Breaking into a skilled occupation can be difficult for career switchers who do not have the means or the time to go back to school and pursue formal education, but a new study from Bayes Business School (formerly
Cass) has found that coding bootcamps and similar learning collectives offer a way for novices without formal training to break into skilled professions.

In this new study, Dr. Ece Kaynak, Lecturer in Organizational Behavior at Bayes Business School, examined coding bootcamps in the San Francisco Bay Area over 17 months, finding over the course of 80 interviews and eight months of observation that bootcamps support learning collectives. The work is published in the journal *Organization Science*.

According to the study, learning collectives are composed of peers and near peers who learn collaboratively and purposefully to reach a shared goal. Dr. Kaynak found that coding bootcamps enable aspiring programmers to progress from novice outsiders to hireable software developers, despite limited expert training and situated learning opportunities, such as internships and new graduate roles that are reserved for formally trained novices.

In particular, the study found that bootcamps facilitated occupational learning in three ways:

- Pair programming and group projects ('peer team structures') turned what is normally a solitary activity—writing code—into a collaborative endeavor and facilitated peer-to-peer knowledge exchange.

- Near-peer role structures, in the form of near-peer instructor, teaching assistant, and mentor roles, engaged recent graduates in teaching and mentorship relationships with novices so that aspiring coders could access knowledge quickly and easily.

- Bootcamps encouraged aspiring coders to develop self-learning
skills. This prepared novices for learning beyond the bootcamp curriculum and socialized them for an occupation with high learning demands.

The outcome of this process was that novices developed both occupational skills and new perceptions of themselves as software developers.

Dr. Kaynak said, "Many career switchers who are unable to go back to school or take on internships and apprenticeships may find themselves in the position of novice outsiders trying to break into an occupation. For people in this situation, learning collectives such as bootcamps could facilitate entry into many skilled occupations.

"Despite their short duration, I found that bootcamps structured learning and peer-to-peer knowledge-sharing dynamics in such a way that career switchers could accelerate their learning and break into a skilled occupation, i.e. software development.

"Lastly, if employers are interested in developing alternative talent pipelines into programming and related jobs, then there appears to be a need for designing situated learning opportunities, such as apprenticeships, for people pursuing alternative reskilling pathways such as bootcamps.

"At the time this fieldwork took place, very few technology companies offered internships/apprenticeships for bootcamp graduates. Providing such on-the-job learning opportunities would be greatly helpful in integrating aspirants coming from non-traditional backgrounds."
