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# *Preface*

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Differentiation has been around since the beginning of school days—even in the one-room schoolhouse where all grades were in the same room, with the same teacher, and where a family-type atmosphere developed over time. Students worked together, helping one another and sharing ideas, expertise, and limited materials. Schools evolved as education became more universal, and students were sorted by age and grade into more chronological groupings. Subject disciplines were also isolated. Teachers influenced by Dewey still recognized the differences in students' abilities and interests and often responded accordingly through different learning activities and assessments. As the Carnegie model emerged in the age of industrialization, "sit-and-get" instruction became more common, and teachers (especially those working in high schools) became more specialized in their content areas. Later, in the twentieth century, the standards movement required mandatory testing at various grade levels for all students, even though the diversity in the classroom had grown as a result of immigration from around the world. The rigidity of program, instruction, and assessment did not get the results expected from this standardized approach; teachers recognized that they weren't reaching and teaching all students if they were only preparing them for "the test." Thus, differentiation emerged strongly in the late 1990s as a mindset and model for helping all students succeed (the No Child Left Behind Act).

Emerging research and information on how we learn, based on neuroscience advancement, helped teachers understand how the brain operates, attends, makes meaning, and creates long-term memory, as well as how the brain becomes unique due to plasticity based on genetics (nature) and prior experiences, circumstances, and environments (nurture). All the authors in this book help teachers connect educational neuroscience to classroom environment and strategies.

Each of the chapters in this book was selected to create a tapestry of critical information for teachers implementing differentiation. Several authors foster the need for a climate conducive to learning, based on what

we know about the brain's need for safety and innate need to belong. Several suggest that knowing the learner and helping the learner be aware of his or strengths, preferred modes of learning, and interests is essential. Others offer a variety of instructional methods to provide diverse ways for students to process content and develop skills. Templates for both unit planning and lesson planning based on standards are included in two chapters. An in-depth look at adolescent learners and the need for differentiation to satisfy their developmental needs is an appropriate addition for middle and high school.