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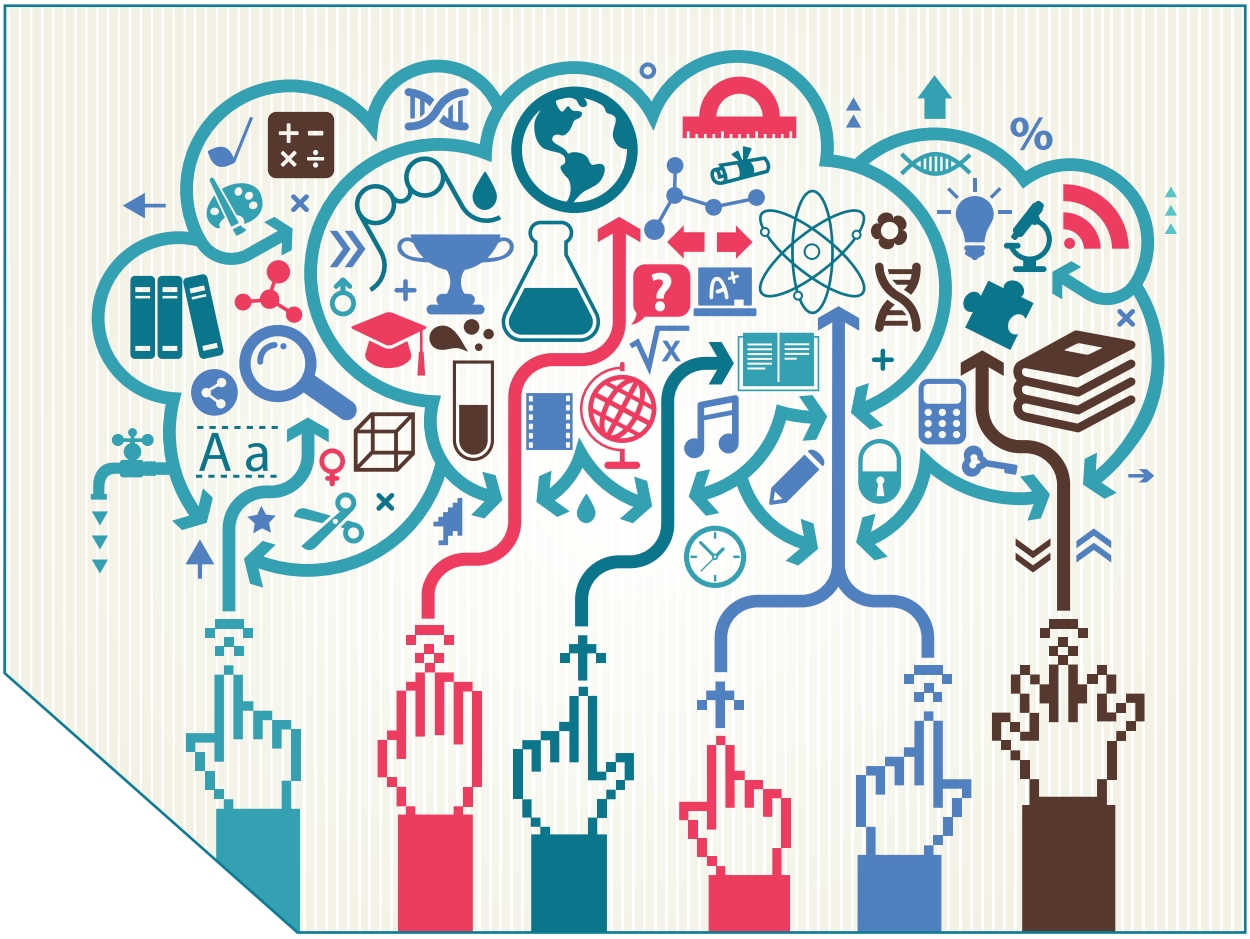
DEVELOPING THE CURRICULUM

Improved Outcomes Through Systems Approaches

NINTH EDITION



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In memory of Peter F. Oliva,
whose rich academic career contributed
to the development of curriculum leaders across
the United States and globally.

For my wife, Patty;
our children, Whitney and Trey;
and my mother and father,
Marcelyn and William;
and my sister, Pam; and my aunt, Mary.

William R. Gordon, II

For my son, Jay,
and education leaders who have
supported my continuous learning.

Rosemarye T. Taylor

ABOUT THE AUTHORS

William R. Gordon II has served as a teacher, instructional leader, and district-level executive leader in Florida. As both an elementary and high school principal, he became known for his deep understanding of curriculum and instruction, thought leadership, and systems approaches in the Orange County Public Schools (OCPS) school system. During his 11 year tenure as the principal of Winter Park High School, the school was named by the State of Florida as a "High-Performing School" due to the school's rigorous curriculum and outstanding student achievement. Additionally, *U.S. News and World Report* repeatedly ranked Winter Park High School in the top 1 percent of high schools in the nation. While in OCPS he became an area superintendent, where he was responsible for the curriculum, instruction and student and teacher performance in 29 diverse schools serving approximately 35,000 students. After serving in OCPS, he became the chief operations officer at Florida Virtual School (FLVS), the nation's oldest and largest public online public school system. While serving as an executive leader at FLVS he established an Analysis, Assessment, and Accountability (AAA) division in the district. The AAA division established enterprise-wide data collection, data analysis, and predictive analytics as a leader in the online industry. Additionally, he engaged with online curriculum, instruction, and professional learning. In 2017, he was selected as a member of the third class of the *Leadership Florida, Leadership in Education Program*, which is funded by the Florida Education Foundation, the Bill and Melinda Gates Foundation, and the Florida Department of Education. This program is established to build a corpus of highly effective educators to improve student learning outcomes in the State of Florida. He has also served as an adjunct professor in the College of Education at the University of Central Florida.

Rosemarye T. Taylor has a rich background in teaching and leading in Georgia and Florida. She also served as national director of professional development for Scholastic, Inc. Since joining the faculty at the University of Central Florida in Orlando, she has become known for expertise in instructional and curricular leadership through use-inspired research that influences improved educator practice. She has published numerous articles, chapters, and books addressing the alignment of curriculum, instruction, classroom and standardized assessment, professional learning, and evaluation to result in improved learning outcomes. She has also led innovations at the school, school district, and university level to leverage technology and digital tools to improve literacy and learning across student populations. Currently, she is professor of educational leadership working with master's degree and doctoral students, while continuing to actively support schools and school districts in their missions to serve all students.

PREFACE

The ninth edition of *Developing the Curriculum: Improved Outcomes Through Systems Approaches* continues to serve as a comprehensive analysis of systematic curriculum development to improve learner success. We are grateful to the readers who continue to use it to further the study of a continually evolving area in a time of standards implementation and accountability for student learning outcomes. In providing a comprehensive view of the field of curriculum development, by illuminating various historical and twenty-first century approaches to this field, we present evidence based content relevant to today's curriculum specialists and instructional leaders in school districts and schools.

NEW TO THIS EDITION

Although the same basic overall structure of previous editions remains in place; several changes have been made in updating this edition to make the text more current and applicable, both to instructors and students in a college or university setting and to curriculum specialists and instructional leaders in their practice.

- William R. Gordon, II, a former practitioner leader in the field of education, shares his contemporary experience and knowledge of leading traditional and virtual education in this edition. With the passing of the original author, Peter F. Oliva, Dr. Gordon replaces him as the lead author.
- Rosemarye T. Taylor, professor of educational leadership and former practitioner, is new to this edition bringing with her expertise in curriculum systems that include instruction, assessment, and evaluation.
- About 35 percent new content has been added. While maintaining the rich historical perspective, topics like ESSA, digital directions, English Learners, science of learning, and standards based curriculum systems (instruction and assessment) have been added or expanded upon. Academic language and literature throughout the text has been updated to reflect twenty-first century curriculum system thinking.

The Digital Curriculum chapter in the 8th edition has been updated to Trends in Digital Curriculum and Instruction which reflects trends and research in this dynamic area of educational curriculum, instruction, delivery, assessment, and data analysis. The concepts of innovative practices in digital and technological literacies are introduced and an analysis of areas such as online learning, blended learning, and mobile learning is provided. Additionally, an overview of how computer based assessments are being used to gather student performance data to inform curricular and instructional practices is presented. Furthermore, a new forum for free digital content, Open Education Resources, as well as a section on digital ethics, are featured.

- Chapter 8 has been deleted and content has been infused throughout other chapters as appropriate.
- Chapter 15 has been deleted and future directions in curriculum development, implementation, and assessment are infused as appropriate throughout the text and in the last chapter.
- References now appear at the end of each chapter and are in APA 6th edition format to aid the reader by more easily situating authors and the time of their work.

- Suggested Readings are before each Reference list at the end of each chapter and therefore, the Bibliography has been deleted.

Like preceding editions, this book is intended to address the learning needs of graduate students in courses such as curriculum development, curriculum planning, curriculum and instruction, curriculum improvement, and instructional leadership. School district-level curriculum specialists, preservice and in-service curriculum coordinators, principals, assistant principals, curriculum resource teachers, department chairpersons, instructional team leaders, and grade-level leaders will benefit from this practical guide to curriculum development.

The six sections of the book follow a particular sequence and have numerous examples of practices of actual schools and school districts. The text begins with an examination of the theoretical dimensions of curriculum development, reviews the various personnel who have the primary responsibility to develop the curriculum, and describes various models of curriculum development, including the Gordon Taylor Model of Curriculum System Development, which is designed to positively influence student learning outcomes in a time of standards. The process of curriculum development is examined from stating philosophical beliefs and broad aims of education to specifying curriculum and instructional goals and objectives, implementing curriculum and instruction, and evaluating instruction and the curriculum.

The chapters are designed to provide in-depth information that relates to the cognitive objectives of the chapter. Each contains a great deal of information and suggestions as well as inquiry and reflection, along with applications that reinforce the objectives and extend the treatment of topics beyond the text.

As in the past, we have tried to provide a synthesis of theory, research, and practice that is clear and readable. Furthermore, we have zealously researched and analyzed the content of this text to provide a quality learning experience for our readers. We acknowledge that we need more educators to take a leading role in the complex field of curriculum development. It is our goal to encourage and nurture such possibilities by providing a helpful teaching aid for those who are involved in the process of curriculum development.

ACKNOWLEDGMENTS

The authors of this text wish to express their deep appreciation to all the people who have contributed to the writing and publishing of this and earlier editions. Insights of the teachers, administrators, students, and colleagues with whom we have worked and of those who have reviewed the text have helped to shape our thinking on the challenging process of curriculum development. We wish to especially thank Julie Peters, our editor, Faraz Sharique Ali, our content producer, and Jessa May Dales, our project manager for the assistance they provided us.

Colton Tapoler assisted with the transitioning of notes and bibliography to references in APA format for each of the chapters. We appreciate his assistance with this tedious task.

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PART I

The Curriculum

Theoretical Dimensions

CHAPTER 1

Curriculum and Instruction Defined

Learning Outcomes

After studying this chapter, you should be able to:

1. Define curriculum for your context.
2. Distinguish between curriculum and instruction.
3. Explain the ways curriculum can be considered a discipline.
4. Create or select a model showing the relationship between curriculum and instruction supported with evidence.

CONCEPTIONS OF CURRICULUM

Gaius Julius Caesar and his cohorts of the first century BC had no idea that the oval track on which the Roman chariots raced would bequeath a word used almost daily by educators 21 centuries later. The track—the *curriculum*—is a major focus of today's educational leaders as they seek to create and implement the curriculum that best aligns with the needs of students and to increase successful student learning outcomes on the accountability metrics that apply in their unique contexts.

It is important to note the pragmatic implications of curriculum in serving the students' needs and in making progress with student learning as measured officially, which may be different requirements. Curriculum theorists recognize that theory and practice are not necessarily separate and should be connected (Wright, 2000). In fact, Wright discusses how curriculum theorists are wrestling with the inclusion of curriculum in non-traditional learning environments, such as museums, community centers, and in various locales which may be virtual or real. Theorists are also considering the technological opportunities for learning that are reflected in changes in brick and mortar schools, virtual schools, and in curriculum development, implementation, and evaluation (Wright, 2000). These and other contemporary curriculum concepts are addressed throughout chapters in this text.

Various definitions of curriculum have been generated since as long ago as 1976, when Dwayne Huebner (1976) ascribed ambiguity and a lack of precision to the term *curriculum* (p. 156). In 1988, Madeleine R. Grumet (1988) labeled curriculum a "field of utter confusion" (p. 4). At the turn of the twenty-first century Arthur W. Foshay (2000) attributed a lack of specificity to the curriculum (p. xv). Indeed, curriculum seems at times analogous to the blind men's elephant. It is the pachyderm's trunk to some; its thick legs to others; its pterodactyl-like flopping ears to some people; its massive, rough sides to other persons; and its ropelike tail to still others. Herbert K. Kliebard (1998) observed that "what we call *the* American curriculum is actually an assemblage of competing doctrines and practices" (p. 21).

Until the development and various implementations of the Common Core State Standards (CCSS) in the United States (US), curriculum was thought to be the written plan provided by the local education agency (LEA) or even by the state education agency (SEA). In 2010 the CCSS or a variation had been implemented in 45 states making curriculum across the US more alike than previously (Common Core State Standards Initiative, 2010). However, as an observer of teachers the authors note that in every school and in individual classrooms (virtual or traditional), the real curriculum is the interpretation of the curriculum through instruction. What an observer immediately perceives is that the interactions between the teachers and students (instructional learning experiences) actually provides evidence of the real curriculum. Because of the practical implementations or interpretations of the official curriculum by the teachers through their instruction with students, curriculum and instruction cannot be completely separated. Officially, curriculum is the *what* and instruction is the *how*.

Professional Licensure and Curriculum

State professional licensure or certification governance documents set professional standards for educators. These requirements, whether in statute, rule, or policy, compound the problem of defining curriculum because few professionals can become licensed or certified in *curriculum.* Whereas most education professionals in preparatory programs take courses of one type or another called *curriculum,* there is generally not a certifiable field labeled *curriculum.* Professionals are typically licensed or certified in areas such as educational leadership, counseling, school psychology, elementary education, or secondary education content areas. But in *curriculum* per se? Not as a rule, although courses in the field of curriculum are often required for most education areas, including educational leadership.

Nevertheless, numbers of curriculum specialists, coordinators, developers, digital designers, supervisors, consultants, and even professors of curriculum can be identified. These curriculum specialists, many of whom may hold licensure or certification in one or more fields, cannot customarily hang on the wall a certificate that shows that they are certified in a field called *curriculum.*

Though a certifiable field of specialization called curriculum may be lacking, the word itself is treated as if it had tangible substance, for it can undergo a substantial variety of processes. Curriculum—or its plural, curricula or curriculums (depending on the user's penchant or abhorrence for the Latin)—is built, planned, designed, and constructed. It is improved, revised, and evaluated based on the implementation's learning outcomes or change in results on accountability metrics. Like muscles that are developed to become stronger and provide more power, the curriculum is developed. It is also organized, structured, and restructured, and, like a misdirected child, reformed. With considerable ingenuity, the curriculum planner can mold, shape, and tailor the official curriculum. However, with the implementation of CCSS and its variations across the states, the public school curriculum may be perceived to have become less creative and more straightforward with defined and expected student learning outcomes across many states. Charter school, for profit school, and private or independent school curriculums may have more flexibility as they have different accountability measures than their public school counterparts.

Interpretations of Curriculum

The amorphous nature of the word *curriculum* has given rise over the years to many interpretations. Depending on their philosophical beliefs, persons have conveyed these interpretations.

- Curriculum is that which is taught in school.
- Curriculum is a set of subjects or content areas.

- Curriculum is a program or course of study.
- Curriculum is a set of materials and resources.
- Curriculum is a sequence of courses.
- Curriculum is a set of performance standards.
- Curriculum is everything that goes on both academic, social, and otherwise, inside and outside of classes.
- Curriculum is that which is officially taught both inside of school and outside of school.
- Curriculum is everything that is planned by school personnel.
- Curriculum is a series of experiences undergone by learners in school.

In the foregoing definitions, you can see that curriculum can be conceived in a narrow way as the official curriculum of the standards that are to be taught in specific grade levels and content areas or the unofficial or hidden curriculum of the other experiences that students have in school, both during instruction and beyond instruction. The implications for instructional leaders to be drawn from the differing conceptions of curriculum can vary considerably. The instructional leader who accepts the definition of curriculum as standards to be learned, faces a much simpler task than the school leaders who take responsibility for experiences of the learner both inside the classrooms and beyond, maybe even to what is learned outside of school.

Historical Conceptions of Curriculum

A variety of nuances are perceived when professional educators define curriculum. Trace how a number of writers between the early twentieth and early twenty-first centuries conceptualized curriculum. Franklin Bobbitt (1918), one of the earliest writers on curriculum, perceived 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. (Bobbitt, 1918, p. 42)

Hollis L. Caswell and Doak S. Campbell (1935) viewed curriculum not as a group of courses but as "all the experiences children have under the guidance of teachers" (p. 66). Ralph W. Tyler's (1949) writings pointed the way to "educational objectives" that "represent the kinds of changes in behavior that an educational institution seeks to bring about in its students" (p. 6). Hilda Taba (1962), in a discussion of criteria for providing sets of learning opportunities for curriculum development, said, "A curriculum is a plan for learning" (p. 11). She defined curriculum by listing its elements. Taba (1962, p. 10) explained that every curriculum globally contains common elements, such as goals and objectives, and distinct content selections and organizational approaches that inform styles of learning and teaching, concluding with an assessment methodology to determine whether the objectives were met.

A different approach to defining curriculum was taken by Robert M. Gagné (1967, p. 21), who wove together subject matter (content), the statement of ends (terminal objectives), sequencing of content, and preassessment of entry skills required of students when they begin the study of the content. Mauritz Johnson Jr (1967), agreed basically with Gagné (1967) when he defined curriculum as a "structured series of intended learning outcomes," (p. 130). Johnson perceived curriculum as "the output of a 'curriculum development system' and as an input into an 'instructional system'" (p. 133).

Albert I. Oliver (1977) equated curriculum with the educational program and divided it into four basic elements: "(1) the program of studies, (2) the program of experiences, (3) the program

of services, and (4) the hidden curriculum," (p. 8). The programs of studies, experiences, and services are readily apparent. To these elements Oliver added the concept of a hidden curriculum, which encompasses values promoted by the school, differing emphases given by different teachers within the same subject areas, the degree of enthusiasm of teachers, and the physical and social climate of the school.

J. Galen Saylor, William M. Alexander, and Arthur J. Lewis (1981) offered this definition: "We define curriculum as a plan for providing sets of learning opportunities for persons to be educated," (p. 8–9).

As the years progress you will notice a broadening of some conceptions of the school curriculum. Geneva Gay (1990), writing on desegregating the curriculum, offered a more expansive interpretation of curriculum: "If we are to achieve equally, we must broaden our conception to include the entire culture of the school—not just subject matter content" (pp. 61–62).

Expressing the view that the word "'curriculum' has come to mean only a course of study," D. Jean Clandinin and F. Michael Connelly (1992) held curriculum to be no less than "a course of life" led by teachers as curriculum makers (p. 393).

Ronald C. Doll (1996) defined the curriculum of a school as: "the formal and informal content and process by which learners gain knowledge and understanding, develop skills, and alter attitudes, appreciations, and values under the auspices of that school" (p. 15).

Departing from a definition of curriculum as "school materials," William F. Pinar, William M. Reynolds, Patrick Slattery, and Peter M. Taubman (1996) described curriculum as "symbolic representation," (p. 16). These authors said:

> Curriculum understood as symbolic representation refers to those institutional and discursive practices, structures, images, and experiences that can be identified and analyzed in various ways, i.e., politically, racially, autobiographically, phenomenologically, theologically, internationally, and in terms of gender and deconstruction. (Pinar et al., 1996, p. 16)

Have definitions changed in writings of the early twenty-first century? Examine a few. Allan C. Ornstein and Francis P. Hunkins (2004) considered curriculum as "a *plan* for action or written document that includes strategies for achieving desired goals or ends," (p. 10).

Emphasizing the role of curriculum in the continuing growth of learning and learners, Daniel Tanner and Laurel N. Tanner (2007) proposed the following definition: "The authors regard curriculum as that reconstruction of knowledge and experience that enables the learner to grow in exercising intelligent control of subsequent knowledge and experience" (p. 99).

Jon Wiles and Joseph Bondi (2007) also saw "the curriculum as a desired goal or set of values that can be activated through a development process culminating in experiences for students" (p. 5).

James McKiernan (2008) saw curriculum "concerned with what is planned, implemented, learned, evaluated, and researched in schools at all levels of education" (p. 4).

Regarding the various interpretations of curriculum, Peter Hlebowitsh (2005) commented, "When we begin to think about the curriculum as a strictly professional and school-based term, a number of different interpretive slants on what comprises the curriculum comes into play" (p. 1).

Definitions by Purposes, Contexts, and Strategies

Differences in substance of definitions of curriculum, while they exist, are not as great or as common as differences in the components that the curriculum theorists include in their conceptions of the term. Some theorists elaborate more while others combine elements of both curriculum and instruction, a problem that will be examined later in this chapter. Others find a definition of

curriculum in (a) purposes or goals of the curriculum, (b) contexts within which the curriculum is found, (c) instructional strategies used, or (d) standards to be learned.

PURPOSES. The search for a definition of curriculum is clouded when the theoretician responds to the term, not in the context of what curriculum is, but in what it *does* or *should do*—that is, its purpose. On the purposes of the curriculum varying statements can be found and confusing. An example is when curriculum is conceptualized. The statement: Curriculum is the development of reflective thinking on the part of the learner, is not concrete. The same statement could be stated more specifically: The purpose of the curriculum is the development of reflective thinking on the part of the learner. A statement of what the curriculum is meant to achieve does little to help us sharpen a definition of curriculum and clarifying and specifying the purpose of the curriculum is a wise move for curriculum developers.

CONTEXTS. Definitions of curriculum sometimes state the settings within which it takes shape. When theoreticians speak of an essentialist curriculum, a student-centered curriculum, or a re-constructionist curriculum, they are invoking two characteristics of the curriculum at the same time—purpose and context. For example, an essentialistic curriculum is designed to transmit the cultural heritage to students in the organized disciplines, and to prepare them for the future. This curriculum arises from a special philosophical context of the essentialist school of philosophy.

A learner-centered curriculum clearly reveals its orientation: the learner, who is the primary focus of the progressive school of philosophy. The development of the individual learner in all aspects of growth may be inferred, but the plans for that development vary considerably from school to school. The curriculum of a school following re-constructionist philosophical beliefs aims to educate in such a way that learners will be capable of solving some of society's pressing problems and, therefore, change society for the better.

STRATEGIES. While purpose and context are sometimes offered as definitions of curriculum, an additional complexity arises when the theoretician equates curriculum with instructional strategy. Some theoreticians isolate certain instructional variables, such as processes, strategies, or techniques, and then proceed to equate them with curriculum. The curriculum as a problem-solving process illustrates an attempt to define curriculum in terms of an instructional process—problem-solving techniques, the scientific method, or reflective thinking. The curriculum as personalized learning, perhaps delivered digitally or online is a system by which learners encounter curricular content through a mode of instruction. Neither purpose, nor context, nor strategy provides a clear basis for defining curriculum.

CURRICULUM OBJECTIVES OR STANDARDS

Among prominent conceptions of curriculum is the classification of curriculum as curriculum objectives or standards to be learned or mastered. This text will use both terms of curriculum objective and standards synonymously, as well as other traditional based academic language and standards based academic language, due to some educational organizations using one or the other or both. Originally, the term used was performance or behavioral objective. Tyler's advocacy in mid-twentieth century was for educational objectives to be written in behavioral terms. W. James Popham and Eva L. Baker (1970) held that "Curriculum is all the planned learning outcomes for which the school is responsible," (p. 48). In designing the curriculum, planners would cast these learning outcomes or objectives in operational or behavioral terms.

The behavioral objectives may also be called performance or operational objectives and in effect are instructional objectives. According to the proponents of behavioral objectives, a compilation of all the behavioral objectives of all the programs and learning experiences of the school would constitute the curriculum. The curriculum would then be the sum of all instructional objectives. You will encounter in this text an approach that distinguishes curriculum goals (overarching ideas) and curriculum objectives (standards) from instructional goals (essential questions, big ideas) and objectives (learning targets). You will see later that standards are derived from overarching ideas and aims of education (mission or purpose), and learning targets are derived from essential questions or big ideas and from overarching ideas and standards. Both standards and learning targets can be stated in behavioral terms. To assist you with the multiple and changing terms related to the curriculum system that includes curriculum, instruction, and assessment, Table 1.1 is provided. Table 1.1, Traditional versus Standards Based Academic Language, shows the alignment between the more traditional terms and terms that apply in the standards based environment. These terms may be helpful as you continue to read this text.

Some advocates of behavioral objectives seem comfortable with the notion that once the expected learning outcomes (learning targets) are clearly specified, the curriculum has been defined. From that point on instruction takes over. This view of curriculum as specification of standards or objectives is quite different from the big concept of the curriculum as a plan, a program, or a sequence of courses.

In this text, the official curriculum is perceived as a plan or program for all the experiences that the learner encounters under the instructional leadership of the school or school district. This official curriculum includes the curriculum objectives or standards that students are expected to master within a specific grade level or content area, and are often those for which educators are held accountable through various metrics. As curriculum is presented within the text, think about the official curriculum and not all the extensions or experiences that students may have while moving through their schooling or education. In practice, the official curriculum consists of a number of plans, in written form and of varying scope, that delineate the intended student learning outcomes. The curriculum, therefore, may be a unit, a course, a sequence of courses, the school's or school district's entire program of studies—and may be encountered inside or outside of class or school when led by the personnel of the school.

TABLE 1.1 Traditional versus Standards Based Academic Language

Traditional Academic Language	Standards Based Academic Language
Aims	Mission or purpose
Curriculum goals	Overarching idea
Curriculum objectives	Standards
Instructional goals	Essential question (big idea)
Instructional objectives	Learning targets (short-term measurable outcomes)
Measures	Success criteria (evidence)
Assessments/tests	Formative assessments (informal or formal check on progress towards standard, goal, or learning target to inform instruction) Summative assessment (measure of progress toward proficiency on a standard, goal, or learning target)

RELATIONSHIP BETWEEN CURRICULUM AND INSTRUCTION

The search to clarify the meaning of curriculum reveals uncertainty about the distinctions between curriculum and instruction and their relationship to each other. Simplistically, curriculum can be viewed as that which is taught, and instruction as the means used to teach that which is taught. Even more simply, curriculum can be conceived as the "what," or intentions and instruction as the "how," or means. You may think of the curriculum as a program, a plan, content, and learning experiences, whereas you may characterize instruction as pedagogy, methods, delivery mode, strategies, and implementation.

Historically, distinguishing instruction from curriculum, Johnson (1967) defined instruction as "the interaction between a teaching agent and one or more individuals intending to learn" (p. 138). James B. Macdonald and Robert R. Leeper (1965) viewed curricular activity as the production of plans for further action, and instruction as the putting of plans into operation. Thus, according to MacDonald and Leeper, curriculum planning precedes instruction, a premise with which this text is aligned (McDonald & Leeper, 1965, pp. 5–6).

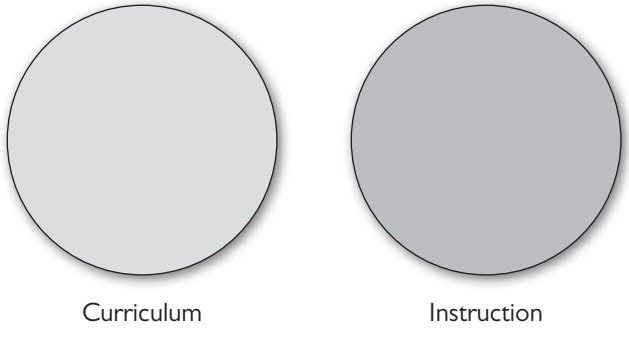
In the course of planning for either the curriculum or instruction, decisions are made. Decisions about the curriculum relate to plans or programs and thus are *programmatic.* Whereas, those decisions made about instruction (and thereby implementation) are *methodological and pedagogical.* Both curriculum and instruction are subsystems of a larger system of education.

Models of the Curriculum–Instruction Relationship

Definitions of the two terms are valuable but can obscure the interdependence of these two systems. That the relationship between the *what* and the *how* of education is not easily determined can be seen in several different models of this relationship. For lack of better terminology, academic language for these models are: (a) dualistic model, (b) interlocking model, (c) concentric model, and (d) cyclical model. Each curriculum–instruction model has its champions who espouse it in part or in whole, and in theory or in practice.

DUALISTIC MODEL. Figure 1.1 depicts the dualistic model. Curriculum is on one side and instruction on the other and they remain separate. Between the two entities lies a great abyss. What takes place in the classroom seems to have little relationship to the master plan of curriculum or learning intentions. The curriculum developers or designers do not engage with the instructors. Discussions of curriculum are divorced from their practical classroom implementations. Under this model the curriculum and the instruction may each change without significantly affecting one another.

FIGURE 1.1
The Dualistic Model



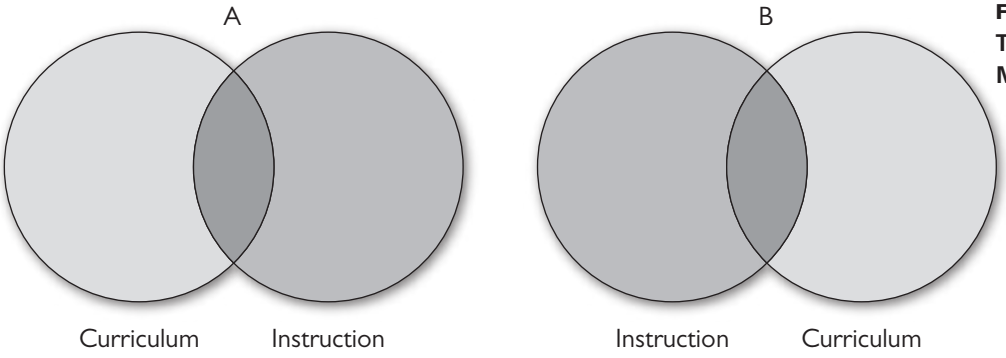


FIGURE 1.2
The Interlocking Model

INTERLOCKING MODEL. When curriculum and instruction are shown as systems entwined, an interlocking relationship exists. No particular significance is given to the position of instruction or curriculum in either of the versions of this model presented in Figure 1.2. The same relationship is implied no matter which element appears on the left or the right. These models clearly demonstrate an integrated relationship between these two entities. The separation of one from the other would impact effectiveness of both.

Curriculum developers would find it difficult to regard instruction as paramount to curriculum and to determine teaching methods before program development. Nevertheless, some instructors may proceed as if instruction is primary by dispensing with advance planning of instruction based on the curriculum and by letting curriculum develop as learning proceeds in the classroom.

CONCENTRIC MODELS. The preceding models of the relationship between curriculum and instruction reveal varying degrees of independence, from complete detachment to an interlocking relationship. Mutual dependence is the key feature of concentric models. Two conceptions of the curriculum–instruction relationship that show one as the subsystem of the other can be seen in Figure 1.3. Variations A and B both convey the idea that one of the entities occupies a superordinate position while the other is subordinate.

Concentric model A makes instruction a subsystem of curriculum, which is itself a subsystem of the whole system of education. Concentric model B subsumes curriculum within the subsystem instruction. A clear hierarchical relationship is in both these models. Curriculum ranks above instruction in model A and instruction is predominant in model B. In model A, instruction

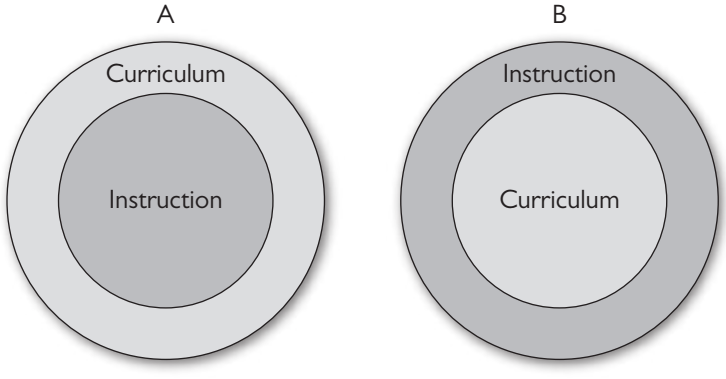
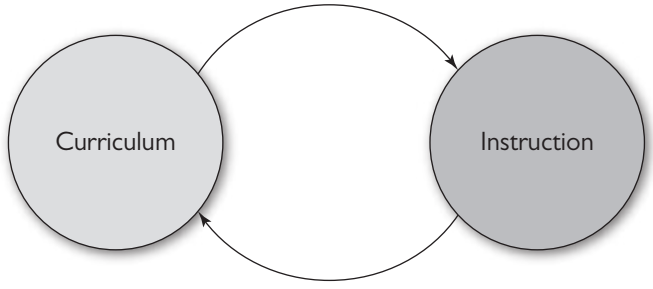


FIGURE 1.3
The Concentric Model

is a very dependent portion of the entity curriculum. Model B makes curriculum subservient to and a derivative of the more global instruction.

CYCLICAL MODEL. The cyclical conception of the curriculum–instruction relationship is a simplified systems model that stresses the essential element of feedback. Curriculum and instruction are separate entities with a continuing circular relationship. Curriculum makes a continuous impact on instruction and vice versa; instruction has impact on curriculum. This relationship can be schematically represented as in Figure 1.4, The Cyclical Model implies that instructional decisions are made after curricular decisions, which in turn are revised after student learning outcomes are evaluated. This process is continuous, repetitious, and never-ending. The evaluation of instructional effectiveness affects the next round of curricular decision making, which again affects instructional implementation. While curriculum and instruction are diagrammed as separate entities, with this model they are not to be conceived as separate entities but as part of a sphere—a circle that revolves, causing continuous adaptations and improvements of both entities, based on learning outcome metrics.

FIGURE 1.4
The Cyclical Model



COMMON BELIEFS. As research findings add new insights on teaching and learning and as new ideas are developed, beliefs about curriculum and instruction also undergo transformation. The "rightness" or "wrongness" of concepts such as curriculum and instruction cannot be established by an individual or even by a group. One index of "correctness" might be the prevailing informed opinion at a particular stage in history—a rather pragmatic but nevertheless a viable and defensible position. Most theoreticians today appear to agree with the following comments.

- Curriculum and instruction are related but different.
- Curriculum and instruction are interlocking and interdependent.
- Curriculum and instruction may be studied and analyzed as separate entities but cannot function in isolation from one another.

Problems may be posed by the dualistic conceptual model of the relationship between curriculum and instruction, with its separation of the two entities. With creation of the CCSS and each state's specific implementation or variation in standards, there is a trend towards the concentric model that makes instruction a subsystem of curriculum with the curriculum standards being the driver. This is the case in many public school districts. Some curriculum developers and designers are comfortable with an interlocking model because it shows a close relationship between the two entities with the feedback loop that includes metrics of student learning outcomes to inform revisions. Given the accountability for student learning outcomes of teachers and administrators, it may be that the cyclical model has advantages. With simplicity and clarity of the importance

of continuous improvement of both curriculum and instruction informed by feedback (data and evidence), this model may hold the most promise for practitioners in roles that include or relate to curriculum development and design.

CURRICULUM AS A DISCIPLINE

In spite of its elusive character, curriculum is a discipline or a major field of study in higher education and curriculum is then both a field within which people work and a discipline to be taught. Graduate and undergraduate students may take courses in curriculum development, curriculum theory, curriculum evaluation, secondary school curriculum, elementary school curriculum, middle school curriculum, community college curriculum, and—on fewer occasions—university curriculum.

The Characteristics of a Discipline

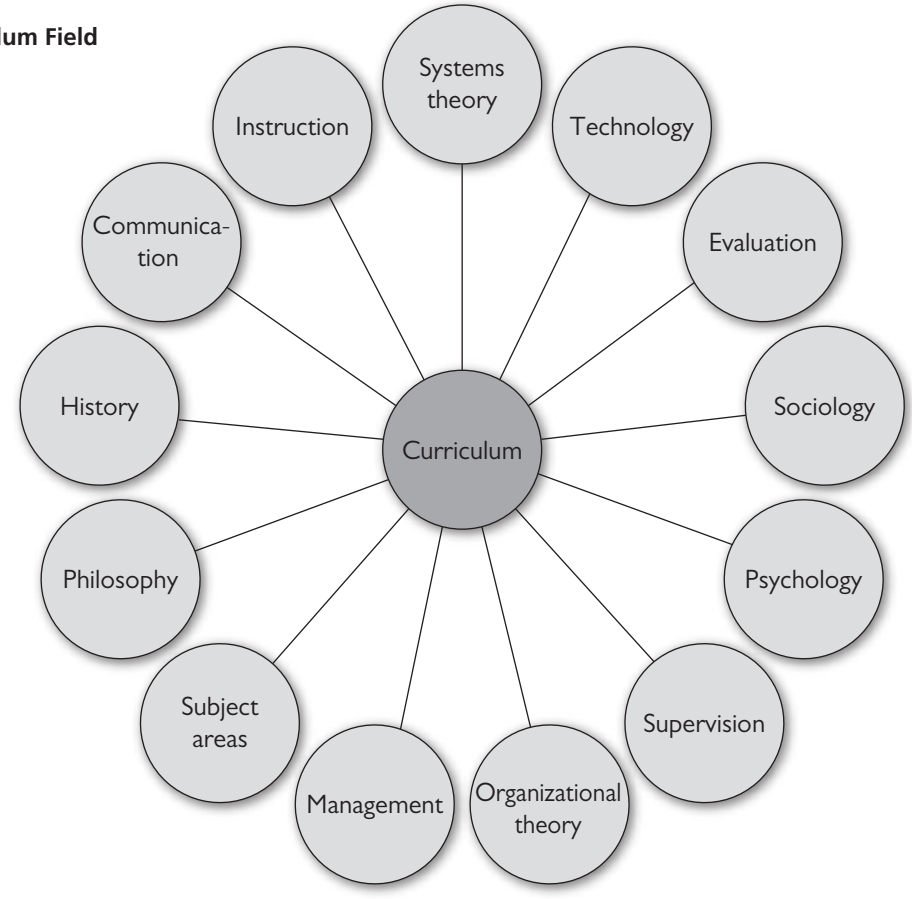
To arrive at a decision as to whether an area of study is a discipline, the question might be raised, "What are the characteristics of a discipline?" If the characteristics of a discipline can be spelled out, it can be determined whether or not curriculum is a discipline.

PRINCIPLES. *Any discipline worthy of study has an organized set of theoretical constructs or principles that governs it.* Certainly, the field of curriculum has developed a significant set of principles, tried and untried, proven and unproven, many of which are appropriately the subjects of discussion in this text. Balance in the curriculum, discussed in Chapter 2, is a construct or concept. Curriculum itself is a construct or concept, a verbalization of an extremely complex idea or set of ideas. Using the constructs of balance and curriculum, a principal can be derived that stated in simple terms, says, "A curriculum that provides maximum opportunities for learners incorporates the concept of balance." Sequencing of courses, behavioral objectives, integrated studies, and multiculturalism are examples of constructs incorporated into one or more curriculum principles.

A major characteristic of any theoretical principle is its capacity for being generalized and applied in more than one situation. Were curriculum theories but one-shot solutions to specific problems, it would be difficult to defend the concept of curriculum as a discipline. The principles of curriculum theory are often successful efforts to establish rules that can be repeated in similar situations and under similar conditions. Generally, the concept of balance should be incorporated into every curriculum. However, controversy may arise over a principle that might be stated as, *The first step in curriculum planning is the specification of behavioral objectives*. Though some maintain this principle has become universal practice and therefore might be labeled "truth," it has been tried and accepted by many educators, rejected by some, and tried and abandoned by others; therefore, it cannot be applied consistently.

KNOWLEDGE AND SKILLS. *Any discipline encompasses a body of knowledge and skills pertinent to that discipline.* The field of curriculum has adapted and borrowed content from a number of pure and derived disciplines. Figure 1.5 schematically shows areas from which the field of curriculum has borrowed constructs, principles, knowledge, and skills. Selection of content for study by students, for example, cannot be done without referring to the disciplines of sociology, psychology, and specific core content like mathematics. Organization of the curriculum depends on knowledge from organizational theory and instructional leadership, which are aspects of school

FIGURE 1.5
Sources of the Curriculum Field



leadership. The fields of communications, supervision, systems, instructional technology, and digital design are called on in the process of curriculum development. Knowledge from many fields is selected and adapted by the professionals within the curriculum field.

The *learner-centered curriculum* as a concept draws heavily on what is known about learning, growth, and development (psychology and biology), on philosophy (particularly from one school of philosophy, progressivism), and on sociology. The *essentialist curriculum* borrows from the areas of philosophy, psychology, and sociology, as well as the academic disciplines.

You might ask whether the field of curriculum contributes any knowledge of its own to that borrowed from other disciplines. Certainly, a good deal of thinking and research is going on in the name of curriculum. New curricular ideas are being generated continuously, such as those emerging from social and political theories related to multi-culturalism and culturally relevant curriculum and pedagogy (Wright, 2000). New ideas, whether they be character education, technical education, or Science, Technology, Engineering, and Mathematics (STEM) education, borrow heavily from other disciplines.

As those who study educational leadership you will be familiar with an example from the field of social psychology. Generally accepted is the notion that a curriculum changes only when the people affected have changed. This principle, drawn from the field of social psychology and

applied in the field of curriculum development, was perhaps most dramatically demonstrated by the Western Electric research studies conducted in the 1930s (Popham & Baker, 1970). In the Hawthorne Plant of Western Electric in Chicago researchers discovered that factory employees assembling telephone relays were more productive when they were consulted and made to feel of value to the organization. Making the employees feel important resulted in greater productivity than manipulating the physical environment (e.g., lighting in the factory). The feeling of being important to the research studies also created its own aura, the so-called Hawthorne Effect, named for the Hawthorne Plant of Western Electric. Because the feeling of being valued can in itself contribute to motivation and productivity, this effect is one that researchers may discount, for it can obscure the hypothesized or real causes for change. However, the educational leader who is aware of the Hawthorne Effect may take advantage of it to motivate students to engage in learning and teachers to engage in collaboration to improve effectiveness.

An instructional leader is the person who acts as a catalyst or agent for bringing about change in effectiveness of teachers and improvement in student learning outcomes by focusing on the creation of an environment with the priority of learning (Hattie, 2009). How does the instructional leader do this? He or she makes use of knowledge and skills from a number of fields: communication theory, leadership theory, organizational theory, psychology of groups, research, and other areas. How does the instructional leader help teachers to carry out the change once they have subscribed to it? He or she applies principles and skills from leadership, professional learning, knowledge of the structure of disciplines, and from other areas.

Consequently, the field of curriculum requires the use of an amalgamation of knowledge and skills from many disciplines. That curriculum theory and practice are derived from other disciplines does not in any way diminish the importance of the field. The observation of its derived nature simply characterizes its essence. Curriculum's synthesis of elements from many fields in some ways makes it both a demanding and an exciting arena in which to work.

In a cyclical fashion, the derived discipline of *curriculum* in turn makes its own potent impact on the disciplines from which it is derived. Through curricular research, experimentation, and application, content areas are modified; learning theories are corroborated, revised, or rejected; leadership and supervisory techniques are implemented or changed; and philosophical positions are examined.

THEORETICIANS AND PRACTITIONERS. *A discipline has its theoreticians and its practitioners.* Certainly, the field of curriculum has an array of people laboring in its name. Mention has already been made of some of the titles they go by: developers, digital designers, consultants, coordinators, directors, and professors of curriculum, to name but a few. This text will include them under the generic title of *curriculum specialist*.

Curriculum specialists make a number of distinctive contributions to their field. Specialists know the types of curricula that have worked in the past, under what conditions, and with whom success resulted. Since continuous improvement is expected, specialists must be well grounded in the historical development of the curriculum and must possess the capacity to use that knowledge to help practitioners avoid historical pitfalls.

Curriculum specialists generate or help to generate new curriculum concepts. In this capacity specialists draw on the past and conceive new arrangements, adaptations of existing approaches, or completely new approaches. Alternative forms of schools, for example, are newer arrangements and approaches for the same general goal of education.

While curriculum specialists are engaging in the process of thinking beyond what is already known, hoping to bring to light new theories; perhaps more curriculum specialists are more likely

to be experts in application of theory and research. These experts know the techniques of curriculum development that are most likely to result in higher achievement on the part of learners. They are familiar with variations in the organizational patterns. Such experts must be not only knowledgeable but also open to research-based innovations that give promise of bringing about higher achievement in learners.

CURRICULUM SPECIALISTS

Curriculum specialists often make a unique contribution by creatively transforming theory and knowledge into practice. Through their efforts a new approach, at first experimental, gradually becomes a widespread practice after data gathering, analysis, and revision until the approach yields satisfactory results. As students of the discipline of curriculum, they also examine and reexamine theory and knowledge from their field and related fields. Awareness of past successes and failures elsewhere helps those who work in the field of curriculum to chart directions for their own curricula.

Curriculum specialists are in the best position to stimulate research on curricular problems. Specialists carry out and encourage study of curricular problems, comparisons of plans and programs, results of new patterns of curriculum organization, and the histories of curriculum experiments, to indicate but a few areas of research. Specialists encourage the use of results of research to continue efforts to improve the curriculum.

While classroom teachers daily concern themselves with problems of curriculum and instruction, the curriculum specialist is charged with the task of providing leadership to administrators and teachers. Since there are many different types of specialists in many different locations, you will find it difficult to generalize on their roles. Some curriculum specialists are generalists whose roles may be limited to leadership in curricular or programmatic planning or whose roles may also encompass instructional planning and decision making.

Some curriculum specialists confine themselves to certain grade levels or content areas, such as elementary, middle, or secondary school; community college; special education; reading, science; early childhood; and any content area that may be taught. What can be observed is that the roles the curriculum leader plays are shaped by the supervising administrator, the school or school district needs, and by the specialist himself or herself. At varying times, the curriculum specialist must be:

- a digital designer,
- a human relations expert,
- a theoretician,
- a data analyst,
- a subject matter expert,
- an evaluator,
- a researcher, and
- an instructor.

Curriculum Supervisors

An additional clarification should be made at this point that is, the relationship between the roles of persons designated as curriculum specialists and those persons who are called curriculum supervisors. Depending upon the context the titles may be synonymous.

In this text, a curriculum *supervisor* is perceived as a specialist who works in three domains: instructional development; curriculum development; and teacher professional learning (Macdonald & Leeper, 1965). When the supervisor works in the first two domains, he or she is an instructional/curriculum specialist or is often referred to as an "instructional supervisor or coordinator" (Macdonald & Leeper, 1965, pp. 5–6). Thus, the curriculum specialist is a supervisor, one with more limited responsibilities than a general supervisor, like a principal. Both the curriculum specialist and the supervisor fulfill similar roles when they work with teachers in curriculum development and instructional development, but the curriculum specialist is not primarily concerned with such activities as evaluating teachers, which are more properly responsibilities of the general supervisors.

Role Variations

As with so many jobs in the field of education, difficulty arises in attempting to draw firm lines that apply under all conditions and in all situations. To understand more fully the roles and functions of educational personnel, examine local practice. Teachers, curriculum specialists, and supervisors all engage in activities to improve both curriculum and instruction. At times, their roles are different and at other times their roles are similar. These personnel, all specialists in their own right, frequently trade places to accomplish the task of improvement in learning outcomes. Sometimes they are one and the same person—the teacher who is his or her own curriculum specialist and supervisor. Whatever the structure of leadership for the improvement of curriculum and instruction, all teachers and all specialists must ultimately participate in this challenging task. Because curriculum and instruction are the heart of schooling, all personnel participate in the improvement of curricular offerings and how these offerings are implemented.

Chapter 3 will describe roles of personnel involved in curriculum development, including teachers, students, department chairs, lead teachers, team leaders, grade coordinators, administrators, curriculum specialists, digital designers, supervisors, and stakeholders.

Summary

Curriculum and instruction are viewed as separate but dependent concepts. Curriculum is defined in a variety of ways by theoreticians. This text follows the concept of curriculum as a plan or program for the learning experiences that the learner encounters under the direction of the school. Curriculum is guided by the objectives and standards adopted by the school, school district, or educational organization.

Instruction is perceived in these pages as the means for making the curriculum operational, that is, the techniques that teachers use to make the curriculum accessible to the learners. In short, curriculum is program and instruction is method.

A number of models showing the relationship between curriculum and instruction have been discussed. While all models have their strengths and weaknesses, the cyclical model seems to have particular merit for its emphasis on the reciprocity between curriculum and instruction.

Planning should begin with the programmatic, that is, with curriculum decisions, rather than with instructional decisions. Appropriate planning begins with the broad aims of education and proceeds through a continuum that leads to the most detailed objectives of instruction.

Curriculum is perceived as a discipline, albeit a derived one that borrows concepts and principles from many disciplines.

Many practitioners work in the field of curriculum, including specialists who make a career

of curriculum planning, development, and research. Teachers, curriculum specialists, and instructional supervisors share leadership responsibilities in efforts to develop the curriculum.

As a discipline, curriculum possesses (a) an organized set of principles, (b) a body of knowledge and skills for which training is needed, and (c) its theoreticians and practitioners.

Application

1. Identify the foundations upon which your state, school district, or organization based its curriculum. Investigate the influences of this curriculum and their expertise in education, leadership, and learning.
2. Unlike many entities that are held up as examples for the US to emulate in terms of student learning, there is not a national curriculum. Ascertain how one of the highly achieving countries globally develops and implements a unified curriculum. Compare the variables involved in the US and the country of your selection.

Reflection and Inquiry

1. Review the curriculum for a grade or course in an education organization. From the review determine how the education organization defines curriculum. What changes in the definition are needed to influence development of more meaningful learning experiences for the students?
2. Think about the knowledge and skills needed to be an effective curriculum specialist. Develop criteria for the selection of an effective curriculum specialist based on the knowledge and skills you selected.

Websites

Association for Supervision and Curriculum Development: ascd.org

National Association of Elementary School Principals: naesp.org

National Association of Secondary School Principals: principals.org

National Governors Association: nga.org

Association for Middle Level Education: amle.org

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CHAPTER 2

Principles of Curriculum Development

Learning Outcomes

After studying this chapter, you should be able to:

1. Describe the 10 axioms for curriculum development discussed in this chapter.
2. Illustrate the ways the curriculum is influenced by changes in society.
3. Describe limitations affecting curriculum changes in a school district and the limitations within which a curriculum specialist functions.
4. Apply the eight concepts of curriculum construction.

CLARIFICATION OF TERMS

The institution of education was created to serve the needs of society and the institution responds or should respond to community and societal issues. A curriculum that is responsive to the needs of the current environment is sought by curriculum developers in their context. Some situations that have influenced curricular changes are poverty, employment needs, homelessness, environmental problems, crime, drug addiction, health issues, natural disasters, climate change, decreasing natural resources, intercultural and international conflicts, the military, and industrial hazards of nuclear power. At the same time, as societal issues influence curriculum, developers also learn to apply, adapt, and adjust to the growing number of technological tools that are present in educational institutions. Because of societal changes education leaders, including curriculum specialists, attend to expectations such as:

- adequate mastery of standards, particularly language arts and mathematics,
- emotional and physical health,
- college or career ready,
- practical arts of personal finance, economics, and consumerism,
- respect and tolerance for diverse perspectives and cooperation with others whose perspectives vary from one's own,
- appreciation for the arts through exposure to the various forms,
- preservation of the environment, and
- examination of the history to include causes, courses, and consequences from various perspectives.

If the curriculum is perceived as a plan for the learning experiences under the direction of the school, its purpose is to be a vehicle that includes the depth, breadth, and order of those experiences. This process of providing the vehicle and keeping it running smoothly is commonly known as *curriculum development,* which includes (a) *curriculum planning,* the preliminary phase when decisions are made and actions taken to establish curriculum plans that teachers will implement through their instruction with students; (b) *curriculum*

implementation, the translation of plans into action or the instruction provided by teachers; and (c) *curriculum evaluation,* those intermediate and final phases of development in which student learning outcomes are assessed and the viability of the curriculum's implementation by the teacher are analyzed.

On occasion, *curriculum revision* is used to refer to the process for making changes in an existing curriculum or to the changes themselves, and is substituted for *curriculum development* or *curriculum improvement.* You will return to the distinctions among curriculum planning, implementation, and evaluation when models of curriculum development are diagrammed and discussed in Chapter 5.

Through the process of curriculum development, you can discover new ways for providing more effective student learning experiences. Successful curriculum developers continuously strive to find research based approaches for more efficient and effective means to improve student learning outcomes.

SOURCES OF CURRICULUM PRINCIPLES

Principles serve as guidelines to direct the activity of persons working in a particular area. Curriculum principles are derived from many sources: (a) empirical data; (b) experimental data; (c) the folklore of curriculum, composed of unsubstantiated beliefs and attitudes; and (d) common sense. In an age of science and technology, the attitude often prevails that all principles must be scientifically derived from the results of research. Yet, even folklore and common sense can have their use. For example, the scientist has discovered that some truths underlie ancient folk remedies for human maladies and that old wives' tales are not always the ravings of demented witches. While a garland of garlic hung around the neck may or may not fend off vampires, and asafetida on the end of a fishing line may or may not lure fish onto the hook, the aloe plant does yield a soothing ointment for burns, and the peppermint herb has reportedly relieved many a stomachache.

Common sense, which is often distrusted, combines folklore, generalizations based on observation, and learning discovered through experimentation with intuition and reasoned argument. It can function not only as a source of curriculum principles, but as a methodology as well. For example, in discussing the language of curriculum more than four decades ago, Joseph J. Schwab (1970) proposed a commonsense process he called "deliberation" to deal with curriculum problems. Minimizing the search for theoretical constructs and principles, his method depends more on practical solutions to specific problems. Schwab pointed out the pitfalls of relying on theory alone. He rejected "the pursuit of global principles and comprehensive patterns, the search for stable sequences and invariant elements, the construction of taxonomies of supposedly fixed or recurrent kinds" and recommended instead "three other modes of operation . . . the practical, the quasi-practical, and the eclectic" (Schwab, 1970, p. 2).

When curriculum planning is based on deliberation, judgment and common sense are applied to decision making. Some professional educators have faulted the application of common sense or judgment as a methodology, so imbued are they with a scientific approach to problem solving. In 1918, Franklin Bobbitt took note of scientific methodology in curriculum making, citing the application of measurement and evaluation techniques, diagnosis of problems, and prescription of remedies (Bobbitt, 1918). Later, Arthur W. Combs (1965) was moved to warn against too great a reliance on science for the solution of all educational problems. Whereas science may help us find solutions to some problems, not all answers to educational problems of the day can be solved using a scientific approach. Certainly, empirical data and other evidences are preferred over unsupported arguments. But there are times when, empirical data are absent or

empirical data do not tell the entire story and, curriculum specialists must rely on observational data, student work samples and other evidences to explain the empirical data, along with intuition and experience to support changes.

Unless a principle is established that is irrefutable due to objective data, some degree of judgment must be brought into play. Whenever judgment comes into the picture, the potential for controversy arises. Consequently, some of the principles for curriculum development provoke controversy, while others are generally accepted as reasonable guidelines. Controversy occurs often due to differing values and philosophical orientations of curriculum specialists as it does from lack of empirical data for making decisions. Michael W. Apple (2008) directed us "to pay particular attention to the fact that the ways in which curriculum planning and selection are done, how curricula are taught and evaluated, and who is and should be involved are not isolated phenomena. Instead, they are best understood relationally, as intricately connected to the realities, good and bad, of the societies in which they exist" (p. 25).

TYPES OF PRINCIPLES

Curriculum principles may be viewed as whole truths, partial truths, or hypotheses. Though all function as operating principles, they are distinguished by their known effectiveness or by degree of risk. It is important to understand these differences before examining the major guiding principles for curriculum development.

Whole Truths

Whole truths are either obvious facts or concepts proved through experimentation, and they are usually accepted without challenge. For example, few will dispute that it is easier for students to master an advanced subject matter as a rule, only after they have developed the prerequisite knowledge or skills. From this principle come the practices of preassessment of entry skills and sequencing of content.

Partial Truths

Partial truths are based on limited data and can apply to some, many, or most situations, but they are not always universal. For example, some educators assert that student achievement is higher when students are grouped homogeneously for instruction. While some learners may achieve better results when placed in groups of like ability or achievement level, others may not. The practice of homogeneous or ability grouping may be successful with some students for certain purposes but not with others. Homogeneous grouping may permit schools to achieve certain goals of education, such as mastery of content, but prevent them from achieving other goals, such as enabling students to learn to live and work with persons of differing levels of ability. Partial truths are not half-truths containing falsehoods, but they are not applicable to every situation and do not provide all perspectives.

Hypotheses

Finally, some principles are neither whole nor partial truths but are *hypotheses* or tentative working assumptions. Curriculum specialists base these ideas on their best judgments, available research, folklore, and common sense. As one example, for many years teachers and administrators have discussed optimum class size and school size for the best learning outcomes. Educators have advocated class sizes of as few as 25 students in high school classes and fewer in elementary classes. They have been less certain as to how many students should be in a single school. Figures used

as recommendations for class and school size are but estimates based on best judgments. School planners have reasoned that for purposes of economy and efficiency, class and school sizes can be too small. They also know from intuition or experience that class and school sizes can grow so large as to create situations that reduce educational productivity. However, the research delivers no magic number that will guarantee success in every course, classroom, and school since each situation is a unique context.

While practice based on whole truth is desirable, the use of partial truths and the application of hypotheses contribute to the development of the field. Growth would be stymied if the field waited until all truths were discovered before any changes were made. Judgments, folklore, and common sense make the curriculum arena a venue for creative and purposeful development and study to achieve the best learning plans for each individual context.

TEN AXIOMS

Instead of thinking of curriculum in terms of whole truths and partial truths, since so many of the principles to which practitioners subscribe have not been fully tested, think of *axioms* or *theorems.* As students of mathematics know well, both axioms and theorems serve the field well. They offer guidelines that establish a frame of reference for those seeking ways of operating and resolving problems. Several generally accepted axioms that apply to the curriculum field might serve to guide efforts of curriculum specialists.

Inevitability of Change

AXIOM 1. *Change is both inevitable and necessary, for it is through change that life forms grow and develop.* Human institutions, like human beings themselves, grow and develop in proportion to their ability to respond to change and adapt to changing conditions. Society and its institutions continuously encounter problems to which they must respond or perish. Forrest W. Parkay, Eric J. Anctil, and the late Glen T. Hass (2006) called attention to the following major contemporary problems facing society, all of which remain continuing issues:

- changing values and cultural diversity,
- changing values and morality,
- family,
- Microelectronics Revolution,
- changing world of work,
- equal rights,
- crime and violence,
- lack of purpose and meaning, and
- global interdependence. (Hass, 2006 pp. 52–57)

To these you might add:

- regional wars and the threat of nuclear war,
- national and international economic conditions,
- international natural disasters and conditions,
- national and international health needs, and
- global warming and ecological disasters.

The public school, one of society's fundamental institutions, faces a plethora of contemporary challenges, some of which threaten its traditional existence. By citing only the inadequate

financing of public schools; growth and intense competition from both secular and sectarian private schools; political support for tax credits and vouchers that may be used at any school public, private, or parochial; growth of public charter schools, both nonprofit and for-profit; and the increase in home schooling to illustrate the scope of challenges confronting the public school. These challenges have developed due to the dissatisfaction of community members and politicians with the learning outcomes of some students and the response of entrepreneurs who see an opportunity to address an education consumer need. Curriculum change in response to contemporary challenges must be foremost in the minds of curriculum developers of public schools.

Curriculum as a Product of Its Time

AXIOM 2. The second axiom is a corollary of the first. Quite simply, a *school curriculum not only reflects but also is a product of its time or historical context.* Though it may seem to some that the curriculum is moving slowly it has really undergone more transformations than the number of disguises assumed by a skilled master change artist.

Prior to the advent of television, the Internet, and other electronic media, curriculum change came relatively slowly; in fact, it sometimes took decades. Today—due to ever-changing technology—news, opinions, and ideas flash instantaneously across the country, indeed across the world, through cell phone, Internet, and television. The world of film contributes its own take on public education as evidenced by the 2010 documentary, *Waiting for Superman*, which highlighted problems in American education, (Guggenheim, 2010). However, it did not take decades for thousands of schools throughout the country to put into practice and, in some cases, later abandon team teaching, instructional television, discovery learning, values clarification, behavioral objectives, computer literacy, and curriculum mapping—to mention only a few curricular innovations. Clearly, the curriculum responds to and is changed by social forces, philosophical positions, psychological principles, accumulating knowledge, and educational leadership at its moment in history. Changes in society—such as, the increased diversity of the US, the rapid growth of technology and expectation to leverage digital tools, and the need for health education—clearly influence curriculum development. You will note the pervasive effects of social forces when programs and issues are discussed in Chapter 9.

The impact of the rapid accumulation of knowledge may be one of the more dramatic illustrations of forces affecting the curriculum. Certainly, some adaptations in the school's program ought to be made as a result of discoveries of lifesaving vaccines and medications and bioengineered body parts; inventions such as artificial intelligence, digital devices, robotics; and scientific accomplishments such as the moon landings, the Mars flights, the Galileo probes, the Cassini and Genesis missions, the Hubble and Kepler Space Telescopes, and shuttles to and from the space station; and other land, sea, and space explorations.

The presence of persuasive educational groups and individuals has been responsible for the adoption of curricular innovations at given moments in history, and in numerous cases caused permanent and continuing curriculum change. The effects of *A Nation at Risk* by the National Commission on Excellence in Education (1983) and the *No Child Left Behind Act of 2001*, are illustrations of the impact persuasive groups have on the curriculum.

You may even point to individuals over the course of history, speaking either for themselves or for groups that they represented, who can be credited (or blamed, depending on one's perspective) for changes that have come about in the curriculum. Who can calculate the impact on education, for example, that Benjamin Franklin made in the eighteenth century when he established a school called the Academy which later became the University of Pennsylvania? Or the impact Horace Mann made when he fathered the Common School movement in the nineteenth century

which led to free public education? What would the progressive education movement of the early twentieth century have been without John Dewey, William H. Kilpatrick, and Boyd Bode? How many secondary schools in the late 1950s and early 1960s "Conantized" their programs on the recommendations of James B. Conant, the former president of Harvard University? What impact has Maria Montessori had on elementary school programs? What responses of the curriculum in the latter half of the twentieth century can be traced to the teachings of Jean Piaget and of B. F. Skinner? What changes will come about as a result of recommendations made by Mortimer J. Adler, Ernest L. Boyer, John I. Goodlad, and Theodore R. Sizer?

Table 2.1 illustrates the effects of several forces during periods of history on both the curriculum and instruction. In the barest skeletal form, American educational history has five periods: 1650–1750, 1750–1850, 1850–1950, 1950–2000, and 2000 to the present. Some of the curricular and instructional responses to the philosophical, psychological, and sociological forces of their

TABLE 2.1 Historical View of Forces Affecting Curriculum and Instruction

Period	Forces	Curricular Responses	Instructional Responses
1650–1750	*Philosophy* Essentialism *Psychology* Faculty psychology—"mind as a muscle" *Sociology* Theocracy–Calvinist Male chauvinism Agrarian society Rich-poor dichotomy	Latin Grammar School for boys The Bible The three R's Classical curriculum Preparation to be a citizen	Strict discipline Rote learning Use of sectarian materials Mental discipline
1750–1850	*Philosophy* Essentialism Utilitarianism *Psychology* Faculty psychology *Sociology* Industrial Revolution Westward movement Rise of middle class Increased urbanization Local tax-supported schools Progressivism	Academy Education for girls Instruction in English Natural history World languages plus three R's and classical curriculum Private kindergartens	Mental discipline Recitation Strict discipline Some practical applications Rote learning
1850 to 1950	*Philosophy* Essentialism Progressivism *Psychology* Behavioristic Experimental Gestalt Perceptual Centralized, then de-centralized control Consolidation of schools	**1850–1925:** High schools **1925–1950:** learner-centered curriculum Experimentalism	Practical applications Problem-solving Attention to whole child

TABLE 2.1 (Continued)

Period	Forces	Curricular Responses	Instructional Responses
	Sociology Settling the West	Life adjustment	Individualized Instruction
		1950–2000	
	Mechanized society	Career education	Instructional differentiation for groups
	Open enrollment community/state colleges	Open-space education	
	Urbanization	Basic skills	Mediated instruction
	Immigration	Alternative schooling	Education for self-discipline
	End of US draft, volunteer military	Choice: magnet schools, charter schools, vouchers, home schools	Achievement testing
	Civil rights, equal rights		Effective teaching models
	Big business		Cooperative learning
	Big labor	Private education options	Whole language
	Changes in family structure	Middle schools	
	Cold War and its end	Vocational education	
		2000–Present	
	Environmental problems	Standards based curriculum	Use of community resources
	Diminishing resources	Digital schools (primary tool)	
	Rapid growth of technology	Virtual schools	Online distance instruction
	Space exploration	Bullying/character education	Integrated and interdisciplinary
	Public demand for school accountability	Environmental education	
	Unemployment	Multicultural education	Accountability assessments
	Drug and alcohol abuse	Global education	Personalized instruction
	Crime	Health education	Single-gender classes and schools
	Homelessness	Community schools	
	Racial tensions/ethnic conflicts	Sexuality education	Inquiry and thinking
	Civil rights	Adult education	Evidence supported writing and response
	Persons with disabilities	Literacy education	
	Aging population	Bilingual education	Culturally responsive pedagogy
	Religious differences	Consumer education	
	World democratic movements	Cultural literacy (core knowledge)	English learner education
	Economic crises		Intervention and acceleration
	Global warming	Community service	
	Health needs	International Baccalaureate	Extended school day
	Globalization	Advanced placement	Influence by private entity funding
	International tensions, conflicts, and crises	Technological education	
	Terrorism	Public prekindergarten and kindergarten	High effect size strategies
	Nontraditional philanthropists		
	Distrust of government	College and career ready	
	Assessable research	International comparisons	
	Meta-analysis research	Private funded development	

time are shown in the table. Periods are not distinctly separate and you will see that these forces and responses often overlap from one period to the next.

Table 2.1 can continually be refined by adding other elements, but this skeletal description serves to illustrate that a curriculum is the product of its time or, as James B. Macdonald (1971)

noted, "any reforms in institutional setting . . . are intricately related to multiple social processes and set in the context of a general cultural ethos" (pp. 98–99).

Carol A. Mullen (2007) observed, "Predictions based on what students will need to know and be able to do continue to form the basis of curriculum planning today" (p. 18). Consequently, the curriculum planner is wise to identify and strategize to address forces that impinge on the schools at the local, state, national, and even international levels.

Concurrent Changes

AXIOM 3. *Curriculum changes made at an earlier period can exist concurrently with newer curriculum changes at a later period of time.* The classical curriculum of the Latin Grammar School was continued in the Academy, despite the reluctance of Benjamin Franklin. Even the first high school, established in Boston in 1821, was known as the English Classical School. It was not until three years later that the English Classical School became the English High School.

Curriculum revision rarely starts and ends abruptly. Changes coexist and overlap for long periods of time. Ordinarily, curricular developments are phased in gradually and phased out the same way. Because competing forces and responses occur at different periods of time and continue to exist, curriculum development becomes a frustrating, yet challenging task.

Differing philosophical positions on the nature of humankind, the destiny of the human race, good and evil, and the purposes of education have existed at every period of history. The powerful schools of essentialism and progressive thought continually strive to capture the allegiance of the profession and the public. The college preparatory curriculum, for example, vies with the career and technical curriculum for primacy. Instructional strategies that are targeted at the development of the intellect compete with strategies for treating the child in body, mind, and spirit. Even the discredited tenets of faculty psychology (mind as a muscle, mental discipline) linger in school practices.

The competing responses to changing conditions have almost mandated an eclecticism, especially in the public schools. Curriculum developers select the best responses from previous times or modify them for future times based on the best available research or external mandates. Except at the most trivial level, either/or choices are almost impossible to make in complex social areas such as education. Yet, some people continue to look for and argue for either/or solutions. To some, instruction will suffer if all teachers do not post daily learning expectations for student viewing and monitoring by administrators. To others, the growth of preadolescents will be stunted unless they are educated in a school with the middle school philosophy. Some elementary school administrators seek to provide a quality education with teaching teams. Others hold firmly to the traditional self-contained classroom. Public sentiment in early twenty-first century America has identified state and national standards to be assessed, although the countries with which we aspire to achieve at a comparative level do not have such mandated accountability, such as Finland, Iceland, and Japan.

Several themes are repeated through history. Critics have, for example, lambasted the schools periodically for what they conceive as failure to stress fundamental subject matter (Parkay, Anctil, & Hass, 2006). The history of curriculum development is filled not only with illustrations of recurrent philosophical themes, such as the subject-matter cacophony, but also with recurrent and cyclical curricular responses. Many of our schools have changed from an essentialistic to a progressive curriculum and back again. They have progressed from the cafeteria style high school curriculums of the 1970s to reduction of the curriculum to the measured standards in the early twenty-first century, to the realization that students are motivated to learn and stay in school by

the arts, physical experiences, career and technical education, and other beyond the core courses. Further more, students learn various content through electives such as those mentioned. Can a student become an artist without understanding relationships in composition of the media or chemistry? Can a student in an engineering course not address reading, writing, mathematics, science, and high-level thinking?

Schools have moved from self-contained to open space to self-contained; elementary schools have shifted from self-contained to nongraded/multigraded to self-contained; schools have taught the old mathematics, then the new mathematics, and afterward reverted to a previous form, or more recently to inquiry mathematics; they have followed the phonics method of teaching reading, changed to look/say methods, and whole language, and then back to phonics-based for primary grades understanding that students are measured in vocabulary and comprehension, not in word calling.

The late 1900s saw a rise in world language offerings. However, a survey conducted by the Center for Applied Linguistics revealed a decline in number of elementary and middle schools offering world languages between its last survey in 1997 and 2008. Signaling once again the effect of social, political, and cultural needs on the curriculum, Arabic grew in those schools offering foreign languages whereas French, German, and Russian declined, (Rhodes & Pufhal, n.d.) On the other hand, some schools, particularly the essentialistic, have remained unchanged and continue to offer Latin, while social transformations have swirled around them. As Spanish speaking families have immigrated to the US, Spanish language instruction has adjusted to have special courses for native Spanish speakers as their needs often vary from the native English learner taking Spanish as a second or world language.

The schools of the early days in America stressed basic skills taught in strict expectations of discipline, even to the point that students may have been required to stand to address the teacher. The early twentieth-century schools went beyond basic skills—some would say away from basic skills—to concern for students' diverse needs and interests in a more inclusive environment. Schools of the present emphasize grade level proficiency for reading, mathematics, and other specific areas or courses that may be measured in specific contexts and grades such as Biology, Algebra 1, U.S. History, etc. While the climate and cultures of schools may have changed and are more inclusive and valuing of differences, respect for the adults and other students in the school is expected. In some school districts, there are even school board policies, which may be called codes of conduct that have as their purposes consistency in expectations of responses to certain misbehaviors. As curricular themes are often recapitulated, some teachers and curriculum developers are disposed to maintain the status quo, concluding that their current mode of operation, while it may be out of favor now, will be in style again sometime in the future. "Why change when we are probably going to eventually change back?" they ask.

When the status quo no longer serves the needs of the learners or of society, the maintenance of the status quo is inexcusable, for it prohibits accomplishment of the ethical expectation of serving the students in the most efficacious and informed manner. Even if prior responses return later, they should result from a re-examination of the forces of that time. Thus, the re-emergence of prior responses will be new responses, not *old* in the sense of being unchanging and unchangeable. To illustrate, in *The Art and Science of Teaching: A Framework for Effective Instruction*, Robert J. Marzano (2007) communicates that Madeline Hunter's elements of lesson design continue to be sound today as a framework for lesson construction (Hunter, 1984; Marzano, 2007, p. 181). Through the influence of Hunter, and then Marzano and his contemporaries, this lesson design model continues to be an expectation for many teachers in the US. In fact, it may even be part of teachers' formal annual evaluation system.

Change in People

AXIOM 4. *Curriculum change results from changes in people.* Thus, curriculum developers should begin with an attempt to change the people who must ultimately effect curriculum change. This effort implies involving people in the process of curriculum development to gain their commitment to change. Experience over a long period of time has demonstrated that top down approaches do not work well as a rule. Not until the subordinates have internalized the changes and accepted them as their own can the changes be effective and long lasting. Many school personnel lack commitment because they are denied this involvement in change and their contributions to change have been deprecated.

The importance of effecting change in people has been stressed by curriculum experts for many years and was noted by Alice Miel (1946):

> To change the curriculum of the school is to change the factors interacting to shape the curriculum. In each instance, this means bringing about changes in people—in their desires, beliefs, and attitudes, in their knowledge and skill. Even changes in the physical environment, to the extent that they can be made at all, are dependent upon changes in the persons who have some control over that environment. In short, the nature of curriculum change should be seen for what it really is—a type of social change, change in people, not mere change on paper. (Miel, 1946, p. 10)

This axiom may be interpreted incorrectly to mean that 100 percent commitment of all affected parties must be achieved before a curriculum change can be implemented. Is it possible to obtain 100 percent consensus on any issue in education? Somewhere between a simple majority and universal agreement would appear to be a reasonable expectation. Involvement of persons affected in the process itself will succeed in garnering support even from those who may not be in total agreement with the final curricular product.

The curriculum developer should ensure that all persons have an opportunity to contribute to a proposed change before it is too far along. No persons should be involved in a less than authentic process whereby teachers and others are brought into the planning process when it is a foregone conclusion that the curriculum change will be implemented whether the participants accept it or not. The "curriculum leader or specialist knows best" attitude will not serve well in either development and design nor in implementation with fidelity. If an innovative and forward-thinking curriculum is developed, without strategic involvement of those who will implement it and a preparation process for implementation with fidelity, then the effort to revise the curriculum may be wasted. Human capital is a scarce resource and therefore, others' time and school district funds should be respected with authentic involvement in the curriculum development and implementation process to achieve intended outcomes.

Teachers, administrators, and stakeholders desire to be empowered, which enables them to exercise a degree of control over what happens in their schools. For further discussion of empowerment, see Chapter 4, which expands on the process for instituting and effecting curriculum change.

Collaborative Endeavor

AXIOM 5. *Curriculum change is effected as a result of collaborative endeavor on the part of groups.* Although an individual teacher working in isolation might conceivably, and sometimes actually does, effect changes in the curriculum by himself or herself, large and fundamental changes are brought about as a result of group decision making. Numerous authorities over the years have underscored the group nature of curriculum development. George J. Posner and

Alan N. Rudnitsky (2006) affirmed that "Curriculum development is typically done by teams of people working together on a common project" (p. 13).

Several groups or constituencies are involved in curriculum development in differing roles and with differing intensities. Students and other stakeholders often, though perhaps not as frequently as might be desired, join forces with educational personnel in the complex job of planning a curriculum.

Teachers and curriculum specialists constitute the professional core of planners. These professionally prepared persons carry the weight of curriculum development. They work together under the direction of the school and school district administrators whose task is to facilitate the curriculum development efforts at all stages of the process. Students enter the process of curriculum development as direct recipients of benefits that result from curriculum change, and parents are brought in as the persons most vitally concerned with the welfare of their own students and the community. It is common for students and stakeholders to be invited to participate in the process of curriculum planning.

Some school districts go beyond parents of children in their schools and seek representation from the total community, parents and nonparents alike. With the emphasis on how education (PreK-12 and higher education) impacts the local and state economies, business and community leaders have interest in the curriculum and resulting preparedness of students to be productive contributors to the economy. Broad community involvement in providing input related to school offerings is a positive approach for designing curriculum that will have support when implemented. Generally, any significant change in the curriculum should involve all the aforementioned constituencies, as well as the school's noncertificated personnel. The more people affected by the change, and the greater its complexity and costs, the greater the number of persons and groups that should be involved. The roles of various individuals and groups in curriculum development are examined in Chapter 4.

Although some limited gains certainly take place through independent curriculum development within the walls of a classroom, significant curriculum improvement comes about through collaborative planning and problem solving. Results of group deliberation are not only more extensive than individual efforts, but the process by which the group works together allows members to share their ideas and to reach consensus. In this respect, members help each other to change and to achieve commitment to change. Carl D. Glickman (1998) averred: "Any comprehensive changes made without the understanding and support of at least a core majority of educators and parents will fail, not necessarily because of the changes themselves (Glickman, 1998, p. 39). But because of the way they came about" (p. 28). "Regardless of how insupportable is the case for keeping schools as they are, without a way for educators, parents, and citizens to understand, discuss, and participate in new possibilities, change efforts for the long term will be for naught" (p. 39). Being cognizant of the attitudes of varying constituents that have a stake in curriculum development is a fundamental responsibility of the curriculum developer (Taba, 1962).

Change Leadership

Those who lead curriculum change and implementation may either have been directed to lead specific change or perhaps they have identified that curriculum redevelopment is needed from analysis student learning outcome data and progress towards meeting school district or school strategic goals. There are three categories of planned change that are generally considered. All three may apply to curriculum development: empirical rational strategies, power coercive strategies, and normative reducative strategies (Bennis, Benne, & Chin, 1985).

Empirical rational strategies are based on using research (empirical) to develop changes in practice and are useful when those who will implement the change see the change as beneficial or rational for their work. An example would be when a grant recipient develops a needed assessment for reading comprehension and through dissemination of the grant outcomes, the assessment is then shared with State Education Authority (SEAs) and Local Education Authorities (LEAs) resulting in a fairly rapid adoption of the new reading assessment.

The second category of strategy is power coercive, and is reliant on the power, often political or legislated to drive the change. An example of power coercive change was the direction from No Child Left Behind (NCLB) that all students would be reading on grade level by 2013, resulting in curricular changes across the country. Readers can evaluate how effective this change strategy was for your own context.

Normative re-educative strategies are grounded in the thinking that stability without change is often comfortable and therefore, change in curriculum may not be invited from outside entities. Those within the organization identify changes in curriculum that may be needed. Then, curriculum leaders collaborate with those who will most probably influence or be involved in implementation of the curriculum change. Through the collaborative process curriculum changes needed are created along with the process for implementation.

Each of the three categories of change leadership may be applied over time. As curriculum leaders, part of the role is determining the most efficacious strategy for the target change and your context. As you think about leading curricular change, consider that it is also human capacity building and professional learning for all who are involved in the collaboration. Per Fullan (2010), as the capacity of individuals and the collaborating group are developed, focused on improving student learning outcomes, then the improvements will be sustainable and continuing.

Decision-Making Process

AXIOM 6. *Curriculum development is basically a decision-making process.* Curriculum planners, working together, make a variety of decisions, including the examples that follow.

1. ***Disciplines.*** The absence or limited presence of philosophy, anthropology, driver education, and sometimes art, foreign languages, music, and physical education from the curriculum of schools indicates that priorities have led to decisions being made about the subjects that are most important for students to learn.
2. ***Competing Viewpoints.*** Planners are to use research and their context to determine which approaches are best for students. An example that has been controversial in some contexts is to have bilingual education or to provide another education opportunity for English learners. Planners make decisions about how students with disabilities will be served and the extent of inclusion in schools. Other common decisions relate to student grouping which could be heterogeneous or homogenous, by achievement on accountability assessments, or by student choice and interest.
3. ***Emphases.*** With the expectation of increased graduation rate, along with students being college and career ready, decisions about how to accelerate students who are not grade level proficient in reading and mathematics is determined as early as kindergarten and through high school. Similar determinations relate to emphasis on providing rigorous learning opportunities for all students or just for select groups (Taylor, Watson, & Nutta, 2015). Emphases are to be developed before the curriculum development or re-development process begins.
4. ***Instructional Methods and Resources.*** Curriculum development frequently extends to the instructional implementation and suggests methods or approaches for efficacious

implementation. Examples of queries that would lead to instructional and resource decisions follow.

Will digital tools be a priority to provide flexible access for learners and teachers? How much time is expected for the elementary school reading block? If the reading block is expected to be more than one hour, how much time will then remain for mathematics, science, social studies, the arts, and physical education? Or, will science and social studies concepts be learned by reading informational text and non-fiction during the reading block?

5. ***Organization.*** Organization of the school day and year impacts curriculum development. If school communities adopt philosophies of continuous progress based on mastering competencies, the curriculum would have to have extremely well-coordinated vertical alignment. If classes are team taught with a social studies educator and English language arts educator, then integrating the two disciplines for facilitated instruction would be an important component of the curriculum organization. With the expansion of virtual schools and virtual courses taken by students in brick and mortar schools, new organizational considerations have arisen to be considered.

Two necessary characteristics of a curriculum planner are the ability to effect decisions after sufficient study of a problem and the willingness to make decisions (Glickman, 1998). Every decision involves calculated risk, for no one—despite what some experts may claim—has all the answers to all the problems or a single panacea for every problem. With this in mind, collaborative decision making that begins with establishing parameters, some of which were identified in this section, will facilitate the process. Curriculum planning decisions are to be made on the basis of the best available research and evidence that suggests optimum opportunities for all learners to achieve at the level expected. Although the task of making curricular decisions may be difficult in complex contexts, the opportunity to make choices from among many alternatives is an advantage in school districts in the US.

Continuous Process

AXIOM 7. *Curriculum development is a never-ending process.* Curriculum planners constantly strive for the ideal, yet the ideal eludes them. Perfection in the curriculum will never be achieved. The curriculum can always be improved, and many times better solutions can be found to accomplish specific objectives. As the needs of learners change, as society changes, as technology unfolds, and as new knowledge appears, the curriculum must change. Curriculum evaluation should affect subsequent planning and implementation. Curriculum goals and objectives and plans for curricular organization should be modified as evidence based feedback reveals the need.

Curriculum development is not finished when a single curricular problem has been temporarily solved, nor when a newer, revised program has been instituted. Continual evidence and data gathering to monitor fidelity of implementation is necessary to assure that the program is on track and that when problems arise, reasonable solutions are developed. Further, adequate records should be maintained of curriculum committees' processes so that in the future there will be an organizational memory for reference and comparison. Using an online collaborative site where participants can contribute and have access will provide interested parties empowerment and a voice to maintain engagement in the continual improvement.

Comprehensive Process

AXIOM 8. *Curriculum development is a comprehensive process.* Historically, curriculum revision has been a hit-or-miss procedure: patching, cutting, adding, plugging in, shortening,

lengthening, and troubleshooting. Hilda Taba (1962) made the same observation when she likened curriculum development to quilt making: the compilation of diverse individual contributions that are interconnected only by threads of similarity (p. 8).

Curriculum planning has often been too fragmentary rather than comprehensive or holistic. Too many curriculum planners have focused on the trees and not seen the forest. The popular expression that the whole is greater than the sum of its parts applies well to curriculum development. Although parts of the curriculum may be studied separately, planners are to frequently and periodically view the macrocurriculum—that is, the curriculum as a whole, as distinguished from the sum of its parts.

A comprehensive view encompasses an awareness of the impact of curriculum development not only on the students, teachers, and parents directly concerned with a programmatic change, but also on the innocent bystanders, those not directly involved in the curriculum planning but affected in some way by the results of planning. Human sexuality education, an example that is sensitive in many communities, may affect not only teachers, students, and parents of students for whom the program is intended but also teachers, students, and parents of those who are not scheduled for the instruction. Some from the groups involved may not wish to be included. Others from the groups not in the program may wish to receive the instruction. There may be those from both groups who reject the subject as inappropriate for the school.

The comprehensive approach to curriculum planning requires a generous investment of physical and human resources. Curriculum specialists engage in planning for curriculum development or in what might be referred to as developing the management plan. Some predetermination is made prior to initiating curriculum development as to whether the tangible resources, the personnel, and sufficient time will be available to provide a reasonable expectation of success. Not only must personnel be identified, but their sense of motivation, expertise, and other commitments are also to be taken into consideration by the curriculum leaders. Perhaps one of the reasons that curriculum development has historically been fragmented and piecemeal is the level of demand that the comprehensive approach places on the school district's resources.

Systematic Development

AXIOM 9. *Systematic curriculum development is more effective than trial and error.* Curriculum development should ideally be made comprehensive by examination of the whole and should be made systematic by following an established set of procedures. Procedures, including norms of collaboration for the participants, should be agreed upon and known by all those who participate in the development of the curriculum. Curriculum planners are more likely to be productive and successful if they follow an agreed-upon model for curriculum development and collaboration that outlines or charts the sequence of steps and the norms of collaboration that will be part of the process.

If the curriculum specialist subscribes to the foregoing axioms and consents to modeling his or her behavior based on these axioms, will success be guaranteed? The answer is an obvious "no," for there are many limitations on curriculum specialists, some of which are beyond their control. Among the restrictions on the curriculum planner are the style and personal philosophy of the administrator, the resources of the school district, the community context, the expertise, knowledge, and skills of the participants in curriculum development, and the availability of professional materials and resource persons.

One of the greatest limitations—sometimes overlooked because it is so obvious and encompassing—is the existing curriculum. Many treatises have been written by curriculum experts on the characteristics of different types of curriculum. The earmarks of an activity

curriculum, a subject-matter curriculum, a broad-fields curriculum, and variations of core curricula are described in detail in the literature. From a purely cognitive base such discussions are useful. But the inference may be drawn that the choice of a type of curriculum is an open one, which would be rare. To change the curriculum type, say to a problem based integrated curriculum from a discrete standards based individual subject content curriculum, would take many months of investigation into the feasibility of implementation, not just of development.

Starting from the Existing Curriculum

AXIOM 10. *The curriculum developer starts from where the current curriculum is, just as the teacher starts from the current achievement of each student.* Curriculum change does not take place overnight. Few quantum leaps can be found in the field of curriculum, and this condition may be a positive value rather than a negative one, for slow but steady progress toward change allows time for data gathering, data analysis, improvement, and revision.

Because most curriculum planners begin with already existing curricula, their role is essentially curriculum re-development. The investment of human capital, their thinking, and school district funds to support re-development generally does not result in eliminating previous curriculum, but building upon it.

EIGHT CONCEPTS OF CURRICULUM CONSTRUCTION

Although a model for curriculum development may show a process, it does not reveal the whole picture. It does not show, for example, how to select from competing content, what to do about conflicting philosophies, and how to assure articulation between levels.

The eight guiding concepts to be discussed are not only perennial problems for curriculum developers but are also concepts that lead to the formulation of principles of curriculum development. The creation of a well-functioning sequence, for example, is a continuing problem for the curriculum developer. At the same time, the curriculum planner must understand the concept of sequencing, which is essential to an effective curriculum. Bringing together the two elements, curriculum and sequencing, the principle is formulated that an effective curriculum is one that is properly sequenced.

All eight concepts are interrelated. First to be examined are four concepts that are closely related to each other: scope, relevance, balance, and integration. The last three are dimensions of scope; all four relate to the choice of goals and objectives. Next to be considered are three other closely interrelated concepts: sequence, continuity, and articulation. The last two are dimensions of sequencing. Finally, you will review the concept of transferability.

Scope

Scope is usually defined as the breadth of the curriculum. The content of any course or grade level—identified as topics, learning experiences, activities, organizing threads or elements, integrative threads, or organizing centers—constitutes the scope of the curriculum for that course or grade level (Tyler, 1949; Bloom, 1958; Goodlad, 1963). The summed content of the several courses or grade levels makes up the scope of the school curriculum. J. Galen Saylor and William M. Alexander (1954), in an earlier work, defined scope in the following way: “By scope is meant the breadth, variety, and types of educational experiences that are to be provided pupils as they progress through the school program. Scope represents the latitudinal axis for selecting curriculum experiences” (p. 284).

When teachers select the content that will be learned during the year, they are making decisions on scope. When curriculum planners at the school district or state level set the minimum requirements for graduation from high school, they are responding to the question of scope.

ORGANIZING CENTERS OR THREADS. John I. Goodlad (1963) defined the elements of scope as "the actual focal points for learning through which the school's objectives are to be attained" (p. 28). He wanted to convey the meaning of these elements as one term for the following reason:

> Nowhere in the educational literature is there a term that conveys satisfactorily what is intended in these focal points. The words *activities and learning experiences* are used most frequently but are somewhat misleading. Under the circumstances there is virtue in using the technical term *organizing centers.* Although somewhat awkward, the term does permit the inclusion of such widely divergent focal points for learning as units of work, cultural epochs, historical events, a poem, a film on soil erosion, and a trip to the zoo. The *organizing center* for teaching and learning may be as specific as a book on trees or as general as press censorship in the twentieth century. *Organizing centers determine the essential character of the curriculum.* (Goodlad, 1963, p. 28)

In a similar vein, Tyler (1949) advised those who are organizing the curriculum to identify the organizing threads or elements, that is, the basic concepts and skills to be taught (p. 86). Thus, curriculum planners choose the focal points, the basic concepts and skills, and the knowledge that will be included in the curriculum. A central problem of this horizontal organization, called scope, is the delimitation of the concepts, skills, knowledge, and attitudes to be included.

AIMS PROCEDURE. By working collaboratively with others, curriculum specialists select the concepts, skills, and knowledge to be incorporated into the curriculum for areas not previously designated by standards or an education organization. Many years ago, Hollis L. Caswell and Doak S. Campbell (1935) suggested a procedure for determining the scope of the curriculum. Referring to the process as the "aims procedure," they outlined the steps as follows.

> First, a general all-inclusive aim of education is stated. Second, this all-inclusive statement is broken up into a small number of highly generalized statements. Third, the statement of a small number of aims is divided to suit the administrative organization of the school [for the elementary, junior high, or senior high school divisions]. . . . Fourth, the aims of each division are further broken up by stating the objectives to be achieved by each subject. Fifth, the general objectives for the subjects in each division are analyzed into specific objectives for the several grades; that is, statements in as specific terms as possible are made of the part of the subject objectives to be achieved in each grade. The specific objectives for all the subjects in each grade represent the work to be carried forward in the respective grades and indicate the scope of work for the grades. (Caswell & Campbell, 1935, p. 152)

Caswell and Campbell perceived the specific objectives—not learning experiences, focal points, topics, or organizing threads—as indicating the scope of the curriculum.

NECESSARY DECISIONS. With time so precious and the content burden so great, every organizing center included in the curriculum must be demonstrably superior to those not included. Decisions as to the superiority of the selected elements are reached by group consensus, by expertise, or by both. Curriculum planners answer questions to which there are no easy answers, like these:

- What do students need to succeed in our society?
- What are the needs of your locality, state, nation, and world?

- What are or will be the essentials of each discipline, including the past, present, and the future?

Decisions on the scope of the curriculum are multiple and relate to the curriculum as a whole for the various disciplines, courses, or content within the disciplines, units, and individual lessons.

Curriculum planners make decisions on scope not only within each of the three domains of learning but also from among the domains. Within the domains they must raise questions such as the following:

- Shall a course in geology as well as human geography be included (cognitive)?
- Shall the development of charity and/or the attitude of cooperation be included (affective)?
- Shall physical education and dance be included (psychomotor)?

Curriculum planners may find the determination of scope within a domain, albeit taxing, easier to resolve than making decisions between domains. Which domain, it must be asked, is most important? This question resurrects philosophical arguments about the nature of knowledge as well as the nature and needs of learners and of society. What knowledge is worth more? Arno Bellack (1965) addressed this question, and concluded that schools should enable teachers to develop students' knowledge in the major disciplines.

Other theorists stressed the domain of knowledge, the cognitive domain. Jerome S. Bruner (1962) wrote: "The structure of knowledge—its connectedness and its derivations that make one idea follow another—is the proper emphasis in education" (p. 120); Robert L. Ebel (1972) championed cognitive learning; and Philip H. Phenix (1962) said: "My thesis, briefly, is that all curriculum content should be drawn from the disciplines, or to put it another way, that only knowledge contained in the disciplines is appropriate to the curriculum" (p. 57).

Combs, Kelley, and Rogers (1962) on the other hand, looked beyond the realm of knowledge to the development of values and the self-concept as central to the educational process. Many teachers and curriculum planners, do not rely on their own judgment, leaving decisions on scope to others—to curriculum consultants, to writers of curriculum guides, and to the authors and publishers of textbooks. Thus, the scope may consist of many pages of one or more texts, and the determination is made simply by dividing the number of pages by the number of days of schooling or by dividing the number of topics and learning activities in a course of study by the number of days or weeks. Although this simplistic planning is better than none, the curriculum would be far more pertinent if planners exercised, through a systematic, collaborative process, their own combined professional judgment and selected from the entire field only those concepts, skills, and knowledge they deemed appropriate to their school, learners, society, state, region, and country.

Since the implementation of standards and accountability for student learning outcomes, there have been changes in the examination of scope by instructional leaders and teachers. Because of the scrutiny of the outcomes, teachers collaborate and add in their own experience about how much time it takes for students to develop proficiency on a particular standard or instructional goal and objective. Even with vast resources of curriculum guides, teacher teams wrestle with portioning time where it is most needed and allowing for differentiation and reteaching as needed. Though standards based education does provide some limitations on curriculum decision making, it does not eliminate the many decisions that teachers make in planning, organizing, presenting, and evaluating learning to support students' success.

Relevance

The challenge of the principle of relevance is, how is it determined and by whom? Relevance in one context may not be quite as relevant in another.

VARYING INTERPRETATIONS. The difficulty of determining relevance lies in the multitude of interpretations of the word. What is considered relevant education for suburbia may not be for urban centers. What is considered relevant for the Anglo may not be for the Hispanic. What is relevant to the essentialists may not be to the progressivists. Relevance, like beauty, is in the eyes of the beholder. "Like the words relation and relating," said Harry S. Broudy (1972), "relevance excludes virtually nothing, for everything mentionable is relevant in some sense to everything else that is mentionable" (p. 179).

Think broadly of generally relevant. Whether the curriculum is relevant or not may be beside the point. The consumers of curriculum, the constituents and patrons of the school, will form attitudes toward relevance. Curriculum developers consider perceptions of relevance before they consider with the question of relevance itself. William Glasser (1992) attributed students' perceptions of their lessons as "boring" to the fact that they could not relate what they were studying to their lives (p. 7).

Conflicts come about between the academic studies and the career-technical curricula. Preparation for careers is of extreme importance. Students can see the value in skill courses but often do not realize that the academic areas may (a) provide a foundation needed in every curriculum and (b) open new vistas toward other careers.

Disagreements over relevance arise from differing conceptions of what exists in society and what should exist in society. The question becomes: should curriculum planners educate students for life as it is or as they think it should be or will be? Should the curriculum develop the desire to read nonfiction, to subscribe to scholarly journals, to listen to classical music, and to frequent art galleries? Should the curriculum encourage students to make money, to prefer pop fiction, to enjoy rock music, and to artistically liven up their own homes? Should the curriculum remain neutral and abstain from all such value-laden content, or, conversely, should it introduce the learners to a range of content and experiences?

Arguments arise over the relative merits of the concrete versus the abstract. Some prefer to concentrate on content that can be experienced with the senses whereas others prefer to concentrate on developing the intellect through high-level generalizations.

AN EXPLANATION OF RELEVANCE. B. Othanel Smith (1969) clearly explained relevance when he wrote:

> The teacher is constantly asked "Why should I learn that?" "What is the use of studying history?" "Why should I be required to take biology?" If the intent of these questions is to ask what use can one make of them in everyday activities, only general answers are possible. We can and do talk about the relevance of subject matter to the decisions and activities that pupils will have to make. We know, among other things, that they must:
>
> - choose and follow a vocation,
> - exercise the tasks of citizenship,
> - engage in personal relationships,
> - take part in culture-carrying activities . . .
>
> . . . the question of relevance boils down to the question of what is most assuredly useful. (Smith, 1969, pp. 130–131)

Smith (1969) admitted that it is difficult to show the utility of abstract subject matter:

> Unfortunately, the utility of this form of subject matter is much more difficult to demonstrate. . . . Perhaps the chief reason utility of abstract knowledge cannot be demonstrated to the skeptic is that a great deal of it functions as a second-order utility. A first-order utility is illustrated in the skills that we use in everyday behavior such as handwriting and reading. The second-order utility consists of a learning that shapes behavior, but which is not itself directly observable in behavior. (Smith, 1969, p. 131)

USES OF KNOWLEDGE. Smith (1969) classified the uses of knowledge that are not directly observable as associative, interpretive, and applicative. By associative Smith meant the learner's ability to relate knowledge freely, sometimes bringing about solutions to problems. Abstract knowledge helps individuals to interpret their environment, which they cannot do without fundamental knowledge. Abstract subject matter enables learners to apply concepts to solve new problems.

Curriculum specialists in collaboration with others decide what is meant by relevance and then proceed to make the curriculum as relevant as possible.

Balance

Balance is an unusual curriculum concept that on the surface seems obvious but with some probing becomes somewhat cloudy. Nailing down a precise definition of balance is difficult. Many—perhaps most—educators think that the curriculum is in a state of imbalance. Years ago, Paul M. Halverson (1961) made an observation that could well be repeated today: "Curriculum balance will probably always be lacking because institutions of all kinds are slow in adapting to new needs and demands of the culture except when social change is rapid and urgent in its implications for these institutions" (p. 7).

The search for a definition of balance is complicated by differing interpretations as it applies to the curriculum. Halverson (1961) spoke of balancing ends and means, as follows: "A balanced curriculum implies structure and order in its scope and sequence (means) leading to the achievement of educational objectives (ends)" (p. 4).

Goodlad (1963) would bring the learner-centered curriculum and the subject-centered curriculum into balance, commenting:

> Much recent and current controversy over the curriculum centers on the question of what kind and how much attention to give learners and subject matter, respectively. The prospect of stressing one to the exclusion of the other appears scarcely worthy of consideration. Nonetheless, the interested observer has little difficulty finding school practices emphasizing one component to the impoverishment of the other. (Goodlad, 1963 p. 29)

Ronald C. Doll (1996) looked at balance from the learner's standpoint and described it as follows:

> A balanced curriculum for a given learner at a given time would completely fit the learner in terms of his or her particular educational needs at that time. It would contain just enough of each kind of subject matter to serve the individual's purposes and to speed his or her development. . . . Perhaps the best that can be done in working toward balance is to be clearer about what is valued for the growth of individual learners and then to apply these values in selecting curriculum content, grouping pupils for instruction, providing for articulation, and furthering guidance programs. (Doll, 1996 pp. 186–187)

In the foregoing comments Goodlad (1963) stressed the need for balance between the learner and the subject-centered curriculum, whereas later Doll (1996) emphasized the need for a curriculum that fits individuals through a judicious balance of group and individual experiences.

SETS OF VARIABLES. You may apply the principle of balance in several ways. Given the typical elementary school, middle school, and high school, curriculum planners seek balance among variables, a few noted in this text. You will note that some of the sets of variables call for proportions or splits other than a 50-50 distribution. There are times when a balance does not mean equal proportion.

1. ***The learner-centered and the subject-centered curriculum.*** This variable presupposes a balance between the conflicting philosophies of progressivism and essentialism.
2. ***The needs of society and the needs of the learner.*** The curriculum must be not only socially but also personally oriented.
3. ***General and specialized education.*** While the curriculum of a high school consists of core education courses that could comprise a majority of the curriculum offerings, electives must be available for learners in specialized fields. School districts in various parts of the country offer alternatives to the general-specialized-education balance by providing magnet programs in separate schools or within a school for specialized education. Also, they meet student needs by allowing dual enrollment in both the high school and a career technical school, community college, or state college, or by joining forces with other public schools to operate an area career technical center. Online coursework is another approach that allows school districts to meet the needs of their students.
4. ***Breadth and depth.*** The curriculum can be so broad as to be superficial or conversely so profound as to limit.
5. ***The three domains may create a three-way balance.*** You cannot ignore the cognitive or affective or psychomotor domain.
6. ***Individualization and general education.*** Find ways to individualize or personalize instruction within the context of a school district. It may be that digital resources hold the most promise for meeting each individual's needs in addition to the expert instructor.
7. ***Innovation and stability.*** Stability is comfortable and encourages development of expertise. Constant innovation can provide cognitive overload for those who are to implement. Evaluation of implementation over time, is essential to know if implementation is with fidelity and if the fidelity or the innovation are most linked to outcomes, either positive or negative.
8. ***The needs of the exceptional and the nonexceptional student.*** All learners are expected to be successful so the varying needs of special needs learners, high achieving learners, English learners, and all of those in between are essential.
9. ***Within and across disciplines.*** Disciplines may compete for time in the curriculum, just as there is competition for content learning within a discipline.

Integration

Curriculum specialists may choose to provide for integrating subject matter. Integration, in the context of a curriculum construction concept, means the blending, fusion, or unification of disciplines. A fully integrated curriculum tears down barriers between disciplines and fuses disciplines under overarching themes or topics. Unlike the determination of scope and sequence, which must be accomplished, the integration of disciplines is an optional and controversial undertaking. Whether to integrate the curriculum is an issue that divides educators.

Whether curriculum planners choose to integrate subject matter hinges upon their philosophy of the nature of knowledge, the nature of learners, and the purposes of education. Many educators support the integration of subject matter based on their analyses of studies pointing to successes with interdisciplinary curricular plans. Tyler (1949) defined integration as "the horizontal relationship of curriculum experiences" and went on to say, "The organization of these experiences should be such that they help the student increasingly to get a unified view and to unify his behavior in relation to the elements dealt with" (p. 85). Hilda Taba (1962) commented that learning is more effective when connections among various fields of study are made explicit, especially when one is applying knowledge.

Subject matter may be organized based on separate disciplines with their own time blocks. Another approach is to integrate it either on a schoolwide basis (as with the core curriculum) or on the classroom level (as with certain types of unit plans) without regard for disciplines.

Not all educators, of course, are advocates of integrating subject matter. Some believe that the various disciplines should be taught separately. Thus, they reject the broad-fields approach to curriculum organization and recommend that teachers and students concentrate on the separate disciplines.

Correlation of the curriculum is a type of integration and is the relating of subjects to one another while still maintaining their separateness. Relationships among subjects taught at a particular school level are shown to students, as in the cases of history and literature; mathematics and science; art, music, and literature. Subjects may be correlated horizontally across one grade level or vertically across two or more. As an example of the latter, world history, taught in the sophomore year, may be aligned with the literature that students read at about the same time.

TWO VIEWS OF CURRICULUM INTEGRATION. Taba offered two views of curriculum integration. The first view is the horizontal relationship of subjects. In addition, said Taba (1962), "Integration is also defined as something that happens to an individual" (p. 299). If you follow the second view, "The problem, then, is that of developing ways of helping individuals in this process of creating a unity of knowledge. This interpretation of integration throws the emphasis from integrating subjects to locating the integrative threads" (Taba, 1962, p. 299).

Regardless of whether the subject matter is presented to the learner in an integrated fashion, the learner must integrate the knowledge into his or her own long-term memory. If new information is not integrated into prior knowledge then it will not be retrievable accurately and quickly at a later date, for example in the spring when accountability assessments take place. Taba (1962) remarked:

> Unification of subjects has been a theme in education ever since the Herbartians. By far the greatest number of experimental curriculum schemes have revolved around the problem of unifying learning. At the same time we are far from achieving unification, partly because of fear of loss of disciplined learning if the study of specialized subjects is discarded, and partly because as yet no effective basis has been found for unifying school subjects. (Taba, 1962, pp. 298–299)

You have seen and will see a number of references to interdisciplinary or multidisciplinary integrated curricula in this text. Although leaders and teachers may seek to employ an interdisciplinary approach to curriculum and instruction at more than one level, integration of the curriculum was, in the days of the core curriculum, found more frequently in middle schools.

Integrated curricula challenge the time-honored organization of curricula into separate disciplines. Curriculum planners must decide whether they will make a conscious effort either to

correlate or to integrate subject matter and, if they plan to do either, determine the organizational structure they will create to do so. Scope, relevance, balance, and integration are interrelated principles to which curriculum specialists give attention.

Sequence

Sequence is the order in which the organizing elements or centers are arranged by the curriculum planners. Whereas scope is referred to as "the what" of curriculum organization, sequence is referred to as "the when." Sequence answers the questions of when and where the focal points will be placed and may be referred to as a pacing guide, which not only includes sequence, but also the approximate time the unit of instruction may proceed. Some time ago Saylor and Alexander (1954) defined sequence as:

> the order in which educational experiences are developed with pupils. Sequence refers to the "when" in curriculum planning. Determination of the sequence of educational experiences is a decision as to the most propitious time in which to develop those educational experiences suggested by the scope. If we think of scope as the latitudinal aspect of curriculum planning, sequence becomes the longitudinal axis. (Saylor & Alexander, 1954, p. 249)

Once the scope is determined, then the order of the content in the flow is decided. In some subjects, there are prerequisite skills and knowledge that are thought to be important, and in other cases the sequence is a preference. In history, chronological order may be a natural organizational sequence. In some cases, history and social studies curriculums are organized by themes, in which case the chronology takes second place in the sequence of decision making. Other considerations in sequence that may be considered are: the learners, the prerequisite knowledge needed, challenge of the curriculum objective, instructional objective, and learning targets.

WAYS OF SEQUENCING. How do curriculum specialists decide which content comes first? Sequencing is accomplished in a variety of ways, including arranging the content. Several ways of thinking about sequencing follow.

1. ***From the simplest to the most complex.*** Learn the tens, for example, before learning the hundreds.
2. ***In chronological order.*** History is most often taught in this fashion.
3. ***By theme.*** Tragedies in English literature and drama.
4. ***Geographically.*** Regions of the world may be studied.
5. ***Concrete to the abstract.*** Develop concepts with manipulatives (real or virtual) before moving to problem solving.
6. ***General to specific.*** Study the concept of interdependence before digging deeply into examples to which students can connect.
7. ***Groupings of similar topics, readings, skills.***

When the order is not important to skill development, there may be groupings such as contemporary American authors. In contrast, literature is frequently grouped by genre: drama, short stories, novels, and nonfiction, but sometimes by a theme, such as change and then within the theme students read a short story, novel excerpt, poem, and nonfiction or informational text. Standards and curriculum objectives will most likely drive the groupings.

For certain content students cannot engage until they have proficiency with the preceding skills. The study of algebra is extremely challenging without proficiency in multiplication,

division, and application of those concepts to fractions. Generally, a student cannot succeed in a second-year world language class without proficiency at the first-year level.

CONCEPTIONS OF SEQUENCING. Donald E. Orlosky and B. Othanel Smith (1978) discussed three conceptions of sequencing: (a) sequencing according to need, (b) macrosequencing, and (c) microsequencing. According to the first conception,

> the learner orders his own learning as he deals with a situation from moment to moment. He selects what he wants to know as the need arises. If he makes a mistake in the selection he simply goes through the process again until he finds that which satisfies his present need. This is an opportunistic notion of sequencing but those who advocate it maintain that it is psychologically sound. (Orlosky & Smith, 1978, p. 267)

Macrosequencing follows principles of learner development expounded by persons such as Arnold Gesell, Frances L. Ilg, and Jean Piaget. Macrosequencing, said Orlosky and Smith (1978), is the organization of knowledge and the formulation of instruction to coincide with the different stages of the individual's development. For a long time, teachers have arranged the knowledge of instruction roughly in accordance with the development learner. Examining the existing program of studies of almost any school shows that it corresponds roughly to the learner's development (Orlosky & Smith, 1978, p. 251).

Microsequencing is the ordering of subject matter according to the prerequisite knowledge required of each unit of content. "This assumes," said Orlosky and Smith (1978), "that for any learning task there is a hierarchy extending from the very simple to the more abstract and complex elements which lead to the attainment of a specified objective" (p. 267).

Curriculum planners are called on to make decisions on placement of content at the appropriate grade levels. Using the terms "sequence" and "grade placement" together, B. Othanel Smith, William O. Stanley, and J. Harlan Shores (1957) observed:

> There are only two possible approaches to the solution of problems of grade placement and sequence. *The first* accepts the child as he is and adjusts the experience to his level of development while holding the instructional goals constant. . . . *The second approach* assumes curriculum experiences to be located at a given grade level and provides learnings to adjust the child to these experiences—that is, to get him ready for the learning. (Smith, Stanley, & Shores, 1957, p. 171)

WHERE TO BEGIN. Disagreements over the process of sequencing center on whether curriculum planners should start with learners or subject matter. The first demands choosing emphases in keeping with the learners' actual growth and development or developmentally appropriate; the second, placing subject matter at the grade level at which it is assumed learners will be able to master it. The latter approach to sequencing has been the historic approach.

Smith, Stanley, and Shores (1957) advocated a blending of the two approaches, holding it unrealistic to subscribe wholeheartedly to either approach (p. 171). They counseled curriculum specialists to take into account the maturation, experiential background, mental age, and interests of the learners and the usefulness and difficulty of the subject matter when developing a sequence. The ordering of the organizing elements of the curriculum is one of the major tasks of the curriculum developer.

Continuity

Continuity is the planned repetition of content at successive levels, each time at an increased level of complexity. Tyler (1949) described continuity as follows.

> Continuity refers to the vertical reiteration of major curriculum elements. For example, if in the social studies the development of skills in reading social studies is an important objective, it is necessary to see that there is recurring and continuing opportunity for these skills to be practiced and developed. This means that over time the same kinds of skills will be brought into continuing operation. In similar fashion, if an objective in science is to develop a meaningful concept of energy, it is important that this concept be dealt with again and again in various parts of the science course. Continuity is thus seen to be a major factor in effective vertical organization. (Tyler, 1949, pp. 84–85)

SPIRAL CURRICULUM. The principle of continuity is represented in the spiral curriculum (Bruner, 1963). Concepts, skills, and knowledge are introduced and reintroduced—for example, the repetition of addition, study of democracy, writing, personal health, and conservation, each reintroduction enhancing the earlier learning over various school years. An example that is common is the spiraling within a school year of standards in English Language Arts (ELA). A specific standard may be learned several times within a school year using different kinds of texts with the expectation of the student work outcomes to increase in challenge each time.

EXPERTISE NEEDED. Planning a curriculum for continuity requires a high degree of expertise, which demands both knowledge of the subject field and knowledge of the learners. For example, to plan a mathematics sequence for kindergarten or prekindergarten through high school with appropriate scope, sequence, and continuity requires the combined skills of subject-matter specialists and teachers. Continuity is not simply repetition of content but also repetition with increasing levels of complexity of thinking and appropriate resources at each stage, followed by professional learning for teachers and instructional leaders. This concept was applied in the development of the Common Core State Standards which begin in kindergarten and progress with increasing challenge through high school. Whereas elementary school learners, for example, may learn that democracy means government of the people, by the people, and for the people, secondary students may wrestle with controversial and unresolved problems of democracy in the global community.

Collaboration with those affected will reveal to curriculum developers which standards and units of content are to be reintroduced and at what point. Preassessment or checking for background knowledge and readiness of the learner, is essential before each new organizing element is broached. Preassessment will uncover whether the learners are ready for (a) new content based on prior content and (b) prior content that will be repeated at a more complex level.

Articulation

If continuity is viewed as the spiraling of content upward through the grades then view articulation as the meshing of organizing elements across school levels—that is, across elementary, middle, and high schools. Articulation from high school to post-secondary institutions is an element of sequencing that is increasing in importance and frequency with the expectation that graduates are college and career ready, and that retention and graduation rates increase for undergraduate degree granting institutions.

HORIZONTAL AND VERTICAL. Oliver (1965) used the term "articulation" synonymously with "horizontal articulation" or "correlation." He equated the concept of "continuity" with "vertical articulation" (p. 222). Sequence, continuity, and articulation are all interrelated. Vertical articulation is grade to grade and horizontal is within a grade. This meshing may or may not involve reintroduction of units of content that are progressively more difficult.

Collaborative efforts are necessary among curriculum developers if articulated sequences are to be planned from kindergarten through twelfth grade and beyond. Within decentralized school districts, lack of articulation occurs frequently; however, curriculum is generally thought of as one of the components of school districts that should be centrally coordinated just as human resource policies are centralized. Articulation is particularly difficult in some states where separate school districts managing different levels of schooling exist side by side under separate administrators and separate school boards, such as in high school districts or elementary school districts. Even when all levels of schooling are centralized under a single superintendent and school board, articulation among schools and among grade levels and content areas remains a challenge.

GAPS AND OVERLAPS BETWEEN LEVELS. If given the authority, teachers could select which content will be taught, leading to gaps in the curriculum. Likewise, there is legitimate concern that students could be reintroduced to the same content more than once as they move up the educational continuum. Gaps and overlaps can be avoided by providing opportunities for teachers to articulate between and among the grade levels. An example of overlap is when students read the same selection of fiction in the fifth grade and then again in the sixth grade, although the selection is appropriate across the two grade levels. Schools that plan contiguously by providing planning opportunities between and among school levels to align curriculum offerings and/or operate as professional learning communities stand a far better chance of eliminating concerns in this area.

PERSONAL ARTICULATION. There is not only a need for planned articulation of subject matter but also for students' personal articulation. School leaders look for ways to respond to students' varied capabilities. Some middle school students, for example, are able to tackle high school subjects, like algebra and geometry. Some high school students can perform well in Advanced Placement courses in the high school or can dually enroll at a local college due to their educational prowess and articulation agreements between the college and school district.

To recap what has been said about sequencing, continuity, and articulation—continuity and articulation are dimensions of sequencing. Sequencing is the logical or psychological arrangement of units of content within lessons, units, courses, and grades. Continuity is the planned introduction and reintroduction of the same units of content through the grades at ever-increasing levels of scope and depth. Articulation is the planned sequencing of units of content across grade levels—that is, from one grade level to the next to ensure that the next grade level begins where the previous grade level left off.

Although this text presents sequencing and related principles in a favorable light as useful concepts in planning, organizing, and evaluating the curriculum, views on many concepts and practices in education differ. The concepts of sequencing and the spiral curriculum are no exception. Holding that "there is little interest today in sequencing," John D. McNeil (2006) wrote, "Current research casts doubt on rigid conceptions of skill hierarchies and spiraled curriculum. Although there may be some valid skill hierarchies such as teaching addition before multiplication, little evidence supports hierarchies such as those in Bloom's taxonomy" (p. 332). With McNeil's finding in mind, helping teachers and curriculum leaders to know how to use higher levels of thinking and complexity effectively without always starting at declarative knowledge, can be