

Preface

Research-based strategies for improving student learning through formative assessment have been the subject of many books and articles. This book synthesizes and highlights important messages and strategies offered by researchers, authors, and practitioners. What is unique here is that the tools and strategies for using formative assessment effectively are operationally defined and shown in the context of K–8 science.

Formative Assessment Strategies for Enhanced Learning in Science is a practitioner’s guide that introduces teachers to formative assessment as a way of thinking and acting. The tools and strategies of formative assessment that are described in the chapters are those that classroom teachers can use to capture evidence of student thinking and learning in all disciplines. Numerous models and templates are provided to assist the practitioner in applying the strategies for high-quality teaching and formative assessment to their classroom practice.

THE GOALS OF *FORMATIVE ASSESSMENT STRATEGIES FOR ENHANCED LEARNING IN SCIENCE* ■

The purpose of this book is to describe and model tools and strategies for learning and assessment in the context of primary, intermediate, and middle grade science and to show how they support a formative assessment system and enhance learning.

The models shown are aligned with important learning goals related to the content, processes, and habits of mind that define the scientifically literate citizen. Carefully constructed formative assessments provide valuable information about student thinking and learning that can be used to monitor progress and inform and guide instruction. Formative assessments provide feedback to students, giving them a way to assume more responsibility for what they learn and how they learn.

Occasionally, readers of this book will be invited to complete exercises that require thought and reflection. The purpose of these exercises is to provide greater clarity about one’s perspective and personal or schoolwide practices

related to assessment while identifying areas that may need modification or change. The book offers an overview of practical ideas and strategies for formative assessment to guide the practitioner in planning effective instruction.

■ **USES FOR *FORMATIVE ASSESSMENT STRATEGIES FOR ENHANCED LEARNING IN SCIENCE***

Formative Assessment Strategies for Enhanced Learning in Science is an excellent resource for science methods courses and teacher enhancement programs since it guides preservice and inservice teachers through a step-by-step approach to understanding how different tools of formative assessment can be used to enhance student learning. A research-based rationale for formative assessment is provided along with tools and strategies that are operationally defined and modeled in the context of science.

As a resource for professional development, *Formative Assessment Strategies for Enhanced Learning in Science* offers a study of the rationale and strategies for using formative assessment and rubrics to provide feedback and motivate students to higher levels of productivity. Through formative assessment, students become more aware of learning goals and expectations, use rubrics to guide their learning and to self-assess, and take responsibility for their learning.

Teachers will discover clear explanations and models that can be used to guide them in developing formative assessments and rubrics that align with their science curriculum. Workshops that engage teachers in the theory and practice of using formative assessments are worthwhile and beneficial to both teachers and students. Teachers focus on important goals and standards, implement more effective teaching methods, and use assessments to gauge student learning, inform instruction, and achieve goals. Students become more responsible and successful learners.