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Demystifying and Decluttering Participation in Software Engineering Education Programmes

Joseph Maguire
University of Glasgow
Glasgow, United Kingdom
joseph.maguire@glasgow.ac.uk

Quintin Cutts
University of Glasgow
Glasgow, United Kingdom
quintin.cutts@glasgow.ac.uk

Steve Draper
University of Glasgow
Glasgow, United Kingdom
steve.draper@glasgow.ac.uk

ABSTRACT

Academics and employers can partner to deliver professional software engineering education via work-based learning (WBL) programmes. These programmes have the potential to engage and motivate under-represented groups, including those that would not normally engage in higher education. However, challenges still exist in supporting such individuals in participating in WBL programmes. Consequently, we discuss a project on broadening participation in WBL software engineering to support individuals from under-represented groups to participate in software engineering education.

CCS CONCEPTS

• **Social and professional topics** → *Computing education.*

KEYWORDS

broadening participation, software engineering education

1 INTRODUCTION

Governments around the world are concerned about access to higher education [1]. The challenge for our discipline is how to deliver meaningful broadening participation programmes that engage as well as support individuals [2]. The partnership between academics and employers in delivering WBL programmes could be valuable in broadening participation. This poster describes initial thinking on an academic-industry partnership to broaden participation in WBL software engineering programmes.

2 DEMYSTIFYING AND DECLUTTERING

There are two primary challenges for broadening participation in software engineering education. The initial challenge is to *demystify the profession*, some activities include:

- *Experience and Exposure.* Individuals from under-represented groups may simply not know any software engineers or what the role requires. Employers can support in such endeavours with professional software engineers assigned as mentors and supporting school trips to their workplace.
- *Interventions at transition points.* The expectation is that a meaningful broadening participation programme intervenes at key transition points [3]. Consequently, activities to support broadening participation should start in early years of education and continue into later years.

The second challenge is to *declutter the landscape* of opportunity, universities and employers will want to avoid overwhelming the same groups with multiples activities and opportunities while simply ignoring others, some approaches include:

- *Unified response.* The concern is that under-represented groups may face a barrage of tests and experiences from various universities and companies, just to access a single opportunity. The project aims to work with other universities and employers to devise unified and recognised broadening participation activites.
- *Unifying Diverse Experiences.* Whether it's cyber security, data science, robotics or many others, these specialist roles rely on a foundation of computer science. The project aims to offer activites that are built upon the same foundation, but afford individuals to tailor them to their own motivations [5].

3 FUTURE WORK

The initial project work has been determining the most successful routes to broadening participation in software engineering. Lessons from medicine would suggest that the most intuitive approaches are not always the most effective [4]. The next stage is to engage with the community to determine the optimal approaches.

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