Is Adolescents' Declining Motivation to Learn Science Inevitable?

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Research in Brief

Research findings from key articles in reviewed publications

Is Adolescents' Declining Motivation to Learn Science Inevitable?

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Many educators agree that an important goal of science education should be to develop the foundation for lifelong learning, including the motivation to learn science in school, out of school, and after school. Many studies have shown that students' attitudes, interest, and motivation towards science learning decline throughout their years at school, especially during secondary school, and reviews of such studies may be found in Galton (2009) and Osborne, Simon, and Collins (2003). Vedder-Weiss and Fortus (2011) presents results suggesting that students' declining motivation to learn science between fifth and eighth grade is not inevitable. They found that students' motivation to learn science develops differently at different school types. In traditional Israeli schools, students' motivation declined from fifth to eighth grade. This decline was apparent in students' motivation for school science learning (personal mastery goals and classroom engagement) as well as in their continuing motivation (engagement in and rejection of extra-curricular science-related activities). However, in democratic schools, the levels of personal mastery goals, classroom engagement, and continuing motivation stayed more or less stable throughout these years. The results suggest that the non-declining motivation of adolescents in democratic schools is not a result of home influence but rather is related to their schools' culture.

Prominent features of the democratic schools' culture are: (1) school is managed by shared decision-making among the students and staff, (2) students can choose which subjects to learn and, in general, what to do with their time, and there are usually no required classes, (4) the staff supports students by offering facilitation according to students' interests and needs, (5) teachers have great autonomy in designing their teaching, (6) qualitative evaluation methods are usually used, (7) classes are often multi-aged, and (8) the number of students in each class is relatively

small. Further research should focus on investigating which features of school culture or teachers' instructional practices are responsible for the different trends in students' motivation to learn science.

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Supernatural Explanations: Science or Not?

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Peter Eastwell, Science Time Education, Queensland, Australia

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Bunsen Burner Danger

I recently conducted

Yes, I would stop all practical work; but only for a limited period. You are likely to find that the class resent the lack of practical work and peer pressure might reveal the culprit.

Sue Howarth, Tettenhall College, UK

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#5 of 40. *Involve Every Staff Member in Some Aspect of the Safety Program and Give Each Specific Responsibilities*

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