Teachers' Role in Curriculum Development: An Alternative Approach*

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Teacher participation in the curriculum planning process is considered essential, whether it be in the definition of problems or the presentation of concrete solutions in the form of programs of studies. Here, we propose to approach curriculum development as it relates to the double role assigned to teachers: that of in-the-field researcher, and that of independent worker. The approach we recommend is illustrated by a case study, and has three goals: (a) program development initiated at the teacher level; (b) active teacher participation in decision making and research and development work; and (c) creation of a program development mechanism designed to make planning more flexible.

La participation des enseignants au processus de planification est considérée comme essentielle, que ce soit pour la définition des problèmes ou pour la présentation de solutions concrètes sous forme de programmes d'étude. Nous proposons ici d'aborder l'élaboration des programmes d'étude en fonction du double rôle assigné aux enseignants: celui d'agent de recherche externe et celui d'exécuter autonome. Nous illustrons par une étude de cas l'approche que nous préconisons et qui poursuit un triple but: (a) utiliser les enseignants comme point de départ dans l'élaboration des programmes d'étude; (b) faire participer activement les enseignants aux décisions et aux travaux de recherche et développement; et (c) créer un cadre d'élaboration des programmes d'étude propre à rendre la planification plus souple.

This paper discusses an approach to curriculum development that relates to the double role of teachers as developers and as autonomous implementers. The proposed approach is demonstrated in a case study curriculum project.[1]

Teachers' role in the curriculum enterprise have been widely discussed. Based on his review of the literature, Connelly (1972) concludes that teachers are highly autonomous agents with respect to externally developed curriculum materials. There is no evidence to support the view that this autonomy may be circumvented by increased control of teachers or by the attempts to construct teacher-proof curricula. Moreover, McLaughlin and Marsh (1978), reporting on the Rand Change Agent Study, describe the process by which an innovation, such as a novel curriculum, comes to be used in a local setting as adaptive and heuristic. The Rand Study confirms a view that teachers are competent professionals

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whose active involvement as decision makers about project activities and objectives is crucial for successful project implementation.

Still, teachers are often considered to be the limiting factor in the curriculum process as far as their flexibility in the adoption of innovations and their readiness to learn new materials and new ways of teaching are concerned. Only rarely are teachers' own interests and concerns allowed to influence or direct the choices made by curriculum developers. Yet, without active teacher involvement, curriculum development may turn out to be futile and ineffective. Leithwood et al. (1976) suggests that "educational research and development is effective when the nature of the problem and of the solution are deliberated by practitioner and researcher together, on a basis of equal status, respect and substantive contribution" (p. 121). Teachers are thus seen as vital partners in the curriculum process, which starts with the definition of a curricular problem and terminates with the production of a curricular solution.

Two ways of involving teachers in the curriculum process are: (a) involving them in the "external" curriculum development process which is carried out by central development agencies outside the classroom; and (b) involving them in the continuing process of adaptation and development of externally developed materials, thus allowing them to function as "user-developers" (Connelly, 1972).

In the developmental process classroom teachers accept the responsibility for the construction of materials. The product of this process is structured to ensure individual and flexible implementation by other teachers using the materials in a variety of educational situations.

The conceptual framework guiding the curriculum project described in this paper will be followed by a flow chart of the various stages of the development process. Each stage will be elaborated and accompanied by critical comments. Implications of the case study of curriculum development by teachers, both for curriculum agencies and for teacher education, will be discussed briefly and some lines for research will be suggested.

GUIDING PRINCIPLES

The guiding principles for the project stem from Schwab's (1973) notion of co-ordinating the four commonplaces in curriculum development. Schwab voices a need for ways that will allow all four commonplaces — subject matter, learner, teacher, and milieu — to be co-ordinated in curriculum deliberations. This co-ordination is considered to be necessary for valid and defensible educational thought. Yet the nature of the subject matter being taught and the nature of the anticipated learner are the main sources for curriculum deliberations that are taken into account by developers. Martin (1970) comments on the overemphasis on disciplines as sources for curricular choices leading to neglect of considerations relating to learners or milieu. Elliot and Macdonald (1975) claim that cur-

riculum projects that take account of learners' needs still lack consideration of teachers.

In most curriculum projects teachers are perceived as the instrument for achieving developers' intentions. Their role may be compared to the role of musicians who perform the creations of composers. A musician may give his own interpretation of a composition, but is not expected to rewrite it. In the curricular approach that guided the development project described here, teachers were perceived as originators of the curriculum, composers of their own "music." Their knowledge, attitudes, concerns, and needs were the starting point of the curricular process. Teachers' expertise about classroom reality was deemed as being crucial for discerning practical problems that call for curricular remedies. Westbury (1972) characterizes Schwab's (1969) approach to the practical as drawing upon "an image of a creative and practical reformer discerning problems through an awareness of apparent gaps between what should be and what is, then seeking solutions from his understanding of what might be done, and finally moving to bring about change or improvement" (p. 30). Because of their involvement in classroom situations, the role of teachers is crucial for discovering these apparent gaps and bringing about change or improvement. Teachers have intimate knowledge of learners, classrooms, and school milieu. This knowledge allows teachers to point out weaknesses, shortcomings, and conditions which should and can be changed. The perception of teachers as sensitive to and knowledgeable about practical problem situations demands their being assigned a primary role in the curriculum process that starts with the locating of curricular problems.

On the other hand, teachers are the immediate agents of change who by their instructional activities can implement appropriate curricular solutions. The perception of teachers as independent implementers demands that their own needs relating to awareness of prerequisites for implementation, anticipation of difficulties, and consideration of interpersonal relationships be taken into account. The only way of achieving this is by assigning teachers a central role in curriculum making, allowing them to voice their concerns and draw on their immediate expertise. Teachers are, therefore, viewed as starting points in curriculum deliberations. The curricular process advocated here allows teachers to play a more significant role in curriculum development without sacrificing the contribution of the other commonplaces. Collaboration with representatives of other bodies of knowledge is required for the articulation of the character of the problem discerned by teachers and for the seeking of alternative solutions. A developing process that makes teachers the starting point of deliberation does not prevent taking equal account of the other commonplaces.

According to Schwab (1973), there are five bodies of experience which have to be represented in the group undertaking the task of curriculum

revision: knowledge of the discipline to be taught, knowledge of learner characteristics, knowledge of the milieu of school reality as well as the wider context of the social milieu, family, and community, knowledge of the teachers who are going to use the curricular materials, and knowledge of the curriculum-making process itself. The actual size of the planning group may be smaller or larger than five, to the extent that two or more of the required bodies of experience may be found in one person or to the extent that more than one body of knowledge concerning any of the commonplaces may be required. In the curriculum development process described, teachers are considered as representing knowledge of learner, teacher, and school milieu. In the development process, teachers are assisted by representatives of all bodies of knowledge, especially representatives of subject matter and the curriculum process. Fox (1972) comments upon the superordinating role usually played by subject-matter specialists: "Educators, even those who are confident and creative in the classroom, are often awed and thus paralyzed by the subject matter specialist" (p. 71). In order to overcome this paralyzing effect experts in the curriculum development process described here were not members of the development team but fulfilled their role as external advisors. Thus the tendency of teachers to subordinate their own ideas to those of specialists was largely avoided.

The curriculum expert acted as chairman of the development team, organizing and administering its work. As chairman he fulfilled a number of critical functions:

1. Taking care of the administrative needs of the team, e.g., funding, ties with the educational system, and connections with specialists.
2. Monitoring the proceedings, preventing one-sided deliberations, and seeing to it that the various bodies of knowledge will be allowed to contribute to the process. Responsibility for the termination of the various stages of development so that the process can go on to its culmination.
3. Providing the team with his own expertise of curriculum construction, e.g., writing of materials, evaluation, and implementation.

So far we have treated two guiding principles of the curriculum development process described here: teachers served as starting point in curricular deliberations, and experts acted in an advisory capacity and not as members of the development team. We turn now to the third principle guiding the project: the modular nature of the curriculum materials, the product of the development process.

The product of the development process possesses unique characteristics. The end product is not a package of curricular materials but rather a number of different packages, all dealing with the same topic, but differing in content, style, and instructional strategies. Members of the development team may have different backgrounds, different orientations to subject matter and instruction, different teaching experiences, and different

educational priorities. These divergent viewpoints may find their expression in the variety of suggestions made by teachers in the course of curriculum development. In the absence of pressure for early closure and consensus, the curricular product may be in the form of a number of modular units, different embodiments of the same subject-matter topic. This is a different approach than the one adopted by Gray (1974) in a project of teacher involvement in curriculum development. The goal of Gray's project was the improvement of teaching abilities and the enhancement of the professional autonomy of teachers. Tyler's model of curriculum development was adopted. Teachers were expected to reach consensus in relation to objectives and product format. The approach presented in this paper differs in that no unity of purpose and format was demanded from teachers. The process aims at providing maximum flexibility and openness for teachers involved in decision making. The pluralistic nature of the curricular product, which consists of alternative versions presented by teacher-developers to teacher-users, releases implementers from dependence on developers' intentions. Thus practitioners using the materials in the educational system may function as user-developers, as advocated by Connelly (1972), and actively adapt external materials to specific situations.

THE DEVELOPMENT PROCESS

The unit chosen for the case study project was part of a biology curriculum, "Man in Nature." The unit itself dealt with the "Uniqueness of Man," focusing on the nervous system. Each aspect of the curriculum development process is vital for its successful culmination. The stages of development carried out by teachers are presented in the chronological flow chart in Figure 1. Significant features characterizing each aspect of curriculum development by teachers will be discussed and commented on separately.

Administrative Arrangements

This is an important preliminary step in the development process. Ensuring the support of the educational system (e.g., the ministry of education, supervisors, principals), is critical for the success of the project. The "Uniqueness of Man" project was carried out with the support of the ministry of education. Teacher-developers received special payment for their work on the project. This was perceived by the teachers as official recognition of the importance of their involvement in curriculum development. Biology supervisors were invited to participate in the deliberations of the team. Principals of the schools supported the participation of their teachers in the project. The overall message of these administrative arrangements was that curriculum development by teachers was considered to be an accepted and viable strategy for curriculum development, even in a centralized educational system.

	Administrative arrangements
	↓
	Selection of teachers Organization of Development Team
	↓
Stage 1 Decision Making	Initial group deliberations about content and instructional strategies
	↓
Stage 2 Decision Making	Preliminary construction of curricular materials by subteams
	↓
	First trial runs by teacher-developers in their own classes
	↓
Stage 3 Decision Making	Group deliberation on preliminary drafts and first trial use of materials
	↓
	Rewriting and editing Preparation of trial edition by subteams
	↓
	In-service teacher training for formal trial runs
	↓
	Formal trial runs by teachers participating in the in-service training
	↓
	Evaluation of trial runs
	↓
Stage 4 Decision Making	Rewriting and preparation of commercial edition

FIGURE 1

Flow-Chart of Curriculum Development Process by Teachers

Selection of Teachers

Teachers were selected on the basis of their previous success in teaching and their subject matter knowledge. All were experienced and successful teachers who came from a range of different schools, urban and rural, as well as high-level and low-level socioeconomic populations. Six teachers were members of the development team.

Stage 1 Decision Making

Teachers were treated as starting points of curricular deliberations in that they were asked to offer first suggestions about the nature of the curriculum problems as well as about subject-matter content and instructional strategies which should be included in the curriculum. In the "Uniqueness of Man" project teachers made widely different suggestions and did not agree either on content or on instructional strategies. The diversity of views may be explained in a number of ways: Teachers had different areas of interest in the discipline; some preferred ethology while others focused on molecular biology. Teachers had different educational experience; some came from well-established schools and some taught mainly disadvantaged students. Teachers had different orientations toward teaching; some preferred learning by discovery methods whereas others felt more comfortable in expository teaching. Teachers had different personal backgrounds and levels of education.

The first meetings were devoted to preliminary deliberations about suggestions made by teachers. In spite of differences of opinion, the reigning tendency was to arrive at a consensus acceptable to all. This tendency to arrive at a consensus was contrary to the notion of constructing a curriculum product consisting of alternative versions for teacher choice. A number of possible reasons may account for the perceived tendency to arrive at unity of purpose and approach: Teacher-developers were not familiar with a situation in which teachers were expected to choose among different curricular materials dealing with the same topic. They thought this to be unrealistic. The teacher-developers found it difficult to give up the notion that complete coverage of the subject matter is a basic requirement for mastery of any scientific topic. Therefore they found it hard to accept the strategy of developing alternative curricular versions that would portray partial views of the subject matter being taught. At this stage, the team members consulted with subject-matter experts as well as with psychologists and educators. On the basis of these consultations, the team decided that it was indeed possible to construct alternative versions without distorting the subject matter. Four different versions were finally decided on:

1. An anatomical-morphological version emphasizing the anatomical-mophological differences between man and other animals. The uniqueness of man is perceived as relating to his specific behavior, especially language skills.

2. A physiological version emphasizing physiological characteristics of the nervous system, comparing man to other animals.

3. A psychological version emphasizing the unique learning and thinking abilities of man in comparison with other animals.

4. A programmed individual learning version emphasizing basic terms and concepts relating to the nervous system. Students using this version would require a common vocabulary in the subject-matter area being taught.

Each version represents a different choice of content and instructional strategies. It was agreed that all versions should stress the distinctive human features of man.

Stage 2 Decision Making

At this stage, teachers created curriculum materials on the basis of the decisions adopted at the previous stage. The creation of curriculum materials started with learner activities being envisaged by teachers. Ends and goals being sought were considered at a later stage. The advantages of starting the curriculum construction process by asking teachers to list possible learning activities and to relate these to potential learning outcomes at a later stage were conceived as twofold. First, teachers have varied experience in teaching strategies and were thus given the opportunity to draw upon their specific practical expertise and professional strength. Secondly, the question "What should I do in my own classroom?" is usually foremost in teachers' minds. Thus teachers were given the opportunity to start their planning on the basis of their own professional needs. The next step was the selection of appropriate learning activities to be included in the material out of the list prepared by the teachers. Criteria for this selection were: potential for classroom use, appropriateness for student target population, and the personal priorities and preferences of the teachers. The first writing of materials was carried out by subteams. Each subteam was responsible for constructing one version. The division into subteams was according to areas of interest and personal preferences of teachers. Work in subteams was perceived as essential for success. Individual work provides fewer opportunities for exchange of ideas and lacks the kind of group spirit which seems to be rewarding to teachers involved in the curriculum development process. In the "Uniqueness of Man" project the subteams consisted of pairs of teachers. For technical reasons there was a time that one teacher worked by herself without a teammate. This proved to be unproductive as far as the creative process of curriculum construction was concerned. It seems that a subteam of two developers is the "critical mass" for curriculum development. During the stage of preliminary construction of material, teachers worked in close collaboration with experts and with the chairman of the development group.

Trying out the tentative parts of the curriculum is an important stage in curriculum construction. Schwab (1973) speaks about formative evaluation that has to be carried out concurrently with curricular deliberations. Formative evaluation was carried out by teacher-developers in two forms by using questionnaires for assessing student achievement and attitudes toward the materials as well as subject-matter experts' opinion about the materials, and recording of teachers' impressions of students' reactions and responses. The data collected in the first trial use of the curricular materials were the basis for further group deliberations in the third stage of decision making.

Stage 3 Decision Making

All the curricular material as well as the findings of the first trials were presented to the whole group and deliberated on, each subteam presenting its products to the group. At this stage, decisions were made about content, instructional strategies, and learning activities that were to be included in the published trial editions of the materials. Teachers deliberated about the possible learning outcomes of the various learning activities, considered the alternatives, and chose those they considered to be most appropriate. The next step was the preparation of trial editions.

The final rewriting and editing was done by subteams assisted by the chairman and specialists, e.g., editors and illustrators. Each subteam was fully responsible for the complete task of preparation of the materials. Teachers had to learn to work in the framework of financial and other practical constraints such as time limits. When the trial editions were published, teacher-developers entered the next phase, teacher education for curriculum implementation.

The teacher-developers were responsible for the training of teachers who were involved in the formal trial runs. The in-service training was planned by teacher-developers in collaboration with subject-matter experts and supervisors. The in-service teacher training program was guided by an image of teachers as autonomous implementers who would function as "user-developers." The characteristics of the training program were therefore as follows:

1. The curriculum product presented to teachers was in modular format, composed of four different versions as opposed to one obligatory curriculum package.
2. Protocols of developers' deliberations were included in the in-service program, thus providing teachers with the rationale of the materials, making them aware of the deliberate choices made by developers and the reasons for these choices.
3. The teachers taking part in the in-service program were involved in deliberations related to possible uses of the materials. They were asked to offer their own suggestions about content, learner activities, sequence of topics to be studied, etc.

4. No teacher's guide or manual was presented to teachers. The initiative for uses of the materials was left in the hands of teachers.

Special strategies were devised to foster teacher autonomy in the implementation of materials. Before being handed the published materials teachers were divided into groups. Each group was asked to propose a variety of ways for teaching about the "Uniqueness of Man." All suggestions were then listed and discussed. Some of the proposals were similar to the alternatives chosen by the teacher-developers and some were different. Thus the teachers in the training program became sensitive to the variety of approaches that might be adopted in construction of curricular materials related to one specific topic. The teachers were highly motivated to explore a number of questions such as: What were the characteristics of the various versions? How did the developers elaborate some of the ideas suggested in the training session? and What was the nature of the deliberations that led developers to adopt some suggestions and reject others? Through consideration and discussion of these points, teachers became involved in the process of curriculum implementation.

Stage 4 Decision Making

On the basis of the evaluation of formal trial runs the final edition was produced by the same teachers who were involved in the curriculum development process from its first stage. This was the fourth stage of decision making. Changes related to the specific content treated as well as to learning activities proposed in the materials.

CONCLUSION

The process described in this paper aimed at allocating teachers a more active role in curriculum development. This active role was achieved through the involvement of teachers in development teams preparing curriculum materials for the school system. The special characteristics of the process permitted consideration of teachers' needs and enhanced flexibility in the implementation of the materials. The case presented in this paper is an example of teacher acting as external developer. Teachers could become curriculum developers in other educational contexts and situations. Thus teachers may function as grass-root developers in the context of local schools, preparing small curriculum units for use in their classrooms. Teachers may also construct alternative versions to existing curriculum materials extending their use through change and adaptation to specific situations. The competencies acquired by teachers functioning as developers could contribute to their abilities to implement externally developed curricula, and because of their growing awareness to curricular deliberations and to choices made by developers, this experience could enhance their ability to function as autonomous decision makers in their professional capacity.

Several possible directions for further research in the area of curriculum development by teachers can be pointed out. A series of case study investigations of curriculum development by teachers in a variety of educational circumstances would provide insights into the nature of the process and its possible uses. Evaluation strategies have to be developed that would allow us to evaluate both the process and the product of curriculum development by teachers. Those evaluation strategies should reflect the growth in teacher autonomy as well as the adaptability of the curriculum materials to a variety of educational situations. An important step in fostering teacher involvement in curriculum development is the development of strategies for teacher training in the necessary skills and competencies.

NOTES

[1] The case study project was carried out at the School of Education of Haifa University, under the direction of the author. This project was part of the "Man in Nature" curriculum development project, carried out by the Division of Curriculum Development in Haifa University and the Ministry of Education, Jerusalem, in the years 1972-1976. The unit chosen for development by classroom teachers deals with the "Uniqueness of Man" as related to his mind and nervous system. The development team consisted of six junior high school teachers in Haifa.

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