

***Involving Undergraduates in Individual Research Activities:  
A Classroom Without Walls***

Pamela E. Scott-Johnson and Earl D. Walker  
Morgan State University

(This essay originally appeared as the monthly "E-xcellence in Teaching" e-column in the *PsychTeacher Electronic Discussion List* for October 2003.)

This article is designed to encourage departments and, in particular, faculty members to incorporate an inquiry-based training component into their undergraduate curriculum. By inquiry-based training, we mean assisting students in developing independent research projects. We, like other educators, have always looked for ways to be effective in and out of the classroom, and we have actively sought opportunities that enriched the learning experiences of our students. Although we try to create alternatives to the traditional pedagogy, many of us still use a traditional format that combines lecture and laboratory. For example, most psychology departments require their majors to take a research methods and/or statistics course (Perlman & McCann, 1999). Many of these courses require that each student attend three hours of lecture and two hours of laboratory per week. Typically, lectures delineate the basic principles and theories of research methods and designs, as well as the appropriate statistics needed to analyze the data. During laboratory classes, computerized and workbook activities offer students practical opportunities to study important terminology and other aspects of research design and data analysis. Although this represents a common approach to enhancing undergraduate education in psychology (McGovern & Hawks, 1988; McGovern & Reich, 1996), there are other mechanisms for exposing students to inquiry-based research training.

Individual research experience is a great opportunity for students to apply what they have learned in the classroom to understanding how research really works. We call this the "classroom without walls." Below we discuss the importance of individual research activity, describe ways to encourage student and faculty involvement in the process, and provide advice for supervising student research projects. Involving students in direct research experience offers a complement to their theoretical training, which may serve to deepen their knowledge.

#### The Importance of Individual Research Activity

The most popular images of psychology tend to be those of applied areas such as counseling and clinical psychology. Students, as well as others, often think of psychology as a profession that mainly deals with counseling and advising individuals who are troubled or "crazy." Many students claim that their desire to study psychology is so "they can help people." Thus, most students probably do not enter the study of psychology with the expectation of becoming researchers or academic psychologists. Beginning students are often surprised to find that research is not only an important part of psychology, but is also a part of their own training that may greatly impact their careers. A crucial first step in establishing the importance of

research experience is to convey to students its relevance to intellectual, academic, and personal career success.

Ultimately, the goal of psychological research is to contribute to the knowledge base in psychology. Therefore, any research has the potential to provide researchers, as well as practitioners, with important information regarding human behavior. A perusal of any psychological journal is likely to uncover relevant information that may inform professionals, as well as laypersons, about depression, teen suicide, attention deficit disorders, and so on. Undergraduate students can be a part of this intellectual process and contribute valuable information to our field.

Furthermore, doctoral training is usually necessary for a career as a psychologist, and research skills are vital for entry into and success in doctoral programs. Many graduate programs—PhD programs in particular—seek individuals who have research experience. Thus, students who participate in research have a competitive advantage in the graduate school admissions process. This is particularly important for students whose Graduate Record Examination (GRE) scores or grades may be low.

Finally, research can be intrinsically exciting. Only those who actually have the experience of framing questions, generating hypotheses, and implementing plans to test these hypotheses can discover this aspect of research. The enjoyment of the process is enhanced when the question is original and the researcher is the first to see the answers. It is particularly exciting when students have the opportunity to present their research at local, regional, or national conferences.

### Encouraging Student Involvement

Students may be hesitant to participate in research for several reasons. They may feel unqualified to conduct research, think that it will be uninteresting, or worry that they will not have enough guidance through the process. Communicating the following ideas to students may encourage them to become involved in research.

First, many of the methods used in psychological research are relatively easy to implement. In many areas of science, original investigation is often reserved for those who have extensive background knowledge and are highly skilled in the use of sophisticated laboratory techniques. For example, undergraduate training in biology, chemistry, and physics typically focuses on acquiring basic knowledge and learning simple observation techniques, with little opportunity for testing new research questions. This is partly because success in these areas is often driven by new technologies that are dependent on both sophisticated equipment and advanced training. In contrast, although undergraduate psychology students also must spend considerable time and effort learning basic concepts and skills, psychology provides many tools of investigation that are relatively easy to use. Tools such as simple questionnaires allow undergraduates, either individually or as part of a research group, the opportunity to ask personally relevant, original questions.

Another piece of information likely to encourage students is that computerized databases make vast amounts of literature easily available, permitting searches that give a relatively complete picture of the existing work in any well-defined area. Such reviews not only provide an idea of what is already known about a particular set of variables, but they also show the limits of that knowledge, invite new research questions, and instruct the new researcher in the types of methods that have been applied successfully, or unsuccessfully, in the past. Students may feel overwhelmed by the vast amount of information until they become aware that these databases help simplify the process.

Students can be further encouraged by the prospect of receiving individual attention from a faculty research advisor throughout the course of the project. Ideally, students interact with a research advisor in the type of one-to-one relationship that is typical of graduate thesis work. This one-to-one interaction often leads to other positive outcomes—stronger letters of recommendation, more information regarding graduate school, and advice on careers in psychology, to name but a few.

### Encouraging Faculty Involvement

Focusing faculty attention on the benefits of advising undergraduate research may help foster their involvement in the process. For example, undergraduate research may lead to publications and conference presentations, further the faculty member's program of research, and provide evidence of departmental productivity. A less immediately recognizable, but possibly more important, consequence of participating in student research is that through inquiry-based training, we have the opportunity to make a positive contribution to the life of another. Because research experience is crucial for the future advancement of undergraduate psychology students, training in the conduct of original research is arguably one of the most important experiences in a psychology student's entire undergraduate career.

Directing undergraduate research thus provides an opportunity to offer some of the most important instruction that a student will ever receive. Moreover, it also allows for the possibility of seeing very dramatic and positive changes in student perceptions of their own abilities and in their expectations for their own professional futures. Part of the appeal of conducting original research may also be in its ability to serve as a model for personal growth. The research process is constantly modifying our knowledge. Those who understand that process may more fully participate in the personal adventure that exists in the continual reappraisal of our ability to understand and appreciate our own lives.

### Advice for Supervising Student Research Projects

There are many different ways of structuring undergraduate research projects. However, one consistent recommendation is that undergraduates should have considerably more structure than is usually necessary at the graduate level. This structure may be particularly beneficial when it breaks the project into small steps, has specific due dates associated with each step, and makes course grades contingent upon meeting those due dates. Building a research project in a step-by-step manner creates a teaching/learning situation that differs in some important ways from the typical classroom experience. In particular, work at each step should

meet relatively high standards in order for the project to progress to the next level. Because the faculty supervisor can decide when a particular assignment is finished, success at any level can be virtually guaranteed. Student recognition of their own success and their understanding of the process that created that success promotes confidence in their academic abilities. Success also has the potential for producing very positive changes in self-image and self-efficacy.

Faculty supervisors should be ambitious with their undergraduate students, but it is important to keep in mind that these students are not graduate students. Give students doable projects that take into account their needs, expectations, and abilities. Have students work at several levels of a project, including literature searches and reviews, and data collection, entry, and analysis. In addition, advisors can set conference attendance and presentations as goals for their students.

By the time students become involved in their own research project, they will have knowledge of research theories and techniques that they acquired in the classroom. Through inquiry-based training, students have the opportunity to contextualize and use that knowledge. Also, faculty supervisors have the opportunity to facilitate students' knowledge of the research process, something that is difficult to convey until students become directly involved.

Finally, faculty members must help students identify the rewards they receive from the process by giving voice to the intangibles gained from their participation: integrity and trust; appreciation for research ethic; critical thinking skills; a chance to know the professor on a less formal, more personal basis; and finally, the experience needed for success in graduate school or the labor force.

### Summary and Conclusion

Throughout this essay, we have encouraged faculty members to engage undergraduates in inquiry-based training. There are many advantages for the students. In addition, the process can also be rewarding for faculty members. Involving students in direct research experience offers a way to bolster their classroom experiences and solidify their theoretical training, while providing them with tangible skills for graduate school or the workforce. Admittedly, there are times when working with students is tedious. However, as coal in its "pre"-diamond state, we have come to discover that the diamond is indeed in the outcome.

### References

- McGovern, T. V., & Hawks, B. K. (1988). The liberating science and art of undergraduate psychology. *American Psychologist, 43*, 108-114.
- McGovern, T. V., & Reich, J. N. (1996). A comment on the quality principles. *American Psychologist, 51*, 252-255.

Perlman, B., & McCann, L. I. (1999). The most frequently listed courses in the undergraduate psychology curriculum. *Teaching of Psychology*, 26, 177-182.