The goal of this study was a comprehensive characterization of environmental factors that are associated with students’ motivation for science learning in school and out of school, including schools’ culture, teachers’ practices and goals emphases, parents’ goals emphases and peers’ goals in science learning. Cross sectional data was collected from 2100 5th to 8th grade students from 30 traditional elementary, middle and democratic schools. Data was also collected from these schools’ managements, 55 science teachers and 402 parents. 420 students were followed for two consecutive years allowing for a longitudinal perspective. Quantitative data was analyzed using SEM, HLM and Rasch analyses. Interviews were conducted with 106 students and both content and structure analyzed.

Results of this study show that the decline in adolescents’ motivation for science learning, which has been identified before in many different studies, is not inevitable consequence of adolescence. The results highlight some aspects in which school culture, teachers’ instructional practices and goals emphases are different in elementary, middle and democratic schools. These differences may explain differences in students’ motivation between school types. Results also indicate the role parents play in influencing their children’s motivation for science learning, especially out of school. Nevertheless, findings indicate that the differences in students’ motivation between different school types may not be solely attributed to parental differences.

Finally, I will describe a draft model to predict the development of students’ motivation, using NPMR.

Biography

PhD in Science Education at University of Michigan, MS in theoretical physics from the Technion in Israel, BS in aeronautical engineering from the Technion in Israel

David Fortus began his career as a science education researcher by developing learning environments that foster the transfer of scientific knowledge to real-world situations and received awards from the National Association for Research in Science Teaching and from the American Psychological Association for his work on this topic. Since moving to Israel he has made the study of the environmental factors that lead to declining motivation to engage with science, in and out of schools, his major focus. His publications range from science education to theoretical physics to legal economics. He is an associate editor of the Journal of Research in Science Teaching. Before joining the Weizmann Institute of Science, he was an assistant professor at Michigan State University, a high school physics teacher, and a project director in the aerospace industry.