Hitting the Mark: Strategic Planning for Academic Rigor

By Dutchess Maye

This article presents a comprehensive example of academic instruction in one elementary school in which administrative and teacher leaders decided to take a stand for students by examining the extent to which instruction was hitting or missing the mark of academic rigor. As a consultant in the school, the author found several areas where the participants could significantly improve instructional practice to increase academic rigor. Perspectives on strategic planning to align instruction to standards, to develop higher level questions, and to promote student automaticity are based on conclusions drawn from classroom observations.

Introduction

The Common Core State Standards (CCSS) Initiative establishes a single set of common educational objectives for kindergarten through Grade 12 in English language arts and mathematics. Forty-five American states, the District of Columbia, four territories, and the Department of Defense Education Activity have adopted the Standards as a basis to determine what every student should know and do to be college- and career-ready (Common Core State Standards, 2010).

With the implementation of the Standards, school administrators, curriculum facilitators, and other educational leaders have become increasingly obsessed with the concept of academic rigor—and for good reason. Although Blackburn (2008) and others agreed there is no one concrete definition of *academic rigor*, the mission of the CCSS comes pretty close: "The standards are designed to be *robust* and *relevant to the real world*, reflecting the *knowledge and skills* that our young people need for success in *college and careers*" (CCSS, 2010, p. 1). Furthermore, Wagner (2006) succinctly defined the outcomes of rigorous instruction as creating a "jury-ready" populace who can "analyze an argument, weigh evidence, recognize bias (their own and others), distinguish fact from opinion, and be able to balance the sometimes competing principles of justice and mercy" (p. 29). If one examines each of Wagner's expectations and plots them on Bloom's Revised Taxonomy Table according to the tenets outlined by Anderson and Krathwohl (2001) in *A Taxonomy for Learning, Teaching, and Assessing: A Revision to Bloom's Taxonomy of Educational Objectives*, one would find that Wagner's objectives fall at the upper end of the cognitive domains. In essence, Wagner concluded that college- and career-ready students should be able to analyze and evaluate conceptual knowledge and apply underlying procedures for concluding a verdict.

Thus, much of what the "frightening" new standards call for in the form of academic rigor is no different than what has been advocated in education since Benjamin Bloom's taxonomy originally surfaced in 1956. The astonishing revelation is that many teachers are

still unsure exactly how the taxonomy should be used to align instruction, learning, and assessment, and, as a result, instruction and, in many cases, assessments tend to focus on recalling facts and understanding concepts—missing the mark of bigger academic gains that come when students are expected to make decisions about the implementation of procedures, determine points of view, evaluate and critique these points of view against specified criteria, and create alternative perspectives based on conceptual understandings.

This article presents a comprehensive example of academic instruction in one elementary school in which courageous administrative and teacher leaders decided to take a stand for students by examining the extent to which instruction was hitting or missing the mark of academic rigor. As a consultant working with these educators who were so willing to look at themselves, I found several areas where instructional practice could be significantly improved to increase the intent and extent of academic rigor. With a history of low performance and a high-poverty student population, but with funds from a national grant at their aid, school leaders at *Courageous Elementary* were determined not just to eliminate their school's state-defined status as "in need of immediate improvement" but also to eliminate low expectations, improve teacher practice, and increase student outcomes for both learning and living by advancing academic rigor. Dubbing the school *Courageous Elementary* is not only appropriate as recognition of the school leaders' initiative to implant rigor but also for the teachers' willingness to participate, their eagerness to receive feedback, and their courage to look at, reflect upon, and embark on the arduous journey of changing their practices.

To begin this process, administrators wanted a clear picture of what was currently happening in K-5 classrooms. Although the entire school population was engaged in the initiative, data from Grades 3-5, where there was a concentrated focus on testing, were of primary interest and thus the focus of my work. My observations of classes were guided by the Rigor/Relevance Framework® (see Figure 1) taken from the International Center for Leadership in Education. The Framework's vertical axis incorporates Bloom's Taxonomy, which delineates cognitive processes from the lowest order to the highest. The horizontal axis is based on five levels of knowledge application that graduate in complexity from low use within the discipline to high use in solving real-world problems. The Framework is thus comprised of four quadrants. Quadrant A represents recall of information and, although Quadrant C represents more complex thinking, both Quadrants A and C rest within disciplinary knowledge that is gained for its own sake. Quadrants B and D, on the other hand, represent high degrees of application of knowledge. Quadrant B includes applying knowledge to real-world problems, and Quadrant D expands that application to analyzing, synthesizing, and evaluating to solve such problems (International Center for Leadership in Education, 2012).

Use of the Rigor/Relevance Framework® as an observation rubric allowed me to highlight where the majority of instruction took place based on the observation of 12 teachers (four teachers each in Grades 3, 4, and 5) over a period of 6 days. Teachers were each observed twice during the 6-day period for 30-minute intervals. The dots represented on Figure 1 indicate points of instruction, learning tasks, and assessments.

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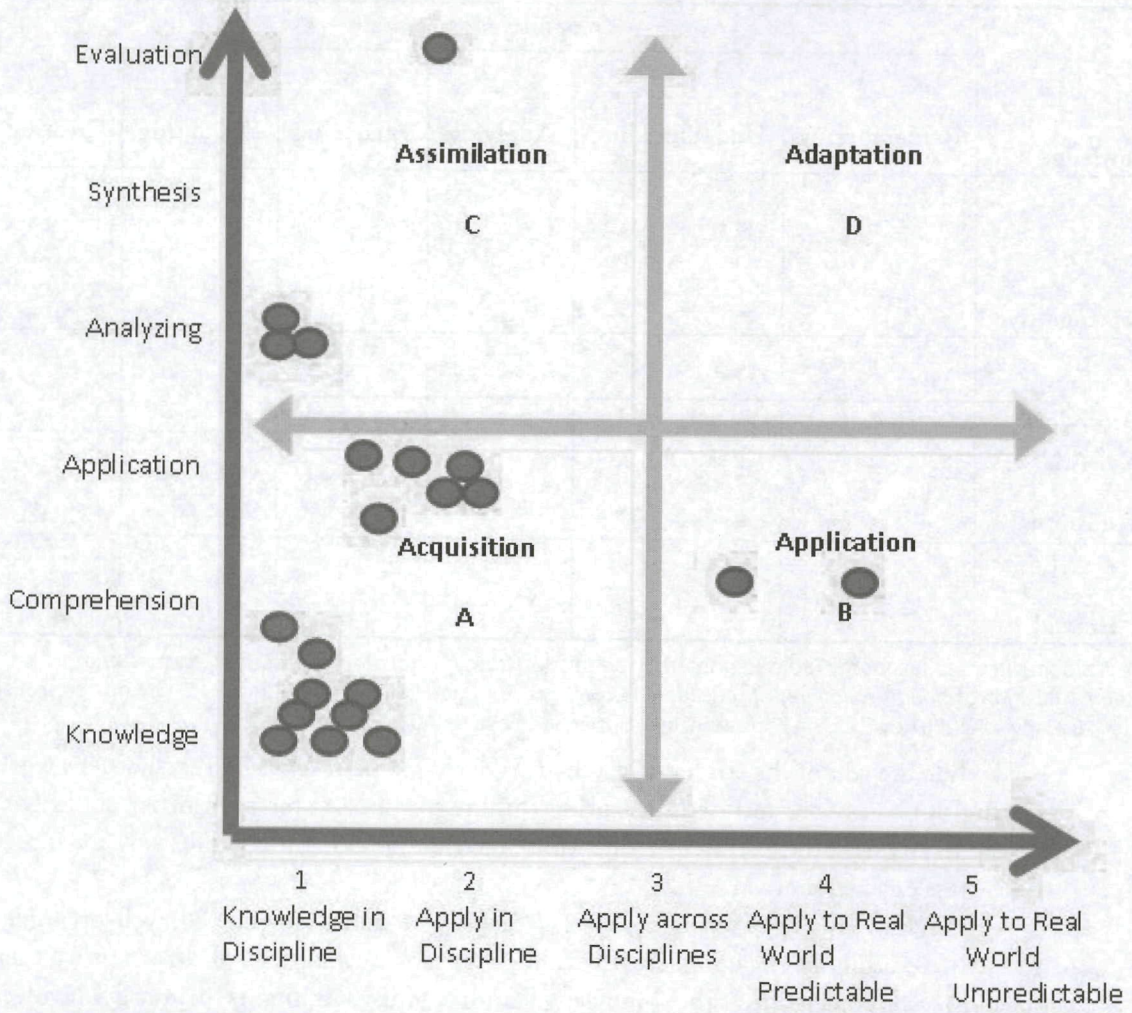

Figure 1. Rigor/Relevance Framework® Observation Rubric (based on Rigor/Relevance Framework®, ©International Center for Leadership in Education, 2012). Used by permission.

In analyzing observations, I also relied heavily upon the Revised Bloom's Taxonomy Table (see Figure 2). The Table's rows delineate the knowledge dimensions, and its columns represent the cognitive processes dimensions. To analyze educational objectives effectively, educators need to identify the knowledge students are expected to acquire and the cognitive skills they are to perform. Once these dimensions are identified, educators can plot the objective in the Taxonomy Table's corresponding cell. Instruction, learning tasks, and assessments can be then be aligned to address the intended objective, as is explained later in this article.

Findings

As illustrated by Figure 1, the majority of instruction was concentrated in Quadrant A, focusing on students' acquisition of knowledge and ability to recall factual information within the discipline. Some teachers' instruction focused on applying knowledge within the discipline, but such was the case primarily in mathematics—a discipline that lends itself more readily to applying procedures. One teacher did situate instruction at the upper level of Quadrant C by engaging students in evaluative skills such as self-assessing their own math work, but large-scale impact was lost because students either worked individually or self-assessment actually involved one student who reworked a math problem at the

Knowledge	Cognitive Processes					
	1. Remembering	2. Understanding	3. Applying	4. Analyzing	5. Evaluating	6. Creating
D. Metacognitive						
C. Procedural						
B. Conceptual				3.RI.2		3.RI.1
A. Factual						

Figure 2. Bloom's Revised Taxonomy Table. Reprinted by permission from *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, Abridged Edition, 1st Edition, by L. W. Anderson, et al., 2001, p. 28. Copyright 2001 by Pearson Education, Inc., Upper Saddle River, NJ.

board while the rest of the students watched. Working in pairs assessing each other's work, pointing out missteps, and demonstrating thinking processes for each other could have resulted in larger gains in student acquisition of evaluative skills and would have promoted whole-class engagement.

Although many of the teachers' learning tasks were tightly structured, well-organized and facilitated, highly engaging, creative, and—for lack of a better word to capture their appeal to students—*cute*, the knowledge and cognitive domains primarily involved students in remembering and understanding information through activities that required listing, identifying, finding, naming, defining, reciting, recognizing, and applying content information within the discipline through rote, perfunctory tasks. The effort and energy teachers put into designing these cute, lower-level learning tasks were quite impressive but ultimately lost luster as the objectives lacked academic rigor. For example, the third grade teachers had spent considerable time collecting an interesting assortment of well-preserved food containers (e.g., Lean Cuisine boxes, Crystal Light canisters, egg cartons, etc.) for a number of math activities that would fall under the title *Grocery Madness*. The genius of their concept rested in the fact that, as they varied the objectives and consequently altered the learning tasks, *Grocery Madness* could be used continuously throughout the academic year to facilitate learning a number of math skills. However, the learning activity witnessed during the observation and the future planned activities that one teacher shared with me revealed that the teachers did not recognize the potential for academic rigor in the *Grocery Madness* concept. Primarily, the planned activities required students to select items from the grocery contents for the purposes of calculating and estimating sums. Although such tasks do not merely require recalling facts, they do rely on students executing "a sequence of steps that are generally followed in a fixed order..." and when "...performed correctly, the end result is a predetermined answer" (Anderson & Krathwohl, 2001, p. 77).

To move the learning task beyond simply *executing*, teachers might require students to apply knowledge through *implementing*, which requires students to use other cognitive

processes such as *understanding* and *creating* (Anderson & Krathwohl, 2001). For example, one way of infusing academic rigor using the *Grocery Madness* items would be to require students to create balanced, healthy meals for a four-person household under the constraints of a weekly budget. Such a learning task requires a number of mathematical skills required by the CCSS, such as "using multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g. by using drawings and equations with a symbol for the unknown number to present the problem" (Math CCSS 3.OA.e). However, such a task also requires students to apply content knowledge to real-world problems across disciplines and not simply use real-world objects to perform rote procedural applications. Furthermore, rather than relying on a random grab-and-add activity, the revised learning task generates strategic purpose to the selection of grocery items by requiring that the student understand what constitutes a balanced meal and how to create healthy options for four individuals within a predetermined monetary limit. To infuse rigor in *Grocery Madness* or any learning activity—cute or not—requires a tight alignment of standards, instruction, and learning tasks that can only be accomplished through strategic planning.

Strategic Planning

Alignment. Strategic planning ensures materials, instruction, learning tasks, and assessments are aligned to the standard(s). In many classrooms I observed, what students were expected to know and do was *related* to the standard but not aligned tightly enough for students to demonstrate acquisition of the intended skill. It is essential that teachers carefully examine the targeted standards first and then select the resources, reading selections, math content, informational texts, and so forth that provide exemplary material for demonstrating the targeted skills. The observations revealed that many teachers were still teaching sequentially, following the textbook and testing recall of the text. To ensure that skills are taught with the appropriate content materials, teachers should determine both the knowledge and the cognitive skills the standards require by plotting them on Bloom's Taxonomy Table (see Figure 2).

For example, one of the English language arts CCSSs requires students to "ask and answer questions to demonstrate understanding of the text, referring explicitly to the text as a basis for the answers" (CCSS 3.RI.1). The key point of the standard is that *students* are to ask and answer questions. Students should be doing the *asking*, which relates to academic rigor because students must *create* questions based on their conceptual understanding of the text and *analyze* by breaking the text into its individual organizational parts of importance. In many cases, when this standard was identified on lesson plans as the target of instruction, learning, and assessment, teachers did the asking and students were only responsible for answering—oftentimes without any deference to the condition of the standard that indicates referring to the text for answers. Plotted on the Taxonomy Table (Figure 2), this standard would correspond to *Creating Conceptual Knowledge* (B6) because students would be generating or creating questions and answering them based on their conceptual understanding of the text.

Direct teacher instruction related to this standard, then, should involve the teacher modeling the actions under the conditions of the standard. The actions would be asking and answering questions that demonstrate understanding of informational text; the condition would be referring explicitly to the text for a basis for the answers. For students to acquire the skills demanded by the standards, they would need to have both guided

and independent practice with a variety of informational texts over time. These methods would provide multiple opportunities to practice (a) asking and answering questions to demonstrate their understanding of the text, and (b) referring explicitly to the text for a basis of their answers.

Furthermore, although instruction might be targeted to this particular standard, other prerequisite skills and standards are and should be included. For example, another standard relates to analyzing the text and requires that students "determine the main idea of a text; recount the key details and explain how they support the main idea" (CCSS3. R1.2). Plotted on the taxonomy table (Figure 2), this standard corresponds to *Analyzing Conceptual Knowledge* (B4). In this case, students must break apart the whole to find organizational coherence and distinguish relevant and irrelevant information based on a conceptual understanding of the text. Asking and answering questions (from CSS 3.RI.1) could be centered on the main idea and key details as indicated in this second standard (CCSS 3.RI.2). Additionally, students should have specific procedures to apply for generating questions, such as using Bloom's Question Stems (Pohl, 2000), which would ensure the questions do not simply fall into Quadrant A of the Rigor/ Relevance Framework®. Students need teacher modeling and sufficient guided and independent practice to perfect the craft of generating higher-level questions that demonstrate their understanding of the text and, in the extended case, their understanding of the main idea and key details as required by the second standard.

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The key, ultimately, is aligning materials, instruction, practices, and assessments that require students to do the asking, the answering, and the referring to the text as well as distinguishing the main idea and key details. Assessments should include *cold* texts—reading selections that students have not encountered in class—giving students authentic occasions to demonstrate skills using new content and not simply to recall information from previously read texts. Alignment requires strategic planning to obtain proper resources that not only meet the requirements for text complexity outlined in the CCSS but that are also contextually rich enough for students to demonstrate the targeted skills.

Questioning. Strategic planning for teachers' questioning is also a critical component for increasing academic rigor. As noted earlier, teachers in the classes observed were doing the majority of the questioning. On average, teachers were asking 5 to 10 questions at the start of a lesson and more than 30 during the course of instruction. Their questions were unplanned, unstructured, and, in some cases, unanswerable. Because their questions tended to be cursory, on-the-spot constructions, teachers often received flat, one-word, half-hearted responses from students. Their questions fell into Quadrant A of the Rigor/ Relevance Framework®, requiring students to recall detailed facts from previous lessons,

recite definitions, list examples, recount processes, and so forth. Even when their questions applied to the real world, teachers only required students to make small transferences to their own feelings about the content. Because questioning is such an inherent part of what teachers do, they sometimes do so without preparing—or waiting. In observed classes, not extending sufficient wait time ended in unintentional surrender: teachers had an uncanny and unconscious tendency to answer their own questions.

To address these issues, I encouraged teachers to implement two strategic-planning methods related to questioning. The first was *Plan 5*. Out of the multitude of questions teachers were asking during a lesson, teachers were required to plan at least five questions that directly addressed the targeted standard(s) and that employed Bloom's Question Stems (Pohl, 2000), specifically including the cognitive domains of analyzing, evaluating, and creating. In addition, when getting responses and giving feedback, teachers were encouraged to restate, rephrase, and reinforce students' replies to clarify and validate students' answers for the benefit of the entire class. Furthermore, teachers were encouraged to give specific, detailed feedback such as *You summarized the statement well,* or *Thank you for providing details to help us visualize your viewpoint,* or *You have identified the influences sequentially. Now, where in the book can we find support for your organization?* rather than flat responses such as *Right, Good,* or *Exactly.*

In addition to *Plan 5*, teachers were encouraged to ask questions without attaching a student's name to the question. For example, the question phrased as *Rashawn, can you tell us the pros of wearing school uniforms as presented in the text?* makes Rashawn solely responsible for the question while unconsciously making other students less accountable for preparing a response. Teachers were also encouraged to give Rashawn and all students sufficient wait time. Generally, teachers extended about 3 seconds of wait time and, in many cases, less. However, if teachers are planning higher-level questions, as these teachers were encouraged to do, more wait time will be required. The higher the cognitive level of the question, the more wait time needed. I suggested a minimum of 20 seconds of wait time to be followed by cueing, rephrasing, scaffolding, and redirecting before the teacher surrendered to providing an answer. Teachers at *Courageous Elementary* confessed that, even beyond the complexities of understanding and implementing the new standards and aligning instruction accordingly, basic and fundamental practices such as providing sufficient wait time for well-planned questions took conscious and concentrated effort.

Automaticity. Among other recommendations, academic rigor cannot exist without student ownership of learning and the automatic application of strategies. The initial observations took place in the spring, and it was disheartening to witness not one teacher but, collectively, the entire fifth-grade team walking students through basic text-tagging procedures such as underlining the title, delineating paragraphs by brackets and numbers, circling illustrations, and so forth. Because teachers indicated this strategy had been in place school-wide since Grade 3, I questioned the necessity of investing 7 minutes of guided instructional time at the Grade 5 level in a preliminary procedure students should have owned by now—a task that required such a level of automaticity that it should have been performed mentally by students at this stage. The conclusion I drew from teachers' comments about students' lack of readiness to assume such responsibility actually related to the pervasiveness of teachers' lack of expectation for students to do so. Skills-based standards that require academic rigor also require students to own the processes and operate at a level of automaticity to demonstrate expected knowledge independent of the teacher. Because teachers did not extend the opportunity for students to perform

autonomously, the teachers themselves did not know what students were actually capable of doing on their own. Accordingly, teachers are encouraged to extend multiple opportunities for independent practice, use varied formative assessments, and institute procedures such as text tagging as prerequisite skills that move from concrete to abstract processes. Relinquishing spoon-feeding practices to increase automaticity, however, is contingent upon more deep-rooted professional learning related to building a school culture of high expectations.

Conclusion

Five conclusions I drew from *Courageous Elementary School's* journey toward implementing new rigorous standards actually highlight some fundamental concepts that have been at the core of education for the last 60 years. First, Bloom's Revised Taxonomy is still a viable tool for pinpointing the intended knowledge and cognitive skills of learning expectations. Plotting the CCSS on the taxonomy table tells exactly what students are expected to know and do and helps teachers align the materials, instructional practices, learning activities, and assessment tools that measure those expectations. Second, learning activities that are well-structured, highly engaging, and cleverly designed are ultimately worthless if they fail to meet the intended learning objectives. Third, effective questioning requires deliberate planning and conscientious practice. Fourth, teachers must hold high expectations for students to own the learning. Finally, professional learning is an ongoing, job-embedded, and reflective basic necessity.

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