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High school students' engagement in a school-
based socioscientific project: Development of
identity in practice

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Abstract

This study explored the ways in which high-school students participate in a socioscientific project using identity research as an analytic lens. The social implications that evolve from negotiating socioscientific issues (SSI) allow for multiple connections to students' world views by associating science with moral aims and by linking social values to actions on science-related issues. For these reasons, dealing with SSIs allows students to web scientific concepts with their own personal world views and identities. Following situated learning theories, the construct of identity formation with relation to practice is suggested as an analytical lens to examine students' participation. The primary purpose of this study was thus to understand the ways in which students practiced and built their practice-linked identities through participation in a school-based socioscientific project. Additional emphasis was placed on students' willingness to participate in an action toward SSI resolution. The students in the examined project take an active effort in reducing malnutrition in underdeveloped countries by developing an affordable and efficient cultivation method for the cyanobacteria *Arthrospira* (Spirulina) as a dietary supplement. Data were gathered using several sources, including phenomenological interviews, observations and documents analysis to explore the narratives of two students (case studies). Data were analyzed using a hybrid process of inductive and deductive analyses. The analysis focused on identity resources that can support students' identity development in practice: having access to the domain, opportunities to take on integral roles, and opportunities for self-expression in the practice. Findings suggest that case study students were afforded deep engagement in practice as they found a connection between who they are and the project. Specifically, students had a wide access to the domain, mainly by being afforded rich and contextual experiences. These experiences appear to have also initiated and motivated students' willingness to take action in the context of global malnutrition. Students took up integral roles which mattered to them and to the practice as a whole and felt accountable to improve their skills in these roles. And finally, they had numerous opportunities for self-expression in practice, which were built upon significant ideational and relational resources. Students' narratives reveal how their ability to find a connection between their identities and the practice was generated through contextual and authentic experiences, which ultimately supported their deep engagement in the practice.