

The Freshmen Scholars Institute: As Described by the Students

Executive Summary

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The Princeton University Freshmen Scholars Institute (FSI) aims to engage a highly motivated community of incoming freshmen in rigorous coursework and meaningful social and professional development. As evidenced by the existing research literature, summer bridge programs, like the FSI, increase retention and graduation rates, as well as improve students' self-efficacy and social capital (e.g. Ackerman, 1991; Gilmer, 2007; Maton, Hrabowski, & Schmitt, 2000). Many of the existing studies primarily use quantitative data to draw conclusions. The voices of the summer bridge participants, who are often first-generation, low-income students, are missing from the literature.

A majority of the available research on first-generation, low-income students focuses on the "achievement gap" and understanding why students are not successful in science, technology, engineering and mathematics (STEM). To shift the literature from a deficit to an achievement model, we must explore the salient features of summer bridge programs that first-generation, low-income students describe as having positively impacted their lives. Moreover, the voices of the students provide a window into the complexity of the lived experience that is often missed by forced-selection survey questionnaires.

To begin to fill these gaps in the literature, the Council on Science and Technology (CST) is conducting a research study on the FSI. The guiding research question is: *As described by the students, what is the lived experience and longitudinal impact of the FSI?* In particular, we are interested in describing the components of the FSI through the students' voices, with a focus on the quantitative reasoning (QR) course for students interested in STEM majors. We are also interested in gaining the students' perspective on the longitudinal impact of the FSI on their persistence in a STEM major and overall satisfaction with the undergraduate experience at Princeton University.

As such, the CST will conduct an in-depth, mixed-methods case study¹ on the FSI. Four primary sets of data will be collected and analyzed: (1) longitudinal interviews with students, (2) classroom observations of the "Problem Solving in Mathematics" course, (3) the FSI pre- and post-questionnaires, and (4) the Class of 2018 Freshman Survey and 2015 and 2016 Enrolled Student Surveys from the Office of Institutional Research. The purpose of the longitudinal interviews is to provide an opportunity for the students to discuss their goals and reflect on meaningful experiences. These semi-structured, qualitative interviews will occur at the start of the FSI, midway through the summer experience, at the end of the FSI, and once each semester of enrollment through the end of the students' sophomore year. Interviews will be

¹ On May 28th, an application was submitted to the Princeton University Institutional Review Board for study approval.

analyzed using Grounded Theory to allow students' voices to guide the discovery of achievement theories. The purpose of the classroom observations is to document student engagement and the evolution of students' mathematical content knowledge. The quantitative classroom observation data will provide basic descriptive statistics and the qualitative observer notes will be coded for analysis. The FSI pre- and post-questionnaires, Class of 2018 Freshman Survey, and 2015/2016 Enrolled Student Surveys will be analyzed to provide basic descriptive statistics and tests for statistical significance.

Findings from this study will provide a window into Princeton students' FSI experience and longitudinal undergraduate STEM experience. The results have the potential to inform the design of the FSI and other programs to support low-income, first-generation students. Lastly, study findings will contribute to the growing body of knowledge about the success of traditionally underrepresented students majoring in STEM.

We believe it is essential to the success of our STEM programs that students be given access to opportunities designed to provide them with useful strategies, practical knowledge, and an improved sense of belonging to help them achieve, both in their STEM field and overall undergraduate experience. Thus, it is necessary to understand the student perspective and to determine how effectively these experiences provide students with the kinds of strategies, knowledge, and sense of belonging that lead to success. This study will provide the student perspective on the FSI in order to increase our understanding of and ability to provide experiences that lead to student success.

References

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