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

Appendices
A: Matrix of Institutional Standards and Departmental Educational Objectives  
B: Institutional Standards and Departmental Educational Objectives that are Addressed by the Program Improvement Goals  
C: Location of Data to which Progress Report Refers
This progress report focuses on the psychology department's assessment efforts from August, 2000 to December, 2004. 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, the department had a full complement of members (two of whom were relatively new, and two, continuing), so it was a good time to evaluate what the department wanted its graduates to become and how changes in its program could enhance the students' development in appreciation for the liberal arts, increasing psychological knowledge and relevant skills, and spiritual understanding and wisdom.

Part of our self-study included identifying the implicit and explicit educational objectives the faculty has for psychology majors, and then matching them against the institutional learning standards. It was encouraging to see a great deal of consistency and overlap between these two sets of outcomes (see Appendix A).

The department identified two program improvement goals, described below, as a place to begin their efforts to improve the educational process. The relationship between these goals, the department's educational objectives, and the institutional learning standards are listed in Appendix B.

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

*Review of Goal Rationale and Strategies:*
A concern and frustration for the department members was the inability to expect a certain level of knowledge and skill in 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, and valuable time was spent reviewing or teaching concepts and procedures that students should already know. Related to this was the apparent perception of students that there was no carry-over of knowledge and skills learned in one course to other courses.

As a result, there was less time to move the students toward more mature understanding and performance throughout their major program. Students who did know the material that was reviewed were frustrated with the repetition of information. And there was a lack of clarity regarding progress through the major and what constituted a well-prepared, well-educated student--for students and faculty.

A variety of programming and pedagogical strategies (inputs) were identified and instituted in Fall, 2000. The department's primary focus was on General Psychology, the first course in the major. Two common texts were selected: a general psychology text and the *APA Publication Manual*. In addition, a common set of topics to be covered and similar 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. For example, the 4 laboratory courses offered in the department were divided into pre-experimental methods, sophomore-level courses (Psychology of Learning, Sensation & Perception) and post-experimental methods, junior-plus-level courses (Physiological Psychology, Cognitive Psychology). It was also decided that one laboratory course at each level would be offered each semester (Psychology of Learning and Physiological Psychology in the Fall; Sensation & Perception and Cognitive Psychology in the Spring).
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 MExcel 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 and plagiarism, 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.

There has also been a recent change in the definition of a qualified instructor for General Psychology. The instructors for General Psychology have been a concern for some time because this course is a General Education course and the introductory course in the major. Therefore, it is critical that students learn the fundamentals of the discipline and experience how one’s faith and disciplinary interests mesh together. It is believed that full-time members of the psychology department, rather than part-time adjuncts, would be the most invested in accomplishing the faith-and-discipline, content, and skill learning that provide solid foundations for students whether or not they continue in the major.

In the last 3 to 4 years, a number of alumni returned to the Santa Barbara area after earning graduate degrees in psychology and were interested in teaching. Since these potential instructors were qualified, seemed to be in the Santa Barbara area relatively permanently, and were familiar with the college and the department, the chair made a commitment to assign General Psychology sections only to full-time instructors or to on-going, qualified, part-time members of the department. In 2004, the inclusion of these part-time instructors in curricular discussions was regularized.

**Outcomes thus Far:**

**Instructors' Impressions.** In sophomore level courses, like Social Psychology, Learning, and Sensation & Perception, as well as junior level courses like the Physiological and Cognitive Psychology courses, students have gradually become better prepared for tasks in these courses.

Dimensions along which students have improved include
- APA writing (correct citations, formatting; content in the proper section),
- statistics (knowledge of appropriate descriptive and inferential statistics),
- methodology (experimental and correlational designs), and
- computer skills (spreadsheet and word processor familiarity, graphing, SPSS).

In previous years, up to 4 sessions in the laboratory courses would be required to re-teach basic skills and principles; currently, students require less review, 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 MExcel 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 MExcel).

**Student Information Cards.** At the beginning of the semester in upper division courses, one instructor has had students record on 3” X 5” index cards what previous courses they have taken and how familiar they are with
various procedures in MSExcel and SPSS. These data indicate that, each year since 2000, fewer students report that they have not completed prerequisites, and most students are at least somewhat familiar with SPSS or MSExcel.

**Transcript Audit of Graduates.** In order to determine how well the department was communicating the importance of course sequencing and completing prerequisites on time, a transcript audit of psychology graduates was completed for the academic years 1994/95 to 2003/04. These data allowed the department to examine whether variability in completion of prerequisites and in sequencing was decreasing as students become more familiar with the new requirements.

**Missing Laboratory Course Prerequisites.** Graduating majors from 1995 through 2000 who did not complete the prerequisites for the laboratory courses ranged from 0 to 12%. Three years, it was 0%; and 3 years, 7 to 12%. In 2001 and 2002, 5% and 12%, respectively, of graduates had taken Statistics (MA 005, a prerequisite for all laboratory courses) concurrently or after a laboratory course. In 2003 and 2004, that percentage was zero.

**Completion of a Sophomore Level Lab after an Advanced Lab.** From 1995 to 2000, the percentage of graduates who took a sophomore level laboratory after they had taken an advanced lab course ranged from 11 to 50%. Between 2001 and 2004, these numbers varied from 0 to 12%.

**Completion of Statistics and Experimental Psychology after the Sophomore Year.** Between 1995 and 2000, the percentage of graduates who took Statistics (MA 005) after their sophomore year varied from 0 to 14%. After 2000, it ranged from 0 to 10%. A similar decline was noted for Experimental Psychology (PSY 013). Before 2000, percentages ranged from 5 to 29%; after 2000, 0 to 20%.

**Completion of Statistics Course Before or Concurrently with Experimental Psychology Course.** These two sequencing problems together are more of an issue after 2000 than before. Between 1995 and 2000, 5 to 21% of graduates took Statistics (MA 005) after or concurrently with Experimental Psychology (PSY 013); in only one year was the percentage 21). In contrast, between 2001 and 2004, the percentages ranged from 11 and 15%.

If these results are examined in combination with the results about timing of Statistics (MA 005) and Experimental Psychology (PSY 013), they suggest that most students are taking these two courses in their sophomore year, which is good, but that they may have sequencing problems in order to do so.

**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 has been in the History and Systems of Psychology (PSY 111) course, where the instructor has begun quizzing students about historical facts that a psychology graduate would be reasonably expected to know. Students take weekly quizzes based on their readings, but the first quiz of the semester is the “pre” test. One would expect them to do poorly on this first quiz and they do, since they haven't learned the material yet.

Each of the items in the quiz are explicitly discussed in reading and lecture, and are covered on exams during the semester. Results of this pre/post quiz for the Spring 04 term were less than satisfying, 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.

**What Have We Learned?**

The evidence suggests that positive changes are beginning to occur as a result of the department's efforts to clarify its educational objectives and developmental learning objectives for both faculty and students. These changes are probably also the result of modifications in other courses that our students take; for instance, the Statistics (MA 005) course, taught by the Mathematics department. Students use MSExcel in that course as well as in Experimental and other psychology laboratory courses. Students are coming into the psychology laboratory courses with greater familiarity and skill in MSExcel, which facilitates their learning in these courses.

Another change that may also be attributed to the department's efforts is the evolution of the student learning culture. It used to be one in which “regular” students did not take their studies seriously, and were expected to complain about the academic workload and instructors’ expectations that students maintain their knowledge. It was only the "smart" ones who didn't complain. More recently, students take more responsibility for their own
learning, taking their studies more seriously and complaining less (at least in the instructors' hearing).

What Do We Do Next (Closing the Loop)?
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.

At a recent department meeting, the faculty decided that it needs help from the registrar to make sure that students have the proper prerequisites and course sequencing, in order to head off problems rather than having to fix them once they've occurred. This could take the form of more detailed information on course rosters (e.g., when students declared their majors, whether they have pre-requisites, whether they are transfers), or computer checks in that office of whether students have completed the prerequisites before they are enrolled in a course.

It was also agreed that the department should update the suggested 4-year plan that is available to students, so that we have another way of communicating expected course sequencing to students.

The department set a goal of reducing Statistics and Experimental Psychology sequencing problems to zero, ideally. It might be the case, however, that transfer students and latecomers to the major would still require some leeway in sequencing these two courses.

Department faculty is also working on other means of collecting clearer data for future updates.

One of the instructors has applied for a faculty development grant to develop a pool of tests, activities, demonstrations, and simulations for General Psychology instructors.

It was agreed that the department needs to work on helping students learn in such a way that they retain what they've learned, rather than "cramming and purging" for the grade, but identifying and applying strategies to move students toward this goal is requiring additional discussions.

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)

Last year, 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.

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 was adapted from a writing workshop in which a Religious Studies professor described how he trains students to write theologically.

In Fall, 2004, students in General Psychology were asked to choose 2 other students and meet together to review each other's papers for correct APA styles and for plagiarism. Because this was a first-time experiment, the instructor wanted to see how students responded to such an assignment. As some might expect, the students approached the assignment half-heartedly, did not take it seriously, and therefore did not provide much help to their classmates in their reviews.

For the next application of this assignment, a clearer rationale for completing it well will be provided. Specifically, it will be argued that students will become much more familiar with APA styles by reviewing another's paper and secondarily, help their classmates write a better paper. In addition, students will be asked for feedback about the assignment in order to identify what aspects of the assignment they perceived as useless or helpful.

Writing Grades.

General Psychology. In the General Psychology sections, it has become clear that changes in grades are not a useful measure of whether writing improvement is occurring because instructors apply a more stringent grading criterion as the students get additional practice. In one section, for instance, students' scores dropped 2 to 4 points from the first to the last assignment.

Social Psychology. The instructor of this course reported that students improved in writing successive drafts of an extensive paper. On the first draft, the average score was 69 (median, 71; \( SD = 20.5 \)). On the final draft, the average and median scores increased 18 points, and the standard deviation dropped to 7.8.

Psychology of Religion. In this course, the instructor focuses on one writing skill for each student and works with them to improve their writing in that area over the course of the semester. Specifically, students write 5 to 7 papers. The instructor writes a 1 to 1½ page evaluation of the paper's strong and weak points, where he points the students' attention to specific places in their papers, offers different wording and compares the difference between his rewording and the student's wording.

Besides general "smoothing of the language," this instructor also worked with students on appropriate use of quotations. Students' first papers had a great deal of quote-overuse (e.g., 24 lines of quotations in a 3-page paper). On the last papers, there was typically only one quote in the paper.
In addition to the changes in students' writing performance, students also report that they appreciate this strategy of teaching writing.

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

Instructors are seeing improvement in students' writing over the course of the semester, although student grades don't necessarily show it. In addition, grading multiple assignments in a class of 40 takes a great deal of time, so the student reviewers are very helpful, especially for the General Psychology sections.

The department has decided to establish a common grading criterion and have instructors maintain a consistent writing standard across writing assignments in a given course, so we can collect better evidence of improvement using paper scores.

Discussions have also begun about the possibility of awarding more than one score on papers, one for APA style, and one for quality of writing and ways to make better use of the Writer's Corner, a peer tutoring center.

The next two program improvement goals were more recently identified, and changes were first implemented 2003-2004.

**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. Many students approached the tasks of the course perfunctorily, producing research ideas of unsatisfactory quality. Other students' carelessness and lack of attention to ethical concerns when carrying out research projects, self-reported apparent lack of knowledge about methods and statistical analysis, and lack of thoughtfulness when writing up their results, was discouraging, given that this course was supposed to be a capstone course in the major. Finally, students were beginning to avoid the research course, saying that it was just too much work; they had observed students in the research course who were working so intensely at the end of the semester and didn't want that experience for themselves.

To address the knowledge and skills problem, one of the instructors tried adding texts about ethical issues in research, experimental design, and thinking critically within the discipline. These topics were then considered in more depth through class time discussion.

To improve thinking, and thereby writing, about the results of students' research projects, the instructor added articles about analyzing, critiquing, and evaluating research in one's writing. These articles contained good and poor examples of these techniques.

Reading and discussing the texts were not effective in producing changes in the students' behavior. Reading the articles on writing produced changes in students' writing--but of course, only if they read them. When discussing what might be done to improve students' learning and performance in this course, it became obvious that the department was expecting more of the students that they could accomplish in a 1-semester course. Students who would be considered successes (submit and present their research at a professional conference) did not finish their work in one semester but continued to work on their projects after the semester was over, and this type of behavior occurred primarily when students took the Research course in the Fall semester. Furthermore, it was noted that professionals in the field do not identify an important question, develop a method, carry out a study, and write up and submit the results in 16 weeks--and expect acceptance.

The department members acknowledged that accomplishing the goal of improving students' performance to correspond with their goal of beginning-level professional work, would require a change in the course larger than those implemented 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. At this point, there aren't much data on the success of these changes, but impressionistically, students seem less harried and rushed with the new course. They also seem to be taking the research tasks more seriously. Students who still have to complete the course in a single semester because of scheduling issues start out very optimistically but acknowledge by the end of the semester that completing a project well in one semester is all but impossible. 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.

Participation in the Student Research Symposium. There are also baseline data regarding presentation at Westmont’s annual Student Research Symposium. At this point, there are two routes by which students complete research projects. The first and most common is the senior research course; the other is to work, along with other students, with a professor in his lab on an ongoing research question.

The data indicate that, while both routes have been somewhat successful (i.e., psychology students have presented every year that the symposium has been held), there is room for improvement, especially in the Research course. Over the last 8 years, 2 to 5 students involved in 1 to 3 projects have presented. In one banner year, 8 students presented who were involved in 6 projects. Given the numbers of students who take the course each semester (2-8), the majority of students from both sections should be presenting at the symposium every year.

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

Students are more interested in research again and seem to be enjoying the course more in its new format. A few students have trouble with procrastination, with more time to complete their projects, so more definite deadlines for various tasks need to be put in place. At a recent department meeting, it was discussed whether to make presentation at the symposium a requirement as opposed to a strong recommendation.

PI Goal 4:
Reduce Plagiarism in Students’ Work

In the mid to late 1990s, various department members began to notice that plagiarism was a problem among upper division students. Every semester, at least 2-3 students in various courses clearly plagiarized on one or more assignments. When confronted with their behavior, students were most often defiant or indifferent (e.g., "I didn't think this [plagiarism] was such a big deal.").

With the addition of two new department members between 1998 and 2000, there was increased attention to detecting plagiarism, which, of course, resulted in more instances being identified. Faculty in other departments (e.g., Anthropology and Sociology) also began paying more attention to the detection of plagiarism, and over the course of 2-3 years, it became clear that plagiarism was a pervasive problem among all categories and levels of students.

In parallel with this discovery, the Faculty Instructional Technology Committee (FITC) had turned its attention to the issue of plagiarizing information from the Web. From Web research done by committee members, it became clear that:

- instructors could not expect incoming students to know what plagiarism is and how to avoid it
- instructors needed to explicitly teach their students what plagiarism is and how to avoid it
- there are effective strategies for both teaching and detecting plagiarism
- many colleges and universities had a well-defined policy against plagiarism and clearly delineated procedures for addressing instances of plagiarism

Departmental concerns about and the FITC’s research on plagiarism converged in Academic Senate, where academic dishonesty, especially plagiarism, became a topic of discussion. This body decided that a college-wide plagiarism policy should be developed in which plagiarism is defined, procedures identified for dealing with it, and consequences outlined. Two members of the psychology department along with Religious Studies and English
professors met 3 times in early summer 2003, to write a policy against plagiarism. This policy was sent back to Academic Senate during the 2003-2004 academic year for approval, and went into effect soon after.

Since we now had clear guidelines for detecting and dealing with plagiarism as well as information about reducing plagiarism through teaching and design of assignments, the department began to put the policy into practice, again with their primary focus on General Psychology. For this PI goal, however, developmental steps were defined as well, and the behaviors and performance expected were delineated for General Psychology students, as well as upper division students, and senior research students.

The programming and pedagogical strategies (inputs) were presented in the department's May, 2004, program review proposal and are reviewed, below.

*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) Require peer review of drafts of assignments to develop skills in detecting plagiarism (some)
  - g) Provide enough assignments that students can practice developing their skills throughout the semester (all)

- Upper Division Courses:
  - a) Put statement about plagiarism in syllabus; review consequences with students (all)
  - b) Offer information about plagiarism, how to avoid it, and how to detect it in their own work (some)
  - c) Offer exercises in recognizing plagiarism, and proper paraphrasing and acknowledgement (some)
  - d) Structure assignments so as to encourage the development of good habits of note-taking, checking for plagiarism, and acknowledging sources properly (some)

*Assessment Strategies:*

- Evaluate peer review success in detecting plagiarism (as indicated by assignment scores)
- 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 questions regarding proper acknowledgement of sources
- Tally the increase in knowledge of how to reference sources properly (especially, secondary sources and electronic sources) (Fewer questions; more papers with correct citations after first teaching)

*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.

Peer review will initially miss a lot of plagiarism, but catch more as the students become more practiced. The instructor should begin to get more questions from peer reviewers about whether a particular instance is plagiarized as students become more attuned to the nuances of plagiarism and paraphrasing properly.
Comments from students may initially be grumbling about strictness of policy. These should change to concern about paraphrasing and acknowledging sources properly (i.e., not losing points). Finally, students should begin to "watchdog" themselves and their classmates (e.g., "I guess I can't do that; it's 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:**

**Plagiarism Exercises.** In General Psychology, two plagiarism exercises were developed; one, to help students learn to recognize plagiarized information, and the other, to help students learn to paraphrase and acknowledge sources properly. Over the course of two semesters' sections, nearly all 27 students did very well on the recognition exercise, indicating that they could tell when plagiarism is occurring, but nearly all did very poorly when they had to paraphrase, which suggested that they were not applying their recognition skills to their own work (plagiarizing on at least 3 of the 6 items).

**Peer Review, General Psychology.** The same peer review assignment that was used to help students with their writing and formatting quality was also used to try to help them improve their plagiarism detection skills. This exercise was first tried Fall, 2004, and was a failure: Students failed to detect plagiarism in each other's papers although the instructor was able to detect later when grading the papers.

**Student Comments.** During the first year that the department increased its efforts to reduce plagiarism (before the new policy was put into place), students' grumbling and comments devaluing the importance of not plagiarizing increased quite significantly. Most of this was done in the presence of support staff in the department rather than in the instructors' hearing. Since the policy has been put in place and students across the campus have become more familiar with it, grumbling and devaluing comments no longer occur.

**Writing Assignments, General Psychology.** Examination of the data over 5 sections of General Psychology taught in 3 semesters from Fall, 2003 to Fall, 2004, indicate that students do need instruction in what plagiarism is and how to avoid it. As many as 90% of students who received very little to no instruction plagiarized. Even with explicit teaching on how to avoid plagiarism, approximately 50% plagiarized on the first assignment. Exercises to develop recognition and avoidance skills also helped somewhat: 64% plagiarized under these conditions.

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, less than 40% plagiarized again. By the second assignment, if plagiarism occurred and students were allowed to rewrite, they did so without plagiarizing.

If stiff grade penalties are applied when plagiarism occurs, rates dropped dramatically across a set of assignments. With perceived minimal penalties, rates drop more slowly.

**Plagiarism rates on the first assignment were also higher in the first semesters during which an instructor addressed plagiarism.**

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

Based on the data so far, the department concurs 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;
- Explicit teaching on the topic (rather than simply expecting that they will read and learn it); and
- Experienced instructors (it may be that subtle differences in teaching or providing feedback are learned each year).

Department members have also found that reading papers for plagiarism is extremely time intensive--whether they or students readers do the detecting, but this is an important aspect of teaching students not to plagiarize, and so they continue to check systematically for plagiarism in the General Psychology papers, but papers
produced in upper division courses are not. Instructors also continue to search for more efficient ways of checking for plagiarism.

**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):**
For the 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.

**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. An additional bonus was the students also dressed and behaved more professionally during their presentations.

**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 learning new knowledge and skills that can 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 procedure was 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 new set of labs were deemed a success in that they accomplished the 3 goals stated above and have been added to the regular part of 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.
### Appendix A
Matrix of Institutional Standards and Departmental Educational Objectives

<table>
<thead>
<tr>
<th>Institutional Standards</th>
<th>Active societal and intellectual engagement</th>
<th>Written and oral communication</th>
<th>Diversity</th>
<th>Critical-Interdisciplinary thinking</th>
<th>Christian orientation</th>
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<td><strong>Departmental Educational Objectives</strong></td>
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<td>Knowledge Base/Perspectives</td>
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Appendix B
Institutional Standards and Departmental Educational Objectives that are Addressed by the Program Improvement Goals

Goal 1: Clarify Departmental Educational Objectives and Developmental Learning Objectives for Faculty and Students

**Institutional Learning Standards**
- Subject Matter--Quality of Program Content
- Written Communication
- Active Societal & Intellectual Engagement

**Departmental Educational Objectives**
- Knowledge Base/Perspectives
- Written Communication
- Experimental Methods
- Statistics
- Computer Skills
- Character
- Reasoning/Thinking

Goal 2: Improve Students' Writing Performance

**Institutional Learning Standards**

**Departmental Educational Objectives**
- Written Communication

Goal 3: Improve Quality of Senior Research Projects

**Institutional Learning Standards**
- Subject Matter--Quality of Program Content
- Written Communication
- Active Societal & Intellectual Engagement
- Christian Orientation

**Departmental Educational Objectives**
- Knowledge Base/Perspectives
- Written Communication
- Experimental Methods
- Statistics
- Computer Skills
- Character
- Reasoning/Thinking

Goal 4: Reduce Plagiarism in Students' Work

**Institutional Learning Standards**
- Christian Orientation
- Active Societal & Intellectual Engagement
- Written Communication

**Departmental Educational Objectives**
- Written Communication
- Character

Goal 5: Across Laboratory Courses, Decrease Unintentional Redundancies and Increase Planned Generalization of Knowledge and Skills
Institutional Learning Standards
  Christian Orientation
  Active Societal & Intellectual Engagement
  Written Communication

Departmental Educational Objectives
  Written Communication
  Character
Appendix C
Location of Data to which Progress Report Refers

Most data are stored on the department server: IP 10.22.21.74
Other locations are noted

Inventory of Data
1. 10-year transcript audit (1994-2004);
   Transcripts: Paper copies; department filing cabinet
   Summaries & Analysis: 10.22.21.74/PsychDeptShare/ProgReview/Data/Prequisites & Sequencing 94-04.xls

2. Minutes of Department Meetings (199X-2004);
   10.22.21.74/PsychDeptShare/Dept Business/Minutes/ multiple MSWord documents

3. Curriculum Discussions: Notes on conversations that occur outside department meetings
   10.22.21.74/PsychDeptShare/CurriculumDiscussions/ multiple MSWord documents

4. Evidence of Plagiarism in General Psychology (PSY 001) sections
   Summaries & Analysis: 10.22.21.74/PsychDeptShare/ProgReview/Data/Plagiarism in PSY1.xls
   Raw Data: Individual instructors' grade books

5. Student Information Cards--3" X 5" cards on which students record what other psychology courses they have taken and their familiarity with MSExcel and SPSS.
   Paper copies in instructor's filing cabinet

6. History and Systems of Psychology (PSY 111) Pre/Post Quiz
   Raw Data: Instructor's grade book

7. Evidence of Writing Quality in General Psychology and other courses
   Raw Data: individual instructors' grade books

8. Research Presentations at Westmont's Student Research Symposium
   Summaries & Analysis: 10.22.21.74/PsychDeptShare/ProgReview/Data/Research Symposium Participants, 97-pres.xls