
R E S E A R C H
B A S E

FOR

Measuring Up
e-Path™



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INTRODUCTION

In January 2002, President George Bush signed into law the No Child Left Behind Act of 2001. Under this law, educational programs and materials paid for by federal funding must be based on sound, widely accepted educational research that supports the materials' design, thus increasing the likelihood that the materials will help students achieve the desired learning outcomes. This law, commonly known as NCLB, thus requires educators to be aware of the body of research that supports the design of any materials they are considering for use with their students.

Since its inception in 1990, Peoples Publishing Group has built and revised our student learning products based on continual review of the scientific research literature. The foundation of Peoples Publishing Group's Measuring Up® program is a set of principles derived from the soundest current theory and research on reading and language arts, mathematics, writing, science, social studies, assessment, and literacy. These principles are based specifically on the student learning standards of the state for which the materials are designed.

This document serves both to provide information about the Measuring Up e-Path™ program for California and to explain the research on learning theory on which the system is based. Consequently, this document is organized in a way to be useful to educators who are considering the soundness and the practical uses of the materials in classrooms.

First, each principle underpinning the design of Measuring Up e-Path™ is articulated. Second, a paragraph discussing the best-known and most respected educational research supporting the principle is given. Third, a discussion of the way Measuring Up e-Path™ specifically embodies both the principle and its research-based foundation helps prospective educators see how the system can be used to help teachers collect information about their students' strengths and weaknesses and to help students explore their own understandings of the California Content Standards.

THE CHALLENGE

Today's educators, schools, and districts face a daunting challenge: how to raise student achievement in an increasingly rigorous, standards-based environment. This dilemma is particularly critical because the No Child Left Behind Act requires that:

- ❑ Each state adopt challenging academic content standards and challenging student academic achievement standards.
- ❑ Each state educational agency implements a set of high-quality, yearly student academic assessments that include, at a minimum, academic assessments in mathematics, reading or language arts, and science that will be used as the primary means of determining the yearly performance of children and discerning whether they meet the state's challenging academic standards.

THE Measuring Up® PROGRAM

Measuring Up® is a supplemental assessment and instructional program with instructional lessons completely customized to the state curriculum standards for California.

The California series includes Measuring Up e-Path™, an Internet-based benchmarking/diagnostic system that helps to assess students' California Content Standards knowledge.

For latest products and updates, please visit www.CAStandardsHelp.com.

RESEARCH-BASED PEDAGOGY OF THE Measuring Up® PROGRAM

The California version of the Measuring Up® program, including Measuring Up e-Path™ is based on that state's mandated curriculum standards and performance objectives and is completely customized. The Measuring Up® series is designed to support and enhance best practices for effective teaching of California's mandated curriculum standards and performance objectives. There are some research-based unifying pedagogical principles that are common across California Content Standards and that form the foundation of the Measuring Up® program's design. Those listed on the following pages apply to the Measuring Up e-Path™ component of the complete Measuring Up® program.

RESEARCH PRINCIPLE 1: Challenging Standards

Educational programs must be based on challenging academic content standards in academic subjects, the teaching of advanced skills, and challenging student academic achievement standards.

(PL 107–110, the No Child Left Behind Act of 2001)

RESEARCH BASIS FOR PRINCIPLE 1

The most extensive and best-known research about the effects of expectations is addressed by Rhona S. Weinstein (2002) in her book, *Reaching Higher: The Power of Expectations in Schooling*, a landmark in support of the results that high standards and expectations can produce. Weinstein's book takes as its thesis that "If . . . we are interested in the development of all children, we must link higher standards to effective teaching strategies for diverse learners. Our assessments of achievement must inform the next steps of instruction, rather than simply hold children accountable for what they may not have been taught."

RESEARCH PRINCIPLE 1 APPLIED

The implication of Weinstein's statement is that assessment must help teachers understand what students know and need to know. The Measuring Up® materials can be used with students to help teachers know in advance where gaps in student understanding lie. Teachers can then begin to think about filling in those gaps for all learners. The California

Content Standards demand high achievement for all learners, and the Measuring Up® program can be seen first as an aid to student learning toward those goals and second as a step toward positive assessment results. Measuring Up e-Path™ can be used with all students of all abilities; they allow all teachers of all students to see where their students need help in approaching the California Content Standards and even allows teachers to work differently with different students to make necessary progress. In other words, using the program allows teachers to enact the principle that high standards can result in higher achievement for all students by using the assessment materials to inform the next steps of instruction.

RESEARCH PRINCIPLE 2: Test preparation

Teachers are responsible for teaching the skills, knowledge, and behaviors essential to answering test questions, as well as preparing their pupils for the formal assessments.

RESEARCH BASIS FOR PRINCIPLE 2

Gulek (2003) writes that adequate and appropriate test preparation plays an important role in helping students demonstrate their knowledge and skills in high-stakes testing situations. Becker (1990) conducted an extensive meta-analysis of the research and concluded that on average, helping students understand how to approach test questions can

help increase SAT scores. Sloane & Kelly (2003) write that “Students can be effective instruments in their own learning if the teacher is clear on the learning goals and the students are informed of their current performance and given clear steps for remediation.... The task for teachers is to know and understand their state’s standards, and then translate this knowledge to continuously help students learn and self-assess to meet those standards.”

RESEARCH PRINCIPLE 2 APPLIED

Working specifically through questions (“What, exactly, is the question asking?” “What kind of answer will you be looking for?” “Why did you choose the answer you chose?”) can be a fruitful practice in reasoning. The cognitive skills required for understanding and answering test questions are higher-order thinking skills; making these skills overt for students can improve their understanding of the many tasks in their lives that will involve reading and answering questions, well beyond the demands of any assessment.

To this end, Measuring Up® provides assessment activities embedded in each lesson of the student worktexts to provide practice on applying curriculum standards. Each question in Measuring Up e-Path™ is linked to the California Content Standards, and Measuring Up® worktext lesson

in the P3™—Personal Prescriptive Path™ Report, so the educator can provide targeted direct instruction for those areas that are weak. This means that teachers use Measuring Up e-Path™ to help students become familiar with the California Content Standards and experience test questions.

RESEARCH PRINCIPLE 3: Formative assessment

“A major purpose of evaluation is to help teachers better understand what students know and make meaningful decisions about teaching and learning activities.”

RESEARCH BASIS FOR PRINCIPLE 3

Assessment comes in two forms: formative and summative. Standardized tests like the CST and CAHSEE are a summative assessment, or testing that occurs at the end of a given amount of instruction. Formative assessment occurs throughout a unit of instruction; because it occurs more frequently, and because its purpose is to inform further instruction, students receive more immediate feedback on their learning. “Formative assessments...are essential. They permit the teacher to grasp the students’ preconceptions, understand where the students are in the ‘developmental corridor’ from informal to formal thinking, and design instruction accordingly” (Bransford, et al., 2000).

RESEARCH PRINCIPLE 3 APPLIED

Together, teacher observation and Measuring Up e-Path™ enable teachers to define and implement a P3™—**Personal Prescriptive Path™** of instruction for all students, no matter how diverse.

In addition, students' approaches to and solutions of questions provide teachers with extra information about what their students know and how they think.

Both Measuring Up® -created tests and Teacher-created Benchmark Tests in the Measuring Up e-Path™ system are designed to provide diagnostic information; working through questions in the Measuring Up e-Path™ program can provide a great deal of information for teachers about their students. Seen in this way, Measuring Up e-Path™ is a powerful instructional tool for informing classroom instruction in ways more profound than simple test preparation.

Effect on Student Achievement

A third-party study is currently underway to evaluate the effectiveness of the complete Measuring Up® program. Empirical Education, Inc. (EEI) will conduct the study. This study will include district studies that evaluate the impact of Measuring Up® on student achievement. Based on our experience, we believe that this research study will demonstrate that the effect on student achievement will vary positively with the level of implementation.

Empirical Education, Inc. (EEI) is an independent research company committed to providing objective findings. EEI's

research meets the highest standards by NCLB's definition of scientifically based research, and is committed to the U.S. Department of Education's What Works Clearinghouse as a reviewer of EEI's research methods and findings. EEI's first priority is providing the school district with valid scientific evidence; the information will have scientific validity as applied to each school/district's particular situation.

Empirical Education, Inc. specializes in conducting scientific experiments in the form of small implementations of instructional programs. These are conducted as "gold standard" experiments that are designed to provide district decision-makers with a scientifically valid basis for a decision. In this case, the study will determine the level of effectiveness associated with the intervention studied.

Upon study completion, EEI will provide a research report. The report will provide specific evidence about how well the Measuring Up® program works, which student populations it is most effective for, whether the publisher-provided training is adequate, and whether the materials are engaging for students and usable by staff.

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