How do the personal experiences of adolescents, aged 10-14, affect their affinity toward science and for science learning?

Thesis for the Degree of Doctor of Philosophy

Submitted to the Scientific Council of the
Weizmann Institute of Science
Rehovot, Israel

by

Ella Ofek-Geva

Advisor

Prof. David Fortus

Summary

While students tend to enjoy science at a young age, as they grow older, they tend to become less engaged with science. This decline in motivation for science has been documented in several studies and is evident in many countries, for both genders. On the other hand, studies have shown that a career choice in science often begins to develop at a young age. The goal of this longitudinal study was to accompany young adolescents over three years, in and out of school, and to try and understand how the environment and their inner world shape the development of their interests in, attitudes toward, aspirations, and motivation to engage with science. The study used a mixed-methods approach. This study reinforces the importance of the relations between the science teacher and her students. In addition, I identified indicators that can predict students' resilience to science studies in school, such as, a significant area of interest in life (not necessarily in science), the thought of future pursuit of science, and more. There appear to be certain conditions that increase or decrease the chances that a student may consider science positively.

Department of Science Teaching, Weizmann Institute of Science