

A model for how students choose or reject subjects at school and what it means for science

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There has been concern expressed by educators, researchers and policymakers that too few students are choosing science in their final years of school. Science study at school has been linked to the supply of a scientifically skilled and literate workforce necessary for Australia's prosperity into the 21st century. This study breaks new ground in exploring how students choose subjects for their final years of school and applying this to the choice of science. Specific strategies are suggested to encourage students to continue studying science at the time subjects are chosen.

The research was conducted with 5 schools in the Sydney region using 10 focus groups with 50 students, interviews with 15 adult stakeholders within schools, 7 subject selection event observations and a survey completed by 379 students.

The students in the study consistently described the subject choice process as two staged. In the first stage, most students started by rejecting subjects they disliked and then chose the subjects they enjoyed. Enjoying or liking a subject was a frequently cited factor for choosing subjects. The first stage of the decision making appeared to be substantially emotive.

In the second stage, students described a more detailed evaluation of the subjects about which they were unsure. Students included the subjects that they considered to be 'core' and would contribute to their future study or career path. Students described a more detailed and rational evaluation of their options and indicated they would seek advice as needed. Older

peers were considered a good source of advice as was general advice from adults. Subject-specific advice from teachers recommending their own subject was viewed with suspicion.

The model for science subject selection suggests that enjoyment of science in the first stage of the decision process leads to consideration of the subject for future study. However, in the second stage this choice is tempered by the student's assessment of their ability to achieve good marks in the subject and the usefulness of the subject in the future. It is in this light that science choice is problematic. Science is generally perceived as an onerous subject where obtaining high marks is more difficult than for other subjects. This means students are less likely to choose the subject unless they feel they need it for future study. In this respect science is also at a disadvantage as it is viewed as a subject that is useful in a narrow range of careers.

To address these disadvantages, it may be advantageous to address these perceptions by promoting science as enjoyable, achievable and valuable in the weeks immediately prior to students choosing their subjects. This may take the form of enjoyable practical sessions, talks from peers and trusted adults on the benefits of science in a range of careers and information on how students will be supported to succeed. These strategies rely on timely information to students to help them reappraise the value of science and decide that science has a place in their future.