

Introduction

A BRIEF HISTORY OF THE PARALLEL CURRICULUM MODEL

When *The Parallel Curriculum: A Design to Develop High Potential and Challenge High-Ability Learners* (Tomlinson, Kaplan, Renzulli, et al., 2002)¹ was published, the six of us who authored the work knew we had found ideas in the model to be interesting, challenging, and worthy of a great deal more thought and articulation. Since the original book's publication more than 6 years ago, we have spent a great deal of time talking among ourselves and with other practitioners about the Parallel Curriculum Model (PCM). These colleagues were as passionate as we were about the nature of high-quality curriculum and the increasing need for such learning experiences for all students. Our colleagues offered us invaluable viewpoints, opinions, suggestions, and probing questions. We surely benefitted in countless ways from their expertise and insights.

Our conversations led to the publication of two new books about PCM in 2006. *The Parallel Curriculum in the Classroom, Book 1: Essays for Application Across the Content Areas, K–12* featured articles that we hope clarified and expanded upon selected aspects of the model. We continue to hope that it helps educators think more deeply about important facets of the model and some of its nonnegotiable components.

The Parallel Curriculum in the Classroom, Book 2: Units for Application Across the Content Areas, K–12 invited readers to consider eight curriculum units that were designed using PCM. As we compiled the units, we sought to answer the question, "What is necessary in the design process of any Parallel Curriculum unit?"

We did not consider these units as off-the-shelf selections that a teacher might pick up and teach. Rather, we viewed the eight units as professional development tools helpful to any educator who wanted to reflect on one way of creating thoughtful curriculum.

Over the last 2 years, we continued to engage in conversations about the nature of curriculum models and how they can be used to create rigorous learning opportunities for students. As before, these conversations ultimately led us to two additional projects. The first was to create an updated version of the original publication. This second edition of PCM was completed in spring 2008 and is called *The Parallel Curriculum: A Design to Develop Learner Potential and Challenge Advanced Learners*

¹Tomlinson, C. A., Kaplan, S. N., Renzulli, J. S., Purcell, J. H., Leppien, J. H., & Burns, D. E. (2002). *The parallel curriculum: A design to develop high potential and challenge high-ability learners*. Thousand Oaks, CA: Corwin.

(Tomlinson et al., 2008)². The second edition of PCM extends our understanding of how this framework for curriculum development can be used to create, revise, or adapt curriculum to the needs of all students. In addition, it explores the concept of Ascending Intellectual Demand for all learners in today's heterogeneous classrooms.

The second project was the creation of a series of curriculum units, based on PCM, that could be used by practitioners. To address the varying needs of teachers across the K–12 grade span—as well as different content areas—we decided to create a series of five publications. The first publication is dedicated to the elementary grades, K–5. It features lessons and curriculum units that have been designed to address the needs of primary and elementary learners.

The last four publications span the secondary grades, 6–12. Each of the four publications focuses on a different content area: English/Language Arts, Social Studies/History, Science, and Mathematics. It is our hope that the lessons in each not only underscore important and discipline-specific content, but also illuminate the four parallels in unique and enduring ways.

We could not have completed these tasks without the invaluable assistance of two new team members. Cindy Strickland contributed to both publications in 2006, and she also created *The Parallel Curriculum, Second Edition: A Multimedia Kit for Professional Development*. Marcia Imbeau is also a long-time user and trainer in PCM. She contributed her editing talents to the K–5 book in this series.

THE PARALLEL CURRICULUM MODEL: A BRIEF OVERVIEW

A wonderfully illuminating fable exists about seven blind men who encountered an elephant. Because each man felt a different part of the beast, none was able to figure out the true nature of the gigantic creature.

Did you ever stop to think that students' perceptions about their learning experiences might be as limited as the perceptions the blind men had about the nature of the elephant? Perhaps, like the blind men, students learn only bits and pieces of the curriculum over time, never seeing, let alone understanding, the larger whole that is mankind's accumulated knowledge.

What if we were able to design curriculum in a multifaceted way to ensure that all learners understand the following: (1) the nature of knowledge; (2) the connections that link humankind's knowledge; (3) the methodology of the practitioner who creates knowledge; and (4) the fit between the learner's values and goals and those that characterize practicing professionals? How would classrooms be different if the focus of curriculum was *qualitatively differentiated curriculum* that prompts learners not only to accumulate information, but also to experience the power of knowledge and their potential role within it?

PCM suggests that all learners should have the opportunity to experience the elephant and benefit from *seeing the whole*. Moreover, as students become more

²Tomlinson, C. A., Kaplan, S. N., Renzulli, J. S., Purcell, J. H., Leppien, J. H. Burns, D. E., Strickland, C. A., & Imbeau, M. B. (2008). *The parallel curriculum: A design to develop learner potential and challenge advanced learners*. Thousand Oaks, CA: Corwin.

expert in their understanding of all the facets of knowledge, the curriculum should support students' developing expertise through ascending levels of intellectual demand. This overview of PCM will provide readers with a very brief summary of the model and an opportunity to see how the sum of the model's component parts can be used to create qualitatively differentiated curriculum for *all* students.

THE PARALLEL CURRICULUM: A UNIQUE CURRICULUM MODEL

What is a curriculum model? Why are there so many models to choose from? A curriculum model is a format for curriculum design developed to meet unique needs, contexts, goals, and purposes. To address specific goals and purposes, curriculum developers design or reconfigure one or more curriculum components (see Figure 0.1) to create their models. PCM is unique because it is a set of four interrelated, yet parallel, designs for organizing curriculum: Core, Connections, Practice, and Identity.

Figure 0.1 Key Curriculum Components

<i>Curriculum Component</i>	<i>Definition</i>
Content	The knowledge, essential understandings, and skills students are to acquire
Assessment	Tools used to determine the extent to which students have acquired the content
Introduction	A precursor or foreword to a lesson or unit
Teaching Methods	Methods teachers use to introduce, explain, model, guide, or assess learning
Learning Activities	Cognitive experiences that help students acquire, rehearse, store, transfer, and apply new knowledge and skills
Grouping Strategies	The arrangement of students
Resources	Materials that support learning and teaching
Products	Performances or work samples that constitute evidence of student learning
Extension Activities	Enrichment experiences that emerge from representative topics and students' interests
Differentiation Based on Learner Need, Including Ascending Levels of Intellectual Demand	Curriculum modifications that attend to students' need for escalating levels of knowledge, skills, and understanding
Lesson and Unit Closure	Reflection on the lesson to ensure that the point of the learning experience was achieved or a connection to the unit's learning goal was made

THE FOUR CURRICULUM PARALLELS

Let's look at these parallel designs through the eyes of Lydia Janis, a Grade 5 teacher who develops expertise in using the four parallels over several years. We will focus on one curriculum unit, Lydia's Civil War unit, to illuminate how it changes, or transforms, to accommodate the goals and purposes of each parallel. For the sake of our discussion, we treat each parallel as a separate unit. In reality, teachers use the parallels fluidly to address students' talent development needs. At the end of this summary, we will speak directly to when and how these parallels are used. Readers wishing for a more detailed analysis of Lydia's work are referred to Chapters 4 through 7 in both editions of *The Parallel Curriculum Model*.

The Core Curriculum

Lydia Janis sat at her kitchen table and looked over her textbook objectives for the Civil War unit as well as her state frameworks. She was troubled. She realized that the textbook objectives were low level; they simply called for students to identify and describe facts, such as "Describe how the Civil War began," and "Identify the differences between the North and South." Her frameworks, conversely, required different kinds of knowledge and understandings: "Explain reasons for conflicts and the ways conflicts have been resolved in history," and "Understand causal factors and appreciate change over time."

Lydia realized that the content embedded in her frameworks—concepts and principles—lay at the heart of history as a discipline. These key understandings were vastly more powerful, enduring, and essential to the discipline than the facts in the textbook objectives. She decided to keep her textbook and use it as a resource, however. After all, the information was right there on her shelf, she was familiar with the contents, and the topics covered were fairly well aligned with her state frameworks. But Lydia decided to replace the more simplistic objectives found in the text with the objectives found in the state frameworks.

Lydia realized that the change in *content* would necessitate changes in other curriculum components. Her *assessments* would need to match the content. Her assessment tools would need to measure—both pre and post—students' conceptual understanding in addition to basic facts about the time period. Her *introduction* would need to be retooled to prepare students for the various roles they would assume during the unit as analyzers of documents, data, maps, and events, and to lead them to the powerful understandings she had targeted.

Lydia's *teaching methods* would no longer be strictly didactic, such as lecture and direct instruction, but more inductive to support students as they constructed their own understanding of the time period. Her *learning activities* invited students to think about and draw conclusions about maps, documents, and related data. She supplemented the textbook with other *resources*, such as primary source documents, college textbooks, and the video series *The Civil War*. She imagined that she would have students who wanted to pursue *extension activities*. She gathered a few books about the Underground Railroad, Abraham Lincoln, and strategic battles. Finally, because she knew already that her students were at different stages in their ability to understand materials and content, she gathered print materials that varied in complexity from song lyrics and easy-to-decipher documents to several "dense" primary source documents so that *all* students could work at *ascending levels of intellectual demand*.

Lydia also altered the *products* that students created. In a variety of *grouping* arrangements, they completed document-analysis worksheets, ongoing concept maps, and time lines to chronicle their deepening understandings about conflict and the causal relationships of events that led up to the Civil War.

Lydia reflected on her work. She had made significant changes to her teaching and student learning, and she was confident in her improvements. She felt the power of the Core Curriculum as a foundational curriculum.

The Curriculum of Connections

Later in Lydia's career, she became aware of initiatives for interdisciplinary teaching. She was puzzled by some of the units that were labeled "interdisciplinary." A unit on Mexico, completed recently by fourth graders, came to mind. Students learned and performed the "Mexican Hat Dance," held a fiesta during which they broke a piñata and ate tacos, viewed a display of Mexican money, and drew maps of the migration route of monarch butterflies. "Yikes," she thought to herself, "this unit is an illusion. It *looks* integrated, but it lacks a powerful theme to tie the activities together!"

Lydia sat looking at the Core Curriculum unit on the Civil War that she had created a few years ago. She thought about the concept that earlier had focused her work: conflict. It reminded her that history repeats itself across people, time periods, and cultures: the Vietnam War, women's suffrage, the Civil Rights movement, and the civil war in Bosnia. This principle, "history repeats itself," held so much power. She realized that she could use the macroconcept, conflict, and the generalization, "history repeats itself," as the content centerpiece to help students build authentic and powerful *bridges* between their understanding of the American Civil War and other times, events, cultures, and people.

Lydia made preliminary plans for her Curriculum of Connections unit. She prepared some assessment prompts, with accompanying rubrics, to assess students' understanding of conflict and the idea that "history repeats itself." She developed a preassessment and essential questions for the introduction to clarify the focus for this unit: "What is a war? Do all conflicts have a resolution? Does history repeat itself?" She knew that her teaching strategies would need to help students make their own *bridges* for the connections among the American Civil war and other events and time periods. She decided to emphasize synectics, metaphoric thinking, Socratic questioning, problem-based learning, and debriefing. Her learning activities emphasized analytic thinking skills to help students in the comparisons and contrasts they needed to make and to encourage analogy making. Her supplemental resources were more varied and covered more events, cultures, and time periods than the resources she had used in her old Core unit, and the materials that she developed to scaffold student thinking included many more graphic organizers, such as Venn diagrams and reader-response questions. She was pleased when she realized that the products, grouping strategies, and extension activities would remain similar to those she had used in the Core Curriculum.

For students needing support with this unit, she developed more detailed graphic organizers; for those needing increasing levels of ascending intellectual demand, she thought of several unfamiliar contexts to which students could apply their new learning, such as the Irish conflict and additional revolutionaries such as Nelson Mandela and Elizabeth Cady Stanton. She tucked away these ideas for later use.

Lydia reflected on the modifications she had made. "This unit will benefit all my students, especially my abstract thinkers, students who value the 'big picture,' and

my scholars,” she thought. “It holds so much promise . . . much different than the ‘Mexican Hat Dance’ unit,” she mused.

The Curriculum of Practice

That summer, Lydia realized she could polish the same unit even more. Even though she had seen her students engaged and learning deeply about the Civil War, she began thinking more about how talent develops, specifically how students become acquainted with and skillful in the use of methodologies. “Now that students have the important ideas within and across disciplines, they need to learn how to act like a practitioner,” she thought to herself.

So began Lydia’s journey through the Curriculum of Practice. She sought out her state and national frameworks to identify the standards related to the role of the historian. To address them, she decided to invite students to read historical novels set during the mid-1800s and record the characters’ feelings, analyze images, and identify perspectives as well as note how they changed throughout the story. Second, she would deepen students’ understandings of these historical perspectives by asking them to read related primary source documents and find evidence to support the characters’ feelings and attitudes.

For students to complete these tasks, she decided to focus her teaching on the skills of the historian: the steps of historical research, taking notes, determining bias, and analyzing point of view, to name a few. She decided to demonstrate or model these skills for students and then use more indirect teaching methods, such as Socratic questioning, to help students construct their own analyses of primary source material. To help students focus on the methodology of the field, she decided to invite a local museum curator to take part in the introduction of the unit.

Lydia subsequently decided to scaffold students’ work with a learning contract. The learning contract required specific learning activities and also asked students to complete several short-term products as well as a culminating project, their historical research. Lydia provided them with a rubric to guide and assess their final work. Lydia knew her grouping formats needed to be fluid to honor students’ interests and to acknowledge that there were times when students needed to work alone or in pairs. This fluidity would be especially important if students elected to complete extension activities around self-selected research questions.

To accommodate students with sophisticated knowledge about the historical research process, Lydia prepared a list of more complex research topics that required ascending levels of intellectual demand, such as inviting advancing students to conduct oral histories on a topic of their choice.

Lydia reviewed the lessons that now reflected the Curriculum of Practice. “Wow,” she thought. “So far, I have three ways to optimize learning.” Lydia compared and contrasted the three sets of revisions to the Civil War unit: Core, Connections, and Practice. “Each approach is unique and powerful,” she thought. And she understood why teaching artful curriculum was a satisfying, career-long journey. “What will I discover next?” she wondered.

The Curriculum of Identity

It was a student who set Lydia on her next journey through the PCM. His name was Jacob, and she was amazed at his knowledge of American history. She envisioned this boy as a history professor, immersed in his own research about historical topics and mentoring others as they investigated questions not yet answered.

She spent time thinking about how she could morph her curriculum once more. The content for any Identity unit has a triple focus: her already rich Core curriculum; the ideas, attitudes, beliefs, dispositions, and life outlooks of a professional; and the learning profile of each student, including his or her interests, learning style preferences, values, and goals. Her task, she thought, would be to increase students' awareness about the degree of *fit* between their own emerging sense of self and the profile of practitioners in the field.

Lydia developed a survey of her students' abilities, interests, grouping preferences, goals, and cocurricular activities. Next, she sketched out the stages that students might go through as they went from an early awareness of and interest in history to self-actualization *through* the discipline. "This tool will help me identify where each student currently is on this continuum so I can support his or her progress," she thought.

Now familiar with the many teaching strategies available, Lydia selected visualization as an important method because students would have to move back and forth between their past self, current self, and future self. She also knew that she would use problem-based learning, simulations, and coaching to help students come to understand their place in the Civil War unit as they acted as historians, authors of historical fiction, or war correspondents.

She envisioned her students in varied grouping formats as they spent time with learning activities that required self-analysis and reflection, prediction, and goal setting, among others. Ideas for products came easily to Lydia: completed learning profiles, prompts that asked students to reflect upon and note patterns in their changing profiles, and prompts that invited students to reflect upon the fit between themselves and those of the guest speakers (i.e., a local historian and journalist), who would take part in the introduction to the unit.

Lydia anticipated several extension activities including explorations about notable leaders from the 1860s, as well as less well-known figures, such as the girls who dressed and fought as soldiers during the Civil War. As she gathered resources to support this unit and its potential extensions, she made sure that her collection featured a variety of introspective materials that would help students understand the beliefs, values, goals, achievements, and sacrifices made by practitioners and enable students' comparisons between their own emerging beliefs and attitudes and those of the professionals.

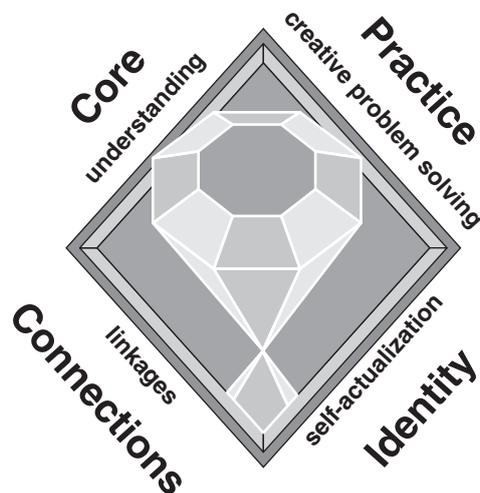
Lydia reflected on her continuing journey with the Parallel Curriculum Model. Her journey elicited a clarity that comes only with time and persistence. She now understood deeply the model's power and promise. It held the power to awaken and support a teacher's passion and focused creativity. Equally important, it held such promise for uncovering and supporting the gifts and talents of all students.

Lydia imagined each of her students as a diamond (see Figure 0.2). The model's four parallels—Core, Connections, Practice, and Identity—served as unique polishing tools to reveal the brilliance in each young person. The Core fostered deep understanding in a discipline, while Connections elicited the metaphoric thinking required to span the breadth of man's knowledge. Practice advanced the methodologic skills required to contribute in a field, and Identity cultivated the attitudes, values, and life outlook that are prerequisites to self-actualization in a field.

The Four Parallels: When and How

We began this discussion by talking about seven blind men, their limited perceptions about an elephant, and their ultimate realization that "Knowing in part may make a fine tale, but wisdom comes from seeing the whole." Lydia's work with each

Figure 0.2 Lydia's View of the PCM



Reprinted from *Teaching for High Potential* (Vol. IV, No. 1, April 2002), published by the National Association for Gifted Children, Washington, DC. www.nagc.org

of the parallels illustrates how different curriculum components can be modified to help students gain an understanding and appreciation for the whole of a particular discipline.

An infinite number of ways exist to draw upon the parallels. They can be used to *revise* or *design* tasks, lessons, or units. With a revised or designed unit in hand, a teacher can move back and forth across one, some, or all parallels in a single unit. Equally attractive, a teacher might use just one parallel to extend a Core unit.

Various individuals within a school can use the parallels differently. A classroom teacher can use the parallels separately for different purposes, or teachers can work collectively—within grade levels, across grade levels and subjects—to use the parallels to support the learning for all, some, or a few students. Furthermore, classroom teachers can use the parallels to modify learning opportunities for students who need something beyond the grade-level curriculum.

What is the driving force behind decisions about when and how to use the parallels? Decisions stem from teacher expertise, the learning goals, and, most important, the students themselves. We draw upon the parallels to make curriculum more meaningful, emotive, powerful, engaging, and more likely to advance energetically the abilities and talents of students.

The PCM holds the power to help students and teachers *see the whole* of what they are learning. It is our hope that curriculum based upon this model will optimize student learning and enhance the likelihood that all students will lead productive and fulfilling lives. We invite practitioners to read more about this model and join us on a professional journey that we believe will yield the joy and wisdom that come from seeing the whole. The possibilities are limitless.

THE FORMAT

The curriculum books that are part of our latest initiative share four features that will provide common threads to readers as they transition among the publications. First, each unit contains a section called *Background to the Unit*, which provides readers with a snapshot of the lessons or unit. If a series of lessons is provided—instead of a whole unit of study—the author may suggest ways to incorporate the subset of lessons into a larger unit. The author may also identify the parallel(s) he or she has elected to emphasize and his or her rationale for highlighting the Core Curriculum, the Curriculum of Connections, the Curriculum of Practice, and the Curriculum of Identity. The author may share his or her experiences regarding the best time to teach the unit, such as the beginning of the year or well into the last half of the year. Finally, the author may share what students are expected to know before the unit is taught as well as resources that would support the teaching and learning activities.

The second common element is the *Content Framework*. One of the nonnegotiables of PCM units is that they lead students explicitly to a conceptual understanding of the topics and disciplines on which they are based. Thus, each set of lessons or unit contains a list of concepts, skills, and principles that drive the teaching and learning activities. We also included the national standards addressed in each unit and lesson.

Unit Assessments is the third common element. Within this section, authors have the opportunity to describe the assessments that are included within their lessons. Some authors, especially those who supplied an entire unit of study, included preassessments that align with a performance-based postassessment. All authors have included formative assessments. Naturally, scoring rubrics are included with these assessments. In many cases, authors describe the nature of students' misconception that surface when these performance measures are used as well as some tips on how to address students' mistaken beliefs.

The final common element is the *two-column format* for organizing the lessons. In the left-hand column, authors sequence the instruction in a step-by-step manner. In the right-hand column, readers will hear the author's voice as he or she thinks out loud about the introduction, teaching and learning activities, and closure. Authors provide many different kinds of information in the right-hand column, including, for example, the following: teaching tips, information about student misconceptions, and suggestions on how to differentiate for above-grade-level or below-grade-level students.

OUR INVITATION . . .

We invite you to peruse and implement these curriculum lessons and units. We believe the use of these lessons will be enhanced to the extent that you:

- **Study PCM.** Read the original book as well as other companion volumes, including *The Parallel Curriculum in the Classroom, Book 1: Essays for Application Across the Content Areas, K–1*, *The Parallel Curriculum in the Classroom, Book 2: Units for Application Across the Content Areas, K–12*, and *The Parallel Curriculum, Second Edition: A Multimedia Kit for Professional Development*. By studying the model in depth, teachers and administrators will have a clear sense of its goals and purposes.

- **Join us on our continuing journey to refine these curriculum units.** We know better than to suggest that these units are scripts for total success in the classroom. They are, at best, our most thoughtful thinking to date. They are solid evidence that we need to persevere. In small collaborative and reflective teams of practitioners, we invite you to field test these units and make your own refinements.
- **Raise questions about curriculum materials.** Provocative, compelling, and pioneering questions about the quality of curriculum material—and their incumbent learning opportunities—are absolutely essential. Persistent and thoughtful questioning will lead us to the development of strenuous learning opportunities that will contribute to our students' lifelong success in the 21st century.
- **Compare the units with material developed using other curriculum models.** Through such comparisons, we are better able to make decisions about the use of the model and its related curriculum materials for addressing the unique needs of diverse learners.

THE SCIENCE BOOK, GRADES 6–12

This volume contains four units and sets of lessons. The first is a Grades 6–8 science unit, *Genetics: Our Past, Present, and Future*. Lindsey Asbury designed this seven-lesson unit to introduce her students to classical genetic concepts, including the structure and function of DNA, Punnett squares and predicting heredity, and dominant and recessive genes while also providing an opportunity for them to examine the cross-disciplinary relationships—how one field may influence the findings in another field of study.

Julie Martinek created the second unit, *The Exxon Valdez Oil Spill: What's At Stake? The Convergence of Science and Society*. It is designed for students in Grade 6 and focuses on how personal, stakeholder, and scientific perspectives shape the decision-making process as they explore the Exxon oil spill disaster. Across the lessons in this unit, Julie provides opportunities for her students to explore how society and science often find themselves in conflict with one another based on the various perspectives each possess.

Kristina Doubet created the third unit, *Systems: An Integrated Approach to Science and English Instruction*, for students in Grades 9–10. The series of four integrated lessons focuses on the Curriculum of Connections, and students are provided with multiple learning opportunities to understand both disciplines through the macroconcept of *systems*. The English instruction is based on the dynamic interaction among Kino, his family, and society in John Steinbeck's *The Pearl*. The complement for this dynamic literary interaction in the science field is the cell and its various structures.

The final unit, by Fie Budzinsky, *The Periodic Table: Getting to Know and Appreciate the Elements and Their Families*, was created for high school sophomores. The five lessons are different from the traditional lessons about the periodic table because these lessons are highly interactive and constructivist. Students are required to explore the principles and concepts in multiple ways: lab explorations, kinesthetic activities, research that requires a deep understanding about the multiple influences that shape scientific understandings, and creative writing. This Core Curriculum unit—if fully implemented—requires about twenty 45-minute periods to complete.