ASEP IN THE CLASSROOM – some issues for research

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I have been asked to outline some of the problems associated with the use of ASEP materials, that might give rise to educational research programmes. These problems have been gathered from reports of meetings of trials teachers, discussions with trials teachers, my observations of ASEP classes in action, and from my experience in using ASEP materials with Grade 8 classes.

Many science teachers today are products of an era in education in which the teacher’s role was to impart information, and the student’s role to receive this information. We left school with this view of the teaching-learning process, and (despite our pre-service training), entered the profession with much the same view. Twelve years of schooling in which we were dominantly teacher-directed, gave us a certainty that such a teaching strategy would be successful for us also. There was no hard evidence to support this view – merely our empirical observation over a twelve year period.

We are now confronted with an ASEP view of science education, and the resultant units reflecting this view, which tell us that:

- a major source of learning is the activity of the child,
- children learn by social interaction,
- children should have considerable control over their own learning,
- children should work at their own rate.

Many, if not most of us, are quite prepared to accept these principles per se. It is in the classroom practice that our previous certainties are shattered. We need hard evidence to be convinced of the educational worth of ASEP materials. Most of us feel that ASEP science is excellent – but our uncertainties run deep.

The problems have been categorised in terms of

(i) the context in which learning takes place,
(ii) the ASEP materials themselves,
(iii) the learner,
(iv) the teacher.

Context

The ASEP view of science education, and its implicit view of the whole junior secondary education, as being directed towards the personal and social development of the child, poses some interesting questions. The materials prepared by the Project seem to have been written for school situations in which rank ordering and grading of students does
not occur. The unit structure with a short core followed by many optional core development activities, and the absence of achievement tests give support to this idea.

- What influence do environmental pressures have on ASEP learning, in terms of
  (i) demand for conformity in a school, as against the encouragement of individual expression;
  (ii) extrinsic rewards for students, as against intrinsic rewards;
  (iii) rank ordering and grading of students.
- What influence does the 'climate' of the school have on ASEP learning? Are ASEP materials equally effective in authoritative and supportive 'climates'.
- Is there an optimum context in which ASEP learning will flourish?

Materials

ASEP materials have been designed to tap the interest of students, to cater for individual differences in ability, to be readable by the vast majority of students, to be activity-oriented, and to develop a wide range of abilities, skills, and attitudes. There seem to be quite a number of underlying assumptions that might be subjected to test.

- What are the effects on learning of the ASEP strategy of
  (i) tapping the interest of the student,
  (ii) giving students some choice in what they study,
  (iii) self-pacing,
  (iv) child-centred instruction, rather than teacher-controlled instruction?

Conducting an ASEP class is hard work for science teachers. What we want to know is this — is our effort to be rewarded?

- What learning gains are achieved when ASEP materials are used? What cognitive abilities are developed, attitudes implanted or changed, manipulative skills enhanced, and interests evoked?
- What learning gains result from the use of open-ended, or unstructured activities?

One of the Project's major aims concerns the development of an understanding of the nature, scope, and limitations of science.

- To what extent do the materials attempt to achieve these aims?