

*New Views of the Learner: Implications for Instruction and Curriculum**

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"If you can be moved to try these ideas with a few teachers in your school for even as short a period as three months, you can determine the validity and limits of these ideas where they really belong—in your classrooms and with your teachers and students. Even more important, I hope this conception of education and of the enormous potentials of our students and schools will inspire you and your teachers to strive toward a renewed and attainable dream of American education during the remainder of this century.

"No other country in the world has succeeded in providing learning opportunities for its youth to the extent of the United States. We now have almost 80 percent of youth completing high school (in contrast with an average of about 33 percent in the other highly developed nations). Approximately 50 percent of our youth enter some form of higher education (in contrast with an average of 25 percent in the other highly developed nations of the world). In no other country has the level of financial support of the learners and the schools reached the level of the U.S. We now contribute about one-sixth of our Gross National Product to education when we count both the funds contributed to the support of the students and the support of the schools and colleges (National Center for Educational Statistics, 1976).

"However, neither further opportunity for education nor increased financial support for education will do much to improve the education of each of our students. The answer does not lie in additional funds, new fads, or major and sweeping changes in the organization of our educational system. As I see it, the solution lies in our views about students and their learning. These views have grown out of our practices and they will not be changed until we alter these practices. When the changed practices succeed in promoting more effective learning, both teachers and students will change their views. It is these views and practices that are central in the following presentation."

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New Views About Learners

In my recent book, *Human Characteristics and School Learning* (Bloom, 1976), I have developed a theory of school learning that attempts to explain individual differences in school learning as well as to determine the ways in which such differences may be altered. The basic ideas in this book are not matters of abstract theory or faith. They depend on easily observed evidence readily obtainable in most of the classrooms of the world.

I find that many of the individual differences in school learning are manmade and accidental rather than fixed in the individual at the time of conception. My major conclusion is: "What any person in the world can learn, almost all persons can learn if provided with appropriate prior and current conditions of learning." However, I would qualify this by stating that there are some individuals with emotional and physical difficulties who are likely to prove to be exceptions to this generalization (perhaps 2 or 3 percent of the population). At the other extreme are 1 or 2 percent of individuals who learn in such unusually capable ways that they may be exceptions to the theory. At this stage of the work it applies most clearly to the middle 95 percent of a school population.

I will try to summarize some of the ideas in this book by relating them to three different constructs about students and their learning capabilities.

- The first construct is that *there are good learners and there are poor learners*. When I began my career in the field of educational research and measurement, the prevailing view was that the normal distribution describes the quantitative differences in students' ability when measured by an intelligence test, an aptitude test, or an achievement test. Learning ability was regarded as a highly predictable characteristic and intelligence or aptitude tests were widely used to predict school achievement. It was also believed that good learners could learn the complex and abstract ideas in a school subject, while the poor learners could learn only the simplest and most concrete ideas.

Learning ability was regarded as a highly stable or permanent trait of the individual.

Theoretically, at least, it was believed that it would remain stable throughout the life of the individual. That is, learning differences found very early in the students' school career would be present not only throughout their school career, but also throughout the remainder of their lives. Evidence in support of this stability is found in longitudinal studies where the same students are repeatedly measured throughout their school career. For example, the correlation between measures of school achievement at grades 3 and 11 is about $+0.85$, demonstrating that over this eight-year period the relative ranking of students in a class or school remains almost perfectly fixed.

If we fully accept this construct, there is little or nothing the schools can do about learning ability. Some have it while others lack it, and the causes are not to be found in the school. There are different views about the basic causes of differences in learning ability—the Lord, genetics, the home environment, or luck. To accept this construct is to believe that the task of the schools is to constantly weed out and eliminate the poorer learners while encouraging the better learners to get as much education as possible.

This construct is the basis for grading students, streaming practices, and selective systems of education. Most school systems in the world are based on it and school authorities, examining bodies, teachers, parents, and finally, the students themselves come to accept it. In most countries this construct influences guidance practices, the amount of education individual students get, and the careers and occupations made available to individuals. The results are reflected in an economic and social hierarchy in many countries.

- The second construct is that *there are faster and there are slower learners*. In 1963, John Carroll (Carroll, 1963) presented a model of learning that postulated that learners differed in their rate of learning, and this rate could be predicted from an aptitude or intelligence test. While there was some ambiguity about the permanence or stability of rate of learning, this model was the basis for the idea that most learners could achieve equally high levels of learning in a school subject—if each student is provided with the time and help he or she needs, when it is needed.

This construct, as Carroll presented it, suggested that if all learners are given the same in-

struction in a subject and the same amount of time to learn it, the resulting scores on an achievement test over the subject will be normally distributed. If, however, the instruction and time are adapted to each student's needs, the achievement distribution will be highly skewed (most of the scores would pile up on the high end of the achievement measure). Under these conditions, the achievement scores at the end of the term cannot be predicted from an aptitude or intelligence test given at the beginning of the term.

However, the students are expected to need different amounts of time and help, with the slower students initially needing perhaps as much as five times the amount of time required by the faster students. The aptitude test, which no longer can predict the final achievement scores, does predict the amount of time each student needs to learn the subject to a high level.

Using the concept of mastery learning, my students and I sought to find ways by which the slower learners could be given the extra time and help they needed (outside of the regular classroom schedule). From this research, in both educational laboratories as well as classrooms, it has become evident that a large proportion of slower learners can learn to the same achievement level as the faster learners. When the slower learners do succeed in attaining the same criterion of achievement as the faster learners, they appear to be able to learn equally complex and abstract ideas, they can apply these ideas to new problems, and they can retain the ideas equally well, in spite of the fact that they learned with more time and help than was given to others. Furthermore, their interest and attitudes toward the subject in which they attain the achievement criterion are as positive as those of the faster learners.

Research on mastery learning has been done in many countries and at all levels of education including primary schools, secondary schools, junior colleges, four-year colleges, and advanced professional schools such as medicine, nursing, and engineering. Most of the different subject courses at each level have been shown to yield excellent results under mastery methods (Block, 1974; Block and Anderson, 1975; Bloom, 1971).

The typical result of the mastery learning studies in the schools is that about 80 percent of students in a mastery class reach the same final

criterion of achievement (usually at the A or B+ level) as approximately the top 20 percent of the class under conventional group instruction. Much of this research contrasts a mastery group of students taught the same subject as a control group of students by the same teacher with as nearly as possible the same instructional methods and instructional material. The two groups of students are roughly equivalent in terms of previous levels of learning, aptitude, or intelligence measures.

As would follow from the Carroll model (Carroll, 1963), the achievement of the upper 20 percent of the control students is predictable from the aptitude tests, intelligence tests, or previous achievement tests; while the achievement of the upper 80 percent of the mastery students is not predictable from these earlier measures.

In general, the students in the mastery classes need about 10 percent to 15 percent more time than the students in the control classes—however, the extra time and help is used only by those students who need it. It should be pointed out that the control and mastery classes have the same schedule of instruction and that the corrective work of the students who need it in the mastery class is usually done outside of the classroom schedule.

One unexpected effect of this research is the extent to which the students in the mastery classes become cooperative in helping each other, while the control students become increasingly competitive. This could have been anticipated if we had recognized that under mastery learning all students may earn equally high grades if their achievement warrants it, while under control conditions there are scarce rewards—only a small percent may earn grades of A. Under the usual normal curve grading conditions, if one student helps another in the learning process he or she may do so at his or her own expense. That is, one student can earn a high grade only at the expense of other students receiving lower grades.

Mastery learning is one of several teaching-learning strategies that can succeed in bringing a large proportion of students to a high level of achievement and to high motivation for further learning. Fast and slow students become equal in achievement and affect if given the extra time and help when they need it. This approach challenges our grading, streaming, and selection sys-

tems, it forces curriculum workers to ask new questions about what is worth learning well, and it threatens some societies with more able and highly motivated students than they may know how to deal with.

• During the past decade, my students and I have done research that has led us to a third construct. *Most students become very similar with regard to learning ability, rate of learning, and motivation for further learning when provided with favorable learning conditions.* This re-

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search questions the first two constructs, especially about the necessary permanence of such traits as good-poor learning ability or fast-slow learning characteristics. However, the research does demonstrate that when students are provided with unfavorable learning conditions, they become even more dissimilar with regard to learning ability, rate of learning, and motivation for further learning.

The book provides theoretical support for this construct and brings together some of the contrasts between favorable and less favorable conditions of learning. However, direct evidence for this third construct can be derived from the many mastery learning studies that contrast the learning of two comparable groups of students under *more* and *less* favorable conditions of learning.

Under favorable learning conditions, the level of learning of students tends to rise over a series of learning tasks. In the mastery learning studies, we typically find that on the first learning task of a new series the mastery and control classes do equally well. However, the mastery group tends to improve in learning on each subsequent learning task, while the control group of students tends to remain the same or decline over the subsequent learning tasks. The comparison of the results on the early and later learning tasks

in a series demonstrates that two groups of students who were very similar at the beginning, become very different in their levels of learning as well as in their affective qualities. These differences are most dramatically reflected in the final cognitive and affective measures. These differences are also reflected in the learning of subsequent related courses. Students who have learned the first course in a subject to a high level (by mastery or other procedures) tend to learn the subsequent courses in the same subject to a high level with less and less in the way of extra time or help needed.

We have already mentioned the variation in rate of learning for students at the beginning of a series of tasks as approximately five to one. That is, some students may take as much as five times as much time to learn a particular learning task as do others. In the mastery learning studies where the same students are followed over a series of learning tasks, we find that the students who are given feedback and corrective individualized help as they need it do become more and more similar in their learning rates. Under such favorable learning conditions, students become more and more similar in their learning rate until the difference between fast and slow learners becomes very difficult to measure except by the most exact measurements of time.

This third construct, then, takes the position that learning characteristics such as good-poor and fast-slow are alterable by appropriate school conditions. The research demonstrates that under appropriate conditions almost all can learn whatever the schools have to teach. It indicates that special and very favorable conditions may be needed at some stages of the learning, but that over time these may be gradually discarded.

It is this research that underlies the theory of school learning developed in the book. This research calls into question some of the prevailing views about human nature, human characteristics, and school learning. Evidence in support of this third construct has far reaching implications for the training of teachers, instruction in the classroom, the organization of systems of school and college education at the local and national level, selection systems, grading procedures, and the development of new curriculum and instructional systems.

Implications for Students

Favorable learning conditions have profound effects on student learning, student attitudes and interests, and student self-view and mental health. These topics are treated briefly in the following pages.

1. Increased Learning Effectiveness of Students

The use of mastery learning and related teaching-learning strategies at all levels of education from the primary school to the graduate and professional schools typically results in about four-fifths of students achieving at the same level as the upper one-fifth of students typically taught by the same teacher. Not only do these students evidence high levels of cognitive achievement on the tests used for grading purposes, they also do very well on measures of retention and higher mental processes when compared to the top one-fifth of the control group of students. Furthermore, almost all of the mastery learning students, who make use of the corrective procedures, achieve above the average of the control students (Block and Burns, 1976; Bloom, 1976).

If the mastery learning procedures are utilized in the introductory courses in a subject field (arithmetic, science, reading, mathematics, social studies, second language, and so on), the students tend to maintain these new learning approaches in subsequent courses in the same field with less and less need for further special help or extra time.

Since the cost of mastery learning for the students who need it is about 10 to 15 percent more time spent in learning the subject, it is a relatively small cost for the individual student. This is especially true when the student needs less and less corrective work and time as the course or subsequent courses proceed.

If mastery learning is used on a wide scale (that is, in the major academic courses or subjects), students appear to show major gains in that elusive quality termed "learning to learn." The students devote more of their classroom time to active learning, and they appear to be enjoying the learning. They develop skill in providing feedback to themselves in determining what they have learned well and what they need to do to improve

their learning where they have learned less well. They become skillful in seeking answers and securing help from books, friends, and teachers where they need to overcome special and detailed learning difficulties in a subject.

Whether or not we wish to provide such approaches at all levels of education, it is clear that providing favorable learning conditions should be almost mandatory at the primary school level. Since the student is legally required to attend school for at least 10 years, effective learning in the first three or four school grades is the very

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least the schools can do to ensure that the remaining six or seven years of school attendance are not dismal learning experiences for a sizeable proportion of students.

However, at least three-fourths of the students in the schools are no longer in these early primary grades. We find that students are prepared to learn in a new way at each new school level—primary grades, junior high school, and high school. The students tend to believe that a new school situation is one in which they can start afresh—no matter how poorly they did before. This new set of expectations enables the mastery learning procedures to work much better than we had anticipated when they are introduced at the beginning of the primary school, the beginning of the junior high school, or at the beginning of the high school.

In summary, if favorable learning conditions are provided at the beginning of new subjects or new school situations, less and less need will be found for these procedures in subsequent courses in a subject—although the new learning abilities may need to be supported to some extent in these later subjects or terms until they are strong enough to be self maintaining.

2. Confidence of Students in Their Learning Capabilities

Repeated evidence of success in learning is likely to lead to a greater interest in the learning and improvements in the student's self-concept as a learner. School learning becomes more attractive and the student has fewer problems of distractibility. With the improvement of achievement, students find that the external rewards for good learning—good grades—are very satisfying. However, even more important is that the students find more intrinsic rewards in the learning itself.

Everyone has difficulties in learning. Students with little confidence in their ability to learn are unlikely to persevere very long in any efforts to solve the difficulties. Increased confidence in the self enables the student to secure the necessary energy and motivation to find solutions where otherwise he/she would give up very quickly.

Schools provide a very demanding set of situations for almost all students. If school learning is or can be made to be effective and successful, the student gains confidence in his or her own ability to cope with the school demands. As the student gains this confidence, his or her self-concept as a learner improves and success at one level of schooling almost assures success at a subsequent level of schooling. This, in turn, further increases one's self-confidence (Bloom, 1976; Kifer, 1973).

3. Improvements in Mental Health of Students

Evidence is accumulating that repeated success in school over a number of years (especially at the primary school level) appears to increase the likelihood that an individual can withstand stress and anxiety more effectively than individuals who have a history of repeated failure or low marks in school. To put it bluntly, repeated success in coping with the academic demands of the school appears to confer upon a high proportion of such students a type of immunization against emotional illness. Similarly, repeated failure in coping with the demands of the school appears to be one source of emotional difficulties and mental illness. Thus, while this research is beginning to draw parallels between immunization against physical diseases, such as polio or smallpox, and immunization against emotional diseases, it is also helping us to understand how schools may ac-

tually infect children with emotional difficulties (Dolan, 1978; Stringer and Glidewell, 1967; Torshen, 1969).

Associated with some of this research is the finding that most of the positive or negative emotional consequences are associated with teachers' marks and judgments rather than with the results of standardized achievement tests. Perhaps the explanation has to do with the fact that most of the evidence of success or failure in the schools is in terms of teachers' marks and judgments which the students receive daily. Standardized tests are given rarely and with little interpretation to students or parents. It is the perception of how well one is doing day after day relative to one's classmates that appears to be a key link between school achievement and its personality effects.

Research on the relations between school achievement and mental health is far from complete or satisfactory. I believe that when it is more fully established, it will have powerful effects on how we run our schools, mark our students, and even teach them. It will surely lead to a more complex view of education and our responsibilities for both the learning of our students and the more basic personality consequences of this learning.

Implications for Teachers and Instruction

1. Equality of Opportunity To Learn

Each teacher consciously strives to provide equal learning opportunities for all students in the class. However, the actual situation under group instruction is far from this ideal. Observations of teacher interactions with students in the classroom demonstrate that teachers (quite unconsciously) direct their teaching and explanation to some students and ignore others. They give much positive reinforcement and encouragement to some students but not to others, and they encourage active participation in the classroom discussion and question and answer periods from some students and discourage it from others. Typically, the students in the top third or fourth of the class are given the greatest attention and encouragement by teachers, while the students in the bottom half of the class receive the least attention and support. These differences in the interaction between teachers and students pro-

vide some students with much greater opportunities and encouragement for learning than is provided other students (Brophy and Good, 1970).

Teachers need to find ways of securing a more accurate picture of the extent to which their ideal of equal opportunity for learning is negated by their own teaching methods and styles of interaction in the classroom. Teachers need help if they are to provide favorable learning conditions for most of their students—rather than just for the top third or fourth of students. They need to be helped in developing methods of teaching that will result in a more effective realization of their own ideal of equal learning opportunities for all.

2. Feedback and Corrective Help

Group instruction produces errors in learning at each stage of a course or school term—no matter how effective the teacher is. These errors in learning are compounded with later learning errors. The errors resulting from this system of group instruction determine each student's final achievement, and only rarely is the individual able to fully recover fully from them.

A major thesis of my book is that a system of feedback to teachers and students can reveal the errors in learning shortly after they occur. And, if appropriate correctives are introduced as needed, the instruction can be self-correcting so that the learning errors made at one time can be corrected before they are compounded with later learning errors.

This is the essence of mastery learning strategies: *group instruction* supplemented by frequent *feedback* and *individualized help* as each student needs it. The *group instruction* is the same as the regular instruction presently provided by the teacher. The *feedback* is usually in the form of brief diagnostic formative tests, which indicate what each student has learned and what he or she still needs to learn before the learning task has been mastered. These are used at the end of each week or two of instruction.

The *individualized help* is provided to enable each student to learn the important points he or she has missed. This help may be provided by an aide, by other students, by the home, or by referring the student to the appropriate places in the instructional material. When this is done well,

most students can be brought to mastery of each learning task.

When this process of group instruction, supplemented by feedback and individualized correctives, is used for each learning task, we find that almost all students gradually become similar in their learning effectiveness and in their interest and motivation for further learning. For most students, the extra time and help (in the classroom or outside) needed at the end of each two-week period is typically only an hour or so.

Since so little extra time and help are needed to bring most students to mastery, the overall implication is that teachers have been doing a far better job of teaching than is usually demonstrated on the achievement tests given at the end of the term. If students start each new learning task with the prerequisite knowledge and skills, they gradually need less and less additional corrective time and help. The major change for teachers is that they do less in the way of judging and grading students on what they had learned by a particular date and do more to see to it that each student learns what he or she needs as preparation for the next learning task.

Mastery learning techniques ensure that students have the necessary knowledge and skills for each new learning task and that they have confidence that they can learn each new task, since they have mastered the previous one. Over a period of time, students develop a positive view of their own learning capabilities. They become more active and involved in the learning process, and they participate more fully in the classroom interaction. Under these conditions equal opportunity for learning does become a reality in the classroom for most students.

3. Teacher Belief in the Learning Capabilities of the Students

Teachers begin a new term or course with the view that some of the students will learn well, some will learn very poorly, and some will learn only moderately well. Usually, by the end of the first month of the term the teachers have sorted their students into some such categories as these, and it is quite likely that this sorting process will remain much the same throughout the term or course. The teacher is very effective in conveying these categories to students through relatively subtle techniques in the interaction that takes

place during the course or term. Teachers rarely expect most of the students to learn well—and the students come to accept the teacher's view of them and their learning capabilities.

Research findings, lectures, and injunctions to teachers to have greater faith in the learning potential of their students are not very effective. Each teacher can and will change his or her belief in the learning capabilities of each student only by discovering this in the classroom.

In our work on mastery learning in the schools, we have insisted that teachers compare student learning under the mastery condition with learning under conventional procedures in a control class. The teachers using the mastery learning procedures find that the majority of students become very successful in their learning. Most teachers note the differences in student learning between the mastery and control class within the first four or six weeks—others may take longer to discover this. As one teacher put it, "my classroom suddenly became overpopulated with good students."

It is of interest to note that teachers who have found mastery learning procedures effective continue to use such procedures thereafter on their own—without administrative urging. Also, such teachers refuse to use control classes (their conventional procedures) thereafter, even if it is suggested as a basis for further study about the process. They view the request to continue using control procedures as immoral or indecent—would you deny the use of a health-giving drug like penicillin to those who need it just for research purposes?

4. No Teacher Can Provide the Supplementary Help Needed by Each Student—Other Allies Are Needed

Teachers frequently feel isolated from all support in their job of teaching 30 or more students. And no teacher can provide the supplementary help each student needs, even if it is only an hour or so for each student every week or two. There just aren't that many extra hours of teacher time. Where teachers have tried to provide each student with all the individualized help, it required so much extra time and patience that the teachers, who got excellent results, refused to use mastery learning procedures thereafter.

The major point brought out in *Human*

Characteristics and School Learning is that, while the teacher is responsible for group instruction, there are many allies to provide the supplementary help that almost all children need at one time or another. The use of peer tutoring (S. Bloom, 1976), the use of aides, the use of supplementary instructional material, and encouraging the students to do the necessary corrective work on their own or in small groups may all be used by the teacher to provide favorable learning conditions in the school for all the children (Bloom, 1976).

The home also can be a major ally of the teacher and the school—if teachers wish this to be true. This may involve periodic meetings of parents and teachers, detailed reports on the children's progress, reminders to parents about the support and encouragement each child needs, and suggestions to parents about help on specific learning tasks when the child needs it. Favorable learning conditions in both the school and home can provide almost ideal conditions for good learning (Dave, 1963; Marjoribanks, 1974; Wolf, 1966).

Implications for the Curriculum

Our building blocks for the curriculum have remained relatively constant over the past 70 years—so many years of arithmetic, so many courses in reading, literature, science, social studies, mathematics, and so on. Although the content of these curriculum building blocks may change from time to time, we rarely entertain new notions about what the total curriculum should be. These courses were originally constructed with the view that only a fraction of students would learn them well, while most of the remaining students were expected to drop out of the schools at various ages or grades. We have held on to the view that only a fraction of students will learn them well, but no longer do our students drop out, most of them now complete high school.

Now we have to confront the possibility that almost all of the students can learn well whatever the schools have to teach. But what is worth learning well? Our immediate answer is likely to be the basic tool subjects such as reading, writing, and arithmetic. Even if we do agree on this, is

there anything more on our list? Is it imperative that anything else should be learned well? If so, what should it be and who should learn it—all or only some students?

What is worth learning well will change for each society and for each individual over time. While no one can provide a complete list, some perspective on this can be secured from the work of some of the national curriculum centers in different parts of the world. Although conditions vary and each curriculum center strives to answer these questions from its own point of view, I will

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stress what I believe to be some of the more positive and general approaches to this question.

Who is responsible for the planning of the entire curriculum? In most countries, this is believed to be a cooperative task involving teachers, scholars, educational planners, citizens, various national groups, and a great variety of specialist groups. Curriculum centers are charged with the responsibility for developing the overall curriculum (including plans and instructional materials) with the aid and assistance of many subgroups in the society. The centers recognize that the curriculum must be continually modified and brought up to date with the changing conditions in the society, with the changing aspirations of both the society and the learners, and with long term views about the central role that education plays in the life of the society and the people. The curriculum centers have learned, after much frustration, that no major curriculum change can be effectively introduced in the schools until many groups in the society have had some opportunity to understand the changes and express their views about these changes. Each center is charged with the task of tryout of the curriculum and systematic evaluation of the proposed curriculum changes to make sure that they work well before they are to be used on a national scale.

Each of the centers is concerned with the integration and sequence among the parts of the entire curriculum. However, they do recognize that local conditions may call for special alterations in the curriculum. They designate some portion of the curriculum that is basic and should be emphasized by all teachers, and they indicate which portions of the curriculum may be optional or adapted to meet local conditions. While teacher groups have considerable voice in the original planning and development of the curriculum, each teacher is not expected to be a curriculum expert who can make his or her own curriculum. Each teacher is given some voice in adaptations to fit local conditions and to add specific features within given limitations. In-service training for the new curriculum is provided the teachers. This in-service training includes the new subject matter of the curriculum as well as new teaching strategies to ensure that all students will learn well.

Contrast this with our own views of each school or teacher being given considerable freedom to determine which of several textbooks or curricular packages to use. In spite of this freedom, ours is a system dominated by a small number of publishers who provide the textbooks and instructional materials used by the majority of teachers. In most subjects, three or four textbooks or series account for 75 percent or more of the classrooms in that subject. When we examine these three or four textbooks, they are as alike as "peas in a pod." While we appear to have many choices, in fact we make few major curriculum decisions.

Contrast this also with the work of publishers or curriculum projects in which each part of the curriculum is developed separately without reference to the relations among the parts. Little careful work is done in the U.S. about integration or sequence of learning experiences for a given group of students. Each subject is thought of as having little or no relation to other parts of the curriculum. And almost no concern is expressed in our published textbooks about local conditions and circumstances. Also, there is little or no concern for revision of the curriculum over time—except to introduce features that will "sell well" or that reflect our current fads.

This method of curriculum planning in the United States rarely looks to see what is happen-

ing in the other educational agencies of the country—home, church, peer group, mass media, museums, and so on. In some other countries, there is a careful appraisal of these other agencies, and the school curriculum is planned as one part of a larger educational system.

In general, I believe our curriculum making and our curriculum choices are disastrously behind the times. We have much to learn about ways of improving these processes. Perhaps a small start might be a series of trips to look into the processes elsewhere. What can we learn from our own successes and failures in curriculum development, and what can we learn from the work in other countries?

But, so much for structure and curriculum planning. What is worth learning well in some of these national curriculum centers in other countries? I will confine my remarks to a few special groups of ideas that I believe to be important and that appear to me to be more emphasized in the schools of other countries than in our own.

1. Higher Mental Processes

While there is much of rote learning in many countries of the world, in some curriculum centers I find great emphasis on problem solving, application of principles, analytical skills, and creativity. Such higher mental processes are emphasized because the centers believe that this type of learning enables the individual to relate his or her learning to the many problems he or she encounters in day-to-day living. These abilities are stressed because they are retained and utilized long after the individual has forgotten the detailed specifics of the subject matter taught in the schools. These abilities are regarded as one set of essential characteristics needed to continue learning and to cope with a rapidly changing world. Some centers believe that these higher mental processes are important because they make learning exciting and constantly new and playful.

In these countries, subjects are taught as methods of inquiry into the nature of science, mathematics, the arts, and the social studies. The subjects are taught as much for the ways of thinking they represent as for their traditional content. Much of this learning makes use of observations, reflections on these observations, experimentation with phenomena, and the use of firsthand data and daily experiences as well as the

use of primary printed sources. All of this is reflected in the materials of instruction, the learning and teaching processes used, and the questions and problems used in the formative testing as well as on the final examinations.

In sharp contrast, we make use of textbooks that rarely pose real problems. Our textbooks emphasize specific content to be remembered and give students little opportunity to discover underlying concepts and principles and even less opportunity to attack real problems in the environments in which they live. Our teacher-made tests

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(and standardized tests) are largely tests of remembered knowledge. After the sale of over one million copies of the *Cognitive Taxonomy of Educational Objectives* (Bloom, et al., 1956) and 20 years of use of this domain in preservice and in-service teacher training, over 95 percent of test questions that our students are expected to answer deal with little more than information. Our instructional material, our classroom teaching methods, and our testing methods rarely rise above the lowest category of the taxonomy—knowledge.

You as supervisors of teachers and as curriculum makers have great responsibility for helping teachers provide higher mental process learning experiences for all students. Do not accept the prevailing view that such processes can be developed only in the minority of students with unusually high intelligence and aptitude scores. Research has demonstrated that almost all students can attain very high levels of cognitive abilities if these are stressed in the teaching, in the instructional materials, and in the testing procedures used in the schools.

2. The Arts

In many countries of the world music, dance, poetry, painting, and the other arts are a central

part of the curriculum at each stage of schooling. All students are regularly and systematically helped to develop a strong interest, enjoyment, as well as considerable competence in some of these humanistic arts. The curriculum and instruction in these fields move from simple interest and appreciation of these works to the development of a high degree of skill in performing and even creating such works. The underlying thesis appears to be that such interests and competence are essential to the good life for all.

In our schools, it is usually believed that everyone should be introduced to the arts, but that only a small percentage of students have the aptitudes or special qualities needed to develop competence in one or more of the arts. Furthermore, we tend to regard the arts as special frills or luxuries to be encouraged when the schools have extra funds, but to be put aside when the funds are needed for other areas of the schools. Even when we find a place for the arts in the schools, the amount of time and emphasis given is only a fraction of that devoted to the "more important" parts of the curriculum.

In a society dominated by TV and where satisfactions are primarily centered on material possessions and comforts, the arts can provide a basis for an alternative life style that is more than a luxury. Our schools must search more seriously for ways in which the arts may provide one source of comfort, satisfaction, and enjoyment for all—both during the learning process and throughout life.

3. Social Interaction

In many countries of the world, social processes among students are highly emphasized. The school (much smaller than ours) and the classroom (much larger than ours) are regarded as a special environment in which students learn that they are part of an extended family. They are expected to care for each other, to help each other, and to cooperate with each other in the learning process. The students assume responsibilities for each other in supporting, caring, sharing, and respecting each other. Learning goes on among and between students.

In contrast, our schools and classrooms emphasize competition for grades, teacher attention, and whatever other scarce rewards are believed to be available. Our teachers devote so much time

to controlling, teaching, and judging students, that our students are given little opportunity for either independence or the assumption of responsibilities for each other. Our schools are rather lonely places for many students, even though they are surrounded by so many other students.

Rarely do our teachers, students, and school authorities develop a school code of behavior that is consistent from year to year and from classroom to classroom. As a result, our teachers devote more time and attention to discipline and managing classroom behavior than appears to be the case in many other countries of the world.

There is a latent curriculum in each country that is reflected in the interactions between teachers and students, and between students and students. The latent curriculum is implicit in what we do (rather than what we say) in the school and it is probably better learned and longer remembered than the explicit objectives of the manifest curriculum. In our schools, this latent curriculum emphasizes punctuality, neatness, docility, and competition (Dreeben, 1968; Henry, 1965; Overly, 1970).

You as leaders in your schools must ask yourself whether these are the major qualities that your school now does and should emphasize. Are these the central qualities for the citizens of a democracy like ours? Until you and your teachers face these problems more directly, the latent curriculum will emphasize only the qualities teachers regard as important in managing the students. The central goals of the latent curriculum (as well as for the manifest curriculum) should be concerned with the learning of students. Social interactions and social qualities should be included among the major objectives and learning in your schools.

4. Continuing Learning

Throughout the world, the instruction and curriculum in the schools is being studied to determine its long-term contribution to continuing learning throughout life. The Edgar Faure (UNESCO) report "Learning To Be" has had great influence on this thinking. The Faure report (Faure, 1972) stresses the many changes taking place in all societies and the difficulties individuals have in adjusting to rapid change in the society, in their work, and in their lives. Since, the report continues, it is virtually impossible to anticipate

and plan for the changes that will take place, the only adaptive mechanism people have to adjust to and cope with these changes is their ability and interest in continuing learning throughout life.

If schools weaken or destroy this potential for further learning, the individual will lose the basic tools for adapting to rapid change, and there will be serious negative consequences for the individual and the society. The schools, from this point of view, must develop a strong positive interest in learning and some of the basic skills in

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"learning to learn." These include skills in the use of libraries, skills in independent learning from books and "real" situations, and skills in developing knowledge and learning from a variety of sources, including other persons. It also includes the development of many of the problem-solving skills stressed under the higher mental processes in an earlier section of this paper.

There is considerable evidence from adult education studies in this country that we do much to develop these continuing learning attitudes and skills in our "best" students. However, it is likely that for a sizeable proportion of our students, schooling and further learning (in or out of the schools) is painful or dull and to be avoided as soon as one has reached school leaving age or has completed high school or college. Only rarely do we look at the curriculum in terms of what it is likely to contribute to continuing learning for all students. Nor do we deliberately search for methods of teaching and learning likely to enhance the individual's skills in "learning to learn." We tend to believe that some students have the ability to learn while others lack it, and we do not regard it as a major goal of the schools to develop learning ability.

We, who are responsible for the learning of our students for a ten- to sixteen-year period, must extend our sights beyond the period that our students are in the schools or colleges. Until we do this and until it becomes a part of our curriculum planning, we will neglect those objectives of education that relate to the entire life of the individual. It is the long-term objectives of education that will give new meaning to what we do in the schools.

5. Peak Learning Experiences

In a number of curriculum centers, there is considerable thought given to providing a small number of memorable learning experiences that will serve to highlight some of the crucial ideas taught in the schools. These centers have been stimulated by A. H. Maslow's descriptions of peak experiences and the qualities such experiences are reported to possess (Maslow, 1959). Peak learning experiences (which share some of the qualities contained in Peak Experiences) tend to be so vivid that students recall them in great detail many years later (Bloom, 1966). Such experiences form landmarks in the student's later school recollections. They were, typically, the source of new interests in a subject, the stimulus to major attitude and value changes, and they served to make school learning truly exciting.

The research done on this subject finds that peak learning experiences are typically very rare, and only a few students can report or recall such experiences after 12 to 16 years of school attendance. The curriculum centers believe that in each school subject there should be a small number of such peak experiences for most of the students, and they are developing ways in which this can be realized. They are attempting to relate such experiences to major new ideas or concepts, the most important principles and generalizations in the subject, and also to some of the truly great works of literature, music, and the arts. The centers believe that such dramatic and vivid learning can be experienced by the majority of students if they are deliberately introduced as moments of great insight, discovery, awareness, vast implications, beauty, and truth. They are trying to secure such dramatic intensity by the use of specially constructed television or film units to be used at selected points in the course. They are also providing suggestions to the teachers about how

selected ideas or materials in a subject can lend themselves to the creation of peak learning experiences.

Peak learning experiences are important because they uniquely combine cognitive and affective components of learning. They indicate what learning might become if only all elements in education are brought to their highest level.

I mention these, not because the centers are finding it easy to do. It represents an attempt to help students find some aspects of school to be fulfilling, moments of great insight, filled with wonder and awe, and exhilaration. School work is typically regarded by students as just that—work. Much of school learning is seen by students (and some teachers) as drab things to do simply because someone in authority has required it. Students come to view school as little more than meaningless drudgery—at least in contrast to television and the excitement they find outside of the school.

I am sure that students in our schools do have occasional peak learning experiences—but they are rare indeed. Our students tend to seek these memorable experiences outside the classroom in sports, social events, and even in illegal and violent activities. Perhaps we too may learn how learning in the schools can be vivid and one source of fulfillment for most of the students in our schools. \square

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