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Implementing Mastery Learning.

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PROLOGUE

To truly appreciate the importance of mastery learning, you need to understand the context in which Benjamin Bloom developed the idea and the boldness of what he proposed. Bloom not only challenged long-held notions about the development of talent in young people and the influence of educators; he proved himself a courageous and steadfast champion of equity and social justice.

Bloom wrote his initial essay on *Learning for Mastery* in 1968, at a time when the United States was embroiled in conflict and turmoil. News reports each day included stories of the escalating war in Vietnam, student protests on college campuses, and civil rights demonstrations in cities throughout the nation. The Soviet Union's successful launch of the Sputnik satellite had convinced many pundits that the American education system was sorely behind in developing students' science and technology skills. And *Equality of Educational Opportunity*, the largest study of our education system ever conducted, was released showing the primary determinants of school learning were students' family background coupled with a mix of social and economic factors, and the influence of educators was negligible at best.

Many commentators at the time recommended that American schools adopt a policy of identifying especially precocious children at an early age and then allocating available resources to developing their unique talents. The Soviet Union did this with young children who displayed exceptional academic and athletic skills, and the approach appeared to work well. To improve our standing in the world and remain competitive, these critics believed that we needed to use our limited resources to foster the excellence of a select few.

Others recommended a more egalitarian approach. They believed that greater progress could be made by ensuring quality learning experiences for all children. Based on John F. Kennedy's idea that "a rising tide lifts all boats," they advocated a focus on equality issues and using available resources to guarantee high-quality education for children of all backgrounds.

The problem was these two approaches were seen as contrary and incompatible. To promote true excellence meant sacrificing equality, at least to some degree. Excellence implies exceptionality, and not all children can be exceptional. Promoting equality was seen as requiring the abandonment of excellence and being satisfied with improved but less remarkable performance.

In this context of conflict, turmoil, and debate, Benjamin Bloom wrote *Learning for Mastery*. As the son of Jewish parents who immigrated to the United States to escape the persecution of Jews in Russia, he understood oppression and discrimination. Living on the South Side of Chicago, he saw firsthand the

seemingly insurmountable hardships faced by children growing up in poverty and economic depression. But he also observed the successes of his wife, Sophie, in tutoring young children from economically disadvantaged backgrounds. He witnessed these children, who most would have predicted to fail in school, begin to thrive, reach the highest levels of academic performance, and gain admission to the most selective colleges and universities in the nation.

Based on these experiences, Bloom reasoned that instead of focusing on equal opportunity and inputs, we needed to focus on achieving equal outcomes. Providing all students with the same opportunity was unlikely to work when students began their education journeys at such different starting points. So rather than concentrating on equality, Bloom stressed that we needed to focus on equity. Then he proposed the far more radical idea that equity and excellence could be achieved together!

At a time when many educators struggled to accept the possibility that “all children can learn,” Bloom pushed one huge step further, suggesting “*all students can learn excellently!*” Imagine how startling such an assertion was at that time, how bold, and how completely audacious. And rather than leave his proposal as a philosophical hypothesis, Bloom described specific strategies for achieving this goal. Not only did he assert that excellence with equity was possible; he explained how we could achieve it!

So that no one would doubt what he was saying or mistake his meaning, Bloom made clear his position in his summary of *Learning for Mastery*:

We are expressing the view that, given sufficient time and appropriate help, 95% of students can learn to a high level of mastery. We are convinced that the grade of “A” as an index of mastery can, under appropriate conditions, be achieved by up to 95% of the students in a class. (p. 11)

In the Foreword he wrote for the first two editions of *Implementing Mastery Learning* (Guskey, 1985, 1997), Bloom described three lines of research that influenced his thinking in developing the theory of mastery learning. First was the highly predictable nature of educational outcomes. He described studies showing that measures of students’ achievement in Grade 3 could be used to predict their achievement in Grade 11 with 80 to 90 percent accuracy. In other words, students’ achievement in early grades has a powerful deterministic effect on their achievement throughout their elementary and secondary school experiences.

Second was the finding that students’ academic self-concept tends to be relatively positive during the first two years of school. But each year thereafter, top-achieving students become more positive about school and about themselves, while low-achieving students become more negative about school and themselves. The long-term consequences of these increasingly positive or

negative academic self-concepts have profound influence on students' view of school, their peers, their family, and themselves.

Third were the results of studies showing that under one-to-one tutoring conditions, the average student learns at a level that is typically achieved by only the top 2 percent of students taught under conventional group instruction. This showed that most students are capable of exceptionally high levels of achievement. Bloom acknowledged that while mastery learning is not as effective as one-to-one tutoring, it enables a large proportion of students to learn any school subject to a very high level.

Early studies by Bloom's students showed that using mastery learning procedures during the first two or three years of school helped raise the level of achievement of the entire class. As a result, nearly all students felt confident in learning situations and believed they could be successful. These investigations also revealed that even more effective learning could be achieved with a combination of mastery learning and support of the home environment, improved instructional materials, and student support systems. Bloom believed that as these studies continued, more would be discovered about how group learning conditions could be made as effective for most students as one-to-one tutoring.

Benjamin Bloom's philosophy of education outlined in *Learning for Mastery*, and his work as an educational leader, changed forever our understanding of the power of education and the influence of educators. He acknowledged that learning in any subject is infinite, and there are no limits to what an individual can learn well in any academic discipline. But a curriculum is finite. When we define a curriculum, we identify within that subject or academic discipline the particular elements we believe *all* students should learn. Our job as educators is then to do everything within our power to ensure that *all* students learn that curriculum *excellently*.

In emphasizing excellence *and* equity, Bloom also took issue with those who recommend that educators should strive to help students achieve their "potential." To him, talk of achieving "potential" always implied limitations—that is, not expecting as much from some students as we do from others. It is the unspoken acceptance of inequity. Who knows the true "potential" of any child? Who would dare speculate what any child can or cannot achieve? In my own case, for example, I doubt any of my elementary or secondary teachers who knew me as a struggling and mediocre student, at best, would ever have believed that I had the "potential" to study with Benjamin Bloom, earn a doctoral degree from one of the most prestigious universities in the world, and become a university professor.

Of all the important things I learned from Benjamin Bloom, perhaps the most important is that we don't have to sacrifice *excellence* for *equity*. With careful planning, thoughtfulness, imagination, and hard work, we can achieve both together. That is the legacy of Benjamin Bloom and the true meaning of mastery learning.

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PREFACE

When initially published in 1985, *Implementing Mastery Learning* was heralded as the first practical guide for teachers interested in applying mastery learning principles in modern classrooms. At that time, mastery learning was already well established as a highly effective instructional process. Research studies on effective schools and the characteristics of high-quality instruction consistently pointed to mastery learning as an integral part of successful teaching and learning at every level of education. *Implementing Mastery Learning* offered educators the most current evidence on these ideas and provided step-by-step guidelines on how to use mastery learning efficiently in a wide variety of classroom contexts.

Since then, our knowledge base in education has evolved tremendously. Every year new studies of teaching and learning deepen our understanding of educational practices. As the quality of those studies improves, their implications for practice become clearer. This has been especially true in the case of mastery learning.

By the time the second edition of *Implementing Mastery Learning* was published in 1997, our knowledge of how to implement mastery learning effectively and its impact on student learning outcomes had grown significantly. Numerous articles had been written that helped clarify educators' understanding of mastery learning, and several major syntheses of mastery learning research had been conducted (Guskey & Pigott, 1988; Kulik et al., 1990). In addition, several important books on mastery learning were published, notably *Improving Student Achievement Through Mastery Learning Programs*, by Henry Levine and Associates (1985), and *Building Effective Mastery Learning Schools*, by James Block, Helen Efthim, and Robert Burns (1989).

Since then, the number of programs based on mastery learning principles has grown steadily in schools throughout the United States and around the world. These programs have been enhanced by the use of more effective professional learning models, advances in technology, recognition of the importance of formative assessments *for* learning, growing use of performance-based assessments, and broad-based interest in “personalized learning” and other competency-based models of education. New books on mastery learning have contributed to the growth as well, particularly *Standards and Mastery Learning: Aligning Teaching and Assessment So All Children Can Learn*, by Ronald Gentile and James Lalley (2003), *Multicultural Applications of Mastery Learning*, by Guzver Yildiran (2006), and *Mastery Learning in the Science Classroom: Success for Every Student*, by Kelly Morgan (2011). These developments, combined with the drastic changes in education brought on by the onset of the worldwide

COVID-19 pandemic in 2020, made clear that an updated edition of *Implementing Mastery Learning* was needed.

Like the first two editions, this third edition of *Implementing Mastery Learning* is designed to be a practical guide for those interested in applying mastery learning in modern classrooms or in online learning environments. It outlines in step-by-step fashion how mastery learning can be used efficiently and effectively in a variety of contexts at all education levels. In addition, this edition explains what we have learned from recent implementation efforts, examines the results of the most current research on mastery learning, and describes the implications of that research for practice. Most important, it shows how the ideas of mastery learning can be practically implemented in today's classrooms or in online learning contexts, keeping in mind the growing complexities of group-based learning environments. Scores of new practical suggestions for improving teaching and learning are offered as well.

Mastery learning remains an instructional *process*. This process involves the careful planning of learning activities, providing students with regular information or *feedback* on their learning progress, offering guidance and direction to help students correct their individual learning difficulties, and enriching the learning experiences of students who master important concepts quickly. Most teachers find that mastery learning allows them to help nearly all of their students become successful learners and gain the many positive benefits of that success. Hence, the ideas described in this book are just as valuable for beginning teachers as they are for experienced teachers looking for practical ways to enhance the effectiveness of their instructional methods.

There remain three major steps in implementing mastery learning: (1) *planning*, (2) *managing*, and (3) *evaluating*. We will address the tasks involved in each of these steps in the sequence most commonly followed by teachers engaged in implementation. While some chapters or sections of a chapter may not be relevant to everyone, the book is designed to provide a fairly complete framework for learning about both the theory and practice of mastery learning.

The first chapters describe the history and development of mastery learning, together with the major tasks involved in planning for implementation. In most cases, these tasks need to be accomplished *before* classroom or online applications actually begin. We focus on how to introduce the essential elements of mastery learning and how to make the best use of available resources, especially instructional time. Most teachers find that many elements of mastery learning are already part of their regular teaching. As they come to understand the mastery learning process better, they are able to apply these elements more systematically and more intentionally to enhance the overall effectiveness of their instruction.

The next chapters describe various management strategies and ways to adapt mastery learning to fit a variety of classroom contexts and online approaches

PREFACE

to teaching. Teachers fairly well acquainted with mastery learning or who teach in schools where mastery learning is already used may want to turn directly to this section. But even teaching veterans generally find it helpful to review earlier chapters to ensure a clear understanding of the development and planning steps necessary for successful implementation.

In later chapters we turn to the evaluation of learning outcomes within mastery learning environments and review procedures for conducting overall evaluations of mastery learning programs. We will explore the development of students' meta-cognitive traits, aspects of self-regulation and student agency, and general learning-to-learn skills often considered in mastery learning program evaluations.

Although the primary purpose of this edition of *Implementing Mastery Learning* is the same as earlier editions, here we take a slightly different approach. The first two editions of *Implementing Mastery Learning* included sample units drawn from a variety of grade levels and academic disciplines that were designed for teaching particular topics in a mastery learning format. These units were included not as exemplary models, but rather as working examples to help clarify the descriptions and explanations of earlier chapters. Today such unit design examples are widely available through numerous online sources that teachers can easily access and explore. So in this edition, we left out the sample units and, instead, broadened our discussion of critical implementation issues with extended examples.

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CHAPTER DESCRIPTIONS

Each chapter in this edition offers a blend of research and practice. We will describe the important issues related to each topic, discuss pertinent research, and offer evidence-based recommendations for successful implementation.

Chapter 1 provides a brief explanation of the rationale for mastery learning. We explore the predictability of results in education, the consequences of that predictability, and what educators can do to alter it.

Chapter 2 describes the history of mastery learning, its essential elements, and the major steps involved in implementation. We outline the basic principles that underlie the theory of mastery learning, along with how these principles translate into prescriptions for classroom and online practice. We also consider the particular aspects of mastery learning that give it such broad appeal among educators at all levels.

In Chapter 3 we discuss the relationship of mastery learning to other systems of individualizing or “personalizing” learning. We review the connection of mastery learning to “performance-based” and “competency-based” approaches to education, along with common misinterpretations of the mastery learning process.

Chapter 4 turns to planning for the implementation of mastery learning and, specifically, techniques for clarifying intended learning goals, standards, or outcomes. We describe the important decisions teachers need to make regarding what they want students to learn and be able to do as a result of specific teaching and learning experiences. Clarifying these decisions is an essential starting point in successful mastery learning programs.

In Chapter 5 we consider the use of preassessments. Benjamin Bloom never discussed preassessments in the context of mastery learning and referred to them only briefly in his other writings on assessment and evaluation (see Bloom, Hastings, et al., 1971; Bloom, Madaus, et al., 1981). Nevertheless, other “standards-based” or “competency-based” approaches include preassessments as a major component. In this chapter we explore how preassessments can be used both in class and online, how to avoid their misuse, and how to ensure they serve to enhance student learning.

Chapter 6 centers on procedures for checking students’ learning progress through “formative” assessments. These assessments include a broad range of techniques for gathering evidence on students’ learning from traditional

paper-and-pencil assessments to the wide variety of alternative or “authentic” assessment formats. We outline steps for developing these assessment procedures; for ensuring they match intended learning goals, standards, and objectives; and for checking on their validity.

In Chapter 7 we turn to the importance of providing students with regular feedback on their learning progress and various techniques for helping students remedy their individual learning difficulties. We address the use of technology in implementing mastery learning both in classrooms and online, along with the importance of providing enrichment activities to broaden and extend the learning experiences of faster learners. Helping students identify and then correct their learning errors, while extending learning opportunities for fast learners through enrichment, remain the most vital aspects in successfully implementing mastery learning.

Chapter 8 reviews the development of “summative” assessments or examinations. Unlike formative assessments that are primarily diagnostic, summative assessments provide culminating demonstrations of what students have learned and are able to do. In most cases they are also broader in scope than individual formative assessments. We use summative assessments in mastery learning classes primarily to verify or certify students’ competence and to assign grades. Our discussion centers on the development of summative assessments, the relationship between these evaluative assessments and diagnostic formative assessments, and important issues related to grading in mastery learning classes.

In Chapter 9 we turn to the classroom application of mastery learning. We describe the major approaches to classroom implementation and how to take advantage of the positive aspects of each. We outline strategies for involving students and parents in the mastery learning process, for motivating students to do well on formative assessments, and for dealing with common problems such as finding time for correctives and fair grading practices. We also discuss some of the rewards and satisfactions teachers derive from using mastery learning.

To determine how well the mastery learning process works and its effects in particular contexts requires some form of evaluation. Chapter 10 considers both the kinds of information and the types of comparisons that can be useful in making these judgments. We explore the results of several large-scale syntheses of mastery learning research and their implications for practice. Our goals in this chapter are to help educators at all levels determine the benefits of implementing mastery learning in traditional classrooms or in remote, online settings, and to establish a basis for sustaining involvement and expanding implementation.

Chapter 11 centers on implementing mastery learning programs on a school-wide or district-wide level. We look at the characteristics of successful implementation plans and specific procedures for sustaining implementation efforts while ensuring program fidelity and quality. We also consider how mastery learning

CHAPTER DESCRIPTIONS

complements other instructional innovations, promising additions to the mastery learning process and prospects for the future of mastery learning in schools.

In this third edition we also offer additional chapter components as an online appendix that readers can download based on their interest. The first is a description of the advantages and shortcomings of different assessment formats that can be used in both formative and summative assessments. It is designed to complement and extend the discussion of formative assessments in Chapter 6. The second describes the theoretical and practical relationship between mastery learning and modern programs based on response to intervention or RTI. Adapted from a major article coauthored with Dr. Lee Ann Jung, a scholar with great expertise in inclusive education and intervention planning (Jung, 2015), this chapter draws parallels between mastery learning and critical features of RTI programs (Guskey & Jung, 2011). It shows that while these two processes share many common elements, each incorporates unique elements that potentially complement and strengthen the other. A synthesis of these two processes offers both special educators and general educators a powerful tool in their efforts to enhance the learning outcomes of *all* students.

Although more detailed than previous editions, this version of *Implementing Mastery Learning* should not be considered a complete treatise of mastery learning. There is much more to mastery learning, its research, and its application in regular classrooms and online learning environments than described on these pages. Instead, this book's purpose is twofold. First, it is designed to help educators at all levels to better understand the process of mastery learning, how it was developed, and why it is so important. And second, it is meant to offer practical ideas on how mastery can be used effectively in a broad array of teaching and learning contexts to help *all* students learn excellently. If using mastery learning allows you to help more of your students become successful learners and gain the many positive benefits of that success, then all the time, thought, and effort that went into developing this book will be truly worthwhile.

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