

# Conducting Undergraduate Research: Independent Study

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Undergraduate independent research projects offer an exceptional opportunity to truly immerse students in the understanding of psychology as a science. Commonly students are required to take an Experimental Methods or Research Design course in their undergraduate training whereby they learn the fundamental principles of scientific investigation in psychology. Beyond this foundational course, many colleges and universities offer additional laboratory or research based courses in their curriculum. However, for many students, it is not until they have had the opportunity to engage in group or independent research projects that the application and understanding of research principles solidifies. Because the actual process of involving students in independent study should be tailored to the specific advisor and student pairing, this chapter will offer suggestions regarding broader issues of selecting students, planning and supervision of independent research projects, and benefits associated with independent study.

## Selecting Students

The process of selecting students to engage in independent study projects is perhaps not as challenging that selecting students for group research projects because the independent study project often does not take place until students are advanced in their undergraduate career and/or have had previous group research experiences, and it is often only the best students who engage in independent research project. However, as Katz, Sturz, Bodily, & Hernandez (2006) suggested, “teaching an independent study course is the ultimate service work,” (p. 131), and thus faculty should consider selective criteria when identifying potential students. Katz and colleagues offer suggestions such as GPA requirements, recommendations from colleagues, and an interview process as a gateway to identifying students who would thrive doing an independent research study.

Burke and Cummins (2002) also noted the importance of compatibility between student and

faculty advisor. The advice offered by Katz et al. (2006) and Burke and Cummins (2002) offer is very helpful and should be considered when considering selection of students to supervising in independent research projects. However, what if you are teaching at a school where all psychology majors are required to complete a senior thesis in the form of an independent study project involving research? Having such graduation requirement clearly negates some of the luxury of only “selecting the best.”

At the institution where I teach, we require every senior majoring in psychology to complete a senior thesis. Students can choose whether they would like to conduct an empirical project or literature review. In the past five years, in addition to various personal and group research projects, I have supervised 17 senior theses, all of which have resulted in presentations at either small or large regional conferences, and in some instances, at national conferences as well. The topics for these senior theses have varied greatly (e.g., soap opera viewing and personal relationship attitudes/beliefs, personality characteristics of leaders, gender stereotype perceptions in preschoolers, elementary school-aged children, and college students, adolescent drug use and abuse, personality predictors of religiosity and conformity, the effects of violent and non-violent videogame exposure on gender characteristics). Few of these projects have been in line my own personal research interests, but because I have supervised these projects, I have become better-rounded in my knowledge of research in various fields of psychology.

Additionally, because of this graduation requirement, I have supervised both strong and marginal students, and although level of ability clearly plays a role in students’ success with these projects, I have found that even marginal students can benefit greatly from independent research projects. In fact, because they are pursuing a project that is their own personal design, regardless of whether the project is empirical or a literature-review, many students rise to the occasion with appropriate direction.

Regardless of whether the project is required or optional for the student, faculty should interview potential research assistants as a part of the selection process. The interview can be a useful tool for examining compatibility between student and faculty advisor. The purpose of the interview is to examine whether the student's interests are aligned with the supervising faculty member's and to determine the possibility of an efficient and effective working relationship. Sample questions faculty should consider asking in the interview process include: Why do you want to get involved in research? What topics are you interested in studying? What are your expectations for time commitment to the project? What previous experiences do you have with research (e.g., course work in Experimental Psychology)? These questions will allow the faculty person to gauge the level of interest, desire, and interest fit in order to better decide whether to mentor the student through a research project.

### **Planning and Supervision of Independent Research Projects**

Once a student and faculty member have agreed to work together on a project, it is important that there first be a discussion of process, expectations, and direction of the project. This early interaction can include very general discussion without getting into specific details of the project. Important initial details to consider are: timeline for completion (e.g., one semester vs. two-semester project), expectations for frequency and duration of meetings, and objectives and requirements for completion of the project. After there is agreement upon these preliminary yet essential details, students and faculty can delve more deeply into the specifics of the independent study.

Burke and Cummins (2002) note "compatibility is important but needs a structure in which to flourish" (p. 130). Their suggestion of structure can be established in the context of planning and supervising the research project. There is a wide range in level of supervision faculty offer to students who engage in research projects. For example, some faculty let the student guide the project in its entirety (i.e., from topic selection to timeline for the completion of the project); whereas others are very directive and require students to follow outlined practice and procedure regardless of project type or design. Personally, I have found most success with a moderate approach of structure that includes weekly opportunities to check the progress of the project, tailored to the specific student and design of the project. Structure in this faculty-student working relationship allows the student to know what to

expect, feel comfortable coming to the faculty person when in need, and provides the best opportunity for successful completion of independent projects.

McKeachie (1994) offers three suggestions to increase the chance of success within the context of independent study projects that all relate to process more than content:

1. Be sure the student has a clear question, problem, or goal. This doesn't mean that the goal will necessarily be clear initially, but McKeachie advocates monitoring students' progress in arriving at a goal that [represents a problem that] is meaningful for them.

2. Help students be explicit about the strategies they plan to use, about their time management, and how they will monitor their progress. This is a chance to get students to develop strategic learning [i.e., learning to develop and implement a strategy].

3. Have students compare notes and get feedback on their progress from fellow students. Producing an independent product can be anxiety producing. Peer support can be helpful both substantively and emotionally (p. 154-155).

Supervising faculty may desire early and frequent contact with the student as the project is developing, but as the independent research progresses, it can become less guided and more self-directed. In the planning process, it is useful for the faculty member and student to agree upon the nature of supervision necessary for the project. Katz et al. (2006) suggest a quasi-structured environment for supervising students conducting empirical projects; however also note the importance of tailoring "the level of structure to suit a student's individual needs and developmental level" (p. 133).

### **Common Pitfalls and Warnings for Students and Faculty**

Although few would disagree that the benefits of engaging students in independent research projects far exceed potential costs, it is important to briefly address common problems associated with student-involvement in independent study research projects. Beginning with topic selection and research design, students often fall victim (at least initially) to being interested in broad topics. Faculty should encourage students to pursue topics that are personally interesting, but encourage students to spend time reviewing existing literature on their selected topic. This literature investigation will help focus and realize a project that is do-able in the limitation of an undergraduate project.

In the early phases of meeting with my students, progress is often slow. After discussing initial

research interests, in the course of two to three weekly meetings, students are asked to engage in library research and share with me the results of their findings. In independent research projects, it is essential for students to take their time and refine what they would like to do given what research has been done previously.

Another potential problem students face is designing a study that can be completed in an agreed-upon timeline (i.e., often one or two semesters). When students conduct empirical independent research projects under my direction, I encourage them to see the project as a two-semester commitment. The first semester is spent finding a topic, developing a design, obtaining IRB approval, collecting, and analyzing data. The second semester is used for write-up, presentation, and pursuit of publication. I will still allow a student to use two semesters if he/she chooses to do a literature review independent research project, but often these types of projects are completed in a one-semester timeline.

In addition to student pitfalls, there are obstacles to overcome from the faculty perspective. With departmental, divisional, and college or university obligations, it often is challenging for faculty to engage a substantial number of undergraduates in independent research projects. This problem can be exacerbated when also supervising group research, and conducting your own personal research. Finding the “right number” of independent projects to supervise is a challenge, and largely consists of trial and error, but as noted in the next section, the benefit to the student, and vicariously for the faculty person is great.

### **Benefits Associated with Independent Study**

The process of independent study as a means of conducting undergraduate research projects is rewarding for both the student and faculty advisor. Because admittance into graduate school is a concern for many students, independent research involvement is one way for students to set themselves apart from other applicants and impress graduate program admittance committees (Landrum, Jeglum, & Cashin, 1994). This possibility is even greater if the student has followed the project through to presentation and publication (Landrum, Davis, & Landrum, 2000). Working on an independent project with a faculty member also gives students the opportunity to be mentored in their professional development and ultimately can result in a good letter of recommendation for the students as they apply for graduate school or reference for job applications.

Another benefit of students’ doing independent study is further development as researchers within the field of psychology. Kardash (2000) explored students’ and faculty mentors ratings of skills pre and post undergraduate research experience. Students noted significant increases in many and diverse skills such as: making use of scientific research literature (e.g., journal articles), identification of specific questions for investigation, formulation of research hypotheses based upon specific questions, designing of an experiment, observing, collecting, and analyzing data, and writing a research paper for publication (see Kardash, 2000 for complete listing). Similarly, Ishiyama (2002) noted students’ perceptions of benefits of research involvement including “(1) think analytically and logically; (2) put ideas together; (3) learn on their own” (p. 380).

Although the gain may be greater for students, faculty too can benefit from supervising independent study projects. As stated previously, independent study often involves students investigating topics that are of particular interest to them specifically. Consequently, faculty may be asked to stretch beyond their specific area of expertise. I firmly believe this stretch is beneficial to us as faculty because it forces us to become knowledgeable in topic areas that are beyond our comfort zone and it also demonstrates to students an investment in their research and models the scientific pursuit of knowledge.

### **Summary**

Student involvement in independent study research projects offers great opportunity for one-on-one collaboration and development of students as professionals within the field of psychology. Although supervision of independent research can initially be time consuming (depending upon the level of skills and ability of the student), Burke and Cummins (2002) remind us of the intrinsic rewards associated with this endeavor such as “watching a student grow, develop, and mature into a trusted and respected colleague” (p. 131). After having supervised many independent research projects, some of which were required others elective, I have found the process to be tremendously rewarding and worthwhile. What I value most in independent study research is the collaborative interaction between faculty and student, whereby there is an increased opportunity for more personalized teaching of skills that frequently involves mentoring. As a result, the intrinsic reward I have experienced is witnessing the development of students’ ownership of process, product, and education.

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