

Exploring the Formation of High School Students' Science Identity: A Qualitative Study

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Abstract : As a sociocultural concept, identity has increasingly gained attention in educational research, and the notion of students' science identity has been widely discussed in the field of science education. Science identity was proved to be a key indicator of students' learning engagement, persistence, and career intentions in science-related and STEM fields. Thus, a great deal of educational effort has been made to promote students' science identity in former studies. However, most of this research was focused on students' identity development during undergraduate and graduate periods, except for a few studies exploring high school students' identity formation. High school has been argued as a crucial period for promoting science identity. This study applied a qualitative method to explore how high school students have come to form their science identities in previous learning and living experiences. Semi-structured interviews were conducted with 8 newly enrolled undergraduate students majoring in science-related fields. As suggested by the narrative data from interviews, students' formation of science identities was driven by their five interrelated experiences: growing self-recognition as a science person, achieving success in learning science, getting recognized by influential others, being interested in science subjects, and informal science experiences in various contexts. Specifically, students' success and achievement in science learning could facilitate their interest in science subjects and others' recognition. And their informal experiences could enhance their interest and performance in formal science learning. Furthermore, students' success and interest in science, as well as recognition from others together, contribute to their self-recognition. Based on the results of this study, some practical implications were provided for science teachers and researchers in enhancing high school students' science identities.

Keywords : high school students, identity formation, learning experiences, living experiences, science identity

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