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Beyond Dualistic Approaches to Professional Identity Formation– A Transactional Perspective

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In this paper we introduce a transactional perspective on professional identity formation. We draw on a study of a design programme in a Belgian engineering faculty and illustrate how students continuously develop their professional identity in 'transaction' with what they encounter in the educational environment rather than merely identifying with or disidentifying from preconceived professional roles.

Eliot and Turns (2011) describe professional identity as personal identification with the duties, responsibilities, and knowledge associated with a professional role. Drawing on earlier research (Becker & Carper & Thornton & Nardi, 1975) they state that the process of developing a professional identity involves a negotiation between the societal/institutional expectations related to a specific professional role and the needs, wants, and aptitude of the individual preparing for that role. A growing body of literature focuses on the overall process of identity-formation as a 'sustainable engineer', 'humanitarian engineer' (Park et al., 2021) or 'reflective engineer' (Robbins, 2007) often contrasted with the 'traditional' engineer. Yet, little research zooms in on concrete situations or moments in which professional identities are (trans)formed in education practices, nor on what is then learned and how. Precisely the latter is the focus of this paper.

We draw on a case study in design education at an engineering faculty where it was the teacher's deliberate purpose to stimulate students to reflect and deliberate upon their (future) role as designers – i.e. their professional identity – in light of sustainability. She does so by addressing a range of possible roles of designers, inspired by the concept of 'possible selves' (Markus & Nurius, 1986): representations of individuals about who they are, what they might become, who they would like to become, and who they fear becoming. The construction of possible selves is an important factor for one's identity development and associated with an identity exploration process (Schallert, 2020).

As indicated, we are interested in revealing and understanding how students develop professional identities in 'transaction' with what they encounter in the courses, i.e. in how the teacher's lesson design and interventions affect what is learned about the professional role of a designer and how it is learned.

The theoretical framework that underpins our study is transactional didactic theory (Östman et al., 2019) based on the pragmatist work of John Dewey. This theory understands learning as being incited by a 'problematic situation' in which our habitual ways of thinking and acting are disturbed. This is grounded in the pragmatist assumption that, in everyday life, we mainly act without reflecting. Reflection, and hence learning first starts when our environment disturbs such habits, for instance through encountering alternative possible selves that one had never considered before. Such encounters are triggers for 'inquiry' which can result in new knowledge, skills, values, beliefs, and, thus, also in a transformation of identities. The transactional theory of teaching, then, focuses on how teachers' actions in both the preparation and implementation of lessons – i.e. the scripting, staging, and performance – affect the encounters taking place as well as what students learn from these. This transactional didactic theory helps us to move beyond a dualistic approach in which identity formation could be narrowed down to the options of, either, being a sustainable designer, or, a traditional engineer as it allows us to investigate how students' professional identity is formed and continuously transformed in 'transaction' (Dewey and Bentley, 1949) with what they encounter in the courses. Such a transactional perspective rejects either/or thinking. Just like knowledge is then understood as 'coming to know' – rather than 'knowing' – identity is seen as a matter of 'becoming' – rather than 'being' (Garrison, 1997).

Methodology, Methods, Research Instruments or Sources Used

The empirical data is collected through an intensive action research process in two courses in a Belgian industrial design program and consists of surveys of students, transcripts of video/audio-recorded observations of lessons, student assignments, and semi-structured interviews with students.

The first step of our analysis consists of analysing the data with the analytical method Practical Epistemology Analysis (PEA) in order to reveal the meaning-making of students regarding their professional identity (Wickman and Östman 2002). PEA is designed to study how learning takes shape through individual-environment transactions and enables a detailed analysis of how professional identities and views on the role of designers are (trans)formed 'in action'. PEA starts from the transactional understanding of learning as the creation of relations between what stands fast for a person – e.g. earlier acquired knowledge, ideas, beliefs – and the new situation that s/he is encountering. Every time a person encounters a new situation, a gap occurs. If one manages to bridge the gap by creating a relation to what stands fast, one has learned something. By analysing the created relations, we can investigate the content of what is learned. Analysing the encounters reveals how the learning was made possible. PEA is typically used for analysing transcripts of conversations. We employ it in that way for the analysis of observations. For analysing the interviews, surveys and assignments, we adapt the method. PEA's key concepts serve as sensitizing concepts in an initial coding scheme used for an interpretative analysis. The analyses of interviews, surveys, and assignments complement PEA in that it also provides insight in the students' intentions, reflections and experiences that remain invisible in a PEA analysis.

As a second step, we conduct an analysis of the teacher's scripting, staging, and her interventions (Teacher Moves) in the performance to investigate the impact of the teacher's interventions on the direction students' learning. Therefore, we also draw on existing engineering education literature about possible/desirable roles of a (sustainable) designer/engineer. We analyse how the teacher's actions affects which of these roles are 'offered' to the students and whether/how they use aspects thereof in the ongoing (trans)formation of their professional identity.

Conclusions, Expected Outcomes or Findings

Guided by the transactional didactic theory elaborated above and with the help of our 'high-resolution' analytical approach, we present detailed answers on the following research questions:

In which ways does what the students encounter in the courses disturb their habitual way of thinking and/or acting about/as a designer?

How does the teacher's actions – in terms of scripting, staging, and performance – affect the emergence of such disturbances? How do students use aspects of preconceived professional identities offered to them as transactional resources in their meaning-making and, thus, in their ongoing professional identity formation?

Under which conditions does the learning process result in a consolidation, enrichment, or transformation of students' view on their identity as a designer?

By conceptualising, describing and empirically illustrating a transactional perspective on identity formation we aim to contribute to overcoming all too dualistic approaches of either identifying with, or disidentifying from 'the traditional engineer' or 'sustainable designer' identities. Paying attention to how teachers can facilitate this is a vital condition to unlock the creative potential for new identities to evolve through educational practices.

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Intent of Publication

This paper will later on be developed into a scientific article for *Environmental Education Research*.