

# Chapter 3

## CURRICULUM THEORY

**W**hile curriculum theory is usually esteemed by scholars in the field as an important component of curriculum studies, it seems to be held in low regard by most practitioners, who often dismiss it as completely unrelated to their day-to-day work. Although that impatience with the theoretical is quite understandable, the view advanced in this chapter is that sound theory can be of value to both the scholar and the practitioner. At its best, curriculum theory can provide a set of conceptual tools for analyzing curriculum proposals, for illuminating practice, and for guiding reform.

Melding theory and the reality of school curriculum together is an important step in the educational planning process. Not all curriculum theories translate smoothly into real-world practice. Educators have found it difficult to use theoretical approaches to make continual analyses, reevaluations, and revisions of curriculum in light of such fields as informational technology and the sociology of knowledge. It is a daunting task to undertake the complexity of curriculum design given race, class, economic conditions, and cultural diversity—not to mention the continual changes evolving with technological advances in education. It is therefore essential to develop a fundamental understanding of curriculum theory by providing the tools necessary when analyzing curriculum proposals, illuminating practice, and guiding reform. Questions addressed in this chapter include the following:

- What is the nature and function of curriculum theory?
- Why is it important to meld the theory and reality of school curriculum together as part of the planning process?
- What is the role of leadership in the development of curriculum theory?
- What are the major classifications of curriculum theory?
- How has technology been a catalyst for curriculum change?

### Key to Leadership

Successful leaders realize that curriculum seems to be changing even more to meet today's needs and realities. There seems to be little doubt that technology is serving as the catalyst for that change.

## THE NATURE AND FUNCTION OF CURRICULUM THEORY

The concept of schooling and education has long been associated with the idea of curriculum and curriculum theory. With no definitive comprehensive theory that covers the field, a great deal of argument and discussion occurs in the field as to what curriculum theory is and what it is not.

To understand the concept of theory, it is essential to understand the nature of theory in general. Much disagreement exists among philosophers of science. On the one hand, some espouse what has come to be known as the Received View of scientific theory. According to this view, science consists of bold theories that outpace the facts. Scientists continually attempt to falsify these theories, but can never prove them true. Many subtleties of the received view of scientific theory are still found in contemporary literature in psychology (Acton, 2003).

Historically, the Received View holds that a theory is a formalized, deductively connected bundle of laws that are applicable in specifiable ways to their observable manifestations. In the Received View, a small number of concepts are selected as bases for the theory; axioms are introduced that specify the fundamental relationships among those concepts; and definitions are provided, specifying the remaining concepts of the theory in terms of the basic ones.

As Atkins (1982) notes, several criticisms of the Received View exist, even in its revised formulation. First, Suppe (1974) criticized it for its narrowness in requiring axiomatization, noting that several scientific theories are not and cannot be axiomated profitably. He argued instead for a broader view of theory that emphasizes the dynamic nature of all sound theory. Other critics, such as Hanson (1958) attacked the Received View for its posture of value-neutrality; as Hanson and others have pointed out, every aspect of theory development is value laden. Scientists do not observe objectively; their observations are profoundly influenced by their worldviews and their values. Popper (1962) rejected the assumption of the Received View that scientific theories can be observationally verified; in his view, theories are conjectures that, although not verifiable, can be submitted to severe tests of falsifiability.

Those who reject the positivist assumptions of the Received View tend to be classified as either realists or instrumentalists, as Atkins notes. Realists see science as a rational and empirical endeavor, concerned primarily with explanatory and predictive outcomes: Thus, in the view of realists, theory is a description of those structures that generate observable phenomena. In addition, the primary feature of scientific theory is the explanation of how underlying structures and mechanisms work to generate the phenomena being studied (Keat & Urry, 1975). Instrumentalists, on the other hand, concentrate on the function the theory performs: In this view, a theory is a tool of inquiry, rather than a picture or map of the world. In this sense, then, a theory is not judged in terms of its truth or falsity; instead, it is assessed on the basis of the quality of predictions it demonstrates (Kaplan, 1964).

Thus, current philosophers of science tend to take a more open view of the nature of theory, and it is this more open view that seems especially useful in a field such as education, where theory development seems still to be in a somewhat primitive stage. For the purposes of this chapter, therefore, this broader definition of curriculum theory is stipulated:

A curriculum theory is a set of related educational concepts that affords a systematic and illuminating perspective of curricular phenomena.

What are the functions of curriculum theory? Most philosophers of science argue that theory has only three legitimate purposes: to describe, to explain, and to predict. A review of curricular theory, however, suggests that many of those theories serve two additional functions. Some theorists, like Michael Apple, seem most concerned with providing educators with a critical perspective on the society and its schools. While Apple and others who share his viewpoint are concerned with describing and explaining curricular phenomena, their stance is an openly critical one. Some theorists, such as Ralph Tyler, seem most concerned with guiding practice. While Tyler and others whom he has influenced attempt to describe and explain, the primary intent of their work is to help educators make more reasoned choices.

Educational experiences are selected based on their likelihood of attaining the educational goals. After educational experiences are selected, they are organized in a logical manner, hoping to obtain the maximum cumulative effect. The curriculum is then improved and refined by a process of evaluation. According to Tyler, curriculum development should be viewed as a cycle: The quality and impact of curricula functions are to be monitored by carefully observing the outcomes, and data from these observations are to be used to fine-tune the curricula (Burks, 1998).

The extent to which a particular theory is able to discharge its functions effectively seems to be influenced by the complexity and maturity of that theory. Here Faix's (1964) classification of the stages of theory development seems useful.

*Basic theory, Stage 1*, is an early speculative stage, in which a theory has not yet been correlated with empirical data. Basic theory sets up untested hypotheses, involves few variables, and employs concepts that are not systematically refined and classified. Basic theory provides only descriptive explanations and directions for more meaningful theory. Glatthorn's (1980) analysis of the curriculum into mastery, organic, and enrichment elements might be described as a basic theory.

*Middle-range theory, Stage 2*, includes hypotheses that have been empirically tested. An effort has been made to eliminate unlikely variables and relations by the use of models and testing. Experimental laws and generalizations result, and theory can be used to illuminate, predict, and control events. Goodlad's (1979) delineation of what he calls a "conceptual system" for guiding inquiry and practice is a good example of a middle-range theory.

*General theory, Stage 3*, is a general theoretical system or an inclusive conceptual scheme for explaining an entire universe of inquiry. General theory attempts to integrate the substantive knowledge produced from middle-range theories. Beauchamp's articulation of a comprehensive theory of curriculum might be seen as an attempt to present a general theory, although some would criticize the shallowness of its empirical foundation (Beauchamp, 1981).

## LEADERSHIP IN CURRICULUM THEORY

The need for leadership and theoretical planning in school curriculum is a common thread running through education on a global level. Today's school administrators currently face one of the most challenging and exciting times in educational history. New curriculum leaders will need to be familiar with a broad spectrum of curriculum theory ranging from behavioral to critical. Leaders will need to fully understand the "mirrored" relationship between theory and practice and how each can be used to mold and define the other.

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The role of leadership in reviewing the relationship between theory and practice will be a crucial element in the future success or failure of curriculum change and how it impacts schools. It is therefore paramount for communities to encourage and recognize successful leaders who demonstrate an ability to make a difference in teaching and learning. No set rules or formulas exist for leaders to follow, only general guidelines, ideas, and generalities. In this age of technological reform, it is crucial that effective leaders formulate an understanding of curriculum theory if they are truly to evoke educational change in the future. Exercising leadership in these areas helps deepen a comprehension of “what works” and “the why” of curricula development.

Leaders also need to be aware of the cyclical nature of curriculum theory. This is especially true when reviewing needs analysis, methodologies, evaluation, processes, and assessment procedures. Areas of review for curriculum leaders of the future should include the following:

- Historical development of curriculum studies
- Current theory and practice in the field
- Macro and micro dimensions in curriculum
- Ethos and cultural considerations
- Process of curriculum change
- Impact of technology on curriculum
- Models and processes of instructional design
- Models and processes of developing learning strategies
- Identification and implementation of appropriate teaching methods
- Models and techniques of assessment and the evaluation process
- Staff development needs
- Practical application of curriculum design and product as per student to work programs

Quality leadership means having a thorough understanding of curriculum and being able to change administrative roles and responsibilities when needed to meet the new challenges of curriculum design. It is an art to know how and when to be flexible and yet at the same time to be able to make important curriculum decisions. It is an art to be able to change administratively by shifting from a focus on the system to a focus on the learner. Such shifts in leadership style allow teachers to have more input on curriculum changes that will allow for the greatest impact on learning. Having educational leaders who understand the curriculum review process, are supportive of change, and are willing to formulate new instructional strategies is a definite key to the success of schools in the future.

### CLASSIFYING CURRICULUM THEORIES

Numerous attempts have been made to classify curriculum theories in terms of maturity and complexity as well as attempts at categorization. McNeil (1985) sets up what seems to be an unilluminating dichotomy: soft curricularists and hard curricularists. Soft curricularists, in his view, are those such as William Pinar and other reconceptualists who draw from the “soft” fields of religion, philosophy, and literary criticism; hard curricularists, such as Decker Walker and Mauritz Johnson, follow a rational approach and rely on empirical data. The difficulty with such a dichotomy seems obvious. It results in a grouping together of such disparate theorists as Elliot Eisner and Henry Giroux as “soft curricularists” simply because they draw from similar research perspectives.

A tripartite classification proposed by Pinar seems equally unsatisfactory: In his formulation, all curriculum theorists can be classified as traditionalists, conceptual empiricists, or reconceptualists. Traditionalists, in his formulation, are those such as Ralph Tyler who are concerned with the most efficient means of transmitting a fixed body of knowledge in order to impart the cultural heritage and keep the existing society functioning (Pinar, 1978).

Traditionalists like Tyler view curriculum as notions of class, teacher, course, units, lessons, and so forth. For example, Hirsch (1995), in one of his many books, *What Your Fifth Grader Needs to Know: Fundamentals of Good Fifth-Grade Education*, reveals his commitment to the concept of basic knowledge and cultural literacy in school curriculums. He founded the core knowledge series to promote excellence and fairness in early education. Proponents of formal education are generally very interested in the concept of schooling that emphasizes basic knowledge and a definitive structure of instruction that involves the classics. Common themes of formal education proponents might include the development of a syllabus, transmittal of data and knowledge via lecture, formulation of goals and objectives, assessment, and a focus on an end product.

Theorists who espouse an informal education reveal an entirely different perspective on how curriculum should be designed and implemented. Informal proponents such as conceptual empiricists and reconceptualists view education more as an existential experience. Conceptual empiricists, such as Robert Gagne, are those who derive their research methodologies from the physical sciences in attempting to produce generalizations that will enable educators to control and predict what happens in schools. The reconceptualists (a label Gagne applies to his own work) emphasize subjectivity, existential experience, and the art of interpretation in order to reveal the class conflict and the unequal power relationships existing in the larger society. The basic difficulty with this tripartite formulation is that it mixes in a confusing fashion the theorists' research methodologies and their political stances as bases for categorizing theorists. Other theorists such as Elliot Eisner (1985) are equally informal in their approach and seem to be more interested in predicting what will happen in schools. Eisner, as a proponent of informal education, has been a leader in curriculum revision and new approaches for many years.

For example, one of the most widely cited classifications of curriculum theories is proposed by Eisner and Vallance (1974) in their *Conflicting Conceptions of Curriculum*. As they survey the field, they find five different conceptions of or orientations to the curriculum. A "cognitive-process" approach is concerned primarily with the development of intellectual operations and is less concerned with specific content. The "curriculum-as-technology" orientation conceptualizes the function of curriculum as finding the most efficient means of accomplishing predetermined ends. "Self-actualization" sees curriculum as a consummative experience designed to produce personal growth. "Social reconstruction-relevance" emphasizes societal needs over individual needs. Theorists with this orientation tend to believe that the primary role of the school is to relate to the larger society, with either an adaptive or a reformist stance. Finally, "academic rationalism" emphasizes the importance of the standard disciplines in helping the young participate in the Western cultural tradition.

While the Eisner and Vallance system seems to make more useful distinctions than either of the two previously discussed, it does seem to err in including "technology" as a basic orientation of the curriculum. All of the other four seem to designate the major sources for determining curriculum content—the cognitive processes, the person, the society, and the subject. A technological orientation is, on the other hand, concerned primarily with advocating one process for developing a curriculum—a process that could be used with any of the other four types.

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The basic error of all three formulations (McNeil; Pinar; Eisner & Vallance) is that they do not sort out curricular theories in terms of their primary orientation or emphasis. Here, Huenecke's (1982) analysis of the domains of curricular inquiry seems most productive. She postulates three different types of curricular theorizing: structural, generic, and substantive. Structural theories, which she claims have dominated the first 50 years of the field, focus on identifying elements in curriculum and their interrelationships, as well as the structure of decision making. Generic theories center their interests on the outcomes of curriculum, concentrating on the assumptions, beliefs, and perceived truths underlying curriculum decisions. Sometimes referred to as critical theories, they tend to be highly critical of past and present conceptions of curriculum. They seek to liberate the individual from the constraints of society, using political and sociological frameworks to examine issues of power, control, and influences. The substantive theories speculate about what subject matter or content is most desirable, what knowledge is of the most worth.

While Huenecke's typology seems very useful, it seems to err in omitting one major domain—those theories such as Schwab's that are concerned primarily with the processes of curricular decision making (Schwab, 1970). While Huenecke would probably argue that Schwab's work is primarily structural in its emphasis, the distinction between structure and process seems to be one worth maintaining.

It therefore seems most useful to divide curriculum theories into the following four categories, based upon their domains of inquiry.

*Structure-oriented theories* are concerned primarily with analyzing the components of the curriculum and their interrelationships. Structure-oriented theories tend to be descriptive and explanatory in intent.

*Value-oriented theories* are concerned primarily with analyzing the values and assumptions of curriculum makers and their products. Value-oriented theories tend to be critical in nature.

*Content-oriented theories* are concerned primarily with determining the content of the curriculum. Content-oriented theories tend to be prescriptive in nature.

*Process-oriented theories* are concerned primarily with describing how curricula are developed or recommending how they should be developed. Some process-oriented theories are descriptive in nature; others are more prescriptive.

The rest of this chapter will use this categorization system for examining several major curriculum theorists.

## STRUCTURE-ORIENTED THEORIES

As indicated above, structure-oriented theorists of curriculum are concerned with the components of the curriculum and their interrelationships. Primarily analytical in their approach, they seek to describe and explain how curricular components interact within an educational environment. Structure-oriented theories examine questions such as the following.

1. What are the essential concepts of the curriculum field and how may they most usefully be defined? For example, what does the term *curriculum* mean?
2. What are the levels of curriculum decision making and what forces seem to operate at each of those levels? For example, how do classroom teachers make decisions about the curriculum?

3. How may the curriculum field be most validly analyzed into its component parts? For example, how does a program of study differ from a field of study?
4. What principles seem to govern issues of content selection, organization, and sequencing? For example, how can curricular elements be articulated?

In seeking answers to such questions, they tend to rely upon empirical research, using both quantitative and qualitative methodologies to inquire into curricular phenomena.

Structure-oriented theorists seem to operate at what might be termed either a macrolevel or a microlevel. Macrolevel theorists attempt to develop global theories that describe and explain the larger elements of curricular structure.

Here it is necessary to turn to the work of microlevel theorists who seem more concerned with describing and explaining curricular phenomena as they occur at the institutional instructional levels. George Posner seems most representative of the microlevel theorists. Over the course of several years, he has identified and analyzed several microelements of curricular structure. Typical of his theoretical work is an article coauthored with Kenneth Strike in which they present and explicate a “categorization scheme for principles of sequencing content” (Posner & Strike, 1976). By bringing to bear some useful epistemological distinctions and by analyzing the curriculum literature, Posner and Strike are able to identify five major types of content sequence.

The first principle for sequencing content they call “world related”—the content structure reflects the empirical relationships among events, people, and things. Subtypes here include sequences based on spatial relations, temporal relations, and physical attributes. The second principle is “concept related,” in which sequences reflect the organization of the conceptual world. Thus one subtype of concept-related sequences is “logical prerequisite”—when it is logically necessary to understand the first concept in order to understand the second. “Inquiry-related” sequences are those that sequence the curriculum in relation to a particular method of inquiry, such as Dewey’s analysis of the problem-solving process. “Learning-related” sequences draw from knowledge of the psychology of learning in making decisions about sequence; thus sequencing decisions based upon such assumptions as “begin with content of intrinsic interest” or “start with the easiest skills” are learning related in nature. The final principle, “utilization related,” sequences learning in relation to three possible contexts for utilization—social, personal, and career.

As Posner and Strike point out, these categories can be considered as a set of concepts that should be useful to the curriculum developer, the curriculum evaluator, and the curriculum researcher.

## VALUE-ORIENTED THEORIES

Value-oriented theorists seem to be primarily engaged in what might be termed “educational consciousness-raising,” attempting to sensitize educators to the values issues that lie at the hearts of both the hidden and the stated curricula. Their intent is primarily a critical one; thus they sometimes have been identified as “critical theorists.” Since many have argued the need for reconceptualizing the field of curriculum, they often are labeled as reconceptualists.

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In their inquiries, value-oriented theorists tend to examine issues such as the following:

1. In what ways do the schools replicate the power differentials in the larger society?
2. What is the nature of a truly liberated individual, and how does schooling inhibit such liberation?
3. How do schools consciously or unwittingly mold children and youth to fit into societal roles predetermined by race and class?
4. As curriculum leaders determine what constitutes legitimate knowledge, how do such decisions reflect their class biases and serve to inhibit the full development of children and youth?
5. In what ways does the schools' treatment of controversial issues tend to minimize and conceal the conflicts endemic to the society?

In examining these issues, most value-oriented theorists draw eclectically from several inquiry methodologies, such as psychoanalysis, philosophical inquiry, historical analysis, and political theory.

### The Major Value-Oriented Theorists

Since many critical theorists seem to focus on the person, and many others on the sociopolitical milieu, it seems appropriate to select for examination one person-oriented theorist, James Macdonald, and one milieu-oriented theorist, Michael Apple.

#### *James Macdonald*

For a period of almost two decades, James Macdonald seemed to serve as a respected gadfly for the curriculum profession, challenging educators to question their assumptions, to aspire to more worthy goals, and to reconceptualize the enterprise of curriculum making. A prolific writer, his work is so multifaceted that it is difficult to summarize.

Basic to all his work is his view of the human condition. Central to that human condition is a search for transcendence, the struggle of the individual to actualize the whole self. Much influenced toward the end of his career by the writings of Carl Jung, Macdonald (1974) used almost mystical metaphors in "A Transcendental Developmental Ideology of Education" to speak of this journey toward transcendence as the primary concern of all humans.

Although Macdonald has been criticized for being too mystical and vague, the cumulative effect of his work has been to challenge curriculum leaders to rethink their basic assumptions and to reconceptualize their field.

#### *Michael Apple*

Michael Apple is a critical theorist who seems to be concerned primarily with the relationship between the society and the school. Central to Apple's critique of the society and its schools is his use of the concept of *hegemony*.

One crucial way in which this cultural hegemony influences educators is in their perception of science. In this telling critique of what might be termed “educational pseudoscience,” Apple (1975) notes that almost all educators rely upon a narrow and strict view of science, one that values only rationality and empirical data in the service of predictability and control and that ignores the close relationship between science and art, science and myth.

## CONTENT-ORIENTED THEORIES

Content-oriented theorists are concerned primarily with specifying the major sources that should influence the selection and organization of the curriculum content. For the most part, their theories can be classified in terms of their views as to which source should predominate: child-centered theories, knowledge-centered theories, or society-centered theories.

### Child-Centered Curricula

Those who espouse child-centered curricula argue that the child is the beginning point, the determiner, and the shaper of the curriculum. Although the developing child will at some point acquire knowledge of subject matter, the disciplines are seen as only one type of learning. While the child develops in and is influenced by a social environment, the needs of the society are not considered paramount; that society will best be served by the kind of mature and autonomous individual that child-centered curricula attempt to develop. As Francis Parker (1894) expressed it many decades ago, “The centre of all movement in education is the child.”

During the past three decades, three major child-centered curriculum movements have occurred: affective education, open education, and developmental education.

#### *Affective Education*

The affective education movement emphasized the feelings and values of the child. While cognitive development was considered important, it was seen only as an adjunct to affective growth. Thus, curriculum leaders were concerned primarily with identifying teaching and learning activities that would help the child understand and express feelings and discern and clarify values. For example, Brown (1975), who advocated “confluent education” (a curriculum approach that attempted to synthesize physical, emotional, and intellectual growth), recommended a “fantasy body trip” as a learning activity. Students are asked to close their eyes and “move into themselves”; each person is asked to concentrate on different parts of the body, beginning with the toes, then all participants share their experiences.

#### *Open Education*

As previously noted, open education was a child-centered curriculum movement that emphasized the social and cognitive development of the child through informal exploration, activity, and discovery. Here the “whole child” was considered the beginning point and focus of curriculum work. As Lillian Weber (1971), one of the foremost exponents of open education, stated,

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These questions about children seem uppermost in developing plans for the classroom, for plans were not made from the vantage point of a syllabus of demand which a child had to meet, but with relevance to children in the most immediate way. A plan fitted itself to the child. (p. 169)

In fitting the plans to the child, the teacher provisioned a rich learning environment, one that emphasized the use of concrete and interactive materials organized in “learning centers.”

The school day was not compartmentalized into subject periods, such as “language arts” and “mathematics.” Instead, children experienced an “integrated day”; they were encouraged to solve problems that required the development of several skills and the acquisition of many kinds of knowledge.

### *Developmental Education*

Developmental education, as the term is used here, refers to any curriculum theory that stresses the developmental stages of child growth as the primary determiners of placement and sequence.

Some current curriculum leaders use a Piagetian framework in selecting, placing, and structuring appropriate learning experiences. For example, Brooks (1986) describes how the teachers in the Shoreham-Wading River (New York) schools first receive extensive training in the theory and research on cognitive development. They then learn how to assess their students’ cognitive development by using a variety of formal and informal measures. Finally, they are taught specific strategies for modifying and adapting predetermined curricula to match students’ cognitive levels.

In the developmental perspective, curricula tend to be seen as instruments for facilitating child development. Certain general outcomes are postulated. The child’s present developmental level is assessed. Then learning activities and content are selected that will challenge the student enough to produce growth, but without overwhelming the student with impossible demands. In all developmental curricula, the teacher is seen primarily as an adapter of curricula, one who learns to modify predetermined content to fit the developmental needs and capabilities of the learner.

While it seems useful to consider the child’s development in selecting and placing content, no conclusive evidence exists that developmental curricula are more effective than those not embodying such a perspective.

### **Knowledge-Centered Curricula**

Those leaders who advocate a knowledge-centered approach argue essentially that the disciplines or bodies of knowledge should be the primary determiners of what is taught. While they acknowledge that child-development research should affect decisions about placement, they pay greater attention to the structure of the disciplines or the nature of knowledge, even in matters of sequence. While they admit that the child lives and grows in a social world, they see the society as playing only a very minor role in developing curricula. In general, curricula based upon a knowledge-centered approach might be divided into two groups: “structures-of-the-disciplines” curricula and “ways-of-knowing” curricula.

### ***Structures of the Disciplines***

Two major attempts have been made to reform the curriculum so that it places greater emphasis upon the subjects. During the period from 1890 to 1910, the concern of curriculum leaders was to standardize the school curriculum and to bring it into closer alignment with college requirements. During the period from 1958 to 1970, the curriculum-reform movement emphasized the updating of curriculum content by emphasizing the structures of the disciplines.

### ***Ways of Knowing***

This approach to the curriculum is of rather recent vintage. As Eisner (1985) notes, it grows out of several emerging research lines: cognitive science, human creativity, brain functioning, and conceptions of intelligence and knowledge. While Vallance (1985) sees this interest in ways of knowing as producing a radically different “curriculum map” that is quite distinct from the traditional disciplines, its emphasis upon knowledge and knowing seems to warrant placing it in the broader category of knowledge-centered approaches.

Briefly, those espousing such a view argue that there are multiple ways of knowing, not just one or two. Further, these multiple ways of knowing should be given greater attention in the school’s curriculum.

## **Society-Centered Curricula**

Several curriculum theorists agree that the social order should be the starting point and the primary determiner of the curriculum. They differ sharply among themselves, however, about the stance the schools should take toward the existing social order; accordingly, they can best be understood by categorizing them on the basis of this factor: the conformists, the reformers, the futurists, and the radicals.

### ***The Conformists***

The conformists believe that the existing order is a good one—the best of all possible worlds. While problems obviously exist in that social order, in the eyes of the conformists those problems are of lesser consequence and can be handled by mature adults. Accordingly, the essential task of the curriculum is to indoctrinate the young: help them understand the history of this society, teach them to value it, and educate them to function successfully in it. Curriculum workers with a conformist intent begin curriculum development by identifying the needs of the existing society and its institutions; curriculum objectives are derived from those needs. The teacher is usually expected to serve as an advocate for the free-enterprise system, helping students understand why it is so much better than competing systems.

Curricula with a conformist thrust have been advocated in almost every period of curriculum history. Bobbitt (1918), in his basic work *The Curriculum*, argued for a social point of view, defining the curriculum as “*that series of things which children and youth must do and experience by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be.*” In the eyes of many critics, the career education movement of the 1970s had a conformist thrust: Bowers (1977) saw their purpose as

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“designed to socialize students to accept the present organization of work and technology as the taken-for-granted reality.” William Bennett, Secretary of Education during Reagan’s second term, advocated a brand of citizenship education that had clearly a conformist intent.

### ***The Reformers***

Those classified as reformers see the society as essentially sound in its democratic structure, but want to affect major reforms in the social order. The major vehicle is the curriculum: Courses should be developed that will sensitize students to emerging social issues and give students the intellectual tools they need to solve social problems. Thus, curriculum workers should begin the task of curriculum development by identifying social problems. Those social problems—such as racism, sexism, and environmental pollution—then become the center of classroom activity. The teacher is expected to play an active role in identifying the problems, in “raising the consciousness” of the young, and in helping students take actions to bring about the needed reforms.

The reformers seem most vocal during times of social unrest. During the 1930s, Counts (1932) challenged the schools to take a more active role in achieving his vision of a more liberal society: The title of his book—*Dare the School Build a New Social Order?*—conveys the tone of his work. During the late 1960s and early 1970s, liberal educators advocated curricula that would be responsive to what they perceived as a “cultural revolution.” For example, Purpel and Belanger (1972) called for a curriculum that would institutionalize compassion and increase students’ sense of social responsibility.

### ***The Futurists***

Rather than being attuned to the present problems of the society, futurists look to the coming age. They analyze present developments, extrapolate from available data, and posit alternative scenarios. They highlight the choices people have in shaping this coming age and encourage the schools to give students the tools to create a better future for them. In a sense, they might be described as reformers intent on solving the problems of the year 2020. In their view, the school curricula should have such a futurist orientation, focusing on the developments likely to occur and involving students in thinking about the choices they have and the consequences of the choices they make. Rapidly advancing and clear-cut new technologies will force schools to change rapidly. Gradual improvements of the educational process will not suffice. The education system of today will be completely transformed by 2020. Many factors will promote this change. The most important are:

- New management models from business will be applied to the educational system.
- Parents and students will promote change in the system.
- Private companies will play a larger role in the education process.
- Technology will influence the education landscape.

(imagitrends, n.d.)

Our schools thrive on information. In the ever-changing world filled with new technology, our teachers and students require the right information, from the right sources, today.

Having direct access to industry information gives the competitive edge needed to succeed. Student performance can be improved when the enhancement of teaching and learning using technology is adopted as the norm (“Why Technology,” 2003).

### ***The Radicals***

Those who regard the society as critically flawed espouse curricula that would expose those flaws and empower the young to effect radical changes. Typically, reasoning from a neo-Marxist perspective, they believe the problems of the age are only symptoms of the pervasive structural inequities inherent in a technological capitalistic system. As a consequence, they want to reach the masses by revolutionizing education by “deschooling” the educational process.

One of the leading exponents of such an approach is Paul Freire (1970), the Brazilian educator whose *Pedagogy of the Oppressed* made a significant impact on radical educators in this country. In Freire’s view, the goal of education is *conscientization*, a process of enlightening the masses about the inequities inherent in their sociocultural reality and giving them the tools to make radical changes in that social order that restricts their freedom. He makes the process explicit in explaining how he teaches reading. Adults learn to read by identifying words with power—words such as *love* and *person* that have pragmatic value in communicating with others in the community. They create their own texts that express their perceptions of the world they live in and the world they want. They learn to read in order to become aware of the dehumanizing aspects of their lives, but they are helped to understand that learning to read will not guarantee them the jobs they need.

## **PROCESS-ORIENTED THEORIES**

Over the past two decades, when curriculum theory seems to have reached its maturity as a systematic field of inquiry, several attempts have been made to develop conceptual systems for classifying curricular processes and products (Eisner & Vallance, 1974) (see, e.g., Eisner & Vallance, 1974; Schiro, 1978; Gay, 1980). However, most of these categorization schemes are deficient on two grounds. First, they badly confuse what have been described above as value-oriented, content-oriented, and process-oriented theories. Second, they seem to give only scant attention to the curriculum-development process advocated by the theorist under consideration. Most suggest that there is some correspondence between the value or content orientation of the theory and the type of process espoused, although such connections do not seem apparent. Thus, one of Gay’s “conceptual models of the curriculum planning process” is what she terms the “*experimental model*” (Eisner & Vallance, 1974). Her description of the experiential model suggests that it gives predominant weight to the needs of the child as a determiner of content, is vaguely liberal in its value orientation, and emphasizes a planning process that she describes with such terms as *organic*, *evolving*, *situational*, and *inquiry-centered*, but she does not provide much detail about the specifics of the planning process.

Thus, if we are asking about alternative planning models, we will have to turn to sources other than these widely known classification schemes. One source that offers some promise is Short’s (1983) paper, “The Forms and Use of Alternative Curriculum Development Strategies.”

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His work seems to build upon previous efforts, it reflects a comprehensive knowledge of both the prescriptive and descriptive literature, and it seems to offer the greatest promise for analyzing and generating alternative systems.

Short's article has two explicit goals. One is to analyze what is known about the forms and use of alternative strategies of curriculum development, and the other is to organize this knowledge in a way that permits one to assess the policy implications of choosing and using one or the other of these strategies.

### **A System for Examining Curricular Processes**

It would seem more pragmatic to both scholars and practitioners to have available for their use a systematic means for examining curricular processes. Such an analytic system should have the following characteristics: It would include all the process elements that the research would suggest are important, thus enabling curriculum researchers to make useful distinctions between sets of recommended and implemented processes; it would be open-ended in form, thus enabling practitioners to become aware of a comprehensive set of alternatives; and it would emphasize description and analysis, not evaluation, enabling both scholars and practitioners to reach their independent conclusions about desirability.

The set of descriptors presented in Exhibit 3.1 represents an initial attempt to formulate such an analytic system. Certain caveats should be noted here. First, the descriptors have been drawn from a preliminary analysis of the literature and the authors' personal experiences, but that analysis has not at this point been completely systematic and rigorous. Second, while there has been some initial success in using it to discriminate between development strategies that on the surface seem quite similar, it needs much more extensive testing and refinement. It is thus presented here as an initial formulation that invites criticism and improvement.

The first descriptor focuses on the participants in the process. As Short indicates, their competence and their perspective are so important that we need to have such information. The second descriptor is concerned with the general tenor of the discussions. A monologic discussion is one in which only one person participates or makes decisions, such as a college instructor developing a new course independently. In a participatory discussion, one individual clearly is in control, but makes a genuine effort to solicit the input of others. A dialogic discussion is one in which there is much open discussion in an attempt to achieve consensus on key issues.

The third descriptor identifies those elements that influence curriculum decision making, even though they may not be explicitly referred to in the final document. As Exhibit 3.2 indicates, several factors variously impact upon curriculum decisions. Thus, nursing educators who have been observed developing courses seemed most conscious of the requirements of accrediting bodies. On the other hand, teachers in a large urban district seemed chiefly concerned about "accountability procedures."

The fourth descriptor is concerned with the starting point for the substantive deliberations. As indicated in Exhibit 3.3, several curricular elements are in this formulation, any one of which might conceivably be a starting point. The obvious intent here is to challenge the conventional wisdom that curriculum development must begin with a clear statement of objectives. As indicated in Exhibit 3.4, the fifth descriptor is concerned with those elements emphasized and the sequence in which they are considered.

The sixth descriptor focuses on the organizing structures of the course—the structural elements that give the course shape. Four structural components are included: the general structure and movement of the course itself, the units, the lessons, and the lesson components.

**Exhibit 3.1** An Analytic System for Examining the Curriculum Process

1. What groups or constituencies should be represented in the developmental sessions?
2. What type of participation structure is recommended for the sessions—monologic, participatory, dialogic?
3. What shaping factors should receive significant consideration throughout the process?
4. Which curriculum element should be used as the starting point in the substantive deliberations?
5. Which curriculum elements should receive significant consideration—and in what sequence should such consideration occur?
6. Which organizing structures should receive significant consideration—and in what order: course structure, units, lessons, lesson components?
7. Should the progression from element to element or from structure to structure be predominantly linear or recursive?
8. What curriculum images and metaphors seem to influence the process?
9. What general type of problem-solving approach should be used throughout the process—technological, rational, intuitive, negotiating?
10. What recommendations are made about the form and content of the curriculum product?
11. What recommendations are made for implementing the curriculum product?
12. What recommendations are made for assessing the curriculum product?
13. What criteria should participants use to assess the quality and effectiveness of the process?
14. To what extent should developers be sensitive to the political aspects of curriculum development?

The seventh descriptor examines the progression of the discussion. A linear progression would move sequentially from element to element or from structure to structure; a recursive discussion would move back and forth in some systematic fashion. The eighth descriptor asks the researcher to be sensitive to the curricular images and metaphors that seem to influence the process. Does the developer seem to conceptualize a curriculum as a mosaic or a patchwork quilt, as a journey or series of travel experiences, as a set of steps moving from the basement to the top floor? The obvious point, of course, is that such images and metaphors reveal the pervasive belief systems of the developers with respect to that field of study—and such belief systems subtly but profoundly influence their decision making.

The ninth descriptor examines the type of problem-solving process at work. Contrary to what some deliberative theorists assert, it seems in many respects that all curriculum making is a type of problem solving. Four types of problem-solving processes have been recommended by theorists: technological, rational, intuitive, and negotiating. A technological approach to curriculum problem solving argues for a tightly controlled process assessing needs, deriving goals from those needs, performing a task analysis to identify learning objectives, determining the sequential or hierarchical relationship among the objectives, specifying instructional activities, and identifying evaluation procedures.

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**Exhibit 3.2** Shaping Factors in Curricular Deliberations

1. The developers: their espoused and practiced values; their knowledge and competence
2. The students: their values, abilities, goals, learning styles
3. The teachers: their values, knowledge, teaching styles, concerns
4. The organization: its ethos and structure
5. The administrators of that organization: their values and expectations
6. External individuals and groups (parents, employers, pressure groups): their values and expectations
7. Accrediting bodies: their requirements and recommendations
8. Scholars in the field: their recommendations, their reports of research; their perceptions of the structure of that discipline
9. The community and the larger society: what is required to maintain or change the social order
10. Other courses in that field of study, courses taken previously and subsequently
11. Courses in other fields that students are likely to take concurrent with the course being developed: their contents, impacts, and requirements
12. The schedule for the course: number of meetings, length of meetings, frequency
13. Accountability procedures: examinations, "curricular audits"

**Exhibit 3.3** Curricular Elements

1. Rationale, philosophy, or statement of espoused values
2. Institutional goals or aims
3. Knowledge outcomes for the course, the units, the lessons: concepts, factual knowledge
4. Skill or process outcomes for the course, the units, the lessons
5. Affective outcomes for the course, the units, the lessons: values, attitudes
6. Content choices: elements of subject matter selected for their intrinsic worth (literary or artistic works, periods of history, important individuals, significant events, etc.)
7. Organizing elements: themes, recurring concepts, structures of linkage:
  - a. Those used to link this course with courses previously or subsequently studied
  - b. Those used to link this course with other courses studied concurrently
  - c. Those used to link units in this course with each other
  - d. Those used to organize units and relate lessons in a unit to each other
8. Teaching/learning activities
9. Instructional materials and media
10. Time allocations
11. Methods for assessing student learning

**Exhibit 3.4** Analysis of Doll's (1986) Curriculum Development Process

1. Groups represented: teachers, pupils, administrators, supervisors, school board, lay community
2. Participation structure: participatory
3. Shaping factors: organizational ethos; pupil needs; teachers' values, knowledge, teaching style, concerns
4. Starting point: institutional goals
5. Elements considered: goals, course objectives, evaluation means, type of design, learning content, interunit linkages, interlesson linkages
6. Organizing structures: not specified
7. Progression: linear
8. Images and metaphor: not used
9. Problem-solving approach: rational
10. Form and content of product: no specific recommendations
11. Implementation recommendations: no specific recommendations
12. Recommendations for evaluating product: extensive formative and summative assessments
13. Criteria in assessing process: eleven specific criteria offered.
14. Political sensitivity: limited

A rational approach to curriculum problem solving describes the somewhat looser but still logical approach advocated by Schwab and others: Deliberators collect and examine pertinent data, formulate the curriculum problem, generate alternative solutions, and evaluate those solutions in order to determine which is best.

In an intuitive approach, participants are encouraged to rely upon their intuition and tacit knowledge, like Schon's "reflective practitioners" who make wise choices but cannot explain how they make those choices (Schon, 1983). Moreover in some processes, the problem solving is more like a negotiating exchange in which bargaining and trading and making compromises seem to be the predominant activities.

The tenth descriptor examines the decisions about the form and content of the final product. Again, there might be much variation here. For example, Glatthorn recommends that the final product should be a loose-leaf notebook that contains only a summary of pertinent research and a list of the required and testable objectives (Glatthorn, 1980). Teachers using the notebook thus have much latitude in how they organize the objectives and which methods and materials they use.

The eleventh and twelfth descriptors are concerned with the future—what plans are made for implementing and for testing the product? The thirteenth descriptor examines the criteria that the participants seem chiefly to rely upon in assessing the quality of their work, and the last descriptor examines the extent to which the process is sensitive to the political aspects of curriculum work.

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**Exhibit 3.5** Analysis of Glatthorn's (1986) Curriculum Development Process

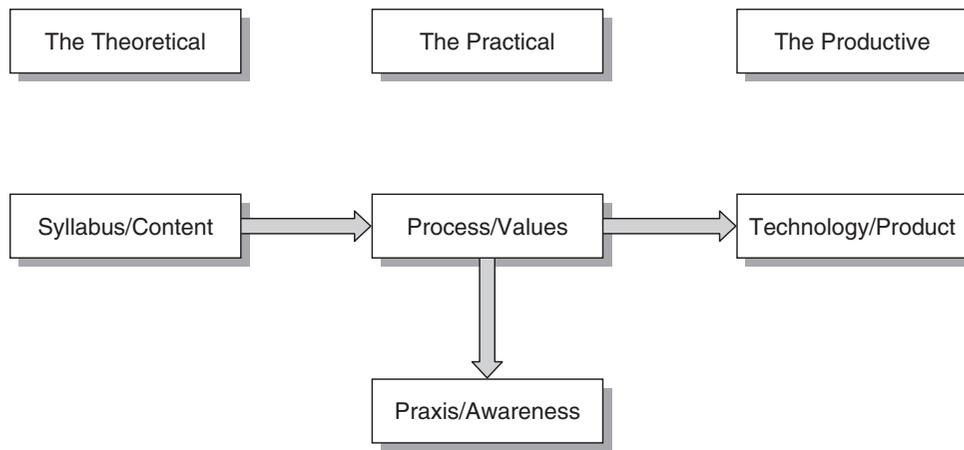
1. Groups represented: teachers
2. Participation structure: dialogic
3. Shaping factors: students, teachers, administrators, scholars, other courses, schedule
4. Starting point: knowledge and skill outcomes for course; starting point for unit planning varies
5. Elements considered: knowledge and skill outcomes for units and lessons, unit themes, teaching/learning activities, instructional materials and media, time allocations, student assessment
6. Organizing structures: units, lessons
7. Progression: recursive
8. Images and metaphors: not used
9. Problem-solving approach: intuitive
10. Form and content of product: open-ended "scenarios"
11. Implementation recommendations: no specific recommendations
12. Recommendations for evaluating product: emphasis on quality of learning experiences
13. Criteria in assessing process: none provided
14. Political sensitivity: extensive

If such an analytic system is at all valid, then it suggests, of course, that the Tyler rationale is not the only system for developing curricula; in fact, the system has been used in initial trials to analyze the significant differences between several distinct models of curriculum development. Exhibit 3.4 shows how the descriptors were used to analyze Doll's (1986) process, and Exhibit 3.5 shows how they describe the "naturalistic" process reviewed in Chapter 8 of this work.

### Alternative Curriculum Approaches

Glatthorn's four curriculum categories still hold up to scrutiny today and continue to help provide a road map for curriculum theory. Nonetheless, Mark Smith (1996, 2000), author of "Curriculum Theory and Practice" in the *Encyclopaedia of Informal Education*, developed his own categories for understanding curriculum development. Smith's approaches are listed as follows:

- *Transmission of Information*: Curriculum as a body of knowledge to be transmitted via a syllabus
- *End Product*: Curriculum as an attempt to achieve certain ends-products
- *Process*: Curriculum as a process
- *Praxis*: Curriculum as praxis (action that is committed)

**Exhibit 3.6** Elements of Curriculum Theory and Practice

SOURCE: Adapted from Smith, M. K. (1996, 2000). Curriculum theory and practice, *The encyclopaedia of informal education*, [www.infed.org/biblio/b-curric.htm](http://www.infed.org/biblio/b-curric.htm). Last updated: 30 January 2005.

Smith's categories reflect and synthesize the essence of curriculum theory into four easily understood approaches. With this in mind, the authors have taken the liberty of combining Smith's ideas into a figure that also includes categories noted by Glatthorn. Exhibit 3.6 is modified to reveal some clear links between Glatthorn and Smith. Areas of consideration include the body of knowledge and content to be transmitted, the process and value models to be conveyed, the focus on an end product, and the practical and technical deliberation. Most interestingly, Smith's categories mirror elements of Aristotle's characterization of the productive.

When reviewing the model using ideas from Smith and Glatthorn, it is important to note change results from several different perspectives. The model blends together the substantive nature of curriculum theory as well as the development of awareness and understanding. Below, we expand upon and compare the similarities between Smith's categories of transmitter of knowledge, end product, process, and praxis as they relate to Glatthorn's typology of structure-oriented theories, value-oriented theories, content-oriented theories, and process-oriented theories.

## Curriculum as Transmission of Information

Smith views curriculum as a body of knowledge to be transmitted and equates it with the use of a syllabus. Some theorists believe that an overemphasis on the use of a syllabus as the sole foundation of curriculum is a dependence on content as well as an overdependence on a particular way of organizing a body of knowledge, content, and/or subjects.

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The syllabus and transmitter-of-knowledge approach seems to follow closely with Glatthorn's *structured-oriented theories*. Structure-oriented theorists generally wish to transmit the body of knowledge, but tend to rely upon empirical research, using both quantitative and qualitative methodologies to inquire into curricular phenomena.

For example, macro structural theorists are now more globally oriented and use technology to transmit information about curriculum. The use of e-mail and the Internet is becoming a larger part of developing curriculum at this level. Educators are using the World Wide Web to share curriculum designs and syllabi. Larger, global forces of polity, economics, common cultures, and classics are becoming points of interest and are more evident when transmitting and sharing basic information. The transmitter-of-knowledge approach is often determined and manipulated to agree with the local interests, values, needs, and wants of the controlling agency, such as a state government educational agency, community, or school.

### Curriculum as End Product

A second fundamental aspect of Smith's curriculum theory is that of *achieving an end product*. Goals and objectives become the common focus of theorists using this approach. Educators using this approach are less concerned with how curriculum is taught than what the end product is, and what the goals and objectives are that are used to achieve that product or result—for example, a science report, multimedia math project, piece of literature, poetry, or a speech. This follows with the concept of expanding and explaining curriculum. Themes often center on preparing the student for life, developing abilities, attitudes, habits, and appreciations. The focus of curriculum is generally that of systemic study, needs assessment, training, implementation, and evaluation with an emphasis on students' producing tangible results that reflect their potential.

End-product approaches seem to follow closely with Glatthorn's *content-oriented theories*. As mentioned previously, content-oriented theorists are often concerned with determining and specifying the major sources as well as the details that influence the selection and organization of curriculum content.

Proponents of product-based curriculum usually focus on the following:

- *Real Problems*—real and relevant to the student and the activity,
- *Real Audiences*—utilising an “audience” that is appropriate for the product, which could include another student or group of students, a teacher (not necessarily the class teacher), an assembly, a mentor, a community or specific interest group,
- *Real Deadlines*—encouraging time management skills and realistic planning,
- *Transformations*—involving original manipulation of information rather than regurgitation, and
- *Appropriate Evaluation*—with the product and the process of its development being both self-evaluated and evaluated by the product's audience using previously established “real world” criteria that are appropriate for such products.

(Farmer, 1996)

An example of a product-based approach is Understanding by Design. Understanding by Design proponents Grant Wiggins and Jay McTighe (2005) noted that this approach often looks at instruction from a “results” orientation. They believe that Understanding by Design

is a recursive process, not a prescriptive program. It targets achievement through a “backward design” process that focuses on assessment first and relevant instructional activities last. The design also uses a spiral of learning where students use and reconsider ideas and skills versus a linear scope and sequence. Individuals using the Understanding by Design approach have a tendency to view curriculum in terms of desired “performances of understanding” and then “plan backwards” to identify needed concepts and skills.

Researchers who espouse product-based curriculum commonly place an emphasis on case studies. Case studies help curriculum designers focus on the realities of classroom life. Teachers have long been aware of the increasing gap between the principles of education taught in university pre-service programs and the classroom. The current burgeoning interest in educational case methods is testimony to the promise of case-based teaching as a way of bridging that gap and of easing the novice teacher’s entry into the classroom. A case study holds attributes of both theory and practice, enabling teachers and students alike to examine real-life situations under a laboratory microscope. Case studies provide a piece of controllable reality, more vivid and contextual than a textbook discussion, yet more disciplined and manageable than observing or doing work in the world itself (Wiggins & McTighe, 2005).

### Curriculum as Process

A third fundamental aspect of current curriculum theory noted by Smith focuses on *curriculum as process*. Viewing curriculum as process places the emphasis on the interaction among teacher, student, parent, and knowledge rather than on a syllabus and/or on an end product. The focus is on what is actually taking place in the classroom as well as the learning process itself. Critical thinking, listening, and communication are important components of process curriculum. Often an emphasis is placed on thinking about planning, justifications of procedures, and actual interventions, as well as providing feedback and changes during the curriculum process.

One of the earlier curriculum planning approaches involved the *instructional design process*. The instructional design process, often referred to as (ISD), emerged from psychology laboratories and helped establish the first systematic approach to the development of instructional materials and teaching strategies. Instructional design is the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs. It includes development of instructional materials and activities, and tryout and evaluation of all instruction and learner activities (Shulman, 2003). Robert Gagne’s (1985) *The Conditions of Learning and Theory of Instruction* and *Principles of Instructional Design* (Gagne, Briggs, & Wager, 1992) describe this approach. Gagne (as cited in Willwerth, 2003) once said,

To know, to understand, to gain insight into, and so on are not useful as descriptions of relatively observable behavior; nor are their intended meanings easily agreed upon by individuals . . . The action verbs which are used in the construction of the behavioral objectives for Science: A Process Approach are: identify, construct, name, order, describe, demonstrate, state a rule, apply a rule. (n.p.)

The instructional design process continues to be an important part of the planning, implementation, and evaluation of curriculum.

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Allan Glatthorn's concept of *value-oriented theorists* relates well to Smith's process and end product approach. It is primarily engaged in what might be termed "educational consciousness-raising," attempting to sensitize educators to the values and issues that lie at the heart of the stated curriculum. Advances in technology and the World Wide Web have provided value-oriented theorists with a global platform to access electronically to share information on social reform, culture, and economics.

Value-oriented theorists draw heavily and eclectically from several inquiry methodologies, such as psychoanalysis, philosophical inquiry, historical analysis, and political theory. For example, A. N. Maheshwari (2003), chairperson of the National Council for Teacher Education, states,

As the world enters the Information Age another dimension to value education concerns information itself. This is to do with the nature of information. (§ 4)

Information is received by human beings through five senses—the senses of seeing, hearing, touch, taste and smell. Information as any one of us receives it is value neutral. Information of seeing is carried by ElectroMagnetic waves, which consist of vibrations of electric and magnetic fields. These vibrations when received by our eyes are transmitted as signals to the brain. The response of brain to information that is received by it is determined by its sub-conscious mind. (§ 5)

"Therefore," according to Maheshwari, "teachers of the future will have to provide learning experiences for holistic development of mind, body intellect and emotions" (§ 7), and this will require value-oriented teacher education. Maheshwari goes on to state, "There are two challenges that may have to be faced in providing value orientation to teacher education—stability and change. Stability demands preservation of culture and change demands technology" (§ 10).

### Curriculum as Praxis/Awareness

The fourth aspect of Smith's curriculum model is *praxis*. Praxis models deal primarily with practical deliberation and differentiated curriculum. Through the use of technological advances, curriculum leaders can now access a body of knowledge, formulate content that is interdisciplinary, and provide a process of electronic communication that helps cut across cultural, economic, and social boundaries worldwide. The praxis concept encourages the student and teacher to reach a higher level of awareness through curriculum differentiation and with the use of technology to speed up the process.

*Curriculum differentiation* is a broad term referring to the need to tailor teaching environments and practices to create appropriately different learning experiences for different students. Keirouz (as cited in Maheshwari, 2003) suggests the following procedures for enhancing differentiation:

- Deleting already mastered material from existing curriculum
- Adding new content, process, or product expectations to existing curriculum
- Extending existing curriculum to provide enrichment activities
- Providing course work for able students at an earlier age than usual
- Writing new units or courses that meet the needs of gifted students

The focus here is to create a differentiated learning environment that encourages students to engage their abilities to the greatest extent possible, including taking risks and building knowledge and skills, in what they perceive as a safe, flexible environment. In that regard, a differentiated learning environment should

1. assess students before a unit of instruction to determine what they already know.
2. adjust the core curriculum by content (below to above grade level), process (concrete to abstract), and product (simple to complex).
3. provide assignments tailored for students of different levels of achievement.
4. have HIGH expectations for ALL students.
5. provide educational experiences which extend, replace, or supplement standard curriculum.
6. structure class assignments so they require high levels of critical thinking and allow for a range of responses.
7. have students participate in respectful work.
8. have students and teachers collaborate in learning.
9. put students in situations where they don't know the answer—often.
10. differ the pace of instruction.
11. provide a blend of whole class, group, and independent learning.

(Principles of Differentiation, n.d. Used with permission from the Manteno C.U.S.D. #5, Manteno, Illinois.)

Differentiated curriculum in enriched learning environments follows closely with a constructivist philosophy and focuses on making meaning of one's environment and becoming aware of the interaction between the enacted curriculum and the experienced curriculum. For example, Seymour Papert uses the term *constructionism* to brand his favored approach to learning. He states,

Constructionism is built on the assumption that children will do best by finding (“fishing”) for themselves the specific knowledge they need. Organized or informal education can help most by making sure they are supported morally, psychologically, materially, and intellectually in their efforts. As such, the goal is to teach in such a way as to produce the most learning for the least teaching. (§ 4)

Constructionism differs from constructivism in that it looks more closely than other educational-isms at the idea of mental construction. It attaches special importance to the role of constructions in the world as a support for those in the head, thereby becoming less of a purely mentalist doctrine. As examples of constructionist learning activities, Papert refers, amongst others, to measuring quantities while making a cake, building LEGO or working with the computer programming language LOGO developed specifically . . . for educational

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use. ¶ 5) As scientists study learning, they are realizing that a constructivist model reflects their best understanding of the brain's natural way of making sense of the world (Papert, 1993). Some educators in the field, however, become confused as to who are constructivists and who are behaviorists. In a behaviorist class, one focuses on the answers desired and tries to shape the responses until they resemble a prototype. In a constructivist classroom, students continually try out ideas and practice for themselves to see where the ideas will work and where they prove to be inadequate (Abbot & Ryan, 1999).

Constructivists and differentiated instruction does, however, require that teachers study differences in understanding, learning modalities, and interests. This can be a problem in that it requires a great deal of time as well as requires the complexity of keeping track of different approaches (Perkins, 1999). Critics of differentiated instruction and constructivist approaches also note that is too permissive and that it lacks rigor. The concern is that the teacher may cast aside the information, facts, and basic skills embedded in the curriculum (Scherer, 1999). There is an additional fear concerning how it will fare with a continuing emphasis on curriculum based on standards and high stakes testing. With the advent of state and national assessments and a focus on the alignment of standards, some constructivists are concerned that students are losing out on special instructional practices that foster meaningful learning (Brooks & Brooks, 1999).

Conflicts between constructivists and those who favor high-stakes testing may be softened by the advent of technology. Advances in technology may hold the promise of providing a means to ameliorate the situation by allowing students to have an active, social, and creative learning environment as well as enable educators to align the curriculum to state and national standards and assessments.

Through actual practice and activities in the classroom, students will be able to negotiate problems and analyze strategies on a case-by-case, situation-by-situation basis. This approach not only allows for description and explanation, but also emphasizes prediction and problem solving at higher levels. It is a curriculum that makes teachers and students more introspective on a global level and allows teachers and students to see through each other's eyes. Learning involves exploration and is based on reflection, exploration, and physical experience. The praxis model becomes more activity- and metacognitively centered and more personal in nature, allowing the development of real-life experiences to unfold. A greater chance exists for the dynamic interaction and reflection between student and teacher that drives the learning process. With the assistance of technological advances, a teacher today can be more involved in the process and better able to capture the coveted "teachable moment."

## CURRICULUM AS CHANGE

Curriculum, whether it is hidden or apparent, seems to be changing even more to meet today's needs and realities. Current instructional design based on brain research is becoming more common. Brain research completed by D'Arcangelo revealed that the brain changes physiologically as a result of experience and that an individual's environment may determine to a large extent the functioning ability of the brain (Brooks & Brooks, 1999). Work in the field of brain research is helping to suggest strategies for teachers in the classroom. Research is helping teachers know how students learn and how students receive, process, and interpret information (Caulfield, Kidd, & Kocher, 2000). The importance of a student's emotional

intelligence is also being considered. Daniel Goleman's *Emotional Intelligence* and Joseph LeDoux's *The Emotional Brain* are books that have advanced our understanding of the role of emotions in learning. In addition, Howard Gardner's work in multiple intelligences and the dimensions of learning reveals that human intelligence encompasses a far wider and more universal set of competencies than a single general intelligence (Given, 2000). Bransford, Brown, and Cocking (2001), in *How people Learn: Brain, Mind, Experience, and School*, note that it is important for students to organize their knowledge around important ideas and concepts—that students “learn how to see” a problem like an expert and understand the “Why and When?” as well as the “What?” and “How?” He states that it is important that students integrate their new knowledge with existing knowledge (constructivism) and for students to monitor their learning and problem solving (metacognition) (Caulfield et al., 2000).

With the advent of more innovative ideas and with the advancement of technology, curriculum is becoming more comprehensive and differential in nature. It is forcing change in order to meet new challenges and changes. Educational content and teaching-learning materials now appear to be more functional, diversified, and operational in nature. An increased emphasis is placed on relevance, flexibility, needs, and speed. Demographics, population, health, nutrition, and environment are becoming dominant factors in what appears to be a value-oriented instructional design process focused on the global community.

A case can be made that the very nature of educational structure and educational methodologies is undergoing a significant change. The World Wide Web, computer-assisted instruction, programmed instruction, educational technologies, multimedia capability, and distance education are changing the face of educational curriculum worldwide. Electronic media on a global level appears to be evolving its own pedagogical methodologies and strategies. These advancements in technology are leading to a multitude of approaches that are blending a milieu of curriculum that caters to the needs of interested, disinterested, and remedial learners worldwide.

## Technology as Catalyst of Curriculum Change

Little doubt is evidenced that technology is serving as the catalyst for change. The advent of new media, such as the Internet and hypermedia, has brought about not only technological innovations, but also provides new ways of approaching learning and instruction. Douglas Leigh (2003), a specialist on instructional systems at Pepperdine University, notes that theorists such as Thomas Duffy and Seymour Papert are suggesting a model whereby sociocultural and cognitive issues regarding the design of learning environments can be supported by computer tools. Future designers will be able to focus on one aspect of learning or instruction as well as act as consultants or subject matter experts, whether internal or external to the organization. Technology advancements will therefore allow practitioners to oversee the development of instructional projects on a broad scale rather than just narrow their efforts exclusively on assessment, analysis, design, development, implementation, evaluation, or continuous improvement (Bransford et al., 2001).

The use of technology also promotes investigative skills, makes learning more exciting, provides opportunities to apply knowledge, and prepares students for an increasingly technological advanced world. Through a type of diffusion theory and process, technology is changing how we think of curriculum and how we think of education (Leigh, 2003). It is important to note that the emphasis is on developing ways to use technology in the curriculum, not just

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adding a new curriculum area. Disciplines can remain, but with a focus on activities and cooperative learning. Technical advances are allowing teachers to move the focus of curriculum to thematic units that emphasize an interdisciplinary approach, an integrated learning approach, and encourage effective habits of the mind. According to Hirsch (as cited in *Unit Curriculum Theory*, 2003),

To give all children a chance to take advantage of the new technology means not only seeing to it that they have access to the technology, but also ensuring that they possess the knowledge necessary for them to make effective use of it. (§ 4)

With technology making such vast, sweeping changes in curriculum worldwide, it is crucial to emphasize that the underlying foundation for educational change is to meet the needs of students at whatever age on a global level. Access to technology and the use of cooperative learning via the use of technology in classrooms is becoming more commonplace as a way not only to advance a body of knowledge, but to access knowledge with blinding speed electronically. Teachers globally are finding that the use of computer clusters with a 1:5 ratio of computers to students in classrooms can aid in the development of cooperative learning strategies. The use of cooperative learning strategies has been directly linked to an increase in student achievement (Hirsch, 2000). As a result, the concept of using technology with cooperative learning strategies as a curriculum strategy is gaining even more acceptance. An article on discussing curriculum theory on WebQuest indicates that when students work and study together cooperatively, they appear to learn more quickly (Whitehead, Jensen, & Boschee, 2003). Towns and Grant also found that cooperative learning helped students develop “meaningful strategies” in order to synthesize other concepts in the classroom (*Unit Curriculum Theory*, 2003). Developing new strategies and meeting students’ needs globally is a key to success.

As part of that global change process, further advances in technology are now utilizing the cooperative learning and differentiated curriculum strategies and combining them with the use of wireless hand-held computing devices. Currently a movement is toward low-cost, portable handheld devices for student use that can be connected through global networks and tailored for specific tasks or applications. Some classroom teachers now have the capability of communicating and exchanging information worldwide with students via classroom workstations and district servers. When viewing the potential of technology in the classroom of tomorrow, Howard Gardner probably said it best: “I believe that the computer revolution is already changing how students acquire and use information; if our schools do not rise to their technological opportunity and challenge, they risk becoming completely anachronistic” (Scherer, 1999, p. 16).

## THE THEORETICAL CLASSROOM OF THE FUTURE

When reviewing possible scenarios of the theoretical classroom of the future, Barbara Means (2001), the director of the Learning and Technology Program at SRI International, probably expressed it best when she described a science class of the future in an article for the Association for Supervision and Curriculum Development’s publication, *Educational Leadership*. Means envisions students in a middle school classroom of tomorrow monitoring

local haze using a sun photometer to measure attenuation of sunlight caused by haze, smoke, and smog. Seven small groups of students take their photometer reading at their school's softball field each day at noon, and the readings are automatically sent to their hand-held wireless MathPads. The information from the MathPads is transferred to a share board computer at the school. When the students return, the teacher begins a class review and discussion of the data on a wall-sized display. According to Dr. Means, the middle school teacher or students plot each of the group's readings on a graph showing measurements over the past 6 months and discuss distinction between accuracy and precision.

The middle school teacher then introduces the next assignment involving data analysis. Small groups of students investigate haze data from their own and other schools using the Internet to go online to the Haze Project database. The teacher reminds the students of the contents of the database and strategies for navigating to the Web site. Students are asked comprehension questions to ensure that they are interpreting and understanding the data tables correctly. The middle school teacher can make on-the-spot evaluations of student learning via electronic assessment software and Web-based evaluation programs that are aligned with state and national standards.

Middle school students participating in the project are asked to explore the data archive before deciding on a research question. Information will be noted in articles on the Haze Project's online student journal. The technology supports access to similar data sets and conferencing with others involved in the project. Students can choose to collaborate with students locally, statewide, nationally, or internationally at other schools via e-mail and real-time online discussions using software that allows them to share and manipulate data graphs.

This type of classroom-of-tomorrow scenario is actually being piloted in experimental classrooms today. The increasing availability of and accessibility to Web-based alternative learning creates all types of theoretical constructs. Technology invites innovation and allows us to envision future curriculum design in many new and different dimensions. The implications of technology for curriculum theory seem to be limitless. The implications of new theoretical constructs embracing technology to change education globally are staggering.

## CONCLUSION

The nature of curriculum theory appears to be a culmination of functions and approaches, whether they are hidden or apparent and/or whether they are old or new. Curriculum theorists are becoming more aware that curriculum can be both the description of what happens in the classroom and what actually happens in the classroom—and why not? Future theorists can help describe, explain, and predict the teaching and learning process. They can also help provide the constructs necessary for analyzing proposals, illuminating practice, and guiding reform. In addition, they can help in developing strategies to transmit knowledge via a syllabus, focus on an end product, state and demonstrate a process of learning, as well as provide praxis by fostering a more dynamic milieu in the technological global classroom of the future. More important, they can provide dynamic models of teaching and learning that can elicit educational change worldwide. The key, then, is for future curriculum theorists to elicit an educational change via technology on a global scale that will allow us to develop new and meaningful ways of improving awareness and understanding throughout the world.

## CHAPTER OVERVIEW

Chapter 3 explains that sound theory can be of value to both the scholar and the practitioner because curriculum theory can provide a set of conceptual tools for analyzing curriculum proposals, for illuminating practice, and for guiding reform. This chapter shows how melding theory and the reality of school curriculum is an important step in the educational planning process. Because it is difficult to use theoretical approaches to make continual analyses, reevaluations, and revisions of curriculum, especially in such fields as informational technology and the sociology of knowledge, this chapter explains the necessity of developing a fundamental understanding of curriculum theory by providing the tools necessary when analyzing curriculum proposals, illuminating practice, and guiding reform. This chapter addresses the nature and function of curriculum theory. It also addresses why it is important to meld the theory and reality of school curriculum together as part of the planning process. This chapter explains the role of leadership in the development of curriculum theory and the major classifications of curriculum theory. Finally, it addresses how technology has been a catalyst for curriculum change.

## CHAPTER TERMS

Curriculum Theory	Open Education
Traditionalists	Developmental Education
Conceptual Empiricists	Knowledge-Centered Curricula
Reconceptualists	Ways of Knowing
Structure-Oriented Theories	Society-Centered Curricula
Value-Oriented Theories	Conformists
Content-Oriented Theories	Reformers
Process-Oriented Theories	Futurists
Child-Centered Curriculum	Radicals
Affective Education	

## APPLICATIONS

1. As noted in this chapter, much debate occurs in the field about the value of curriculum theory. As you understand the nature of curriculum theory, how much professional value does it seem to have for you?
2. Most of the theoretical work in the field would be subsumed under the headings of value-centered and content-centered theories. How do you explain the fact that structure and process matters have received much less attention from curriculum theorists?

3. Several experts who have analyzed process theories claim that all attempts to develop new process approaches turn out to be simply variations of the Tyler rationale. To what extent do you agree with this assessment?
4. Use the proposed descriptive system to analyze any article or book that describes a curriculum development process.
5. As noted in this chapter, very little work has been done in applying ways-of-knowing approaches to curriculum development projects. What do you think a school curriculum would look like, in general, if it attempted to embody a ways-of-knowing approach to the curriculum?
6. Looking at your school system, how have advancements in technology changed the roles of the education process?

## CASE STUDY

Bruce Novac has been a PK–5 elementary school principal in the Dover School District for the past 2 years. This is the beginning of his third year and the year in the district in which he will be up for tenure. He has a meeting scheduled with the school superintendent, Dr. Robert Kerr, and the curriculum director, Dr. Karla Johnson, to review test score data of the third-grade students in his school. The results revealed that the third-grade students' scores were well below state and federal guidelines for proficiency. In fact, second-grade students had higher achievement scores than the third-grade students in his school.

Mr. Novac was told by the two central office administrators that his theory of curriculum implementation was not working. In fact, what he was doing was held in low regard by the teachers in his school. In a panic, Novac begins to search for some answers on curriculum theories espoused by authors of curriculum textbooks and in educational journals. His focus is captured by structure-oriented, value-oriented, content-oriented, and process-oriented curriculum theories, which he hopes will provide answers to the third-grade low-achievement dilemma in his school.

## THE CHALLENGE

Student achievement is often thought to be the result of curriculum theory that teachers support. How can Mr. Novac educate and motivate the third-grade teachers to integrate sound curriculum theory into their day-to-day work with students?

### Key Issues/Questions

1. What are your impressions of the superintendent and curriculum director? Did they adequately address Mr. Novac's responsibilities in this incident? Why or why not?
2. What are your impressions of the third-grade teachers in this elementary school in the Dover School District?

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3. If the principal meets with the third-grade teachers, what should be discussed?
4. What are some possible reasons why third-grade students in Mr. Novac's school are low achievers?
5. What are some theoretical curriculum approaches that Principal Novac might use to increase student achievement scores? Identify the strategies and explain why you think they might be effective.

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