



Hands-on Scientific Method in an Introductory Psychology Course

Many students who are “just taking their generals” feel that classes outside their major, such as Introductory Psychology, are not meaningful. Often, students’ first exposure to psychology is participating in psychological research rather than being the researcher, further obscuring the importance and value of the field. Providing hands-on opportunities to experience psychology and perform research is an important step toward engaging students. Unfortunately, it is difficult to set up a laboratory setting that provides proper and ethical hands-on experience.

The American Psychological Association (APA) stresses that because psychology is a field that uses the scientific method, it is indeed a scientific discipline. Recently, the Idaho State Board of Education (ISBOE) rewrote student learning objectives for the Social and Behavioral Ways of Knowing element of our general education program to include using social science approaches, such as research methods. As a way to combine these initiatives, I created a course project in my PSYC 101 course that steps students through the scientific method experientially and introduces them to conducting research. The scientific method is not new to college students, but practicing it hands-on helps to entrench the process and encourages students to examine their preconceived notions.

The backdrop of this project comes from two other student learning objectives (SLOs) from my State Board of Education: inquiries into how decisions are made and similarities and differences among and between people. To incorporate these SLOs, I tasked my students with surveying individuals’ rationales for solutions to moral dilemmas (Kohlberg’s Moral Reasoning) and individuals’ ratings of individualistic versus collectivistic tendencies (identity, goals, and accomplishments being prized at the individual level versus the group level).

Hypotheses

Students first complete a low-stakes paper that hypothesizes their survey findings. These are couched in terms of differences that might be observed between genders, ages, and racial groups. Students are encouraged not to worry about political correctness, but to provide reasoning for their opinions and an estimate of how confident they are in their hypotheses. They are also prompted to discuss what their overall findings might be,

including a potential relationship between moral reasoning and individualistic versus collectivistic tendencies. I introduce this project early on, in tandem with the first set of readings. Frontloading this project helps engage students and encourages commitment to the class. It makes this “general” course feel more real to them.

The first iteration of this project allowed students to create their own questions and prompts for their research. I discovered that at this level of psychological education, students need more scaffolding to produce a reliable educational experience, so I now provide questions and prompts.

When I presented a roundtable discussion at NISOD’s International Conference on Teaching and Leadership Excellence, I was asked whether I had experienced push back from any source on this project. Although the scientific enterprise is one in which controversial topics can and should be investigated with due sensitivity, I have not received push back on this project from any source. On the contrary, this project has opened candid dialogues with some of my colleagues from other sciences.

Data Collection

With the hypotheses in place, students are instructed to collect data from at least 35 and no more than 50 participants. Before they engage in survey collection, they are cautioned to stay within ethical parameters, such as respecting individuals who do not wish to participate and being sensitive to identifying information. Because many students are apprehensive about approaching strangers, I give them the option to use family, friends, and social media as necessary to survey the required 35 to 50 people. Surprisingly, some of my introverted students take the plunge and reach out to students in the Student Union Building, the library, and in their classes. These brave students usually confess that this is exactly the experience that they needed to break the ice and experience college life more fully!

Results

All materials for data collection are provided in the course Learning Management System (LMS), including a spreadsheet I have developed for this project.* Once students enter their data, the spreadsheet automatically calculates the necessary statistics and writes a fairly thorough and decent results section for them. This write up includes descriptive and inferential statistical calculations

with p values, and always elicits conversations during my office hours about what these numbers mean. It provides the opportunity for a tangible conversation about statistical significance. Knowing that their experience is usually a bit limited, I also provide a quick, automated section with simplified “follow up conclusions” that summarizes the statistical conclusions.

Final Paper

The final element of the project is a high-stakes paper that instructs students to compare their preconceived notions (their hypotheses) with their actual findings. They are instructed to use terminology from the textbook and peer-reviewed research articles to explain what they have found. It is rewarding to read students’ reflections on their original hypotheses and how they are replaced or reaffirmed with their empirical observations. It is a feeding ground for critical thought. More often than not, my students discover that our differences are not as great as they originally assumed.

Going Forward

I have not yet programmed a venue for sharing findings and conclusions, but doing so would create an opportunity to deepen students’ appreciation of the acquisition of knowledge and the need to tolerate ambiguity. I have found that it is very common for students to arrive at similar conclusions with different findings, as well as different conclusions with similar findings!

*I would be happy to share my spreadsheet and project instructions with anyone who would like to try this project in their own course offerings.

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