

A Diary-Based Reflection to Assist STEM Students gain clarity on the Technology Entrepreneurship Pro

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How can STEM students gain insights into whether they want to become an independent entrepreneur, or may be become an entrepreneurial engineer? An app-based scrapbook where students collect and reflect upon their exposure to the interface of entrepreneurship and engineering.

When STEM students combine engineering talent with entrepreneurship, they can improve the world. Examples are the commercialization of lab-on-a-chip for individualized cancer therapies, or microsatellites for earth observation. A key goal of the Nanotechnology Design Project at the University Twente is creating this combination of engineering and entrepreneurship. This combination is difficult because students' existing role identities limit their choices. If students see themselves only as engineers and not as technology entrepreneurs, they do not consider that entrepreneurship can be part of their future profession. To solve this, we need innovative learning activities geared to develop the Technology Entrepreneurial Identity Aspiration (TEIA) of STEM students. In our class, we currently address engineering and entrepreneurship on the level of knowledge/skills, and only implicitly on an identity level. We argue that explicitly addressing the identity level supercharges students' TEIA. The innovation is three-fold. First, learning activities on TEIA do not exist yet. Second, we co-develop them with our students, allowing us to tap into the tacit knowledge and needs of this particular student population. We also cater to the TEIA of female students, an underrepresented group in technology entrepreneurship. Third, the proposed identity work is supported by a mobile application, which supports identity work in real life and outside the classroom. The intended outcomes are a set of co-developed learning activities on TEIA, their use in this course, to be disseminated with the 4TU Centre for Engineering Education and the European Consortium of Innovative Universities.

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