# Individualized Instruction: A Mastery Learning Perspective

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*This author sees a promising future for the concept of individualized instruction, as being instrumental "in meeting growing public demands that our schools produce truly competent learners and in meeting growing learner demands that they do so as humanely as possible." However, the author feels the future of this concept is clouded by current practice.*

Over the past decade, my colleagues, our students, and I have been developing a set of ideas and practices for individualizing instruction that have come to be known under the rubric of "mastery learning." Much of this work has been described in detail elsewhere (for example, see: Block and Anderson, 1975; Block and Burns, 1976; Bloom, 1976). So, suffice it to say here, that—like other well-known individualized instructional strategies such as IPI, IGE, and PLAN [1] (see: Gronlund, 1974; Talmage, 1975)—mastery learning approaches assume that virtually all students can master a great deal of what they are taught in school if the "instruction is approached systematically, if students are helped when and where they have learning difficulties, if they are given sufficient time to achieve mastery, and if there is some clear criterion of what constitutes mastery." [2] Unlike these other strategies, however, mastery approaches are designed for use in the typical classroom situation; they can be implemented in a group-based, teacher-paced format; and they rely primarily on human beings, rather than on technological devices, for their success.

So far, our mastery approaches have worked unusually well in promoting student learning across a wide range of instructional settings (see: Block and Burns, 1976). They have worked so well, in fact, that we believe they may indicate some fruitful guidelines for the effective individualization of classroom instruction. In the present paper, therefore, I should like to share what I believe are four of the more important of these guidelines.

*Guideline 1: Variety is not necessarily the spice of classroom life.*

One important lesson we have learned through our work with mastery strategies is that it is insufficient to conceive of individualized instruction as merely a process for providing each student with a "variety of ways" to learn. Early in our experiences, we gave students a variety of ways to learn; but some of these ways, though prettily-packaged and purportedly avant-garde, proved to be ineffective—and consequently, their users still failed to learn well.

We have found it more useful to conceive of individualized instruction as a process for providing each student with a *"variety of effective ways"* to learn. Such a conception has forced us to keep in mind the learning *goals* to which our instruction is aimed and to select only those techniques whose use would definitely lead to these goals.

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[1] Individually Prescribed Instruction, Individually Guided Education, and Program for Learning in Accordance with Needs.

[2] Benjamin S. Bloom. "An Introduction to Mastery Learning Theory." In: J. H. Block, editor. *Schools, Society, and Mastery Learning.* New York: Holt, Rinehart and Winston, Inc., 1974. p. 6.

In short, it has reminded us to correlate our teaching means to our desired learning ends.

In our own work, for example, we have sought to select a variety of teaching techniques geared to reaching two basic student learning goals. One goal has been uniformly high levels of student achievement; the other has been uniformly high rates of student achievement. Consequently, we have selected techniques that have helped to diminish individual differences in student achievement and learning rates. Our techniques attempt to assist virtually all students to achieve as well and as fast as have traditionally only our best (that is, "A") students. Clearly, had we had a different set of learning goals, we would have selected a very different set of effective ways for our students to learn.

*Guideline 2: Individualized classroom instruction need not necessarily be individual-based and student-paced.*

A second important lesson we have learned through our work with mastery strategies is that the classroom teacher need not necessarily move to individual-based/student-paced methods so as to better individualize his or her instruction. We have found that ordinary, group-based/teacher-paced methods can serve as effective springboards for one's individualization efforts.



The key to the individualization of ordinary, group-based/teacher-paced methods, in our experience, is the judicious use of what we call "feedback/correction" procedures to supplement and complement these methods. At approximately two-week intervals, mastery learning teachers administer a brief, ungraded, diagnostic-progress or "formative" test (see: Bloom, Hastings, and Madaus, 1971) keyed to the objectives just covered during the group-based/teacher-paced instruction. The test's results provide information of "feedback" to both the teacher and the student regarding how the latter's learning is changing as a result of this instruction.

The teacher can then identify learners whose progress toward course mastery is unsatisfactory. Moreover, he or she can prescribe a variety of supplemental and alternative instructional procedures or "correctives" whereby each of these learners can promptly attempt to overcome particular learning difficulties. Each corrective will represent the problematic material and/or reinvolve the student in learning the material in ways that differ from the original group-based instruction; the student will not be directed simply to restudy this material in the same old ways.

Space precludes a full listing of all the correctives we have used in our work. In Figure 1, however, I have summarized, in brief, some of



*Photos: Charlene Rothkopf.*

Figure 1. A Summary of Our General Types of Correctives [3]

| Corrective | Individual | Group | Re-Presentation | Re-Involvement |
|---|---|---|---|---|
| Alternative Textbooks | ✔ | | ✔ | |
| Workbooks | ✔ | | ✔ | |
| Flashcards | ✔ | | ✔ | |
| Re-teaching | | ✔ | ✔ | |
| Audio-Visual* Materials | | ✔ | ✔ | |
| Token Economies | ✔ | | | ✔ |
| Academic Games | | ✔ | | ✔ |
| Group* Affective Exercises | | ✔ | | ✔ |
| Programmed Instruction | ✔ | | ✔ | ✔ |
| Tutoring | ✔ | | ✔ | ✔ |
| Small Group Study Sessions | | ✔ | ✔ | ✔ |

* These correctives might also be used on an individual basis in some situations.

the more effective correctives we have found. For each corrective, I have indicated whether the corrective is used primarily by individual students or by a group of students. I have also indicated whether the corrective focuses primarily on re-presenting the problematic material and/or on re-involving students in learning. I hope my labels will suffice; a more detailed description of each corrective, as well as procedures by which the teacher may go about constructing correctives, may be found in Block and Anderson (1975).

Generally speaking, of the types of correctives listed in Figure 1, we have found the *small-group study sessions* to be the most versatile for primary, secondary, and college students. This type of corrective seems to offer each student all the advantages of a tutorial approach to instruction, yet enables more than one student to be tutored at a time. We have also found that the *individual* correctives seem to be more effective with older students than with younger ones. Perhaps this is because the younger students have not yet developed the sense of autonomy and responsibility that the use of these correctives seems to require. Lastly, we have found that the *re-involvement* correctives seem to be more popular with and effective among students than are the *re-presentation* correctives. We believe that this is because most group-based/teacher-paced plans of instruction tend to focus primarily on presenting the material to be learned and generally ignore involving students in its learning.

*Guideline 3: Start small.*

A third important lesson we have learned from our mastery learning work is to start small. Just as the farmer carefully cultivates soil and seed before planting the whole crop, we have found it extremely useful to cultivate school personnel and basic techniques before planting our whole mastery strategy.

We have typically begun efforts to promote our ideas about the individualization of instruction by directing them to those few school personnel who seemed basically interested. Usually, these few individuals have eventually spread our ideas to their uninterested colleagues.

We have then encouraged our sympathizers to try out our ideas in basic areas and especially in early courses in these areas. Success has not necessarily been easier to attain here than elsewhere. But when our sympathizers have been successful here, they have had a stronger case for advocating the value of individualized approaches to instruction, such as mastery learning. After all, basic skills lie at the heart of most elementary and secondary school curricula. Consequently, students' mastery of these skills has great political appeal.

Finally, we have also reminded our sympathizers to develop and implement our ideas in bits and pieces and give each bit and piece some

[3] Adapted from J. H. Block, and L. W. Anderson. *Mastery Learning in Classroom Instruction*. New York: Macmillan Publishing Co., Inc., 1975. p. 38.

test runs. I have asked school personnel to think of teaching for mastery in the same way that a chemist thinks of conducting an experiment. Before conducting the whole experiment, the chemist develops, assembles, and calibrates each piece of his or her apparatus. So, too, I have contended, must school personnel "tinker" when experimenting with mastery learning ideas.

This cultivation strategy does result in successful, large-scale applications of our mastery brand of individualized instruction. The work of Kim and his colleagues is a good example (for details, see: Block, 1974). Under extraordinarily high student-teacher ratios (about 70 to 1), not to mention a rapidly deteriorating political situation, Kim *et al.*, have been slowly but surely converting the entire South Korean elementary and middle school system to mastery approaches to instruction.

Kim's initial work involved the teaching of simple geometric figures to 272 seventh-graders in an eight-session learning unit. His next project involved the teaching of mathematics and English to 5,800 seventh-graders over an eight-week period. And his next project was even larger; almost 26,000 seventh-graders were taught mathematics, English, and also physics and biology over an entire school year. At last report, Kim's current work involved several hundred thousand students and the full range of elementary and middle school subjects!

*Guideline 4: Respect the ecology of the classroom; strive for what can be the case.*

The final lesson we have gained from our mastery learning work, and in some ways the most important, has been to respect the ecology of the setting in which our ideas have been implemented. So often, as we review the research in individualized instruction, we see suggestion after suggestion about what ought to be the case in the classroom. Not only are teachers invariably asked to consider new means for individualizing their instruction, means that often involve sophisticated hardware (for example, computers) or software (for example, new curricula), they are even asked to contemplate new goals for their individualization efforts (for example, affective outcomes). Doubtless, these suggestions are sometimes intriguing and worthy of contemplation. But frequently, they seem to ignore the



Photo: Joe Di Dio, National Education Association.

fact that teachers already have basic ends they are expected to attain with students (for example, achievement) and that they already possess some basic means which they are accustomed to using to attain these ends (for example, a prescribed textbook and group-based instructional methods). Consequently, the suggestions often fall on unsympathetic ears.

We, like Sarason (1971), are convinced that no suggestions as to what *ought to be* the case in the classroom can ever be readily adopted unless they are more sensitive to the constraints of what actually *is* the case. Consequently, in our own work, we have strived to make suggestions that reflect what we believe realistically *can be* the case in the classroom.

To develop such suggestions we have proceeded as follows. First, we have begun by listing what we believe "ought to be" the case in the classroom. For example, we believe, among other things, that schools ought to produce truly competent learners; that instruction should be individualized in terms of how and how long the student is taught; and that students should be graded against themselves for mastery/non-mastery and not against their peers.

We have then attempted to understand what "is" currently the case in the classroom

and to identify particular factors that might affect the attainment of each of our "oughts." For example, we have found that teachers typically face pressure to get through a fixed curriculum in a fixed period of time; that the bulk of this curriculum is usually contained in prescribed textbooks; that most teachers already possess some successful techniques for getting through this curriculum; that most teachers' instruction is necessarily group-based and teacher-paced; and that teachers need to give grades and their students need to receive them.

Finally, we have also proposed some suggestions for reaching each "ought" given what "is." To illustrate, though we believed from the outset of our work that instruction ought to be individualized, we also realized that most classroom instruction was group-based and teacher-paced. So, as noted already, we suggested procedures to individualize ordinary, group-based/teacher-paced instruction. Consider another illustration. While we believed that students ought to be graded for only mastery/non-mastery, we were also aware that students are routinely graded against their peers using grades of A, B, C, D, E (or F), and I for incomplete. So we developed procedures whereby an "A" grade could be used to indicate mastery and grades of B, C, D, E (or F), or preferably I, to indicate non-mastery.

This strategy of striving for what can be the case produces substantial changes in classroom practices, but it does so gradually and iteratively. Although one's initial suggestions regarding new classroom practices are necessarily more conservative than he/she desires, conservative in the sense of bowing toward the *status quo*, they still shake that status. Consequently, as the suggestions are realized, a new *status quo* emerges and the conditions are set under which one's next set of suggestions can be bolder. Eventually, of course, as this process of suggestions, new *status quos*, and new suggestions cycles over and over,

one's suggestions about what can be the case become as bold as were one's views about what ought to have been the case in the first place. But now the actual nature of the classroom has been modified sufficiently to be ready for the implementation of these views.

I, for one, am optimistic about the future of the *concept* of individualized instruction in this country. I see such instruction as being instrumental in meeting growing *public* demands that our schools produce truly competent learners and in meeting growing *learner* demands that they do so as humanely as possible. But I am pessimistic that the concept will survive unless the *practice* of individualized instruction proves to be more effective. I hope that the four guidelines for the individualization of classroom instruction suggested here contribute to the upgrading of that practice.

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