Introduction
and Overview

Differentiation for adolescent learning is grounded in the premise that all students have the capacity to learn and achieve *if* they have the opportunity to access, process, and demonstrate knowledge of content and skills in ways that are personally meaningful. Whereas teachers have little control over the wide range of diversity in contemporary middle and high school classrooms, they can seek to know their students developmentally as learners with similar and differing strengths, preferences, and interests and design a context for learning that is responsive and supportive for their academic success. This context is shaped by the dynamic interaction of strategic instruction and learner engagement. The ultimate goal of differentiation in the adolescent classroom is to empower students with the cognitive strategies and personal efficacy to manage their own learning.

This book introduces a differentiation framework for adolescent-centered learning that incorporates research from the field of neuroscience on the developing and learning adolescent brain. This framework is sustained by adolescents' developmental needs for personal connection, appropriate intellectual challenge, emotional engagement, guided social interaction, metacognitive development, and a supportive learning environment. The six components of the adolescent-centered differentiation model are these:

Evaluation: Diagnostic, ongoing formative, and culminating assessment of students' knowledge, skills, interests, preferences, and progress that informs curriculum design and instruction and promotes student learning management.

Expectation: Curriculum designed around age-relevant themes, essential content understandings, key concepts, and cognitively compelling learning experiences.

Engagement: Authentic and relevant learning experiences that intrigue and motivate by building on students' knowledge, experiences, interests, strengths, and preferences.

Exploration: Structured and flexible social interaction that promotes collaborative inquiry and individual academic and behavioral accountability.

Extension: Explicit instruction to promote students' metacognitive development, self-regulation, and learning transfer.

Environment: A classroom learning community responsive to adolescents' physical, social, intellectual, and emotional development.

Differentiation for adolescent-centered learning is a proactive, developmentally appropriate, and student-centered approach to assessment, curriculum design, and instruction. It is based on current pivotal research on how adolescents' brains learn developmentally and individually. It provides a commonsense guide for teachers to determine adolescents' differing learning strengths and needs and to respond strategically through varied, multiple, and flexible strategies for engagement, involvement, and evaluation. It constitutes teaching so that all adolescents in mixed-ability classrooms have cognitive access, opportunity, and support for academic competence. Differentiation for adolescents further involves metacognitive coaching so that students attain and know how and when to use pertinent cognitive strategies for self-regulated and independent learning. Ultimately, adolescent-centered differentiation is about good teaching practice.

CHAPTER 1: DIFFERENTIATION AND THE LEARNING BRAIN

Chapter 1 addresses the many and varied differences among adolescents that impact learning strengths and needs. It includes a discussion of new research on differences in the way the learning brain receives, processes, and emotionally relates to content, materials, and instructional experiences. The chapter defines differentiation as curriculum and instruction design that builds strategically and meaningfully on adolescents' learning strengths, interests, and preferences. The chapter gives an overview of the differentiation model, Universal Design for Learning (UDL), and introduces the concepts of technology-enhanced cognitive tools, or digital accommodations, which provide flexible scaffolding to enable more equitable access to learning by the range of adolescents in mixed-ability classrooms. Chapter 1 identifies six differentiation design principles for adolescent-centered learning. These are the "Six Es" of Evaluation, Expectation, Engagement, Exploration, Extension, and Environment.

CHAPTER 2: DIFFERENTIATION AND ADOLESCENT DEVELOPMENT

Chapter 2 identifies six developmentally-responsive, brain-based elements that support adolescent learning and align with the components of the adolescent-centered differentiation framework introduced in Chapter 1. These developmentally appropriate elements are personal connection, appropriate intellectual challenge, emotional engagement, purposeful social interaction, metacognitive development, and supportive learning environment. Chapter 2 also examines pivotal findings from the field of neuroscience that shed light on the developing adolescent brain and related cognitive and emotional development. It explores the interrelationship among adolescents' developmental tendencies, brain functioning during the learning process, and compatible classroom practices.

CHAPTER 3: ADOLESCENT-CENTERED DIFFERENTIATION: EVALUATION, EXPECTATION, ENGAGEMENT, AND EXPLORATION

Chapter 3 broadens the discussion of adolescent-centered differentiation with focus on four of the design principles: Evaluation, Expectation, Engagement, and Exploration. These principles present a differentiation framework for adolescent-centered teaching that is based on six research-based elements. It suggests ideas for evaluating adolescents' interests, abilities, and learning preferences and in setting high curricular expectations accompanied by pertinent support. It also describes instructional approaches that motivate and engage adolescent learners and enable them to interact collaboratively. Chapter 3 provides differentiation classroom examples in the disciplines of science, social studies, English/language arts, and mathematics, builds on the differentiation examples introduced in Chapter 1, and adds others appropriate for contemporary heterogeneous secondary classrooms.

CHAPTER 4: METACOGNITIVE EXTENSION IN ADOLESCENT-CENTERED DIFFERENTIATION

Chapter 4 elaborates on the fifth "E" of the adolescent-centered differentiation framework, Extension. It explores ways in which teachers instruct so that adolescents attain important cognitive strategies that enable them to take ownership and management of their own learning. The chapter showcases two integrated, technology-enhanced problem-based learning (PBL) units that incorporate the principles of UDL, cognitive strategy development, guided reflection, and metacognitive extension.

CHAPTER 5: A DIFFERENTIATED LEARNING ENVIRONMENT: THE AFFECTIVE, SOCIAL-EMOTIONAL, AND PHYSICAL DIMENSIONS

Chapter 5 describes the interrelated affective, social-emotional, and physical dimensions of the adolescent-centered learning environment. Adolescents learn and think better in a flexible, yet structured, community-oriented environment where they move, talk, act, and interact. They thrive in a learning environment where they are motivated personally, guided socially, challenged intellectually, and supported intentionally as they engage in relevant and meaningful learning experiences. Adolescents also need a *safe* learning environment defined by respect for and acceptance of students as individuals, however diverse. Essential to the social dimension is instructional use of flexible grouping that enables adolescents to interact with peers on a variety of engaging, appropriately complex tasks. Adolescents also learn better in a physical setting characterized by order, cleanliness, movement, and structure. Chapter 5 further offers research-based strategies for managing the differentiated adolescent classroom.

CHAPTER 6: THE INTELLECTUAL DIMENSION IN THE DIFFERENTIATED LEARNING ENVIRONMENT

Chapter 6 continues the conversation of the adolescent-centered learning environment with a focus on the intellectual dimension. Adolescents thrive in an intellectually charged environment where they are appropriately challenged and intentionally supported. The chapter illustrates key instructional strategies that differentiate for student readiness and stresses the critical connection between affective and cognitive competence. Chapter 6 also emphasizes the important interplay of knowledge acquisition, understanding, and meaningful assessment in shaping the intellectual dimension. It suggests grading principles that support adolescent-centered differentiation and intellectual growth and mastery. Chapter 6 further features instructional technology as a cognitive scaffolding tool for adolescent learning and intellectual development.

CHAPTER 7: LEARNING PATTERNS AND PROFILES

The underlying message of Chapter 7 is that teachers view all adolescents as contributing members in the learning environment. Rather than thinking in terms of labels and students "at-risk," teachers in differentiated classrooms regard students' learning strengths as starting points for instructional design. At the secondary level, where adolescents are expected to read more complex content, many students need explicit instruction to attain the skills for critical literacy. This chapter focuses on instructional differentiation for three clusters of adolescent populations prevalent in contemporary mixed-ability classrooms. These are gifted, or advanced learners, English language learners, and adolescents with learning challenges that affect reading comprehension and literacy development. The chapter reiterates the goal of adolescent learning that they become metacognitive managers of their own thinking and learning. It describes many differentiation approaches, including explicit cognitive strategy instruction, to help students activate prior knowledge, build connections, construct meaning, and attain pertinent cognitive strategies.

EPILOGUE: A SHARED COMMITMENT TO EQUITY

The Epilogue brings closure to the discussion of adolescent-centered differentiation with a focus on collaboration. Through collaboration, teachers in heterogeneous classrooms encourage high levels of respect and concern among students in high levels that transcend intellectual, cultural, and economic differences. The section showcases project-based learning as a collaboration strategy that works well with all adolescent learners.

GLOSSARY OF DIFFERENTIATION TERMINOLOGY

The final section of the book is an annotated Appendix of relevant differentiation terminology. Throughout the book these terms are boxed and highlighted to denote their importance in adolescent-centered differentiation.