Enhancing the Undergraduate Curriculum in Psychology

Departmental Initiative Proposal to the Faculty Development Committee

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Specific Aims

The aim of this departmental initiative is to obtain support for our department-wide revision and enhancement of the curriculum in Psychology. Although we have spent this academic year revising the curriculum for Psychology majors and minors, these revisions should also improve the quality of psychology courses taken as electives by the considerable number of students in our classes who are not majors or minors in psychology. At the heart of this revision is our contention that because psychology is both a social and natural science, there is a significant need to strengthen our curriculum in three fundamental ways: First, we need to increase our current emphasis on directly involving students in scholarly research in (a) regularly taught courses, (b) faculty-student collaborations on research projects, and (c) student-initiated independent research projects. Second, we need to increase our use of modern technology to improve our teaching of the scientific character and basis of psychology. Third, we need to improve and upgrade our equipment and software so that it is more in line with how research is actually practiced in modern psychology. We are thus asking for funds to purchase software and instrumentation to support our proposed revision of the curriculum in psychology.

Needs Statement

The requested items are listed in Table 1 (page 6). All of them will be used in nearly all of our courses and will help students gain valuable hands-on research experience and increase the variety and quality of classroom demonstrations and activities. This hands-on component is crucial to the revised curriculum, and can only be fully accomplished with the following software and instrumentation.

Item 1. The SuperLab Pro Bundle is a combination of software and response box that will be used to generate research tasks and run psychological experiments. The software is easy to use and program. Two of the faculty use this software in their own research (Ackles and Sexton-Radek) but we need an additional license to use this software in our classes. The

software facilitates computer generation or import of visual and auditory stimuli, control and/or synchronizing other lab equipment, the precise control and timing of stimulus presentation during an experimental protocol, and fast, accurate measurement of responses both in terms of speed and accuracy. Data are stored in data files that can be easily imported into spreadsheet programs or standard statistical packages such as SPSS. This package will allow and facilitate both students and faculty in their design, development and execution of new studies and research activities in our courses.

Item 2. The PCI-DIO24 Card (input/output card) and supporting software Measurement Computing Support Pack are needed to use programs developed in SuperLab Pro that require the control and timing of external equipment (e.g., lamps, rotary pursuit devices, physiological recorders, etc.). This card and software will allow us to greatly expand the types of studies and response measurement beyond that provided by the computer monitor and response box.

Item 3. The Video Splitter will be used in experimental situations where the experimenter needs to be physically separated from the subject (e.g., not looking over their shoulder) and still run the experiment on a PC. The splitter permits the presentation of the same image on two different monitors (one for the subject and one for the experimenter with the rest of the PC). An additional advantage is that when using a second monitor and a response box (or other response devices such as a serial mouse or tracking joystick) the subject will not be distracted by the keyboard and control of the program PC by the experimenter.

Item 4. Laboratory in Cognition and Perception (v3) is a software package that contains 20 “canned” experimental paradigms based on the psychological literature. The experiments can be used in courses in general psychology, research methods, sensation and perception, cognition, social psychology, mind-brain-behavior, and history of psychology. Students and faculty can use these canned experiments to demonstrate and replicate important experiments. Moreover, there are provisions in the software to modify each paradigm without programming.

Thus this package can be used and extended so that students can use it for their own research projects. The program includes what is referred as an “intelligent” spreadsheet program for processing collected data.

Item 5. The Head-Chin Rest (Lafayette 14302) will be used when conducting demonstrations and experiments with the SuperLab and Laboratory in Cognition and Perception programs. This device will allow the experimenters a reasonable and noninvasive method for maintaining a subjects head and eyes at a fixed position relative to the experimental stimuli. This is a critical control parameter in psychological studies and we currently do not have a device that will allow us to do this.

Items 6 and 7. Discrimination Weights and Quality Cutaneous Sensitivity Kit are stimulus packages that will primarily used in the new Sensation and Perception course. These kits will be used for determining the limits of sensations in these modalities and how individuals detect changes in the magnitude of a stimulus. Nevertheless, these items will also be used for demonstrations and research projects in many of our other courses on a more limited basis (e.g., General Psychology, Research Methods, History of Psychology, etc.). Both kits allow for precise stimulus control in these sensory modalities.

Item 8. We have estimated shipping costs for items 1-7 (at about10%). We also included a small amount for small items and supplies that will become needed as we develop even more fine details for the courses and labs in our curriculum revision.

Rationale

The requested items will allow us to activate the three key components of the revision in the psychology curriculum for majors and minors. All three components will serve to increase active participation of students in scientific methods employed in psychology and facilitate faculty teaching, and all three require the requested items. Our aim is improve student acquisition of content and concepts along with improved abilities to evaluate and conduct research, writing and oral communication skills, critical thinking skills, and creativity. In addition, these

components were developed to facilitate the achievement of our stated "Goals for the Major in Psychology." These are: "Students will understand basic psychological theories and principles; Students will apply psychological principles to everyday circumstances and social issues; students will critically evaluate and express psychological content in written and oral communications; Students will utilize the scientific method in the design of research studies and recognize appropriate methodology, statistics, and interpretation of results; Students will appreciate the importance of ethical and professional practice in the field of psychology" (Elmhurst College Catalog, 2001-2002, p. 226).

The first component of our revision is a modification in the timing and sequence of three required courses. The timing and sequence of these courses will be changed so that two existing courses addressing the basic concepts and skills in scientific research are taken early and right after our introductory course (i.e., statistics and research methods, Psychology 355 and 433). Furthermore, this three-course sequence of General Psychology, Statistics for the Behavior Sciences, and Research Methods in Psychology will serve as prerequisites or co-requisites for the rest of the courses in the psychology curriculum. The software and equipment requested in this proposal will be used to support a laboratory component that will be added to each of these courses as well as enhance demonstrations and other activities involving basic psychological phenomena and research approaches to them.

The second component of the curriculum revision involves the modification of several existing courses by adding laboratory exercises and activities to their format. Our aim is to strengthen the acquisition of concepts and content as well as provide a more solid foundation for research approaches to the content of several existing courses. These courses are (in addition to the three discussed above): Social Psychology (PSY 303), Cognitive Processes (PSY 330), Learning (PSY 411), History of Psychology (PSY 421), and Physiological Psychology (PSY 424). The software and equipment requested in this initiative will be used in all of these courses.

The last component of the curriculum revision involves the development of two new courses that will also include a laboratory section along with demonstrations and in-class activities: Mind, Brain, and Behavior (PSY 313) and Sensation and Perception (PSY 423). These courses fill gaps in our existing curriculum and will strengthen student preparation for post-graduate programs in psychology and related fields as well for students who purse professional post-graduate training. Again, the requested software and equipment will be used in both courses to strengthen the students' acquisitions of course content and research approaches to theoretical and methodological issues in these areas.

Finally, it should be noted that we intend to use the requested software and equipment to facilitate and encourage student participation in three additional courses in the psychology curriculum that are aimed at more individualized training in research. The first two are the Research Mentorship courses (PSY 249 and PSY 449) and the last is the Individual Research in Psychology (PSY 451).

Table 1: Proposed Items and Budget

Item #	**Item**	**Quantity**	**Price**
1	SuperLab Pro Bundle C (software, 6-button response pad, & keycap kit)		$ 725
2	PCI-DIO24 Card (input/output card) & Measurement Computing Support Pack (software)		199
3	Video Splitter (Model 200 for PCs)		249
4	Laboratory in Cognition & Perception v3 (software)		300
5	Head-Chin Rest (Lafayette 14302) for stabilizing head position to observe visual stimuli or listen to auditory stimuli.		211
6	Discrimination Weights (Lafayette 16015) for illustrating absolute and difference thresholds.		145
7	Quality Cutaneous Sensitivity Kit (Lafayette 16010)		296
8	Miscellaneous plus Shipping & Handling (estimated)		$ 375
		Estimated Total	$2,500