it in their own work (all)
- c) Require students to download and read the new document, and sign an agreement that they acknowledge the consequences and would abide by the policy. (some)
- d) Develop exercises in recognizing plagiarism, proper paraphrasing, and acknowledging sources properly (some)
- e) Structure assignments so as to encourage the development of good habits of note-taking, checking for plagiarism, and acknowledging sources properly (some)
- f) Provide enough assignments that students can practice developing their skills throughout the semester (all)

Assessment Strategies:

- Evaluate results of exercises in recognizing plagiarism, proper paraphrasing, and acknowledging sources properly
- Evaluate papers for presence of plagiarism (numbers of papers that are plagiarized)
- Tally the increase in knowledge of how to reference sources properly (more instances of correct citations)

Expected Outcomes:

Students demonstrate a commitment to ethical scholarship and research procedures by actively working to prevent and check their work for plagiarism.

General Psychology. Over the course of a semester, individual students should plagiarize less, and the reviewer should detect less plagiarism.

Upper Division Courses. Instances of plagiarism should be low to non-existent. Over the course of a student's tenure at Westmont, there should be a decrease in plagiarism over the first year, with low to no plagiarism in successive years.

Outcomes thus Far:

Writing Assignments, General Psychology. Examination of the data over the sections of General Psychology taught in 3 semesters from Spring, 2005, to Spring, 2006, verify, as was discovered earlier, that students do need instruction in what plagiarism is and how to avoid it. Depending on the semester and section, at least 72% of students plagiarized on their first writing assignment.

Most instances of plagiarism would be classified as "minimal" (See definitions in Westmont's Plagiarism Policy), and when students were allowed to rewrite a plagiarized assignment, about 42% plagiarized again. By the second assignment, if plagiarism occurred and students were allowed to rewrite, they did so without plagiarizing. On a third assignment, with no opportunity for rewriting, between 8 and 14% continued to plagiarize.

What Have We Learned and What Do We Do Next (Closing the Loop)?

Based on the data so far, the department still agrees that having an explicit, clear policy is important and helpful, but it is not sufficient. Knowing about plagiarism isn't enough to help students avoid plagiarism, as shown by the fact that most of our students plagiarize on their first assignment, even after being instructed. The evidence suggests that three things seem to reduce (and, together, perhaps even eliminate) plagiarism:

- Repeated practice in avoiding plagiarism throughout a course for which the policy is consistently applied; and
- Explicit teaching and re-teaching on the topic (rather than simply expecting that they will read and learn it).

During the 2005-2006 academic year, some department members were able to use the services of turnitin.com to evaluate its plagiarism-checking abilities. While this was a time-saver for the summary of APA formatting and helpful in picking up instances of student-to-student plagiarism, it was less helpful in checking plagiarism in the summaries of journal articles because these are not contained in turnitin.com's data base. Student reviewers were also used this year but their work was highly variable both within and across student papers. So the search for more efficient ways of checking for plagiarism continues since this task is an important part of the process of teaching students how not to plagiarize.

PI Goal 5: Across Laboratory Courses, Decrease Unintentional Redundancies and Increase Planned Generalization of Knowledge and Skills

General Rationale:

As the department continued with its overall educational objective of producing well-prepared, well-educated students, it turned its attention more intentionally to the laboratory courses. Experimental Psychology (PSY 013) is the foundation course for 2 of the other 4 laboratory courses as well for Senior Research (PSY 197/198). While there is little repetition among the laboratory exercises between Experimental Psychology and 3 of the 4 laboratory courses, there was quite a bit of repetition in the operant conditioning exercises that were required in Psychology of Learning (PSY 121) and Experimental Psychology. Over the years, this has generated the perception that Psychology of Learning isn't all that different from Experimental Psychology.

In addition, the instructors for Experimental Psychology became aware that students were not very good at transferring their knowledge and skills that were taught in the earlier part of the course to their tasks in the latter part of the course. And if the students couldn't do this, then it was unlikely that they could transfer this learning to later laboratory courses or to the senior research courses.

Experimental Psychology

Programming and Pedagogical Strategies (Inputs):

In Spring, 2004, semester, the laboratory and writing exercises were restructured so that each new lesson included and built upon the previous lessons. In addition, students were explicitly required to think about their research projects from the beginning of the course by the use of questions from the instructors during the labs. Finally, the students practiced identifying and stating research questions, collecting data, analyzing the data, and interpreting the results on a weekly basis. This process has continued.

Assessment Strategies:

- Quality of research ideas and questions (grades, instructors' judgment)
- Students' ability to collect, analyze, and interpret data in a timely fashion (observations of students' behavior)
- Quality of project presentations (grades, instructors' judgment)

Expected Outcomes:

As judged by the instructors, students should generate more interesting and important research ideas and questions. In addition, with greater and earlier practice in collecting, analyzing, and interpreting data, they should be able to carry out their own projects in more a timely fashion. They should also be able to present their projects in a more professional manner, and they should generalize their knowledge and skills to other courses.

Outcomes thus Far:

The additional practice that the students gained paid off immediately in better research ideas, carry through, and project presentations, as judged by the two instructors of the course. Farther reaching outcomes remain to be seen as these students take other courses.

Psychology of Learning

Programming and Pedagogical Strategies (Inputs):

With changes in the Experimental Psychology (PSY 013) laboratories and the acquisition of new equipment for the Psychology of Learning (PSY 121) laboratories, two of the lab instructors worked together in late summer of 2004 to develop new laboratories of the Psychology of Learning course. The goals were to reduce the overlap of similar laboratory exercises with the Experimental Psychology course; to provide exercises for classical conditioning phenomena; and to foster new knowledge and skills that could be applied in other courses (e.g., Sensation and Perception [PSY 124], Behavioral Neuroscience [PSY 125]).

In the first trial of this new set of labs, variations of the basic procedure were applied in each lab group in the Fall, 2004, Psychology of Learning course to see what aspects of the procedures worked and didn't work. The procedures were then modified, with input from the two instructors and the department's laboratory coordinator, for a student project in Behavioral Neuroscience (PSY 125), also during Fall, 2004. The procedures used in the student project were modified once again and added to the regular part of the Psychology of Learning laboratory exercises in Fall, 2005.

The new set of labs were deemed a success in that they accomplished the 3 goals stated above and have been added to the Psychology of Learning laboratory exercises.

Assessment Strategies:

- Quality of research ideas and questions in senior research (grades, instructors' judgment)
- Documenting level of knowledge at which instructors can begin
- Increased requests by students to use procedures and skills that they have learned in other courses
- Better understanding of classical conditioning and the relationships among classical and operant conditioning as indicated by class discussion and test scores

Expected Outcomes:

In future years, more students should take on more complex research questions in the laboratory and research courses. Instructors should find that they can take students further in their learning due to their knowledge and skill levels coming into the course. Within the Learning course itself, students should show improved understanding of classical conditioning and the relationships between classical and operant conditioning. Comments about repetition of laboratory exercises between Experimental Psychology (PSY 013) and Psychology of Learning (PSY 121) should decline.