INVITED EDITORIAL: A Model for a Research Program That Encourages Undergraduate Students to Present and Publish Original Research

Jennifer L. Hughes
Agnes Scott College

Most undergraduate psychology programs require their students to engage in research in a research design and methods course, but few of these projects are presented outside of the classroom or published (Perlman & McCann, 2005). Much of this research involves papers that would not be accepted for publication because the students are still learning how to conduct research. Once students have taken their introductory statistics and research design and methods courses, they are ready for additional research experiences. Faculty at undergraduate institutions without graduate students often struggle with how to make a research laboratory work for them. For this editorial, I present a model for a research program using a topic-based research laboratory course and a supporting team of undergraduate student and alum researchers at an undergraduate college.

First, I describe how I recruit research assistants and provide opportunities for them to participate in the research process. Next, I share the benefits of joining my research laboratory, which I discuss with my research assistants. I also explain the expectations for my research assistants during the research process. Then I describe how I encourage my research assistants to present and publish their research. Finally, I discuss the possible benefits of this model for faculty members who want to conduct research with undergraduate students.

Recruiting Research Assistants and Providing Opportunities to Participate in the Research Process

Every spring, our department distributes applications for students who want to enroll in a topic-based research laboratory or conduct independent research projects. Gramlet Alvarez (2013) suggested looking for reliable, engaged, and trustworthy students. I often encourage Psi Chi members or students who have done well in my courses to apply. I speak with the applicants about their academic goals and their future goals. I try to gauge their interest in the research process and why they think conducting research is important for them. I usually accept 6 to 10 students to be members of my topic-based research laboratory course, which I teach every fall semester. Students are allowed to take several topic-based research laboratory courses, and I often have at least one student a year take my course a second time to conduct additional research. I also usually sponsor two to five students conducting independent research projects during each year.

I ask all of these students to join my summer lab as volunteer research assistants because I want their help with collecting the data they will use during the school year. They do not receive academic credit for volunteering, but they get to put the experience on their resume. I rarely have students turn down this opportunity. The reasons they cite for wanting to volunteer include taking part in the data collection, getting a recommendation letter from me in the future, adding additional research experience to their resume, and increasing their chances of getting into graduate programs or obtaining jobs.

I also keep a running list of other potential research assistants. These students might be first- or second-year students who have not completed their statistics and research design and methods courses but want some research experience. I tell these students that they are strictly volunteers and will not receive academic credit. Their work is completed during the summer and mostly involves editing the survey and recruiting participants. After they work with me for a summer, I strongly encourage them...
to join my topic-based research laboratory course when they are eligible to do so. Other potential research assistants include alums that have already taken my topic-based research laboratory course and want to continue to conduct research after they have graduated. I like to work with students that range from first-year students to alums so that I have a consistent group of repeat students that can help to mentor less experienced students. The alums cannot receive academic credit because they have graduated, so they join the laboratory as volunteers. I usually add 5 to 10 additional students and alums as volunteers. After combining all of these groups of students and alums, I typically have a total of 10 to 20 students working with me as my research team, to help each other learn about the research process and conduct research starting in the spring semester. All of my research assistants, except the ones who have not had statistics and research design and methods, continue through the spring when they present their work at conferences.

During the academic year, I sometimes will have one or two of the alum volunteers drop out of my research laboratory, and their reasons typically have to do with time constraints. I rarely have students who are receiving credit for the topic-based research laboratory or independent research quit my laboratory. The three that have dropped out in the past 16 years have quit within the first week, and they quit because of schedule conflicts, change of career plans, and workload issues.

Every spring, I determine a theme for my research for the coming academic year. I have several major areas of research that I am interested in and often conduct research on one of these topics. They include working couples, work-related commuting, and positive psychology. However, if a student wants to conduct independent research, I am willing to consider many other topics. I start my research near the end of every spring semester so that students who plan to be away from the college during the summer can begin the process and still continue to participate remotely.

Explaining the Benefits of Joining My Research Laboratory

At the beginning of the research process in the spring semester, I have a discussion with my research assistants about the value of volunteering as a research assistant. I let them know that, by helping me to know them better, I will be able to write them stronger letters of recommendation for graduate school or employment. I cite research such as Collins’ (2001) and Page, Abramson, and Jacobs-Lawson’s (2004), which emphasizes higher acceptance rates to graduate schools for candidates who have strong research credentials. I let them know that, by working with them, I am better able to speak about these specific skills when I recommend them for graduate school or employment. I share with them that this experience will help them to better understand the research process as well as develop their skills for conducting research (Landrum & Nelsen, 2002). I also tell them that this type of experience helps them to develop better reading, writing, and presenting skills, which are useful for both graduate programs and employers (Cramblet Alvarez, 2013; Sleigh & Ritzer, 2007). Also, becoming involved in research allows them to develop their own specific areas of interest that they would like to focus on with future research (Crowe, 2006). Finally, I stress that it is important for them to know if they like to conduct research because conducting research is often a major part of many graduate programs and some research-based jobs.

Developmental Progression

I find that clear expectations are essential for the effective development of research capabilities, and I carefully cover my expectations with students before they agree to participate. The role I give the students depends on their skill set.

Research assistant volunteers. The students who have not had the statistics and research design and methods courses primarily help with data collection and editing the research survey used to collect data during the summer. I want these students to be involved, but I do not feel they are ready for the responsibility of designing a project and writing a paper as first author. Palladino, Carsrud, Hulicka, and Benjamin (1982) found that many undergraduate students do not have the expertise to develop research projects that are presentable or publishable unless they have learned basic research skills.

Students in my topic-based research laboratory course. These students who are mostly juniors use the survey questions that I developed based on the topic I have selected for the course. I develop a rather extensive survey covering many aspects of the selected topic. The students read the literature I provide, design a project using a selection of the provided questions/questionnaires, analyze the data collected from the summer that fits with their hypotheses, and write a paper as first author. I am second author. I find that, by having the
students be first author, they take more ownership of their projects.

**Students working on independent research projects.** I expect for these students to have already taken my research laboratory course. I feel that, after completing that course, they are prepared to select a topic they are interested in and to complete a project. For the students completing an independent study, I help with narrowing the topic and the design of the project to ensure that they can effectively use the survey data that we will be collecting. They are expected to develop research hypotheses, collect and read literature on their topic, develop survey questions or find questionnaires to add to my survey, seek institutional review board (IRB) approval, analyze their data that we collect in the summer, and write a paper as first author. I am second author on their papers.

Each year, I ask two of these independent study students to be teaching assistants for my topic-based research laboratory course. Because they have taken the course, they are able to serve as peer mentors. They attend the course and help students with tasks we complete in class. I also ask them to lecture about the process of creating a presentation or poster and their conference experiences. I ask the teaching assistants who are going through the publishing process to discuss that process as well. Finally, if the teaching assistants are applying to graduate programs, I have them discuss that process.

**Returning research assistant alums.** The alum volunteers who have taken my topic-based research laboratory research course can design their own project using either the topic from my survey or their own topic. Most create their own topic. Then they are expected to develop research hypotheses, collect and read literature on their topic, develop survey questions or find questionnaires to add to my survey, seek IRB approval, analyze the data that we collect in the summer, and write a paper as first author. I am second author on their papers.

I also expect that the returning research assistant alums will serve as mentors for the rest of the research assistants. During our lab meetings at the end of the spring semester just before summer starts, I have them explain what it was like to work in my lab and how they benefitted from it. I also have them describe their participation with conferences and the preparation that happened before attending. If they are published alums, I ask them to discuss the publication process.

**Making the Research Process Manageable**

All of the research assistants listed above except for the research assistant volunteers that are not completing research projects and end their work in the summer, are given deadlines for each part of their papers during the fall semester. Because the survey was already developed, IRB approval was received, and the data were collected and cleaned during the summer, we are ready to jump into the projects at the beginning of the fall semester.

I find that giving students very specific tasks makes the research process proceed more smoothly. It is difficult for beginning researchers to manage the multiple steps required in writing an entire research paper well. I advise them to complete each task with focus and to turn in their best possible work. The tasks include (a) hypotheses and proposed statistical tests to be used; (b) articles and book selection and a justification of why they chose those articles and books; (c) summaries of the articles and books they read; (d) a title for the paper; (e) an introductory paragraph; (f) an outline of their literature review; (g) a literature review; (h) a method section; (i) statistical analyses and their interpretation of their analyses; (j) a results section; (k) a discussion section including a summary of their findings, how their findings compare with other research literature, strengths of their study, weaknesses of their study, and future research ideas; (l) references; and (m) an abstract. I intentionally lecture about and give them this detailed list of tasks to guide them in their development. I have found that the specificity helps them do quality research. For example, by asking them to justify the articles and books that they selected to read for their paper, I am emphasizing the importance of selecting quality articles and books to use. I read the article and book summaries to see if students are selecting relevant material to write about and citing that material properly. I ask for an outline for their literature review because I know that having initial structure helps students to write more organized literature reviews. I also ask for their statistical analyses and interpretations to see if they know what their analyses mean. My syllabus for this course explains each step in greater detail, and it is available by request.

I give students detailed feedback on each task and verify they are completing the tasks correctly.
Once the students have completed each task, I ask them to piece the paper together to create a rough draft. I ask them to read the paper as a whole to check for flow and consistency.

Because I find multiple forms of feedback to be useful, I ask two students to review each student’s rough draft. The authors are asked to use this feedback in revising their draft of the entire paper. The students in my research laboratory course and those taking independent study courses receive grades for all of these assignments and their reviews. The alums do not receive grades, of course, but I find that they take the process seriously. I then ask the authors to turn in a final rough draft to me. I read the paper and give further advice for revisions. I have the students turn in their final paper after this round of revisions.

**Encouraging Presentations and Publications**

I encourage each of my research assistants who complete a project to submit their work to conferences. I tell students that their conference presentations are a way for them to receive credit for writing their research paper. Their attendance allows for valuable feedback from conference attendees and they can gain valuable experience in making presentations to large audiences. Our college has an internal conference, and I expect students to present their papers. In the past 16 years, my students have given 138 presentations at this conference. I also expect my students to submit their work to an external conference. Every year, I attend the Southeastern Psychological Association meeting, and I have students present their work. I have had 28 students and alums give professional talks or present professional posters and 72 students present undergraduate posters at these meetings. The other students often present their work at local conferences in Atlanta, where our college is located. I have had 19 students give talks or present posters at local conferences. Our department works to secure funding to help students attend these conferences. We celebrate their attendance by photos posted in the department, and I personally display pictures of each presentation in my research lab. My walls are filled with photographs.

After students have presented on and off campus, I contact the students and ask them if they would like to try to publish their work. Only about half of my students express interest in publishing, and I am fine with that. I know that publishing takes additional work, and I only want to work with students who will be strongly committed to the process. If the authors are interested, I ask them to edit their papers again because it usually has been four to six months since the completion of the papers. I encourage them to consider feedback they received from their conference attendance. Then I reread their papers and suggest possible journals based on the strength of their findings and writing. I suggest journals that have been known to publish papers written by undergraduate students because they judge students’ work based on their current developmental level (Cramblet Alvarez, 2013). The Psi Chi Journal of Psychological Research is a journal that I often recommend to students with strong papers because of its quality and how encouraging the editors are for student authors. My students and I have published 13 papers with this journal and three more are in press. I also have worked with my research assistants to publish six additional papers in other professional journals and seven papers in undergraduate journals.

I should note that around 50% of my students’ papers have been rejected from journals. Because publishing is competitive, I prepare students for possible disappointment. I develop a backup plan in case they do not receive favorable feedback and encourage them to use the feedback to continue to improve their paper. I then suggest that they submit the paper elsewhere. Most of my students submit their papers to other journals, and I make sure to write about their persistence in letters of recommendation that I write for them.

**Benefiting Faculty Members**

One of the biggest rewards of working with students on research involves being able to help students become scholars (Cramblet Alvarez, 2013). However, the process can be time-consuming and interfere with faculty’s personal scholarship, so faculty should make the process work for them as well (Cramblet Alvarez, 2013). One way to do this is to have the students help the faculty member collect data that he or she will use for his or her own research manuscripts. If a professor wants to run participants through experiments or have participants take surveys, having 10 to 20 research assistants who can help do this is very valuable. Before I collect data every summer, I develop specific research hypotheses that I will test and write about for my personal research manuscripts.

If a faculty member does not have a topic-based research laboratory course as part of his or her teaching load, he or she should strongly
pursue getting one. It allows the professor to get teaching credit for helping students conduct their research and can increase his or her own research productivity. Professors who teach these courses should encourage students to consider presenting and publishing their work because the work has already been completed during the course. These presentations and publications not only will help the professor for promotional purposes, but the constant development of new data sets will also support the professor’s own research interests.

References


Author Note. Jennifer L. Hughes, Department of Psychology, Agnes Scott College, GA.

Correspondence regarding this article should be addressed to Jennifer L. Hughes, Charles Loridans Professor of Psychology, 141 E. College Ave., Agnes Scott College, Decatur, GA 30030. E-mail: jhughes@agnesscott.edu