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Patterns of Teachers' Involvement in the Curriculum Endeavor

"No action is without side effects"
Commoners's law of ecology
Paul Dickson, The Official Rules, *1978, p. 30*

Curriculum topics and materials are prominent elements of the culture of schools. The choice of content for teaching, the nature of instructional materials, and the preferred modes of using these determine, to a large extent, the environment in which teachers, students, and materials interact in the teaching-learning process. Curriculum materials are the tools of the trade of teaching. The adoption of appropriate materials and their skillful adaptation to specific classroom situations will either facilitate or hinder the teaching efforts of even the most dedicated of teachers.

The dominating form of curricula at all school levels is textbooks (Goodlad 1984). Reviewing teachers' school practices, Fullan claims that "teachers frequently take and teach the textbook" (Fullan 1982, p. 118). It seems that textbooks play a central role in the planning of lessons by teachers, who decide in what order to treat the various chapters of the textbook and how much time to devote to each one. The choice and use of textbooks, or other kinds of curriculum materials, seem to constitute the major curricular function of teachers. Teachers' function as implementors of curricular materials, which are developed by agents outside their classrooms, raises the issue of adherence to the given text versus teacher autonomy to introduce changes and modifications. This issue is the central theme examined in this book.

Use of external curriculum materials in the form of textbooks is not the only mode of teacher involvement in the curriculum endeavor. Teachers may also be engaged in centralized, or in school-based, curriculum development. We shall examine possible links

between these two curricular functions of teachers, as curriculum implementors and as curriculum creators.

Two case studies form the basis for describing and analyzing the major ways in which teachers may become involved in curriculum efforts. One case study deals with teachers' use of externally developed curriculum materials. The second case study focuses on teachers' involvement in a curriculum development project in which they created their own curriculum materials.[1]

TEACHERS' USE OF EXTERNALLY DEVELOPED CURRICULUM MATERIALS

We start with an analysis of a case of curriculum implementation. It deals with teachers' use of externally developed curriculum materials, their interpretation of the materials, and the manner in which they adapted them for their classrooms (Ben-Peretz and Silberstein 1982).

The case study was an investigation of the metamorphosis which occurs in the process of transforming scholarly knowledge into curricular materials in classroom use. At the first level of transformation, curriculum developers decided on the following issues: What ideas, principles, and concepts were suitable for inclusion in the curriculum material? What information should be covered and what omitted? What aspects should be emphasized? What meaningful aspects for students and society could be dealt with by means of the chosen content? What opportunities for cognitive and affective development of students could be incorporated into the curricular material?

At the second level of transformation, teachers who used the curriculum materials, the guidelines, textbooks, and audiovisual aids devised learning experiences which were based on their interpretation of the materials. In this process teachers may modify the materials or may adhere to the text, may try to cover the prescribed curriculum or may decide to use only parts of it. The case presented herewith may serve as a concrete example of teachers' decisions in their use of curriculum materials.

The curriculum unit in this case was a topic in a biology course which had already been taught for several years in junior high schools. This unit is part of a student textbook in botany intended for the eighth grade: The Plant and its Environment (1974). The textbook itself is one component of a junior high school curriculum package in biology which includes student textbooks, teacher

guides and instructional aids such as films. It is related to the following issue: Is it possible to reduce the amount of water used in irrigation of citrus trees? and was designated for two lesson periods. The unit described several experiments related to the water consumption of plants, and raised issues of basic research and its potential contribution to socioeconomic problems. The unit had been prepared by a group of curriculum experts, teachers, and subject matter specialists acting as a team at a national Centre for Curriculum Development.

For the purpose of analyzing the implementation process, twenty teachers were randomly chosen from a list of teachers who had taught the unit. They were approached and asked to respond in writing to several questions relating to the following issues:

- The actual time they had devoted to teaching the unit
- The extent of their adherence to the recommendations in the teachers' guide
- The elements of content chosen and emphasized by the teachers
- A description of instructional strategies used in teaching the unit
- An indication of the context in which the unit had been taught, its place in the sequence of teaching, and its linkage to other topics

Teachers were asked to provide reasons and considerations leading to their actions in using this unit. The teachers were also asked to provide a short description of their student population and some background data about the school. These background data were necessary to an understanding of the context of teaching and the teachers' decisions in relation to their concrete classroom situations. The reports prepared by the teachers are interpreted as expressing their perception of the teaching-learning situations as planned and created by them. Teachers' perceptions of the mode of curriculum implementation they adopted are considered in relation to their "autonomy space" as decision makers. The analysis of teachers' responses provided some glimpses into the kinds of transformations which take place in the process of implementing external curricular materials.

Findings from this Case of Curriculum Implementation

According to Fullan (1982), "the time perspective is one of the most neglected aspects of the implementation process" (p. 68). Yet

teachers make daily decisions about time allocations and timing of instruction. In our case the teachers' guide recommended, for instance, that two periods be devoted to teaching the unit. Ten of the responding teachers stated that they did indeed allocate between one and two periods to this unit. However, the other teachers needed three, four, or more periods for teaching the same unit. Since the unit was one of the first in the set of curriculum materials, this may be why some teachers devoted extra time to it. At the beginning of the course teachers may not feel under any pressure of time. They may also be concerned with covering all the materials, which will lead to an extension of the recommended instructional time.

Twelve of the twenty teachers replied that they adhered to the teachers' handbook in their teaching. How did this faithfulness express itself in the ways in which teachers used the materials? What aspects of content did they emphasize? What educational themes, topics, and principles of knowledge did they try to transmit to their students? We may view these themes, topics, and principles as the educational messages embodied in the text. Teachers' choice of "educational messages" determines to a large extent the scope of possible learning outcomes and achievements. Some of these "educational messages" are stated explicitly in the curriculum text, for instance, in a passage related to the importance of learning about scientific research methods. Yet implicit messages, the hidden curriculum, accompany the teaching process.

In this specific case the teachers' guide lists four "educational messages" to be emphasized in teaching the unit. An analysis of the information received from teachers about their choice of themes and principles indicated the following selection patterns (shown as percentages of total references to all themes emphasized by the teachers):

1. Gaining insights into issues involved in conflict situations between the needs of individuals (e.g. free water consumption) and the public good (water conservation for agricultural purposes)—29 percent
2. Understanding the research design described in the unit and its various components—23 percent
3. Understanding the relationship between the interpretation of data collected in an experiment and the drawing of conclusions—23 percent

4. Perceiving possible links between research and societal needs—18 percent

In addition to these four themes, which were indicated in the teachers' guide, another 7 percent of the "educational messages" reported by the teachers concerned issues not explicitly listed in the guide, such as "learning about agriculture."

It is interesting to note that, in contrast to the degree of freedom which they permitted themselves in allocating time to the teaching of this unit, teachers generally adhered to the teachers' guide with regard to the educational themes, the "messages," which they handled in the course of their instruction. Only 7 percent of the issues and principles emphasized by the teachers went beyond the suggestions in their teachers' guide. It should be added that, although the teachers did not, in fact, reveal a significant variety of possible different themes in the curriculum materials, they did express their professional autonomy in deciding on the relative importance which they assigned to the various themes. These decisions are reflected, for instance, in the preference for dealing with issues of conflict situations between individual and public needs. In stressing this aspect of the content offered in the unit, teachers may convey to their students implicit messages about life situations in general.

It is generally accepted that teachers act independently behind their classroom doors in choosing instructional strategies for their teaching. What instructional strategies were adopted for teaching this unit? How far did these depart from the strategies suggested in the teachers' guide? The curriculum unit which served as the focus of the study included specific suggestions for instruction. The teachers' guide recommended four instructional strategies. Teacher responses indicated that they used many of these strategies but supplemented them with additional teaching procedures. The strategies recommended in the guide are shown below, together with the frequency of the teachers' statements which referred to these strategies:

1. Classroom discussion	24 percent
2. Reading in classroom based on preparatory reading at home	24 percent
3. Individual pupils' use of worksheets	12 percent
4. Group work	12 percent

Other, additional, teaching strategies reported by the teachers included the following: simulation debates between pupils representing different positions, introductory presentation of the topic by the teacher, use of transparencies or other audiovisual methods, presentation of related scientific articles, and oral reports by pupils.

Although it is clear that teachers varied their methods and added their own ideas (eight new ones against the four recommended in the guide), it turns out that relatively little proportional weight was given to the new instructional strategies: 72 percent of the reported references relate to the recommended instructional strategies, and only 28 percent represent new strategies. One may conclude that in this case, although teachers did devise ways of teaching which departed from the developers' suggestions, these were not major elements in their actual teaching.

Sequencing topics and providing links between topics constitute another important element in the planning of instruction. The development team had decided to design the unit as an introduction to the entire course, believing that the specific content would contribute to students' motivation to study botany. However, because the unit is not dependent upon previous knowledge and is not a necessary prerequisite for the following units, its place in the instructional sequence could have been changed by teachers using the materials. Yet all teachers in the study taught the unit as the opening section of the new curriculum topic—the relationship between plants and water. They seemed to have accepted the decisions of curriculum developers regarding the appropriate sequencing of units in the materials. This situation calls to mind Jackson's (1986) statement: "Many teachers never trouble themselves at all with decisions about how the material they are teaching should be presented to their students. Instead, they rely upon commercially prepared instructional materials such as textbooks to make those decisions for them" (Jackson 1986, p. 20).

What reasons were given by the responding teachers for their implementation decisions? Classification of the reasons according to various key words yielded the following breakdown:

1. Roughly half of the reasons cited stemmed from considerations of the attitudes and needs of the pupils: that is, they originated in the teachers' image of the pupils. A third of the teachers described the student popula-

tion as being "disadvantaged" and tended to view this as an important factor influencing their decisions.
2. About a quarter of the reasons cited by teachers stemmed from a consideration of their own attitudes and needs as teachers, such as a personal preference for a certain theme or instructional strategy.
3. Relatively few reasons cited stemmed from a consideration of the instructional objectives as conceived by the teachers. Key phrases here were "It relates to the instructional objectives," "In accordance with a definition of the objectives," or "It is important from a social standpoint." The minor role that objectives play in teachers' decisions about curriculum use conforms to other research findings. (Zahorik 1975)

Teachers' Involvement in Curriculum Implementation

What can we learn from this case about the nature of the involvement of teachers in curriculum implementation? It is one of many cases, and therefore no generalizations are possible. Still, case studies may provide insights into, and raise questions about, cardinal issues of the phenomenon under consideration (Stenhouse 1979).

One of these issues, in the context of the implementation of curriculum materials, is the issue of "fidelity" versus "adaptation." Fullan and Pomfret (1977) speak about different orientations in studies of curriculum implementation. In the framework of the "fidelity" orientation one tends to look for deviations from the original intent of curriculum developers, as reflected in the way the materials are used by teachers. In the framework of an "adaptation" orientation, one tends to look for modifications of curriculum materials according to specific classroom situations. Teachers who taught the unit in botany deviated from the developers' guidelines with respect to time allocation and instructional strategies, although most claimed that they did adhere fully to those guidelines. There seem to exist some ambiguities, and even a measure of dissonance, between teachers' self-image as faithful implementors and their self-declared instructional actions. Teachers' initiative in varying time allocation, and their ingenuity in devising teaching methods beyond those specified in the teachers' guide, may be viewed as an expression of their felt concern for the needs of students in the concrete settings of their classrooms.

One major issue, illuminated by the above study and related to the notion of fidelity versus adaptation, concerns teachers' desire for professional autonomy. Teachers may tend to feel strongly about their autonomy and professional know-how. Lortie (1975) found that many teachers want to add personal aspects to their curricular responsibilities. This sense of autonomy and professionalism may be especially dominant as far as choices of instructional strategies and time allocations are concerned. Teacher autonomy seems to be less pronounced in their treatment of the "educational messages" incorporated in the text of the curriculum materials.

It is our point of view that teachers' adherence to textbooks, teachers' handbooks, and curriculum guidelines is not necessarily a question of lack of inclination to make pedagogical decisions regarding the materials they use. It may be, rather, a question of developing the necessary professional expertise to experiment with the materials. Rudduck (1987) claims that teachers lack the curriculum literacy which is required for the confident critique and adaptation of materials. Teachers seem to restrict themselves mainly to those messages that are explicitly stated in the teachers' guide. Teachers' adherence to the curricular content themes can be interpreted in different ways. One alternative is that teachers prefer to remain faithful to the suggestions included in the guide because they believe that curriculum developers, or authors of commerical textbooks in general, possess valid knowledge and expertise which is reflected in their choice of the topics, themes, and principles included in the materials. Another interpretation of teachers' allegiance to the materials is based on the notion of interpretative abilities. It may be that, lacking adequate training and practice, teachers are not able to elicit additional themes and principles, which may be found in curriculum materials, beyond those that are explicitly mentioned by the developers and authors. A different interpretation may be that the teachers' guide does indeed present teachers with a comprehensive listing of all possible main "educational messages" of the unit, and it is therefore not surprising that the teachers did not exceed the recommendations.

The last alternative is considered to be untenable. It is the main thrust of this book that curriculum materials are richer in educational potential than any predetermined set of intended learning themes and activities stated by the developers. The issue becomes one of the interpretative skills needed for a "reading" of curriculum materials which goes beyond their obvious and explicit

meaning. Interpretative skills can be learned and cultivated, leading to an expansion of the repertoire of learning opportunities which teachers offer to their students.

However, teachers may be also constrained in their interpretation of different ways of using the educational potential of materials because of a perception of the authority of the text. A sensed authority and rigidity of curricular texts may inhibit teachers in using the potential richness of existing curriculum materials in a manner which is most appropriate for their students. How to free teachers from the tyranny of curricular texts is the focal point of the following chapters.

As a teacher, administrator, curriculum developer, or curriculum scholar, you may have been involved in the documentation of, and inquiry into, cases of curriculum implementation. You may try to think about such a case and reflect how similar or different it is from the case discussed above. How did teachers allocate time to teaching the various components of the curriculum? Did they go beyond the specific themes suggested in the materials? How varied were their teaching strategies in comparison with those suggested by the curriculum developers? How do you account for some of these commonalities or differences? What may be the impact of the subject matter on the way in which teachers use curriculum materials? And what about the nature of specific students or the background of their teachers? Teachers' varying degrees of mastery of the subject area being taught have been shown to have far-reaching consequences for the complexity of the curricular "stories" they have constructed for their classroom (Gudmunsdottir 1988).

The nature of the materials, whether they are content oriented or process oriented, may determine teachers' use of curriculum materials (Ben-Peretz and Kremer 1979).[2] Treating all innovative curricula in the same way may lead to misinterpretations. For instance, Ben-Peretz and Kremer note that one curriculum package, "The Listening" curriculum, focused on the development of interpersonal communication skills. Because the materials also presented specific literary content, teachers viewed this content as part of the "required learning." The literary examples tend to acquire a significance of their own, which may be counterproductive to the major goals of the innovative curriculum. It seems that a high degree of specification of instructional activities in the mate-

rials may lead teachers to emphasize these, sometimes at the expense of providing appropriate experiences for their students.

To sum up this point, it is difficult to generalize across subject matter areas, teachers, and classrooms about modes of teachers' uses of curriculum materials. The implementation case presented herewith is a concrete example of the everyday involvement of teachers in the use of curriculum materials. This case raised several issues, among them the issue of teacher autonomy and the issue of the potential diversity of educational themes or "messages" embodied in curriculum texts.

TEACHERS AS CURRICULUM DEVELOPERS

Up to this point we have discussed a case of teachers' involvement in curriculum implementation. We turn now to a case of another kind of curriculum function of teachers, namely, teachers' role in curriculum development (Ben-Peretz 1980a). Teachers participate from time to time in curriculum development efforts, whether school based or centrally organized. Sometimes teachers are involved in the construction of curriculum guides, but more often their contribution lies in the preparation of curriculum materials for classroom use. Different modes of teachers' involvement as developers may affect the nature of the curriculum materials on the one hand, and the anticipated use of these materials by other teachers on the other hand. The purpose of presenting the following case of curriculum development by teachers is twofold: (1) to discuss a possible function of teachers in the curriculum domain; and (2) to demonstrate a link between teachers as curriculum developers and teachers as users and implementors of curriculum materials.

Teachers may be viewed as "instruments" for achieving the intentions of curriculum developers. This approach may be powerful in limiting teachers' motivation for curriculum change and adaptation. Their role may be compared to the role of performing musicians who are bound by the score of composers. Musicians may present their own interpretations of a composition, but they are not expected to rewrite it. In the curricular approach that guided the development project described herewith, teachers were perceived as creators of the curriculum, composers of their own "music." Their knowledge of subject matter and classrooms, their concerns, and their needs became the starting point of the

curricular process. Teachers' expertise about classroom reality was the basis for discerning practical problems that call for curricular remedies. Westbury (1972) characterized Schwab's (1969) approach to the practical mode of curriculum work 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 teachers are familiar with classroom situations, their role is deemed central for discovering these gaps and bringing about change or improvement. Teachers know their learners, classrooms, and school milieu in a way that central curriculum developers can never know. This knowledge enables teachers to reveal weaknesses, shortcomings, and conditions which should and can be changed. The perception of teachers as sensitive to, and knowledgeable about, problem situations in school demands their being assigned a central role in the curriculum process that starts with the locating of curricular problems (Schwab 1983). The question arises whether teachers have the necessary expertise in curriculum development and the construction of materials.

Several kinds of knowledge are important for the task of curriculum revision: knowledge of the discipline to be taught, knowledge about the nature of learners, knowledge of the context of school reality and of the community at large, knowledge of the characteristics of the teachers who are going to use the curricular materials, and knowledge of the curriculum-making process itself (Schwab 1973). Two or more of the required kinds of knowledge may be found in one person. In the curriculum development case presented here, teachers were considered to represent knowledge of learners, teachers, and school milieu. In the development process, teachers were assisted by subject matter specialists and by experts in curriculum development. Fox (1972) comments upon the controlling 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 effect, experts in the curriculum development process described here were not regular members of the development team but fulfilled their role in development as external advisors. Thus the possible tendency of teachers to subordinate their own ideas to those of specialists was

largely avoided. When experts are not part of the regular deliberations of the planning team, their advice can be sought whenever the developers need it. The recommendations of experts are then considered by the teacher-developers, who may accept or reject them. In the specific case reported here, a curriculum expert acted as chairperson of the development team, organizing and administering its work.

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

The end product of the development process in this case was not one "package" of curriculum materials but rather a number of different modules. All the modules dealt with the same topic but differed in specific content, style of presentation, and choice of instructional strategies. This format was adopted because of its congruence with the central role assigned to teachers in the development process. Teachers who become members of a development team may have different backgrounds, different orientations to subject matter and instruction, different teaching experiences, and different educational priorities. Their divergent viewpoints may find their expression in the variety of suggestions made in the course of curriculum construction. Because of the deliberate lack of pressure for early closure and for consensus about the nature and format of the materials, the curricular product is in the form of a number of modular units, representing different approaches to the same subject matter topic. The modular format of materials provides maximum flexibility and openness for teachers who are involved in the decision-making process. Moreover, the pluralistic nature of the curriculum product, which consists of alternative versions of the same topic, may release teachers, who will act as implementors of these materials, from dependence on the intentions of curriculum developers. Teachers who encounter diverse curricular options bearing on the same topic, all of which were developed by their peers, may see themselves free to choose among these options. Alternatively, they may decide to combine different components of each of these versions, and thus create their own set of curriculum materials. Carrying this process one step further, teachers may be motivated to develop a completely

different version based on their own knowledge, instructional preferences, and insights into the nature of their teaching situation.

Let us return to the description of the development project. Six teachers were members of the development team. They were selected because of their previous success in teaching and their comprehensive subject matter knowledge. All were experienced teachers who came from different schools, urban and rural, serving high- and low-level socioeconomic populations. The unit chosen for the project was part of a biology curriculum "Man in Nature" by Ben-Peretz et al.; (see Curriculum Materials following References).* The unit itself deals with the "Uniqueness of Man," focusing on the nervous system. The "Uniqueness of Man" project was carried out with the support of the Ministry of Education. Teachers received special payment for their work on the project. This was one way of demonstrating the official recognition of the importance of teachers' involvement in curriculum development. School administrators, such as supervisors in biology, were invited to participate in the deliberations of the team. School principals 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.

The Curriculum Development Process

Initial deliberations and choices

As a start in their curricular deliberations, teachers were asked to offer suggestions about the specific topics and instructional strategies which should be included in the curriculum materials. Teachers made different suggestions and did not agree on content or on instructional strategies. The diversity of views may be explained in a number of ways: teachers had different areas of interest; some preferred ethology, whereas others focused on molecular biology. Teachers differed in their educational experiences; some came from middle-class schools, and some taught mainly disadvantaged students. Their educational philosophies and orientations toward teaching varied; some preferred learning by discovery methods, whereas others thought that expository teaching would be more appropriate. It may be assumed that such differences exist as well among teachers who are potential users of any

* Hereafter references to curriculum materials will be signified by *CM*.

kind of ready-made curriculum materials. These individual differences have to be taken into consideration in the implementation process of the materials.

The first planning meetings were devoted to preliminary discussions about suggestions made by teachers. In spite of differences of opinion, the common tendency among the participants was to try to arrive at a consensus about a content and mode of instruction which would be acceptable to all. This tendency was contrary to the intention of constructing a curriculum product consisting of alternative versions for the teachers who may use the materials. Several possible reasons may account for the perceived tendency of teachers to arrive at a consensus about educational purposes and at a common curricular approach. Teachers might be unfamiliar with a situation in which the choice of curriculum materials was in the hands of teachers. Some found it difficult to give up the notion that complete coverage of different aspects of the subject matter is a basic requirement for learning any scientific topic. They found it hard to accept a strategy of developing an alternative curricular version that would portray partial views of the subject matter being taught. Teachers' need for complete coverage of subject matter topics in schools has already been mentioned as one of the concerns teachers have regarding the curriculum they teach. Teachers also considered the construction of alternative versions an unrealistic effort which would be too costly and time-consuming. Subject matter experts as well as educators joined the deliberations at this point. Both the subject matter experts and the educators convinced the team that it was indeed possible to construct alternative versions without distorting the subject matter and without misrepresenting it to students. Four different versions of the materials were therefore decided on:

1. An anatomical-morphological version, focusing on the anatomical-morphological differences between humans and animals. In this version the uniqueness of mankind is perceived as relating to specific behavior, especially manual dexterity and language skills. This version offered a variety of student activities, such as visits to the zoo.
2. A physiological version, based to a large extent on comprehension of text, emphasizing physiological characteristics of the human nervous system.

3. A psychological version, concentrating on the unique learning and thinking abilities of mankind. This version presents students with many opportunities for experimentation.
4. A programmed version for individual learning, dealing with basic terms and concepts relating to the nervous system.

Each version represents a different aspect of content and choice of instructional strategies. The participating teachers agreed that all versions should stress the distinctive human features of mankind.

Preliminary construction of materials

Subteams of teachers were set up according to areas of interest. Each subteam was responsible for constructing one curricular version. Work in small groups was considered essential for the process. Individual work provides fewer opportunities for the exchange of ideas and lacks the kind of group spirit which seems to be rewarding to teachers involved in the curriculum development project. For technical reasons there was a time that one teacher worked by herself. This proved to be an unproductive situation as far as the creative process of curriculum construction was concerned. It seems that a subteam of two developers is the "critical mass" for teachers cooperating in curriculum development. Cooperation among teachers is considered to contribute to the effectiveness in finding solutions to educational problems. Lortie (1975) states, "Relationships among teachers may deepen and broaden. Considerable effort is being expended today to foster closer working relationships among teachers" (p. 209). Teachers' experiences in collaboration in development projects may be productive for preparing them for varied further cooperative efforts in school. Such cooperation may be also valuable in joint attempts to adapt curriculum materials to local school situations.

During the stage of preliminary construction of materials, teachers were assisted by subject matter experts and by the chairperson of the development group.

Teachers started the writing process by devising activities for students. The advantages of starting the curriculum construction process by listing possible learning activities and of relating these to potential learning outcomes at a later stage were conceived as twofold. First, teachers have intimate experience and knowledge

about teaching strategies, and in starting from planning activities they were given the opportunity to draw upon their special expertise and professional strength. Second, when planning their lessons, the question "What should I do in my own classroom tomorrow?" is usually foremost in teachers' minds. Teachers who started with this question in their development groups were thus given an opportunity to start their planning on the basis of their own professional needs.

Research on teachers' planning shows that teachers tend to focus on student activities and content decisions. Teachers apparently spend the smallest proportion of their planning efforts on the specification of objectives (Zahorik 1975; Peterson, Marx, and Clark 1978). Teachers who participated in the curriculum project worked in a manner which was consistent with the preferred mode of teacher planning. The curriculum materials constructed by them may therefore be more helpful for other teachers. The learning activities were chosen by the teachers according to the following criteria: appropriateness for student target population, feasibility for classroom use, and the personal priorities and preferences of the teachers.

Trial uses

The trial use of tentative parts of curriculum materials is an important stage in curriculum construction. The participating teachers used the materials in their own classrooms and noted their impressions of students' reactions to the materials. Concurrently subject matter experts were asked to evaluate the materials. The data collected in the first trial use of the materials were the basis for further group deliberations and for rewriting. Further decisions were made about content, instructional strategies, and activities. The possible learning outcomes of the various activities were considered, and those considered most appropriate were included in the published trial editions of the materials.

The final rewriting and editing was done by the subteams assisted by the chairperson, editors, and illustrators. Each subteam was fully responsible for the complete task of preparing the materials, working in the framework of financial constraints and other practical pressures such as time limits.

The trial editions were submitted to formal trial runs carried out by teachers who were not part of the development team. These teachers participated in a special in-service program

planned and conducted by the members of the team. The in-service teacher program was guided by an image of teachers as adaptors of materials and as flexible implementors. The characteristics of the training program were therefore as follows:

1. The curriculum product presented to teachers was in a modular format composed of four different versions, as opposed to one obligatory curriculum package. Teachers' encounter with varied materials all dealing with the same topic provided opportunities for considering appropriate choices.
2. Protocols of developers' deliberations were offered as part of the in-service program. Providing teachers with the rationale of the developers and the basis for their curricular decisions permitted teachers to question those decisions and to draw their own conclusions about the materials. Rudduck (1987) draws attention to the importance of sharing with practitioners the inside story of curriculum development: "An understanding of the dilemmas that shaped the process of creation is the pre-condition of intelligent experimentation" (p. 87).
3. No teachers' guide or manual was presented to teachers. The initiative for the use of the materials was left in the hands of teachers. They offered their own suggestions about the adaptation of learner activities, the sequence of topics, and such matters.

Special strategies were devised to foster teacher autonomy and flexibility in the implementation of the materials. Teachers participating in the in-service program were asked to propose a variety of ways for teaching the unit "Uniqueness of Man." All their suggestions were listed and discussed. Some of their proposals were similar to the alternatives chosen by the teacher-developers, and some were different. Teachers in the training program became sensitive to the variety of approaches that might be adopted in the construction of curricular materials related to one specific topic. They became aware of the complex issues involved in the process of developing the unit. Through their own explorations they became involved in the process and were motivated to try out different combinations of the materials. The teachers who had participated in the in-service program then tried the materials in their

classes. On the basis of the evaluation of these trial runs, the final edition was produced by the same teachers who were involved in the curriculum development process from its first stage.

After reading about the case of teacher involvement in curriculum development, it may be of interest to compare this case with your own experiences in curriculum development. You may ask yourself who the participants in the process were, what the role of subject matter experts was, and what the nature of the end product was. Was the developmental effort confined to the boundaries of one school, or was it intended to serve wider audiences? How were teachers expected to use the materials, and how, if at all, were they introduced to the curriculum? What do you consider to be the advantages and the drawbacks of either development mode? What are some of the implications for curriculum use in classrooms? You may wish to become engaged in curriculum development and to try the described mode of development.

Teachers' Involvement in Curriculum Development

What can we learn from the reported case about teacher involvement in curriculum development? Several issues are evoked. First and foremost, teacher involvement in curriculum development is a lengthy and costly process. Teachers who participate in the process need ample time for their development activities. They need formal recognition of the educational establishment and the professional support of a curriculum consultant. The specific organizational arrangements may depend on the anticipated use of the materials. In the case described above, the materials were meant to be implemented beyond the classrooms of the developers. This was not a case of school-based curriculum development, but rather a case of teacher involvement in the "external" process of curriculum development, carried out by agencies outside the schools. Still, it is contended that even in the context of the development of curriculum materials for one school, or even for one classroom, teachers who act as developers need time, resources, and professional support.

Another emerging issue concerns the search for new formats of curriculum materials based on teachers' preferences and perceptions. The multiple modules which were constructed in the described case are just examples of the wide variety of curricular possibilities that exist once teachers function as initiators of the

process. Manifold possible formats may be more responsive to the actual needs of learners in diverse classroom situations.

The construction of curriculum materials is viewed as a cooperative effort demanding close collaboration and sharing. It may well be that all forms of teacher-curriculum encounters, as users and innovators, would benefit from this mode of cooperation and sharing. Teachers could become curriculum developers in a variety of educational contexts. They could function as grass-roots developers in their schools, preparing curriculum units for use in their own classrooms. Teachers could also construct alternative local versions of existing materials, extending their uses through appropriate modifications for specific teaching situations. The in-service training which was part of the project emphasized active involvement in curricular deliberations, even when these were carried out after the actual development process had been terminated. The opportunity to discuss with one's colleagues the nature of materials and their possible classroom uses is seen as a prerequisite for flexible and adaptive curriculum implementation.

Have you been party to such discussions? How were these conducted? You may wish to initiate such discussions in your own school.

At this point in our discussion the two cases described here, one related to teachers as implementors and one concerning teachers as developers, intersect. Curriculum development by teachers may be meant for other teachers, but these do not have to be faithful implementors of the ideas which originated elsewhere. Schwab (1983) puts it in the following way: "It [the curriculum] is not decided in Moscow and telegraphed to the provinces" (p. 240). The implementing teachers are perceived as full partners in the development process, shaping the finished product according to their own needs, adapting it to their own teaching circumstances. Curricular abilities acquired through participation in development projects could serve teachers in the implementation of externally developed curriculum materials, including commercially prepared textbooks. Awareness of curricular deliberations and choices could enhance teachers' ability to function as autonomous decision makers. It is "important to find ways of inviting teachers into the world of deliberation that the curriculum developers inhabited so that they would, to some extent, be able to reconstruct the process of development; in this way they would be in a better position to

respond critically to the product" (Rudduck 1987, p. 81). This view calls for a new process of teacher involvement in the curriculum realm. Some components of this process have been presented here. The whole issue will be treated in greater depth in the following chapters.

CONCLUDING COMMENTS

This chapter has focused on a detailed description and analysis of teachers acting as curriculum users and as curriculum creators. The complexity of both functions is highlighted, and the professional requirements related to curricular issues are clarified. Teachers are called upon to reflect on their own activities in the light of these cases.

RECOMMENDED ADDITIONAL READINGS

Several books and articles on curriculum use by teachers may serve to expand your view of this process. Among them are the following:

Fullan, M. (1982): *The Meaning of Educational Change*, Toronto, OISE Press.

Fullan, M., and Pomfret, A. (1977. "Research on curriculum and instruction implementation," *Review of Educational Research* 47, 1:335–397.

Leithwood, K., and MacDonald, R. (1981). "Decisions given by teachers for their curriculum choices," *Canadian Journal of Education* 6, 2:103–116.

McLaughlin, M., and Marsh, D. (1978): "Staff development and school change," *Teachers College Record* 80, 1:69–94.

Sarason, S. (1982): *The Culture of School and the Problem of Change*, Boston, Allyn and Bacon: 1st edition 1971.

Divergent cases of the process of curriculum development in different contexts are described and analyzed in the following books and articles:

Kennedy, K. J., and McDonald, G. (1986): "Designing curriculum materials for multicultural education. Lessons from an Australian Development Project," *Curriculum Inquiry* 16, 3:311–326.