

Immediate IBL Implementation With Minoritized Students as a Professional Development Activity

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Research has documented the benefits of Inquiry Based Learning (IBL) on student outcomes (e.g., Laursen et al., 2014). Even as new studies more carefully examine the differentiated benefits on minoritized populations (Johnson et al., 2020), professional development (PD) efforts, like the Academy of Inquiry Based Learning continue to attract many university educators nationally. The impact of such PD on participants' adoption of IBL practices have been a focus of study (e.g., Archie et al., 2022). The nature of PD usually involves workshops where people learn about teaching or how to adapt their teaching material to apply ideas from the PD. To different degrees, programs would incorporate student work or video data as a reflection material for participants. In this report we ask, *what are the impacts of immediately engaging PD participants in implementing IBL with minoritized students on the participants' teaching?*

This analysis was part of a larger project investigating instructors' development of teaching using active learning and anti-deficit perspective. Instructional faculty and graduate students at a research university applied to participate in the PD, and the year-long program went from the summer to the following spring semester. One core activity was the participants' leading a five-day IBL workshop in pre-calculus, calculus, or linear algebra. A month prior to the workshop, participants participated in four preparation meetings focusing on: 1) deficit discourse in mathematics education and teaching using IBL, 2) anti-deficit perspective and funds of knowledge, 3) writing an IBL worksheet (individual consult); 4) sharing the first worksheet and lessons about how to write worksheet; 5) sharing hopes and fears about the upcoming workshop. The five-day workshop was a part of a summer bridge program serving primarily first-year first-generation STEM students of color, and other interested minoritized students at the university. The instructors also received coaching on IBL teaching on their second day of the workshop.

Our findings come from analysis of exit interview data with a cohort of eight participants. We report on the significance of the immediate implementation of IBL with minoritized students by analyzing responses to two non-consecutive questions: "What is a major highlight of your experience participating in this program?" and "How do you view your role as a classroom teacher now?" Constant comparison (Glaser, 1965) revealed themes in the data. Four of the five common highlights pertain to implementing IBL in the workshop: *experiencing teaching using IBL, learning to design worksheets, playing a role of a guide in the classroom, broadening communication in the classroom*. Moreover, they aligned with the six themes of how participants viewed their role in the classroom eight months after the workshop, including *creating an empowering classroom community, shifting the thinking from instructor to students, actively listening to student thinking, affirming and honoring students' work, expecting students to communicate with one another, and expanding participation to include non-visible involvement*. Seven out of eight participants gave explicit examples on how they performed their roles in the classroom during their regular semesters, highlighting impacts on their practice. The emerged roles encouragingly align with many culturally responsive teaching practices (Zavala & Aguirre, 2024), which we connect to their actual experience implementing IBL with minoritized students.

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