

Attitudes of Year 7 New South Wales students towards school science.

Pilot Study Summary Report

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The Australian Science Enrolment Project Pilot Study was an online attitudinal survey designed to assess Year 7 students' attitudes towards school science. The instrument consisted of sixty eight items that were administered using both visual analogue scales and five point discreet response format. There were both semantic differential items and Likert-style agree-disagree items included in the instrument. A total of eight independent schools from both metropolitan and regional New South Wales were invited to be part of the pilot study and from these 28 students (20 males and 8 females) fully completed the survey.

The findings

Using a series of principle components analyses seven Attitudinal constructs were identified.

- A student's perception of their own ability
- The enjoyableness of school science for a student.
- The desire of the student to follow a career in which the skills of school science are

specifically useful

- The student's perception of the usefulness of school science to their proposed career.
- The student's perception of the difficulty of school science for them (note this has been reversed in figure 1 to aid in comparison)
- The student's perception of the everyday relevance of school science to them.
- The student's intention of continuing with a science subject in Year 11.

As figure 1 shows, students attitudes towards all seven aspects cover most of the full range from -50 to 50 with the mean response value in each case being positive. This indicates a generally positive attitude towards school science by Year 7 students.

The aspects of "Usefulness to my Career" and "Perceived Ability" scored the lowest mean scores at +6 and +8 respectively. This would suggest that the majority of Year 7 students are a little lacking in confidence in science and that this in turn may be encouraging them to consider careers where science

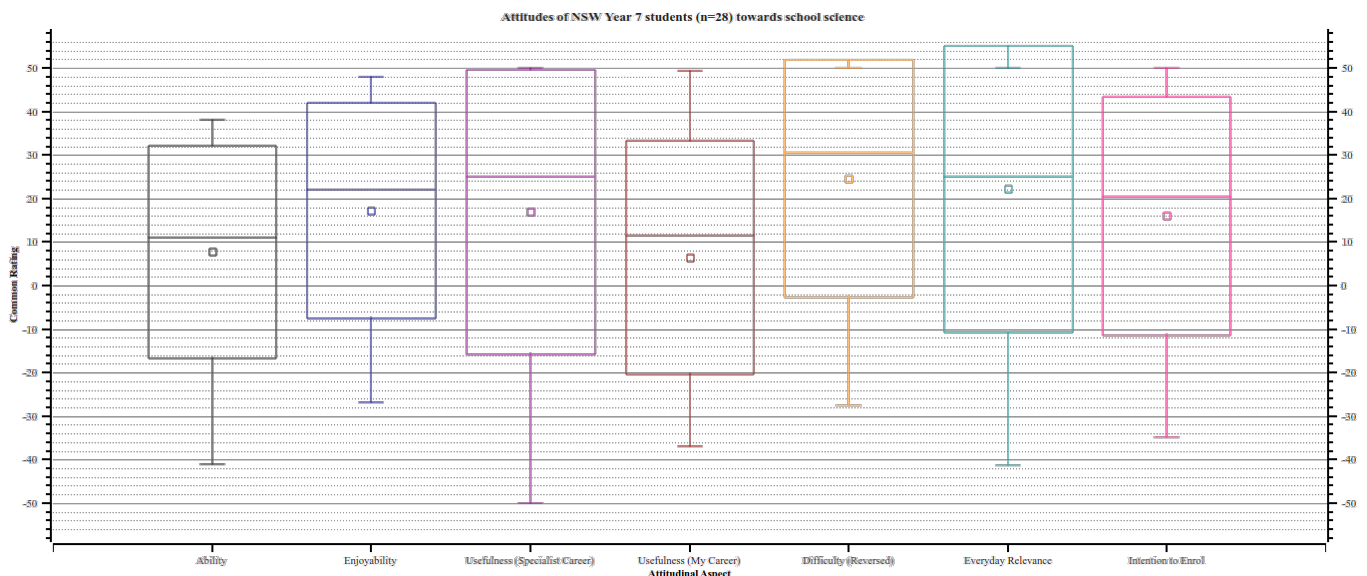


Figure 1: The attitudes of New South Wales Year 7 students towards school science. The rectangle represents \pm one standard deviation, the horizontal bars represent the 5%, 50% and 95% points of the student responses; the square represents the mean response rating

skills and knowledge are less central to success.

It is interesting to note that “Usefulness for a scientific career” had the equal largest spread of responses along with “Everyday Relevance”. These together suggest that Year 7 students may have a large range of ideas as to what a scientific career entails; it is quite likely that they do not yet appreciate the vast range of possible careers paths that encompass scientific disciplines.

It is encouraging to note that students do not consider school science to be too difficult and do enjoy their lessons. It is also, highly encouraging to note the high rating and relatively low spread for “Intentions to Enrol on a Year 11 science course”. Clearly school science programmes are engaging students sufficiently that they would, at this stage, like to continue their study in the post-compulsory years.

Implications for Schools

It is encouraging to find that the average Year 7 student in NSW finds school science lessons to be enjoyable, relevant to everyday life and not excessively difficult. However, they have a relatively lower perception of their own scientific ability and consider school science neither particularly useful nor useless for their own future careers. This latter point could be interpreted by

assuming that the average Year 7 student has little idea of their own future career path. Yet it could be equally true that they have a underdeveloped understanding of the transferability of scientific skills and knowledge. Schools may need to address this understanding during their discussions on application of scientific knowledge and also explicitly investigate the area of scientific careers.

Even though the average student appears to have a positive overall attitude towards school science, it is interesting to note the size of the spread of responses towards some aspects. Both of the aspects of Usefulness and the aspect of Relevance have particularly large spreads. This has implications for schools when choosing contexts for the delivery of the syllabus content. The usual practice of selecting a single context that suits the majority of students for the delivery of content may not be the most effective approach towards ensuring student engagement and developing positive attitudes towards school science.

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