

EVALUATING A HIGH SCHOOL CHEMISTRY COURSE

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Since the ultimate effect of the teaching upon the student is of most importance, the student's opinion of what is interesting and valuable in his general education should be considered.

To obtain the student's evaluation of what he studies, a questionnaire was prepared which listed 46 different learning elements, achievements and activities commonly included in the high school chemistry course. Each student in ten different high schools of cities having populations from 1000 to 100,000 was asked to judge each item as to whether it was interesting and as to whether it was of general educational value in later life.

Abstract ideas, it was found, are not interesting and are usually not recognized as of much value, especially if they are difficult to comprehend. For example, the theory of atomic structure and its relation to chemical activity was rated very low in both interest and educational value. How laws are derived was considered of interest by only 30 per cent and of educational value by 23 per cent of all the students. Determining the weight of a metal that would replace one gram of hydrogen ranked 32 per cent in interest and 42 per cent in educational value.

The data showed that what appealed most either applies to life directly, provides purposeful activity, or explains the nature of chemical activity. The students considered it very interesting and still more valuable to learn of the elements and compounds essential to plant and animal life, to learn of some of the chemical processes in the animal body, and to learn of the chemistry related to the home. Taking trips to local industries was considered very interesting by 94 per cent of all the students, and 89 per cent considered it of great educational value. Doing projects was interesting to 80 per cent of all the students, while 62 per cent thought it educationally valuable.

Learning that clarifies the nature of chemical action is also desired by students. For example, 68 per cent of the students were interested to know that when two elements were united chemically, the compound formed has entirely different properties from either of the two elements thus uniting, while 58 per cent believed it of educational value. Again, 74 per cent thought it was both interesting and valuable to know that matter cannot be destroyed, even by burning, but that it can be changed in form into a different substance.

The uses of the elements and compounds and the properties that make them useful appeal to the students of all the schools. The uses were rated as interesting by 75 per cent of the students and as educationally valuable by 87 per cent.

In the light of the above data the teacher should associate the necessary abstract material as closely as possible with actual problems of his students' experience. Learning elements can be made to appeal to students by presenting them through projects, studies of local industries, or other activities of interest to students.