

On Mastery Learning: An Interview with James H. Block

RONALD BRANDT*

RON Brandt, a member of the ASCD Publications Committee, interviewed James H. Block when Block spoke to a Conference of Urban Curriculum Leaders sponsored by ASCD December 5, 1975, in Phoenix. Block has done research and written extensively about the model of mastery learning, proposed by Benjamin Bloom and himself, that is designed to help more students learn as well as our best students do.¹

BRANDT: *Jim, in your recent book, Schools, Society, and Mastery Learning, Benjamin Bloom says something that to most educators sounds incredible. He says that with mastery learning, individual differences approach a vanishing point. How can that possibly be?*

BLOCK: Well, in point of fact they do. We have not yet gotten to a perfect vanishing point, but we've found that under appropriate conditions—allowance of more time for some students, and differential instruction for all students—one can sometimes get very close, at least in terms of student achievement and the amount of time students spend actively engaged in learning.

BRANDT: *But most educators assume*

¹ Those who would like to learn more about mastery learning are referred to: James H. Block. "Teachers, Teaching, and Mastery Learning." *Today's Education* 62 (7): 30-36; November-December 1973.

that ability differences among students, and we base this on much experience, are very large. You're saying that. . . .

BLOCK: We're saying that basically all people—95 percent of the students—have fundamentally the same capacity to learn. And we're also saying that in order to realize that possibility, educators have to move away from forms of instruction that make use of one or two gifts that only a few of our students possess to forms of instruction where we're using the many gifts that all of our students possess.

BRANDT: *Many educators in the United States are familiar with programs, such as Individually Prescribed Instruction, which are based on the idea that people will learn if we give them enough time. The longer students are in these programs the further apart they get. You're saying that. . . .*

BLOCK: We're saying that if your instruction is really good, you shouldn't be getting that phenomenon. Often, even in such programs as IPI, students are exposed to essentially one kind of instruction. If they don't do well at certain points in the program, they're cycled back to the same old material presented in the same old ways under the assumption that all they need is more practice with the problematic material.

*Ronald Brandt, Associate Superintendent for Instruction, Lincoln Public Schools, Nebraska

We, on the other hand, argue that if students have difficulty with certain material at certain points in an instructional program, as indicated by their diagnostic test results, it doesn't make sense to send them back to restudy that material using the same old methods. Rather, we must find supplementary forms of instruction that re-present the problematic material and reinvolve the students in its learning in ways that differ from the old methods.

BRANDT: *You are actually proposing that schools should not expect large differences in achievement, but should try to get achievement levels to be more homogeneous.*

BLOCK: Yes. What we've done historically in education is allow time to be the constant in school learning and achievement to be the variable. What we're talking about in mastery learning is for achievement to be the constant in school learning and for time and the manner in which students are taught to be the variables. All students should be expected to achieve to the level that is typical of the best students and each student should receive differential instruction in terms of how and how long he or she is taught.

BRANDT: *That makes me think of the continuing concern about equality of opportunity. James Coleman, for example, has said equality should be judged in terms of outcomes and not input.*

The most common objection I've heard to this notion is that it will hurt the ablest student; it will slow him or her down.

BLOCK: I would contend that there isn't such an animal as "the abler student," and that we create by the methods of our instruction who is able and who is not able. Hence, in mastery learning there really isn't a "naturally" able group that somehow might be discriminated against. There is a group who will learn as they normally have learned—well—and there's another group of students who are going to learn better than they have ever learned. I simply do not find the terms "able"/"unable" or "fast" learner/"slow" learner very descriptive. Mastery learning is proposing that virtually all students are "able" and virtually all can be "fast."

BRANDT: *That seems to defy everything*

we've experienced. Isn't it always the same students who day after day are going to have to spend that extra time to learn the materials that other students learn rather quickly?

BLOCK: We forget the extent to which some students get locked into learning poorly and slowly because they are being taught in

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the same way day in and day out. All students can learn well and quickly if different students are provided with different modes of instruction. To illustrate, if by "individualized" we mean instruction that is geared to the individual's needs, capacities, et cetera, for some students the most individualized mode of instruction may be *group-based, teacher-paced* instruction, whereas for other students the most individualized mode may be *individually-based, self-paced* instruction.

BRANDT: *Well, I'm interested in that. Bloom's model of mastery learning includes quite a bit of conventional group instruction.*

BLOCK: My personal predilection is toward the group-based, teacher-paced model. I can see no reason for completely overhauling the organizational nature of schools when we know that group-based, teacher-paced instruction can function very effectively as a beginning point for a mastery strategy.

BRANDT: *Well, group instruction is obviously more efficient, at least for certain purposes. Are there any other advantages you can see?*

BLOCK: It's also highly effective. We forget that some students learn very well in group situations. Learning in schools is a social enterprise, and it seems to me the height of asocial learning is a student set away in his little learning carrel where he doesn't see anybody else.

BRANDT: *I suppose another advantage is that it discourages procrastination.*

BLOCK: There are technical reasons for using group-based instruction, and that indeed is one of them. In some fully individualized and modularized approaches, in which students are pretty much on their own, there is a tremendous tendency to procrastinate. Students spend a lot of time in the presence of instructional materials, but a relatively small proportion of time actively engaged in learning. We find that in some programs students spend a lot of time in neutral as it were, just waiting. Teacher pacing is a very effective way of keeping students actively involved with the material to be learned—and we're finding, in our research, that it is the time students spend actively engaged in learning that is the single most powerful predictor of their actual achievement. The more time spent, the greater the achievement.

BRANDT: *Some of the research you cite suggests that under non-mastery learning conditions there are great differences between the amounts of time students actually spend in learning.*

BLOCK: There are research studies that suggest that once students begin to learn, they learn at fundamentally the same rates. Where we get tremendous individual differences is in their procrastination in beginning to learn. A colleague of mine says that "good" students spend large amounts of time actively engaged in learning and spend it right from the beginning of the course. The "average" spend a great amount of time actively involved in learning in the beginning, but as the course goes on they spend less and less time. It's the "poor" students who are fascinating, because they spend radically different amounts of time at one point in the instruction than at other points.

BRANDT: *Professor Bloom says that a major reason some of the mastery learning projects have failed is that students couldn't be induced to—as I understand it—go to the trouble of correcting their learning difficulties as revealed by the tests. Is motivation a big problem in mastery learning?*

BLOCK: Motivation is a problem in any form of instruction. There are, however, a number of important features built into mas-

tery learning strategy to provide motivation. One of the most powerful is the opportunity to earn an A. When you give all students a chance to earn A's, particularly students who have historically not earned A's, you get a marked increase in motivation to learn. We've already mentioned that group-based, teacher-paced modes of instruction decrease student procrastination. And, perhaps the most important source of motivation in the strategy is mastery itself. We find students learning effectively, perhaps for the first time. This generates what has been called "competence motivation," the self-feelings that "I can control my academic environment," rather than being controlled by the environment. Competence motivation is very much akin to what psychologists have called "intrinsic motivation."

BRANDT: *Let's talk about the grading system for a moment. As I understand it, the student's grade for the course is based entirely on the final examination. I think many American teachers would probably feel that it's fairer to students to base a grade on lots of samples of their work rather than on one "sudden death" examination. How do you feel about that?*

BLOCK: We've had problems with the single final examination, because it generates a certain amount of testing anxiety. So we've begun using two examinations, a mid-term and a final. But, we do not advocate using too many small, graded quizzes. Our idea is that mastery is a holistic concept. That one does not master bits and pieces, one masters the whole—and the only way that mastery of the whole can be reflected is when one tests for the whole.

Another consideration is that if students are tested and graded too soon in a course, some will decide they are already down the river and there is really no chance for them to get an A. We say to students, "You may not learn as well as you would like at first, but by the end of the course you will have an opportunity to put all these bits and pieces together and to show what you can do."

BRANDT: Bloom says that a good way to motivate students is to use small groups or a buddy system. Apparently one of the important side effects of the mastery learning program is that students work together more. He talks about a "flowering of student cooperation." Have you observed that?

BLOCK: Yes. There are at least three basic kinds of classroom reward structures that a teacher can use to motivate individuals to perform in group situations. First there's the infamous competitive reward system, with some people earning A's and B's at the expense of other people earning C's, D's, and F's. In this system, if I win, somebody else must lose. There is also the cooperative reward structure in which if I win, everybody wins. Mastery learning uses an individualistic reward structure. If I win, it has no bearing on my classmates' winning or losing. This structure allows students to get together and help each other in a variety of ways, for they know they are not putting themselves at a competitive disadvantage by helping their classmates.

BRANDT: It makes me think of what I saw when I visited schools in the Soviet Union. They emphasize cooperation and responsibility for one another. They claim that all students in their schools study generally the same curriculum—algebra, geometry, physics, chemistry, foreign language—and they claim that most students successfully learn those subjects. Do you think the Russians are already into mastery learning?

BLOCK: I don't know. They say the same thing about the Chinese.

BRANDT: Some Americans might question the approach on that basis alone.

BLOCK: Oh, I think that some Americans would surely question it.

BRANDT: They might consider it as opposed to individualism, which is deeply embedded in the American character.

BLOCK: Well, I think that inter-individual competition is a perverted form of individualism. The frontiersmen winning or losing did not come at the expense of other frontiersmen. It was each person doing his thing and doing it well. His doing it well had a bearing on the total community, but it

did not mean that others would lose. I would argue that the intra-individual competition, that is, self-competition, fostered by an individualistic classroom reward structure squares very well with the founding precepts of this country and that the inter-individual competition, that is, peer competition, fostered by a competitive classroom reward structure does not.

BRANDT: On the other hand, I suppose that inter-individual competitive norms are quite strong in American classrooms.

BLOCK: Yes. When we start a new mastery learning program we spend a lot of time convincing students that they can help their classmates without hurting their own chances.

BRANDT: Let's talk for a moment about

"I am of the opinion that our society may not really want mastery by everyone; that our society can simply not allow our schools to produce a generation of truly competent students. I hope that I'm incorrect, but that remains to be seen."

the bright students. In the few instances I know about in which students have been encouraged to work together, it's been my experience that the bright students prefer to work with each other rather than to waste their time on the slower students. Are there ways to overcome that?

BLOCK: Again, I don't think of students as "bright" or "slow," but I'll try to answer your question. In our work we have systematically encouraged students who master the material more rapidly than other students to tutor their classmates. We find that if we set up formal structure, most will volunteer to do it. Some of these kids, as you pointed out, do not want to tutor their classmates, so we arrange an enrichment activity for them. The fundamental precept is that once mastery has been attained, the child should have an opportunity to go in whatever direction he or she wants.

You implied earlier that the smarter

children don't want to work with the slower children—the implication being that it's beneath their dignity. We've observed that when we've gotten the "faster" students to work with the "slower" students, they quite enjoy the enterprise because it gives them a chance to go into the material in greater depth and to share their knowledge, to play "teacher" as it were. Moreover, as their classmates improve, the tutors find that working with them becomes highly stimulating. Their classmates become more and more challenging, more like themselves.



BRANDT: *I noticed that both in your book and in your talks, you refer to the teacher devising the tests, the teacher organizing his or her class. It seems to me that curriculum planning should be done on a broader scale than the individual classroom. For example, Professor Bloom says that success or failure of mastery learning is related to the degree of efficiency of the formative, diagnostic-progress tests. He says they must be detailed and accurate so that prescriptions can be derived from them. If the tests are that important, is it appropriate that each individual teacher should write them?*

BLOCK: I think it's important that the teacher have some idea of the role that testing can play in the teaching-learning process. Historically, testing has been conceived of as something that is divorced from and follows the teaching process. We think it's very important that the teacher get accustomed to the idea of using diagnostic-progress tests as teaching tools.

BRANDT: *But do you really believe that teachers should develop all their own tests, all by themselves in classroom after classroom?*

BLOCK: That depends. If you are talking about implementing the strategies on a districtwide or schoolwide basis, then I would say that the teacher needs help. But you still want the teacher to be sensitive to and aware of the value of formative diagnostic-progress testing. The teacher can surely help to develop some tests without

necessarily burdening him or her with the responsibility of constructing all of the tests.

BRANDT: *The major job of development would seem to be appropriate for a research and development center, a regional laboratory, or some other agency of the National Institute of Education. Why hasn't that happened?*

BLOCK: Well, I really don't know. I have friends with the National Institute of Education who are interested, but the response seems to be that we do not want to legislate at the national level what's to go on at a local school district, so let the school districts develop their own.

The place where I see the slack, however, is not with the government or with school districts, but with the professional testing organizations, especially the publishers. Most textbook publishers do not put out instructional packages. They put out textbooks. The textbooks are written as instructional devices, but in large part the teacher must do a heck of a lot to that textbook to make it teachable.

BRANDT: *Part of the problem is materials; part is organization. Let's say a school or teacher were already using a set of materials in which objectives were clearly specified, the content was broken into sequenced units, and detailed diagnostic tests were available. Could the teacher simply convert to the Bloom approach using these same materials?*

BLOCK: Yes, the basic point is that once one has a clear idea of his or her instructional objectives, one can move straight-forward into their teaching. A colleague and I have put together a little book explaining how to teach for mastery when all you have available is a conventional textbook. It's called *Mastery Learning in Classroom Instruction*, published by Macmillan.



BRANDT: *From your experience with mastery learning, what suggestions would you make to a supervisor who would like to introduce Bloom's model of mastery learning into his or her school district?*

BLOCK: Start small. Start with teachers and administrators who are basically sympathetic. Start with a basic skills subject area and start with an early course or courses. Implement the strategy in bits and pieces, maybe only a segment of one course. Start there and see what you learn. Beliefs run school systems and what you're talking about is a new belief system. If you're going to generate that belief system, you have to have the data to go with it. So set it up in a situation and try. If it doesn't function, try to understand why it does not and start again.

BRANDT: *One last point. You have a lot of interest in implications of mastery learning for the future of our society. What do you foresee?*

BLOCK: I would hope that the mastery learning point of view—that all of us are capable of learning and learning well, and that most limits on human beings learning are self-imposed—eventually becomes an important part of the world view of education. In short, I like to see our schools having a vested interest in producing truly competent learners. That's the optimistic part of me. The pessimist in me, however, sees our schools as having a vested interest in producing mostly incompetent learners. To make a few people competent, we make a lot of people incompetent. Accordingly, I am of the opinion that our society may not really want mastery by everyone; that our society can simply not allow our schools to produce a generation of truly competent students. I hope that I'm incorrect, but that remains to be seen.

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