

***Supervising Undergraduate Research: An Active, Original, and Meaningful
Experience***

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(This essay originally appeared as the monthly “E-xcellence in Teaching” e-column in the *PsychTeacher Electronic Discussion List* for November 2005.)

Scott-Johnson and Walker (2003) made a convincing plea for departments and faculty members to assist undergraduates in developing independent research projects. Fortunately, I have been involved in developing an effective model of undergraduate research at Belmont University for the past 20 years. This model has worked well, producing over 530 public undergraduate research presentations in the last 15 years; and almost all of these projects originated from students, rather than from faculty research programs. As we like to say, “You don’t do our research, we do yours.” In this essay, I hope to illustrate what I have learned about the value and meaningfulness of involving undergraduates in independent research. The student comments I present have been collected anonymously over the many years I have supervised undergraduate research.

What do I mean by “undergraduate research”? According to Dominick, Buffington, Rowland, and Warren (2000), “undergraduate research experience is an active inquiry or investigation conducted by an undergraduate that makes an original intellectual or creative contribution to the discipline that is relevant, meaningful, and engaging for the student” (p. 6). This definition includes three important characteristics: (a) the active nature of undergraduate research, (b) the originality of ideas, and (c) meaningfulness to the student.

The first important characteristic of undergraduate research is that it provides an opportunity for students to be active in the process of research. At Belmont, we offer two research courses. The first is a basic survey course covering the research process, with typical textbooks, lectures, activities, tests, and papers. The second course requires students to produce independent research projects. In this course, there are no texts, no lectures, and no tests. The purpose of the course is to expose students to the research process, from conceptualization to communication. The course consists of a series of writing assignments, the purpose of which is to lead students to original research proposals; in addition, many students collect data and present their research publicly.

Students have commented that this second course is “stressful,” “hard [but] thought provoking,” and “time consuming and mind wrenching at times.” However, they have also commented that they “achieved a whole lot” and found the experience to be “very rewarding.” Each year, students have the opportunity to give pieces of written advice to future students who choose to take the course. At the beginning of each class, we pass this advice on to the new students. Overwhelmingly, the most popular pieces of advice

have been statements such as: “do not procrastinate,” “start early,” “stay on top of things,” “stay focused,” and “don’t get behind.” From these comments and others, it is clear that this is a challenging course that requires a lot of active involvement.

The next important characteristic of undergraduate research is that students make “an original intellectual or creative contribution to the discipline.” Original research can take on several different forms. For example, original research can include important and meaningful replications, which, if accompanied by compelling rationale, can be regarded as original. This is especially so if the researcher produces a replication with extension, and new information is added at the same time previous findings are confirmed. In addition, these types of studies are excellent places for undergraduates to start the process of conducting research: Such studies help students recognize that all research builds on previous studies and that replication is an honorable and necessary aspect of scientific research. Students should also learn that science is based on curiosity. There is no activity more difficult to endure than having to answer a question for which one has no interest. When students ask questions in which they are truly interested, they often exhibit refreshing creativity.

I am continually amazed at students’ creative and varied research ideas. Students at Belmont have studied an amazing array of topics including: compulsiveness/obsessiveness, body satisfaction, drawing self-efficacy, flashbulb memories, and perceptions of the metrosexual male. Even though we require our students to use the undergraduate psychology research pool—we allow no research on clinical populations, discourage use of children and older people because of IRB difficulties, and have few animal facilities—Belmont students have found ways to develop original and creative research studies.

The last important characteristic of undergraduate research is that the process should be “relevant, meaningful, and engaging for the student.” This is the most important characteristic. Students have conveyed to me at least three levels of meaningfulness they have experienced in my years supervising undergraduate research. The first level involves what I call “personal efficacy.” Common examples of students’ comments that convey personal efficacy include, “Awesome . . . I am so proud of myself” and “A huge self-esteem booster.” One student expressed it this way: “One of the most rewarding experiences of my college career. I feel that I can do anything now!”

The second level of meaningfulness occurs when students gain an appreciation of the research process, including an appreciation of the importance of presenting their work publicly. Many of my students have presented their papers orally, via posters, or, often, both. For most students, the prospect of giving an oral presentation is terrifying; presenting a poster is only a little less terrifying. However, these can be very meaningful experiences to undergraduates.

Students tend to have two types of comments about giving oral presentations. One deals with self-confidence. For example, one student said, "It was a good experience. It helped me grow as an individual, because I gained confidence and satisfaction [and was] proud of my achievement." Another student stated, "Everyone should have to do this before they finish college. It is an invaluable experience. I could make a presentation at work with full confidence now." Other statements dealt with the research process. For example, one student commented, "I think it is a great opportunity to be professional. Even though I dreaded it at first, the two BURP [Belmont University Research Practice, a prelude to our campus wide research symposium] nights put me at ease." Another student said, "I'm very glad I did both BURS [Belmont Undergraduate Research Symposium] and MTPA [Middle Tennessee Psychological Association]! I began to realize I was a real researcher and had something to offer other people."

Another way students express their appreciation of the research process is when they choose to do additional studies after the course, which has been quite common over the years. Having gained confidence from their first studies, many students pursued a different research problem; others developed follow-ups to their original studies, which allowed them to gain first-hand understanding of programmatic research.

The third level of meaningfulness occurs when students understand how engaging in research can impact their careers. Many students have expressed the importance of having class that allowed them to practice the research process. For example, students have said the course is "the most beneficial class of my college career" and "the most important academic experience for me so far." Another student said the course was "a challenge, but a necessary evil. I feel that this class has been one [of] the most important ones that I have taken at Belmont."

There are three personal examples I want to share regarding the effects that engaging in undergraduate research had on my students' careers. The first example involves Johnny Bolton, a former student who contacted me a few years after he had graduated. He told me that at the bank where he worked, he had become known for his ability to present complicated data in a clear and organized manner. He said he simply applies what he learned in the research methods courses: He presents an introduction to the problem, a rationale for solving it, an approach or method, the results, and a discussion. Johnny learned some meaningful skills and has the confidence to apply them in his chosen career.

The next two examples involve students who chose teaching careers. Carla Stassle is an assistant professor of psychology at York College in Pennsylvania, where she supervises undergraduate research. While at Belmont, one of her research studies placed second in the Psi Chi/Allyn and Bacon Psychology Awards competition. Dan Corts' project in the second research methods course focused on short-term memory and fueled his interest in cognition. After graduating from the University of Tennessee at Knoxville with a degree in cognition, Dan completed a teaching internship at Furman University and is now an assistant professor of psychology at Augustana College in Rock Island, Illinois. There he supervises a very active and successful undergraduate cognition lab. His students regularly present their research, win research awards, and publish a paper from time to time. Neither of these students expressed interest in research or teaching prior to the

research methods courses. Their experiences conducting and presenting research, however, enabled them to envision and ultimately pursue interesting career paths involving both research and teaching.

Conclusion

I feel fortunate to have shared in my students' undergraduate research projects, where they engaged in active inquiry, made original contributions to the discipline, and had meaningful experiences. For me, undergraduate research is the most effective way to help students bolster their confidence, not only for doing research, but for "doing life." For students who have graduate school aspirations, research experience is invaluable, not only for gaining acceptance, but also for achieving success while there. Even for the much larger number of students who have no desire to become professional psychologists, conducting research is one of the most effective ways to learn critical thinking skills. Finally, I don't believe you can come to a deep, implicit understanding of any psychological phenomenon unless you understand something about how it was discovered. To me, research methods are the glue that holds all the disparate areas of psychology together. As my students have taught me over the years, the dedication it takes both students and faculty to be engaged in undergraduate research is well worth the effort.

References

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