



SoTL Grant Closure Report (2020 – 2021)

I. Basic Information

Title of Project: Designing integrated career-focused activities in physics using personas

Investigator(s) Information

Principal Investigator:

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II. Project Update

Research Question

The overall goal of this project is to adapt/design a set of curricular activities for physics students that will help them navigate the complex landscape of physics careers and are integrated within our local context to help students also connect to DePaul University's mission through the concept of vocation. Research shows that successful change in instructional practice requires understanding the local system and designing to work within that system. Thus, addressing the design goal required first answering a research question which was the focus of this project: **What are the needs and motivations of DePaul physics students around issues of career planning and exploring one's sense of purpose?**

Progress Report

Due to travel restrictions due to the COVID-19 pandemic, the timeline moved more slowly than anticipated. In collaboration with colleagues at Kansas State University, we conducted 19 interviews (12 current students and 7 alumni) near the end of the fall quarter. During winter quarter, we did initial analysis and synthesis of these data, including pulling in additional data about DePaul students from IRMA. In addition, the research team began using these data to explore more fundamental research questions around students' sense of purpose and career exploration and began to present on and publish some of these preliminary findings.

In early spring quarter, after vaccinations were available and travel was no longer limited, I traveled to Kansas State as a scholar-in-residence. During my visit and throughout the spring quarter, we were able to design and validate a set of personas based on our data, analyze a set of potential topics/activities for

how they would meet the needs of each persona, and identify a target list of topics for curriculum development. We also explored ways to further this research and decided to conduct a set of follow-up interviews with graduating seniors and alumni who were in the midst of a major transition at the time of the first interview. We completed 6 follow-up interviews at the end of June and are still in process of analyzing these data.

We have mostly completed the research needed to address our research question, but the curriculum development part of the project is still in its early stages. Remaining work on the primary research question involves completing detailed documentation for each persona and incorporating the data from the new interviews. The design stage of the project will involve meeting with faculty colleagues to share the personas, discuss the target list of topics, and work with them to adapt and/or design activities for their classes that meet the needs of the personas. I have also begun drafting an article on the development and use of personas for curriculum development and anticipate completing and submitting after the initial round of curriculum design and assessment.

Impact

The classroom impact of this project has yet to be determined. However, through these interviews, the research team is already furthering our knowledge about how physics students conceptualize sense of purpose; perceive their identities and communities through their learning and work experiences; and envision and plan for their life after graduation. This work will be furthered by the follow-up interviews just completed and we anticipate several more publications and presentations over the next year.

Dissemination

- H. Khong, B.C. Lohman, N. Foth, E. C. Sayre (accepted). Senior undergraduate students developing and envisioning possible selves after graduation. *Proceedings of the 2021 Physics Education Research Conference*.
- H. Khong, E. C. Sayre (2021). *Career choices after graduation: the role of social identity and learning experiences*. Poster presented at the 2021 X-DBER Conference.
- H. Khong, S. El-Adawy, and E. C. Sayre (2021). Community of Practice in a Physics Department: Double-Majored Students' Perspective. *Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021*.

III. Expense Report

Expenditure	Amount Requested	Amount Spent	Notes
Interview incentives for participants	\$520	\$630	We anticipated interviews with 14 current students (\$20) and 8 alumni (\$30). In initial rounds, we had 12 students and 7 alumni. For follow-ups, we re-interviewed 6 participants who are now all alumni (\$30).
Transcription of interviews	\$1980	\$1795.19	We anticipated 22 interviews 60 min long (\$1.50 per min) and ended up with 25 interviews of average length 45-50 min.
	Total	Total	
	\$2500	\$2425.19	