

Perspectives on the purpose of engineering higher education: A close-up view on undergraduate education in the US and England

Alaa Abdalla

Department of Engineering Education, Virginia Tech, alaa.abdalla@vt.edu

Abstract

The think piece by Hlengwa (2022) prompts us to think of the pace and the nature of transformation happening at higher education institutions. Particularly concerned about the academy no longer serving the students' transformation and the public good. This latter idea speaks to Komljenovic's call for a discussion on the higher education industry and the markets (2022). Bridging these two think pieces together leads us to think about the kind of humans we are educating in these marketized higher education systems. A useful way to explore the formerly introduced idea is to adopt the Human Capabilities Approach, mainly put forward by Amartya Sen and Martha Nussbaum, to question what higher education is for, or what is a student able to do and be during and after being a part of the higher education system. Why do they even choose to enroll in a university system? How, if at all, do students change during their time of undergraduate education, and what values do they attain and leave behind in the process?

This paper, which is built on work from my ongoing doctoral dissertation, is written from a point of interdisciplinarity of engineering education and higher education research. The purpose is to build a qualitative multi-case study to explore the purpose of an engineering higher education degree from the students' perspective, in the hopes of answering the following research question:

RQ 1: What are the held perspectives of undergraduate engineering students towards the purpose of higher education?

This work is part of a larger overarching project, an international four-year longitudinal collaboration spanning the United States, England, and South Africa, with two institutions from each country for a total of six institutions. For data analysis, the focus has been on chemical engineering students in England and the US where the entirety of the students' interviews across the four years is read as one narrative to capture their whole story. Although the study establishes extended engagement with the interviewed students and includes longitudinal and contextual elements to add to the thickness of the study, there are still challenges of conducting qualitative research as presented in Macfarlane's think piece (2022). Current challenges are concerning the dividing line between myself, as a doctoral student, and the participants, the extent to which the students are actually participating in the formation of this research, and not merely being interviewees, and the ongoing reflection on my positionality.

Keywords

Human capabilities, engineering higher education, international comparative education