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DEVELOPING INSERVICE MODULES ON STUDENT ASSESSMENT

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Introduction

By the mid-1980's only a small proportion of Australian teachers will be experiencing teaching for the first time in any given year (Auchmuty, 1980) and most will be some years removed from their formal preparation for teaching. In addition, teachers will be required to assume new roles and to take greater responsibility for decision-making in the School, particularly in the areas of curriculum and assessment. For these reasons, the continuing professional development of teachers through inservice education is crucial, a point which has received due emphasis in recent reports on Teacher Education (for example, Auchmuty, 1980; Asche, 1980; Correy, 1980).

This paper describes a project for the development and evaluation of modular kits of materials for school focussed inservice education in the area of student assessment. The project was supported by an ERDC grant for 1980-81 and is called the Student Assessment Project (SAP).

A Model for Decisions Required by Inservice Program Developers

The planning, development, production and evaluation of an inservice program will involve the developers in a number of decisions relevant to the content and thrust of the venture. At each decision point, a number of options need to be considered in the light of previous research and theory, the unique features of the program being developed and the inevitable practical constraints operating. However, it would be inappropriate to provide a mere checklist of decisions. The whole process is one of formative evaluation in which feedback on user needs and reactions under specified conditions are used to refine decisions taken. It follows that the decisions need to be located within some form of systems model.

The evaluation literature generally and the literature on the evaluation of instructional materials in particular is replete with examples of such models. We found it useful for our purposes to draw on the work of Baker and Schutz (1971) and the model presented in Figure 1 represents a modification of their flowchart, in turn derived from the work of several other writers on the evaluation of instructional materials. The feedback mechanisms within the model are obvious and this paper focusses on key decision points rather than on the systems nature of the whole decision process.

At one level, this paper simply describes the decisions taken at these key points for the SAP. However, we have also tried to provide some insights into the nature of the decisions, the attractiveness of alternative options and the rationale for the decisions made. It is our hope that the linking of the decision questions and the discussion of options within each will provide some guidance for other inservice education projects. The extent to which the specified choices made for the SAP will guide decisions on other projects is a matter of judgment by program developers.

Decision 1 : Aims of the Program

Which needs for what group will the program aim to satisfy? Is it intended to extend the theoretical knowledge of teachers or to further their classroom skills? Will it enhance the personal development of participants or is it designed to change or enhance their professional role?

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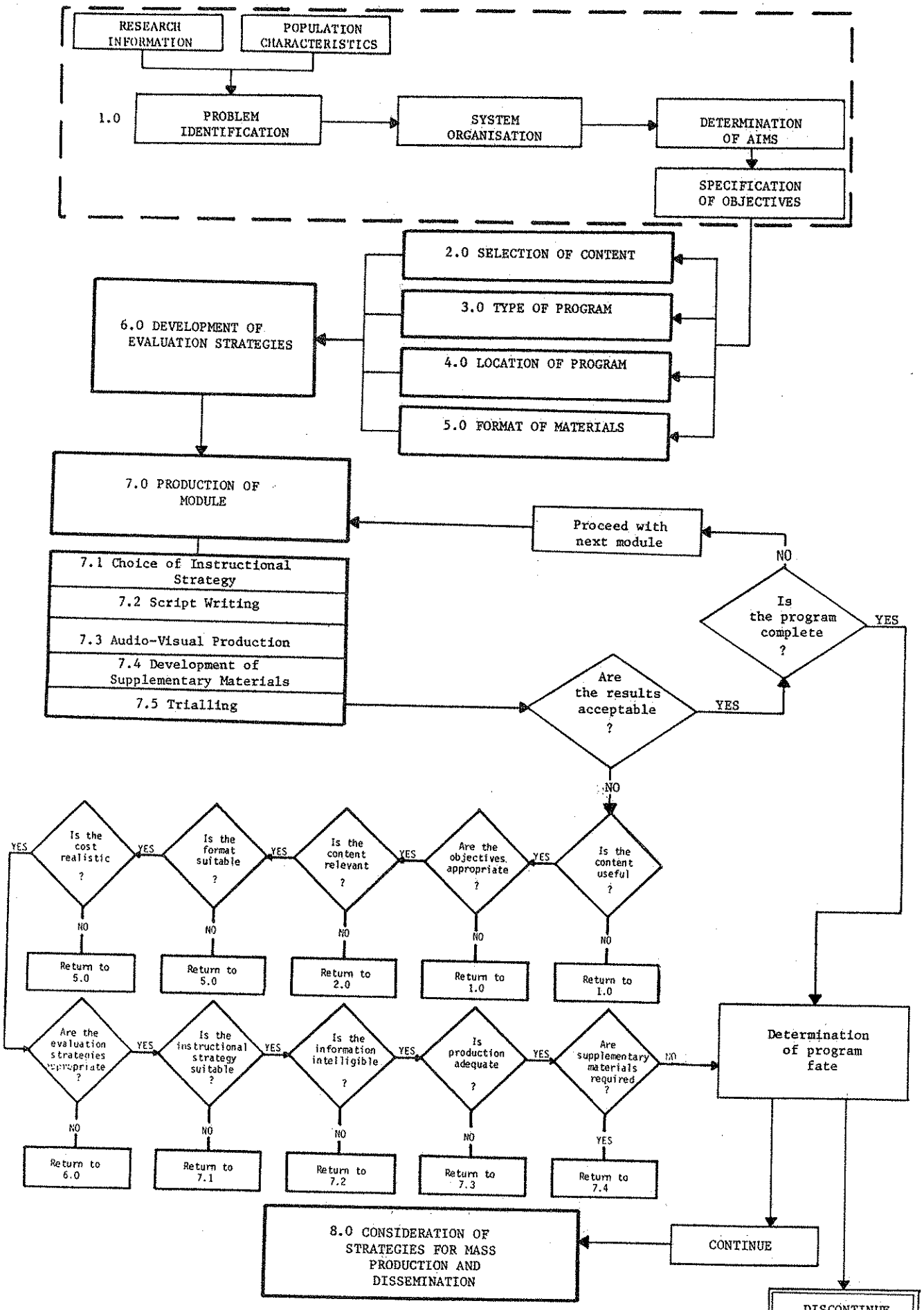

FIG.1. A model for decisions required by inservice program developers

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An interim report on an OECD study (CERI, 1978) carried out in ten different countries (including Australia) set up a typology for distinguishing the aims of inservice programs in various countries. Programs were seen along two dimensions of training: one was an academic-pedagogic dimension and the other a personal vocational one. In combination, they yield a four cell model as shown in Figure 2.

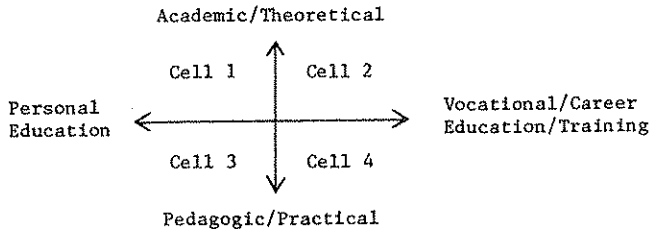

Figure 2. Typology for distinguishing aims of inservice programs

The SAP was intended to improve classroom assessment practices and thus to satisfy practical teaching related to the school and the education system rather than being aimed at the academic and personal development of teachers. In other words, SAP chose a program focussing mainly on cell 4 although there was some overlap into other cells.

The aims of the program cannot be considered independently of the target audience. Will the program be aimed at

(i) the school executive - principals, deputy principals and subject maters?

(ii) master teachers and experienced assistant teachers?

(iii) neophyte teachers?

(iv) student teachers?

Option (ii) in this list was selected as the initial target audience for the SAP.

Decision 2 : Content

What will be the substantive content of the program? How this question is answered will depend on the orientation of the developers. A policy maker at the system level with responsibility for planning inservice programs will seek to identify priority areas of need. On the other hand, the developer may already have a commitment to the substantive area and may see an inservice commitment in another context. Even when the latter applies, program developers should set forth a rationale for the selection of the content. In the present study, this is a matter of answering the question "why student assessment?"

Evaluation of student learning has always been an important professional responsibility of teachers and a crucial link in the cyclic chain of teaching, learning and feedback. However, in recent years, teachers have had to assume far greater responsibility for the assessment of student learning. The decline in external examinations, apart form placing direct responsibility on teachers for assessing students' achievements, has also removed a familiar model for teacher-made tests.

At the same time, teachers have been encouraged to use a range of tests and other assessment devices as components in a program of continuous assessment. Moreover, a focus on school based curriculum development has emphasised the uniqueness of each teacher's approach to assessment and has limited the validity of using published tests. In keeping with the additional freedoms associated with school based curriculum development, teachers have had to assume additional responsibilities in educational evaluation. Thus they have had to evaluate not only student learning but also curricula

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and teaching methods. They have had to devise better strategies to communicate evaluations to colleagues, to students and to parents and they have been required to demonstrate accountability for their actions to principals, to system leaders and to a community with far greater educational sophistication than ever before.

In this climate, the need for inservice training in aspects of educational evaluation is evident. To some extent, there has already been a positive response to this need. Notable examples can be found in the "Teachers-as-Evaluators" project (Hughes et al., 1979), in the work of the A.C.T. Schools Accrediting Agency (Selby Smith et al., 1979), in some initiatives taken by the Curriculum Development Centre (1977) and in a project in Queensland (Fitzgerald et al., 1980).

It is not surprising that most of the inservice initiatives on educational evaluation have been designed to assist teachers in those aspects of evaluation which have not previously been of major concern to teachers. Thus there has been a tendency to focus on topics such as school and curriculum evaluation, communication of evaluation results to different audiences, different models for evaluation taks, and so on. Student assessment per se has received relatively little attention as a topic for inservice programs.

Although assessment of student learning is not a new role for teachers, it is a role which has changed in recent times. As indicated above, the changes have been associated with a devolution of responsibility for student assessment. Accompanying the changes has been a growing literature of new terms - criterion referenced tests, tailored testing, Rasch scaling, item banking, computer software, and so on.

The need for inservice education of teachers in Australia specifically in relation to student assessment has been identified in several publications. For example, the Study Group on "National Assessment of Educational Progress", while having difficulty in achieving consensus on the desirability or otherwise of national assessment, agreed on the need to improve the assessment of pupil performance. Thus they referred to the need to "improve the competence of teachers in their assessment of pupil learning" (Webster (Chairman), 1980) and they made several recommendations on how this might be accomplished. Similarly, a review of the A.C.T. Schools Accrediting Agency (Selby Smith et al., 1979) recommended that "teachers should undertake continuing professional development activities to enable them to improve assessment procedures" (Rec.28, p.107). More recently, a report from the Senate Standing Committee on Education and the Arts titled "Preparation for the Workforce" drew attention to changes in methods of assessment and stressed that the success of new techniques would "depend on how efficiently teachers are trained in implementing them and interpreting the results" (p.32).

With this background of a need for inservice work on evaluation and with the recognition that some of the broader aspects of evaluation in schools have been addressed in previous projects, it was decided to focus the present project on an inservice program limited to assessment of student learning.

The SAP proceeded by using a pool of 30 experienced teachers from 10 schools, both government and independent as resource persons. The teachers initially attended a one day workshop and then subsequently met with the researchers at specially convened meetings or by appointment at their schools.

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At the end of the initial workshop at which the project was outlined, problems in student assessment were identified and teachers rated these in terms of their perceived needs. Eventually the topics were organised into seven sequenced modules as listed in Table 1.

TABLE 1. List of SAP Modules

Module No.	Title	Description
1	Why Test What When?	Setting objectives and designing tests.
2	None of the above	Writing items to match objectives.
3	Testing the Test - I	Analysing norm-referenced tests.
4	Testing the Test - II	Analysing criterion-referenced tests.
5	... And the last shall be first	Combining scores
6	... all things in moderation	Moderating test scores across groups; Rasch scaling
7	A B or not a B? That is the question	Grading and reporting results

Decision 3 : Type of Program

Will the inservice program be

(i) a program leading to an award by an institution?

(ii) a non-award program for individual teachers?

(iii) a non-award program for teachers working as a group in a particular school?

Selection amongst these options may well be related to program aims as defined under Decision 1. For example, programs leading to an award by an institution ((i) above) are most likely to have aims falling within Cell 1 of Figure 2. Since the present study aimed to influenced school practice (Cell 4), we were interested in the findings of previous research indicating the relative effectiveness of different types of programs with similar aims.

A number of large scale projects on inservice education have produced findings relevant to this question. The Change Agent Study (sometimes known as the Rand Study) carried out in the United States up to 1975 (McLaughlin and Marsh, 1978), the OECD Study on Innovation in Inservice Education (CERI, 1978) and recent INSET (Inservice Education of Teachers) work in United Kingdom (Campbell,1981) have investigated different modes of inservice education. These studies have shown that, if significant and lasting changes are to be produced within a school, then a "school-focussed" mode is likely to be the most successful. The "school-focussed" mode has two important characteristics. It satisfies the aims and needs of a particular school and it operates with a group of teachers who work together in the school and identify with the aims of the school.

On the basis of this evidence, option (iii) above was selected as the type of program for the present project.

Decision 4 : Location of the Program

Will the program be administered in

(i) a tertiary institution?

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(ii) a teachers' centre or similar venue?

(iii) the teachers' own school?

It should be noted that the desire to offer "school-focussed" inservice programs does not force a particular decision here. Provided that the program is offered to a group of teachers from the same school, and provided it works towards the aims and needs of that school as perceived by the teachers, it will be a "school-focussed" program. The physical location for the program may then rest on practical considerations involving facilities available, time allotted, how the program is timetabled and the availability of replacement staff. Although SAP chose option (iii) above as the most likely location for the majority of users, the possibility of use within the other options is feasible as is the possibility of offering the program in a distance education mode.

Questions of location will also arise during the development phase. Presumably most of the development will occur where the best facilities are available to the developers. Thus SAP was developed principally on Macquarie campus. However, where teachers (potential users) are involved in development, in trialling, and in formative evaluation, other venues may need to be considered. The present study held several meetings of teachers at a local Education Centre in the early stages of the project and later tended to seek assistance and feedback from teachers through visits to schools.

Decision 5 : Format of Materials

In what format will resource materials for the program be produced? The research literature gives very few guidelines on the most suitable format of materials for various types of programs. The SAP used the development group of teachers as a source of advice and evaluation, not only on materials themselves, but also on different formats for the materials.

Initially the project used videotape production but insurmountable problems prevented development along these lines. One module was produced first in videotape and then in colour slides and audio-cassette Feedback from participating teachers indicated that, given a fixed budget, the latter was of higher quality and much to be preferred. Kits accompanying the slide-tape contained printed materials, books and microcomputer disks with relevant software.

Although not discussed in detail here, decisions on an appropriate format for materials and decisions on aspects of the presentation of slides occupied an enormous amount of time. They were also aspects on which participating teachers voiced strong but frequently differing views.

Decision 6 : Evaluation Strategies

How will the trial materials be evaluated before large-scale production?

The OECD Study (CERI, 1978) identified the lack of evaluation of programs and materials as a common defect in inservice programs in many countries. For the SAP, the researchers were interested in evaluation at two levels:

(a) How effective were the content and materials of the program? Did the content covered meet the needs of teachers? Was the mode of presentation satisfactory? What changes were required? When evaluations of the content and materials differed, could different views be "explained" by different characteristics of teachers making the evaluation?

(b) Under what conditions would the program be likely to be used effectively? Berman and McLaughlin (1978) found that training materials which allowed

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teachers to try out new techniques and to ask for assistance with their immediate problems were most likely to promote successful inservice programs. Although we had a commitment to a "school focussed" mode, we sought to compare a situation in which at least one teacher present had prior experience of the materials (as a participating teacher) with one in which all teachers were experiencing the program for the first time.

Pencil and paper instruments as well as interview and discussion were used to obtain evaluation data for both (a) and (b). Results from these evaluations are not included here but will be given at the Conference presentation.

Decision 7 : Production of Materials

The move from videotape to slide tape had enormous advantages for the SAP in its developmental stage. Whereas a videotape requires all segments to be completed at the time of editing, the slides could be changed at any time on the basis of feedback received from various forms of evaluation.

We deliberately used a mix of slides - some schematic, some graphical and tabular, some of teachers and pupils in situ and some of a cartoon nature - with the intention of evaluating audience reaction to particular components as well as to the mix. It was possible to prepare module materials in an overlapping sequence. That is, the script for one module was prepared while the slides for another were being produced and while a third module was under trial. In this way, it was possible to streamline production activities. Initially we used a PERT chart to timetable these activities although practical constraint limited the usefulness of this planned attack. The development of computer software (to suit the Apple II), the production of handbooks on using the software and the collection of additional written materials proceeded along with the production of audio-tapes and slides.

Decision 8 : Mass Production and Dissemination

Even at the stage of initial development and trial of materials, it is necessary to plan strategies for mass production and dissemination. Although SAP materials are not yet at this stage, the initial development, trialling and evaluation has been conducted in such a way that mass production will be facilitated. Originals of materials have been catalogued, formative evaluation results have been incorporated or noted for later mass production and dissemination activities have been planned to accord with the aims of the program. Of course, even where a program has been carefully evaluated at trial stage, further evaluation at the time of dissemination or implementation is warranted to maximize effectiveness.

Summary

This paper has described a project for the development and evaluation of modular kits of materials for school focussed inservice education in the area of student assessment. Eight decision points have been described within a more general systems model which could be applied to similar projects involving the development, trial, modification, production and dissemination of instructional materials for inservice education. Nevertheless, the authors realise that this paper gives little indication of the flavour of the project itself and for this reason they will provide a poster display of the SAP at the AARE Annual Conference.

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