"I WORKED SO HARD, AND I STILL DIDN'T SUCCEED": CODING BOOTCAMP EXPERIENCES OF PEOPLE WITH DISABILITIES

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INTRODUCTION

Coding bootcamps are intensive training programs that aim to turn adults with no computer programming experience into professional software developers in as little as 12 to 16 weeks. Coding bootcamps have been promoted as a key solution for the tech "skills gap" in the United States (Swartz, 2017) as well as a "ticket into the middle class" for low-income workers (Pathak, 2016). In the United Kingdom, coding bootcamps have been positioned as a solution to the "digital skills gap" (Nugent, 2022) as well as a strategic facet of the National AI Strategy (2022), with a network of government-funded "skills bootcamps" aimed at providing workers with "in-demand digital skills" (Institute of Coding, n.d.) launching in 2021. In the US and Canada, it is estimated that approximately 25,000 people attended a coding bootcamp in 2020 (Eggleston, 2020); there is no comparable data for the UK.

In both the US and the UK, coding bootcamps are positioned as an alternative pathway into the tech "pipeline" for groups who are traditionally excluded from computing careers (Schnell, 2019; UK Digital Strategy, 2022). Framed as a form of "coding equity", bootcamps are said to provide "transformative access" for participants and have even been characterized as a form of social justice activism (Rea, 2022). Critics of coding bootcamps, however, suggest that they are another form of "lower ed" (Cottom, 2017) that leaves students in debt and unprepared for the demands of the tech labor market (e.g., McBride, 2016).

Despite polarized claims about coding bootcamps and their possibilities, there is very little empirical work that investigates the experiences and outcomes of bootcamp attendees. This work-in-progress paper responds to this gap, drawing from a four-year comparative study between the US and UK that investigates who benefits the most from attending coding bootcamps, and why. Combining ethnographic, interview, and survey data, this study suggests so far that the benefits of coding bootcamp attendance accrue disproportionately across different groups.

One of the notable themes that has emerged from the study is that people with disabilities are far less likely to have a positive bootcamp experience. As recommendation site *Best Bootcamps* notes, people with disabilities "can learn to code and excel at it", but most bootcamps "don't provide pathways specifically for these students" (Plaut, 2023). Perhaps for this reason, people with disabilities were more likely to experience unfair bias and/or exclusion at their bootcamp and are less likely to have experienced employment-related benefits than people without disabilities. This paper discusses some of the reasons as to why this is the case, casting some doubt on the "transformative" possibilities of bootcamps for marginalized groups.

METHODS

This work-in-progress paper draws upon data from an ongoing comparative study (2018 - present) about coding bootcamps in the US and UK. It combines ethnographic and interview data from the United States and survey and interview data from the United Kingdom. The US ethnography took place over 9 months at a bootcamp in a major US city; interviews with participants from that fieldsite (n= 29) were conducted over a period of two years (2018-2020). The UK project began with an exploratory national survey of adults who attended a coding bootcamp (n = 193); data collection concluded in 2022. Interview candidates were recruited from survey participants and through snowball sampling (n =14); UK interviews are still ongoing.

BOOTCAMP EXPERIENCES OF PEOPLE WITH DISABILITIES

In our survey sample, people with disabilities comprised 29% of respondents; compared to the 17.8% of England and Wales residents with disabilities (Office of National Statistics, 2021) this is a notable over-index; it is worth noting, however, that the respondent population was self-selecting. Morris, Begel, and Wiedermann (2015) note that neurodiverse people are often interested in digital technologies and that there are "affinities between the profile of some individuals with ASD [autism spectrum disorder] and the job requirements of the technology industry" (p. 173). While survey respondents self-identified as having a variety of disabilities, interview participants with disabilities were mostly (but not entirely) neurodiverse, disclosing diagnoses of ASD, ADHD, dyslexia, and dyspraxia.

Regardless of the type of disability, the poor experiences of people with disabilities at coding bootcamps was a stand-out theme across both the interview and survey data. 26% of respondents with a disability reported experiencing unfair bias and/or exclusion compared to 10% of respondents with no disability (p=0.013). Interview data from both the US and the UK suggests that both the pedagogy employed at the bootcamps and treatment from staff were significant problems for people with disabilities. In both countries, students with disabilities struggled with the fast paced nature of the programme, with one interview participant with ASD describing it as "hard to keep up". While bootcamps are notoriously high-pressure environments (Thayer and Ko, 2017), they seem to be particularly difficult for neurodiverse students.

Both the Equalities Act 2010 (UK) and the Americans with Disabilities Act state that organizations are required to provide reasonable accommodations for people with disabilities, but neurodiverse students from both countries reported that their bootcamps either struggled or refused to make adequate adjustments. Furthermore, these students also reported that they felt penalized by staff for disclosing their disabilities and requesting additional support. Perhaps unsurprisingly, bootcamp students with disabilities were less likely to complete their bootcamps (78% vs 87% for students without disabilities); even those who technically completed the course reported feeling "burnt out" or "depressed" as a result of the bootcamp.

The impact of these experiences could be quite significant. One participant with ADHD described feeling "flawed" and "broken" by their inability to keep up in their program; another participant with dyspraxia who felt "defrauded and "shafted" out of their life savings also reported being mocked by a fellow student and insulted by a staff member. Furthermore, while 77% of respondents without disabilities got a job after finishing their bootcamp, that number dropped to 65% for respondents with disabilities. Interview data also suggests that these numbers don't tell the full story; for some bootcamp graduates with disabilities, staying employed in the jobs that they got after they completed their program could be a challenge. One participant with ASD got two part-time jobs after they completed their bootcamp; however, they lost both jobs after three months and consequently experienced homelessness for a period of time. With stories like these, it is perhaps not unexpected that there was a statistically significant difference (p=0.048) between the course recommendation scores for students with disabilities (6.95) and students without disabilities (7.80).

CONCLUSION

Although some bootcamps declare their "support" for "people with disabilities and neurodiversities" (Northcoders, n.d.), our study indicates that even if and when this support exists, it falls short of what people with disabilities need to thrive in a bootcamp setting. As one interview participant with ASD said, "It could've worked for me. I loved it…I just would have loved it if it had all been the right support." While coding bootcamps might provide "transformative access" (Rea, 2022) to some marginalized groups, this paper suggests that this is less likely to happen for people with disabilities.

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