

Honor Students Serve as Peer-Teachers to Implement the Introductory Psychology Initiative

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Abstract

Our department has developed a unique way to support APA's Introductory Psychology Initiative (IPI) (Rudmann et al., 2022). Advanced students, all Psi Beta honor students, train and deliver supplemental instruction to introductory psychology students. Supplemental instruction includes lessons covering evidence-based study skills and applications of basic scientific concepts to topics of interest to students. The scientific concepts align with material presented in most introductory psychology courses (Becker-Blease et al., 2021; Stevens et al., 2016). Several forms of instructional delivery are used: In class presentations, live presentations via Zoom, or on-demand interactive web presentations using the PlayPosit platform. A comprehensive assessment plan gauges the supplemental instruction's impact on student outcomes: Course SLOs, a pre- and post-presentation assessment battery, and longitudinal tracking of the academic progress of the introductory psychology students. In addition, our Psi Beta student presenters benefit from participating in a combined service and research project. Preliminary results indicate improved learning, but more comprehensive evaluation research is planned to overcome limitations of the current study.

Keywords: supplemental instruction, introductory psychology, peer-teachers

In recent years, the American Psychological Association (APA) has dedicated time and resources to improve and standardize introductory psychology education in the United States. In a project known as the Introductory Psychology Initiative (IPI), a team of psychology instructors met in Washington D.C. with the intention of improving introductory psychology instruction.

As a course, introductory psychology is one of the most popular classes taken by undergraduate students in their first year of college. According to the APA (2023a), approximately 1.4 million students take this course each year, often as a required element of either discipline-specific or general

education coursework. In spite of the popularity of this course, instructors are often overwhelmed, feeling pressured to cover excessive amounts of content in their single-semester courses. To rectify this, the APA team sought to create integrative themes, offer teacher training and development, create a comprehensive set of learning outcomes (SLOs), and offer recommendations to improve student success.

Because of this team's efforts, the introductory psychology course content was divided into five pillars. These five pillars are further divided into key topics. Instructors are advised to cover at least two topics per pillar, with pillars and topics

detailed below in Figure 1. As this figure shows, psychological research is the foundation for the five pillars and their corresponding topics. By

organizing the themes in this manner, it was theorized that instructors will feel less pressure to cover

Figure 1. The Five Pillars of Introductory Psychology (APA, 2023a)

PILLAR 1	PILLAR 2	PILLAR 3	PILLAR 5	PILLAR 5
BIOLOGICAL	COGNITIVE	DEVELOPMENTAL	SOCIAL AND PERSONALITY	MENTAL, PHYSICAL HEALTH
Neuroscience Sensation Consciousness	Cognition Memory Perception Intelligence	Learning Life Span Dev Language	Social Personality Emotion Multicultural Gender Motivation	Abnormal Health Therapies
<i>RESEARCH METHODS</i>				

the expansive content of this topic in their courses (Guring & Neufeld, 2022).

After reviewing APA’s IPI work, we sought to apply several IPI recommendations to improve the introductory psychology course at Irvine Valley College (IVC). To do so, a longitudinal study was designed to evaluate the benefits to students of adding supplemental instruction to introductory psychology.

Institutional data from IVC’s Office of Research, Planning and Accreditation was obtained to determine which subsets of students would most benefit from changes to the introduction to psychology course. Longitudinal data reviewing multiple cohorts of first-year college students revealed a troubling phenomenon – first-generation, minority, and low-income students at IVC are less likely to successfully complete introductory psychology. To rectify this, the authors implemented an IVC specific subset of the IPI project.

Previous research offers multiple explanations and suggestions to improve course performance and completion rates for these students. First-generation college students are likely to face barriers that their counterparts do not and are consequently less likely to successfully complete a college degree (Petty, 2014). These barriers are numerous and limit these students’ ability to succeed.

Specifically, first-generation students may be unprepared for college, working with limited academic abilities, lack of social preparation, and lower self-esteem (Atherton, 2014; Mehta et al., 2011; Hicks 2002; Hicks 2003). Additionally, first-generation students are more likely to be low-income and work full-time jobs while in school, often working to help support their families (Cho et al., 2008; Terenzini et al., 1996). Often, these students balance work, school, and familial commitments, and may struggle with guilt for pursuing academics if their family and peers do not understand the benefits of a college education (Payne, 2006). Because these students do not have access to the same resources as their counterparts, research suggests the need to provide first-generation students with additional scaffolding and academic support when beginning college (Petty, 2014). In other words, first-generation students will benefit from academic support beyond what is offered in a traditional classroom. In addition to these barriers experienced by first-generation students, many are also underrepresented racial minorities (URMs), adding an additional layer of complexity to the struggles they face (Goldman et al., 2020).

URMs specifically experience barriers to their education, prompting the need for equity-based practices in admissions, financial aid, and

academic supports (Cuellar & Gándara, 2021; Ben-simon & Bishop, 2012). Bailey and Morest (2006) identified three elements that make up equity in higher education: (1) college preparation, (2) access to college, (3) success in reaching goals. For students who are already in a community college classroom, the area of focus is to ensure they are able to achieve their goals. Although there are a number of methods for improving equity for these students, the present study focuses on longitudinal success. Research suggests that for URMs, GPA is predictive of long-term success (Mooring & Mooring, 2016), indicating the importance of offering URMs academic support. Looking back at the needs of first-generation and URM students at IVC specifically, this literature suggests that offering additional academic support may be beneficial and lead to student success in the form of academic momentum (Wang, 2017), intellectual development (Pike & Kuh, 2005), and academic self-efficacy (Ramos-Sanchez & Nichols, 2008).

Academic support can take many forms, including supplemental instruction. Supplemental instruction is based on three goals, (1) improving student course performance, (2) improving course retention, and (3) improving graduation rates (Arendale, 2001). Current literature across multiple disciplines suggests that supplemental instruction is beneficial, as students with lower GPAs are more likely to stay in school after attending a supplemental instruction session (Skoglund et al., 2018). Furthermore, supplemental instruction delivered by peer mentors rather than faculty leads to additional benefits (Collier, 2017).

First among these benefits is role-modeling provided by peer mentors to their mentees (Collier & Morgan, 2008). First-year students must learn their new roles as college students, understand instructor expectations and develop academic skills. Peer mentors have already developed this understanding and skills and can serve as a resource to the mentees who may be struggling to achieve this. Additionally, peer mentors possess credibility, having succeeded in the same courses while often

remaining more approachable than faculty (Collier, 2017). It follows that the presence of peer mentors in introductory psychology courses can improve outcomes for first-year college students (Asgari & Carter, 2016).

In addition to the benefits for mentees, mentors also experience benefits. Peer mentors further develop their own content knowledge, better understand their peers' experiences, improve interpersonal skills, and reach higher levels of engagement with both their peers and faculty members (Riser et al., 2020). In other words, both the peer mentors and the mentees experience benefits as a result of their involvement in supplemental instruction.

Considering these potential benefits for both the mentors and mentees, implementing supplemental instruction with peer mentors was expected to improve course outcomes for introductory psychology students at Irvine Valley College. Peer mentors were trained to deliver curriculum, assist with coursework, and help promote equity in the classroom. Following the delivery of supplemental instruction, students were expected to be able to describe evidence-based study skills and basic research concepts and procedures used in psychology, as well as acknowledge that psychology is a scientific discipline that makes a positive contribution to society.

Method

To achieve these goals, honors psychology students were recruited and trained to deliver supplemental instruction. These peer mentors were recruited through the college's Psi Beta honors society chapter. The volunteers attended Zoom trainings, discussed supplemental content with faculty, and completed background readings. The benefits and skills associated with acting as a peer mentor are especially noteworthy for these students, many of whom intend to pursue graduate education, teaching careers, and other academic pursuits.

Supplemental instruction content was divided into a set of lessons. The lessons cover research-based academic success tips, personality, memory,

development, biopsychology, therapy, sensation and perception, and health and wellness (Stevens et al., 2016; Becker-Blease et al., 2021). Introductory psychology instructors were given autonomy in how they encouraged student participation in the IPI project, with most faculty members opting to offer extra credit in exchange for completing both the supplemental instruction lessons and the subsequent SLO assessment. Faculty further supported this project by sharing class time with peer mentors, encouraging students to attend the supplemental instruction sessions, and sharing feedback provided by their students.

Following the COVID-19 pandemic, most introductory psychology classes at our college were offered entirely online. As a result, supplemental content was also offered online. In Fall 2022, peer mentors provided supplemental instruction via synchronous Zoom meetings. In Spring of 2023, this procedure was modified to instead use PlayPosit, an instructional software that integrates pre-recorded videos, slides, and quiz questions. Videos in PlayPosit were pre-recorded by peer mentors, with videos programmed to pause and require students to answer questions or provide reflections before continuing. This delivery method allowed students to complete modules independently and asynchronously, on their own schedule outside of class time. Additionally, by pre-recording these lessons, instructors were given the option of scheduling lessons in order to match their course content.

To evaluate the effectiveness of this intervention, a number of strategies were implemented. These strategies include qualitative evaluation through surveys and discussions with peer mentors and mentees, scores on lesson quizzes, end-of-term outcome assessments, overall course performance, and longitudinal completion outcomes as reported by the college's Office of Research, Planning and Accreditation. The primary outcome assessment was comprised of 15 items, divided into two sections. The first section (the SLO assessment) measured students' understanding of course content and scientific reasoning abilities, while the second

section (the psychology as a science (PAS) assessment) measured students' belief that psychology is a science (Stevens et al., 2016; Friedrich, 1996).

Cohorts

This project was implemented across three cohorts: Fall 2022, Spring 2023, and Summer 2023. In Fall and Spring, introductory psychology students were offered extra credit for participating, but may have seen participation as extra workload and declined. This may have resulted in small sample sizes unrepresentative of the population. Students who did participate completed the outcome assessment at the end of the semester. In Summer 2023, the supplemental instruction modules were integrated as a required element of an introductory psychology course offered to advanced high school students through the college's dual enrollment program. Because these students did not have prior experience in college courses, integrating supplemental instruction with peer mentors was expected to provide students with academic support and improve learning outcomes. Additionally, in this course, students completed the outcome assessment both as a pre- and post-test allowing us to assess change over time following completion of both the course and the supplemental instruction lessons.

Participants

Participants in the Summer 2023 cohort were high school students taking introductory psychology as their first college class. This cohort was comprised of 63 students, all of whom were below the age of 18. There was a total of 20 males and 42 females in the sample, and a majority of students (82.5%) were not employed and were taking only one college course (71.4%), with an average GPA of 3.38.

Results

Looking at project data from each cohort, both the Fall 2022 and Spring 2023 cohorts did not have an accurate comparison group due to the small sample sizes. Additionally, these students did not complete a pre-assessment, limiting the utility of the data. However, in Summer 2023, because the

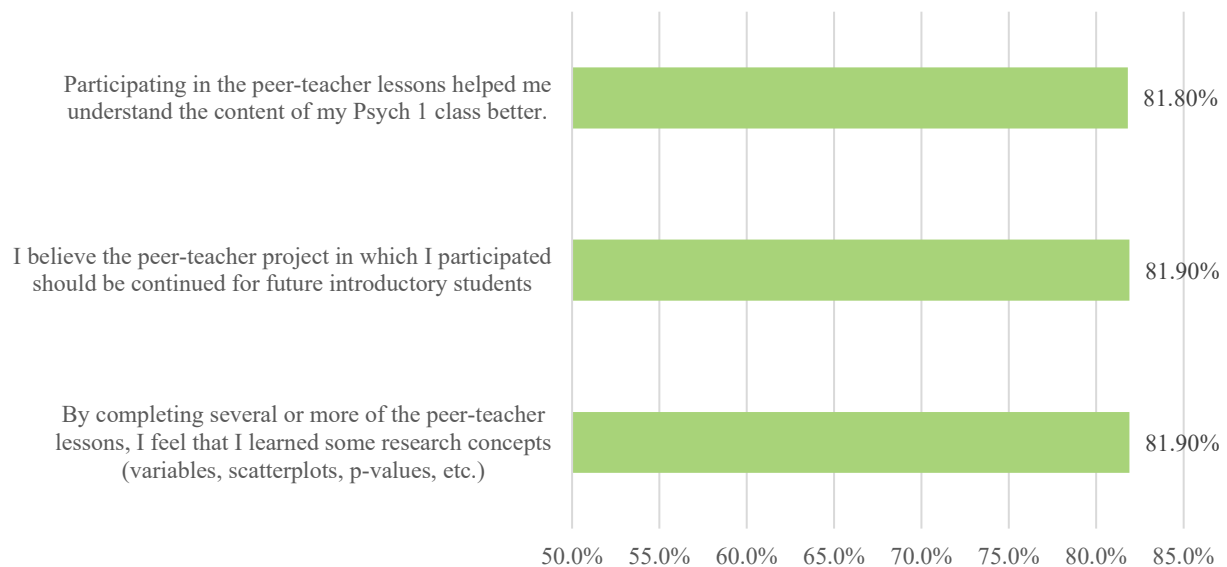
supplemental instruction modules and pre and post-tests were a course requirement, a total of 63 students participated. Data from eight participants was removed via listwise deletion due to incomplete assessments, leaving a final *N* of 55.

Results indicated a significant difference between SLO and PAS results between pre and post-test. Specifically, paired samples t-tests indicated that SLO scores were significantly higher at post-test ($M = .66$) than at pre-test ($M = .58$), $t(54) = -2.50, p = .02, d = -0.34$. Similarly, PAS scores were

significantly higher at post-test ($M = 4.28$) than at pre-test ($M = 4.03$), $t(54) = -6.23, p < .001, d = -0.84$. Finally, there was a significant positive correlation between PlayPosit scores and final course grades $r(61) = .820, p < .001$.

Looking at qualitative data collected in both Fall and Spring, students reported high agreement that participating in supplemental instruction modules with peer mentors was beneficial and should be continued (see Figure 2).

Figure 2. Percent Agreement of Benefits to Participation



Additionally, students were given opportunities to share their feedback about the content of these supplemental instruction lessons. Students requested better alignment between lesson materials and course content, but overall were highly satisfied with the supplemental instruction. One student shared that:

“The peer-teacher lessons kind of made the course feel like a classroom again in a sense. Maybe it is because the course I am enrolled in currently is online, but it felt nice going through the lessons rather than just opening the books.”

Discussion

Although this project is still very new, early results suggest that participating in peer-mentor led supplemental instruction can benefit students. Paired samples t-tests indicated a significant change in SLO and PAS scores between pre and post-tests. In other words, after completing the introductory psychology course and supplemental lessons, students had a deeper understanding of psychology and were more likely to believe psychology is a science. Additionally, the significant positive correlation between PlayPosit scores and overall course grades suggests that better performance on the PlayPosit assignments is predictive

of better performance in the class overall. However, it is important to note that this relationship is not causal, and it cannot be assumed that PlayPosit performance contributed to overall class performance. It is equally possible that high-achieving students happened to do well on both metrics.

Further research is needed to elucidate these relationships as well as to infer causality and integrate student feedback. A more comprehensive and systematic research plan will help us determine the most effective mode of instructional delivery. It seems likely that peer-taught lessons presented in the traditional face-to-face classroom will have greater impact than the online alternatives. Stevens et al., (2016) and Becker-Blease et al., (2021) reported successful outcomes for lessons presented by instructors in traditional classroom settings. The student's comments that end the Results section of this paper suggest that the online environment is not ideal for delivering peer-taught lessons; future instruction may best be implemented as face-to-face delivery. This feedback can be integrated in future semesters, ensuring continuous quality improvement in the intervention.

Limitations were present in this study. First, students may not have given their best effort in completing assessment questions, especially in pretests. Additionally, there are likely differences in individual students' pre-existing knowledge. Finally, because this supplemental instruction was conducted in an asynchronous online environment, there may be differences in student performance if compared to face-to-face instruction. Future research can seek to rectify these limitations, expanding the generalizability of findings and create resources that can be used by introductory psychology instructors at other colleges.

The results of this study support the notion that peer mentors in introductory psychology courses can improve outcomes for first-year college students (Asgari & Carter, 2016). Further research is needed to assess the positive impact of this project on the peer-instructors themselves (Colvin & Ashman, 2010). Participating Psi Beta

students gain experience in organizing and presenting supplemental instruction and researching the impact of their efforts. It is likely that many of the learning outcomes for peer-instructors align with outcomes presented in the APA's Guidelines (APA, 2023b) for undergraduate psychology majors.

Finally, we intend to share resources developed for this IPI project. Resources will include lesson materials such as lesson guides for peer-presenters, PowerPoints, group discussion worksheets, and participant handouts. Most of these resources were adapted from Becker-Blease et al., (2021). Resources from this on-going research project will become available for download from the Psi Beta Research Website during the 2023-2024 academic year.

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