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RECONCEPTUALIZING THE CURRICULUM DEVELOPMENT PROCESS THROUGH IN-SERVICE EDUCATION

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Introduction

Recent studies published by the National Science Foundation and the Rand Corporation have indicated the immense difficulties that confront anyone seeking to bring about change in education (Helgeson, Blosser and Howe, 1977; Suydam and Osborne, 1977; Wiley, 1977; Berman and McLaughlin, 1978). In particular, these studies indicate the special problems posed by attempts to implement curriculum change. On the one hand, there has been strong teacher resistance to externally designed products. Perhaps the most startling result of the NSF studies was the reported lack of use of the major curriculum projects of the 1960s and 1970s. On the other hand, curriculum designers seem to have placed too much emphasis on ensuring a quality product (often using high levels of technology). They have often failed to consider the problems that may arise when the product is in the hands of an untrained user who does not share the designer's commitment and who has not been involved in the product's design. Even when they have, as in the case of *Man: A Course of Study*, social and political constraints militated against the innovation's use. Assisting teachers to overcome problems related to new curricula is therefore an important task in both the pre-service and in-service education of teachers.

The purpose of this paper is to describe one strategy that has been used to try and overcome the problems that have been associated with attempts to change the curriculum. That strategy involved the use of in-service education courses for teachers as curriculum development workshops. The workshops were supported by a number of school-based activities so that both design and implementation could be highlighted as important aspects of the curriculum development process.

Theoretical Framework

In the most general sense, the strategy adopted was one in which the curriculum emphasis was shifted from the design process to the implementation process. Since the early 1920s, curriculum writers have been

wedded to linear models of curriculum design. Their approach found its most popular advocate in Ralph Tyler. His little book, *Basic Principles of Curriculum and Instruction*, has probably influenced more teachers and instructors than any other book on an educational topic (Tyler, 1949). He outlined a simple sequence to be followed in designing an educational programme. The starting point is the determination of objectives. These will determine the selection and organization of content, and, finally, the objectives are evaluated to assess the extent to which they have been achieved. This design system is meant to be rigorous enough to guarantee a quality product.

Over the years attempts have been made to improve the design system with circular models, systems models and operations models being recommended (Nicholls and Nicholls, 1978; Dick and Carey, 1978). Techniques such as field testing and formative product evaluation have been used in an attempt to ensure the rigour of the final product. The assumption in all of this has been based on the efficacy of design systems in curriculum development.

Two additional variables have been identified in relation to the process of curriculum development: location and participants. They are not always discrete variables as location can often determine who will be involved. Yet discussion of them separately allows a number of points to be made. First, products can be developed externally to the user-system. Locations include tertiary institutions, research and development centres and commercial publishing houses. The alternative is product development within the user system, usually on a school site. Second, location very often determines participants. Externally produced material is likely to involve academics, psychologists and a sample of possible users, whereas local, on-site development is likely to involve only the people who are going to use the product that is designed. Suggestions have been made concerning compromises between these two extremes. For example, external consultants can enter the user-system to provide advice and assistance (Havelock, 1971). Whatever approach is used, much thought has been given to where the process of curriculum development should take place and who should be involved.

Concern with curriculum design systems, the location of the curriculum development process and the participants who should be involved has come under increased scrutiny since the publication of the Rand and NSF studies referred to at the beginning of the paper. These studies have

indicated that the amount of *use* (or lack of it) of products in school settings should form a major area of interest for anyone involved in curriculum development. In particular, criticisms were levelled against externally designed products that did not take the user system into account. This point had certainly been raised earlier in the curriculum literature but these major studies have focused attention on the issue. The questions of how to design, where to design and who should be involved, have really been subsumed by a larger question: how to ensure that products will be used. It is not that the previous questions have become irrelevant. Rather, they now have to be asked within a broader conceptual framework that relates them to the eventual implementation or use of the product.

From Theory to Practice

In June 1981 an opportunity arose to test the thesis that a concern with implementation could be made the focus of the curriculum development process. The Western Australian Services and Development Committee of the Commonwealth Schools Commission funded an in-service education course for teachers entitled, "Participation and Planning: The Classroom Teacher and the Curriculum Process". A number of points need to be made about the course.

First, in funding the course the Committee was not interested in supporting current work being done in a specific curriculum area such as Social Studies, Science or Language Arts. Rather, there was an overall concern to provide experienced teachers with an in-service education programme that would assist them to become involved with curriculum matters in their own schools. The emphasis was to be on the processes of curriculum development rather than any specific content.

Second, processes cannot be experienced or practised without some content. A broad theme entitled "Energy Education" was chosen both because of its topicality and the general lack of attention that has been paid to it in Australia. The objectives of the course, therefore, were defined both in process and content form and were relayed to course participants in this way:

Objectives:

To provide participants with experiences in the design, implementation and evaluation of educational materials.

To equip participants with skills that will enable them to become effectively involved in the curriculum process, both during the course and in their schools.

To encourage participants to appreciate the significant role they can play in their own schools, concerning curriculum.

Content:

"Energy education" will be used as the focus for the group's activities during the first five days. Participants will be involved in:

1. Identifying reasons for the significance of the topic and developing policy statements.
2. Examining the topic and its relationship to existing curricula and making recommendations concerning the placing of energy education in the total curriculum.
3. Identifying teaching resources already in existence and suggesting other needed resources.
4. Planning teaching/learning activities in energy education.
5. Examining their own classroom timetables and planning for the "infusion" of energy education on their return to school.
6. Examining dissemination strategies to be used to inform other teachers in their school about the importance of energy education and encouraging other teachers to include it in their programme.

The first step, therefore, in trying to focus attention on implementation was to remove the emphasis from content and its mastery to general curriculum processes of design, implementation and evaluation. It was in this context that the remainder of the course was organized.

Course Participants and Organization

Fourteen teachers attended the course and background information concerning them was collected through the administration of a pilot instrument - Attitudes to In-service Education Inventory (AIEI). They represented a considerable age range (20-60 years) with a clear majority (65%) under 40 years. They came predominantly from State schools (69%) but Catholic schools were well represented (30%) with none from independent schools. Their length of service varied, with a surprising

23% having more than 21 years' experience. The modal length of service was three to five years. The majority of the participants were teachers who were not in administrative or promotional positions. Two main reasons were given for attending the course: Personal choice (61%) and at the request of the principal (53.8%). It should be noted that these categories were not mutually exclusive so it seems that although the principal may have been responsible in bringing the course to people's attention, the final choice was left to the participant.

A large majority of the participants (77%) indicated that they felt in-service education was essential for all teachers although a minority (15%) thought it important for some but not all teachers. They were agreed that in-service education should equally benefit the individual participant, the organizations from which participants come and students, and that it should be aimed at personal and professional development. The majority of them (77%) rated their previous experience with in-service education as positive although they had some reservations, whereas a number rated their experience as very positive (23%). There were mixed feelings concerning the preferred location for in-service education with 62% in favour of local schools, 31% an in-service education centre, 39% tertiary institutions and 23% indicating some other location. It is clear that participants could see a role for different location rather than a single preferred location. In the same way they viewed both advisory teachers (54%) and tertiary educators (54%) as people suitable for running in-service courses although a minority (23%) indicated that teachers themselves were suitable course instructors. This information was collected on the first day of the course. It proved useful as a means of providing the course organizers with some indication of needs and interests of participants.

It has been acknowledged in the literature that extracting staff from their local environment for in-service education is not always successful (Lawrence, 1974). Nevertheless, the method was the preferred one by local educational authorities. It was thought important, therefore, to try and cater for the perceived needs of teachers who generally see more merit in school-based in-service education. For this reason, the course was organized along the following lines:

Orientation	School Based Activity (1)	Curriculum Development	School Based Activity (2)	Evaluation	Follow-up at Regular Intervals by Course Co-ordinators
2 days	3 days	5 days	4 weeks	2 days	
1. Orientation:	Introduction to general curriculum processes and some specific content. The purpose is to prepare for the task of curriculum development.				
2. School-based Activity (1):	Collection of resources, preparation of activities, dissemination of ideas.				
3. Curriculum Development:	A concentrated period of time during which a specific educational programme will be prepared for participants.				
4. School-based Activity (2):	Implementation of the prepared educational programme and further dissemination of ideas.				
5. Evaluation:	Evaluation of programme implementation and dissemination attempts. Course evaluation.				
6. Follow-up:	Evaluation continued for participants and course.				

By linking the staff development programme to activities that teachers did in school, it was hoped to gain some of the advantage that the literature has suggested accrues from totally school-based programmes. In reality, the entire period can be looked at as one in which the in-service course operated although only nine days were funded for teacher-release.

The Course: Orientation Phase

This consisted of six sessions spread over two days. The first three of these sessions dealt with theoretical issues related to the curriculum process and the final two with energy education. An evaluation of the first day (consisting of three sessions) indicated that while teachers were happy with being able to clarify their views on curriculum, a number of them expressed some concern that as yet there had been no mention of content. This kind of tension is normal. For many teachers (and academics) curriculum is most often identified with content. At this stage of the course, teachers recognized that they had learnt something about curriculum without reference to content. Following a variety of activities, including lectures, group work and simulations, the group agreed to

accept the view that curriculum was a process concerned with design, implementation and evaluation of educational programmes. This approach to curriculum emphasized process rather than product and in particular, shifted the emphasis from design. It served as a functional definition for the purpose of the course.

The fourth session dealt with implementation as an aspect of the curriculum process. Through a simulation exercise, teachers learnt that curriculum designers often do not take implementers of their curriculum into consideration, that implementers of curriculum are naturally resistant to having change forced on them and that people in positions of authority can exert enormous influence on curriculum decision-making. In this way the shift from design to implementation was reinforced. It became clear to teachers that the quality of a product was not the main concern of potential users. Rather, involvement in the product's design, commitment to it and a sense of ownership concerning it were also important. In this way the significance of implementation as a curriculum process was established.

In the fifth session, on the second day, teachers were introduced for the first time to energy education. Keeping in mind that these were primary school teachers and not subject specialists, the following strategy was adopted:

1. Printed material had been gathered from energy agencies throughout Australia. It was displayed for inspection in one part of the room. The material ranged from posters and car stickers to reports from government departments on energy needs and energy conservation techniques.
2. A 16mm film from Canada entitled "This Nuclear Age" was shown. Its purpose was to highlight one form of energy. At the same time the film raised general questions related to energy education.
3. A film strip-audio entitled, "Sun-Shine Kids" was available. It emphasized solar energy as an alternative energy source.

This strategy can be linked to the "Pre-Notional" stage of curriculum development as described by a recent study (Kennedy, 1982). Basically, it is an information gathering stage. Teachers took time to become familiar with the topic. The session was very loosely structured with course co-ordinators being available when needed. The assumption behind such

an approach was that adult learners probably function better in a situation that allows them to develop at their own pace. An alternative approach would have been to lecture on energy education, but the size of the topic coupled with the relative ineffectiveness of lecture methods during in-service education courses indicated the futility of such an approach. This session, followed by a final session examining existing curriculum resources in energy education, served to provide an adequate framework for future programme development.

At the end of two days teachers had been introduced to energy education as well as ideas about the curriculum process. They then returned to their schools to assess their own classroom activities in relation to energy education, to assemble possible resources and to reflect on ideas about curriculum. This school-based activity allowed teachers to try to integrate ideas from the course into their own situation. In particular, it provided time for teachers to think about issues that had been raised and possible ways of dealing with them in the remainder of the course.

Development of Educational Programmes

On return from schools small groups of teachers worked together for five days to produce energy education programmes. Decker Walker's naturalistic model of curriculum development was used during this time. The model was chosen because it represented a design system that allowed designers to focus on implementation. Each group had to work out the values, ideas, theories and conceptual framework it wanted to place on energy education. Once the group reached consensus on these, data were collected that allowed for the translation of the framework into a coherent programme. Each group established what it thought a good programme should be like and then set about it. The process of deliberation played an important role in drawing ideas from people, moving towards resolution of conflicting ideas and establishing a group identity. At the end of the period, five distinctive energy education programmes had been designed to meet the needs of.

The curriculum development process not only resulted in the production of educational programmes. People working together as programme designers developed a commitment to their programmes, as well as a sense of ownership. As has been mentioned previously, these are important characteristics in ensuring successful programme implementation. Energy education programmes have now been implemented in

six primary schools in Western Australia. It is a small start but at least indicates the possibility of ensuring the implementation of new curriculum materials. The main principle used has been to give the task of curriculum design to the potential user of the curriculum. By training the user in this way the problems of implementation have been significantly reduced.

Evaluation

Formative evaluation data in the form of questionnaire responses indicated that all participants in the course were happy enough with it to be able to recommend it to their colleagues. Their reasons varied:

1. (a) This course provided an opportunity to gain some insights into curriculum planning.

(b) The course gave something to the teacher to take back to the school and teach and it had been devised according to the teacher's own ideas, style of teaching, etc.
2. It was a valuable experience in planning curriculum. It especially showed what problems have to be overcome in implementing new curricula.
3. It gave you **time** to think about curriculum – the whys, whats, hows, etc.
4. Quite practical skills were involved.
5. Skills acquired can benefit the individual as well as the school.

Formal evaluation sessions indicated that teachers faced fairly typical implementation problems: time constraints, lack of resources and the usual school interruptions. Yet programmes were implemented with varying degrees of modification and adaptation.

A crucial evaluation question to be addressed is the extent to which the skills learnt can be generalized and used to develop other curricula in school settings. Preliminary results have indicated that this particular course has been successful for one particular programme. An important test will come when participants are followed-up to assess the maintenance of such skills and the use to which they have been put.

Conclusions

The importance of this course lies in the fact that it attempted to assist teachers to reconceptualize the curriculum development process. It has done this by putting teachers in the role of curriculum designers and exposing them to a model of curriculum development that allowed them to consider problems of implementation as well as the more traditional elements of curriculum design. Teachers constantly had to think how they were going to use materials (this is an implementation problem) as well as how they were going to put the whole programme together (this is a design problem).

There is some evidence that similar approaches are being used elsewhere, with particular emphasis on Walker's model of curriculum development (Sabar and Shafriri, 1982). There are, nevertheless, some differences between those approaches and the one described here. For example, should teachers be exposed to extensive or intensive curriculum development experiences? The present study has indicated the success of intensive experiences while overseas studies point to the success of extensive experience. How process-oriented can the curriculum specialist be? Is there a role for content specialists? Again, different answers are given by different studies. Finally, should we consider curriculum development a means to an end (for example, a way to get teachers to influence other teachers) or as an end in itself (for example, completed by the user for the user). These differences highlight important areas for future research.

We have come a long way in the curriculum field if we are able to assert confidently that we know at least some of the factors that will assist teachers to design and use new educational programmes. We have passed the phase of high technology, content-dominated curriculum development projects and have almost dispensed with the notion that teachers can do it all themselves in their own time without specific skills training. The approach suggested in this paper and trialled independently elsewhere indicates a promising alternative.

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APPENDIX 1

ATTITUDE INVENTORY FOR IN-SERVICE EDUCATION (1)

The purpose of this inventory was to gather information that would be useful to course planners.

This inventory was prepared for an in-service education course sponsored by the Western Australian Services and Development Committee and held in the Faculty of Education, Western Australian Institute of Technology, June 8, 19, 15-19; July 27-28, 1981.

PART A : Background Information

NAME: (Optional)

AGE: 20-30 ____ 31-40 ____ 41-50 ____ 51-60 ____

SCHOOL: Primary ____ Government ____
 Secondary ____ Catholic ____
 Independent ____

LENGTH OF TEACHING SERVICE (Years) 0-2 ____ 3-5 ____ 6-10 ____
 11-15 ____ 16-20 ____ 21-25 ____

NUMBER OF IN-SERVICE COURSES ATTENDED This year ____
 Last year ____

PRESENT POSITION Teacher ____
 Deputy Principal ____
 Principal ____
 Advisory Services ____
 Superintendent ____
 Other (please indicate) _____

PART B : Information Concerning This Course

REASON FOR ATTENDING COURSE Personal choice ____
 At request of principal ____
 At request of superintendent ____
 Other (please indicate) _____

SOURCE OF INFORMATION FOR THIS COURSE Long course calendar ____
 Principal ____
 Colleague ____
 Media ____
 Other (please indicate) _____

IN DOING THIS COURSE, DID YOU EXPECT MAINLY TO Gain new knowledge ____
 Learn new skills ____
 Develop new attitudes ____
 Other (please indicate) _____

PART C : General Information About In-Service Education

DO YOU SEE IN-SERVICE EDUCATION FOR TEACHERS AS
Essential for all _____
Essential for some but not all _____
Important for all but not essential _____
Important for some but not all _____
Not important _____

DO YOU THINK IN-SERVICE EDUCATION SHOULD MAINLY BENEFIT
Individual participants _____
Organizations from which participants come _____
Students _____
Other (please indicate) _____

DO YOU THINK IN-SERVICE EDUCATION SHOULD BE AIMED MAINLY AT
Personal growth of participants _____
Professional growth of participants _____
Helping schools cope with change _____
Other (please indicate) _____

WOULD YOU DESCRIBE YOUR PREVIOUS EXPERIENCE WITH IN-SERVICE EDUCATION COURSE AS
1. Very positive _____
2. Positive but with reservations _____
3. Negative _____

PART D : Preferences Concerning In-Service Education

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO TAKE PLACE IN
Local schools _____
In-service Education Centres _____
Tertiary Institutions _____
Other (please indicate) _____

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO BE HELD
During school time _____
At the week-end _____
In the afternoon after school _____

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO BE RUN BY
Local teachers _____
Advisory teachers _____
Tertiary educators _____
Other (please indicate) _____

ATTITUDE INVENTORY FOR IN-SERVICE EDUCATION (2)

The purpose of this inventory was to gather information that would be useful to course planners.

This inventory was prepared for an in-service education course sponsored by the Western Australian Services and Development Committee and held in the Faculty of Education, Western Australian Institute of Technology, June 8, 19, 15-19; July 27-28, 1981.

PART A : Background Information

NAME: (Optional)

AGE: 20-30 ____ 31-40 ____ 41-50 ____ 51-60 ____

SCHOOL: Primary ____ Government ____
Secondary ____ Catholic ____
Independent ____

LENGTH OF TEACHING SERVICE (Years) 0-2 ____ 3-5 ____ 6-10 ____
11-15 ____ 16-20 ____ 21-25 ____

NUMBER OF IN-SERVICE COURSES ATTENDED This year ____
Last year ____

PRESENT POSITION Teacher ____
Deputy Principal ____
Principal ____
Advisory Services ____
Superintendent ____
Other (please indicate) _____

PART B : Information Concerning This Course

WOULD YOU RECOMMEND A SIMILAR COURSE TO COLLEAGUES? YES/NO

WHY/WHY NOT?

IN DOING THIS COURSE, DID YOU EXPECT MAINLY TO Gain new knowledge ____
Learn new skills ____
Develop new attitudes ____
Other (please indicate) _____

PART C : General Information About In-Service Education

DO YOU SEE IN-SERVICE EDUCATION FOR TEACHERS AS Essential for all ____
Essential for some but not all ____
Important for all but not essential ____
Important for some but not all ____
Not important ____

DO YOU THINK IN-SERVICE EDUCATION SHOULD MAINLY BENEFIT Individual participant ____
Organizations from which participants come ____
Students ____
Other (please indicate) _____

DO YOU THINK IN-SERVICE EDUCATION SHOULD BE AIMED MAINLY AT Personal growth of participants ____
Professional growth of participants ____
Helping schools cope with change ____
Other (please indicate) _____

WOULD YOU DESCRIBE YOUR PREVIOUS EXPERIENCE WITH IN-SERVICE EDUCATION COURSE AS
1. Very positive ____
2. Positive but with reservations ____
3. Negative ____

PART D : Preferences Concerning In-Service Education

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO TAKE PLACE IN Local schools ____
In-service Education Centres ____
Tertiary Institutions ____
Other (please indicate) _____

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO BE HELD During school time ____
At the week-end ____
In the afternoon after school ____

WOULD YOU PREFER IN-SERVICE EDUCATION COURSES TO BE RUN BY Local teachers ____
Advisory teachers ____
Tertiary educators ____
Other (please indicate) _____