The Eight Cs of Engagement:

How Learning Styles and Instructional Design Increase Student Commitment to Learning

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Every day, in every one of the United States' 14,000 plus school districts and in the majority of our 3 million plus classrooms, a small to mid-size miracle occurs. It begins when teachers lead discussions, deliver lectures, organize discovery labs, initiate practice sessions, and conduct student conferences. The success of these activities depends on the work, participation, and effortful engagement of students. Much of this work is challenging, some is necessarily a little tedious, and almost none of it resembles the activities students choose for themselves during the 185 days a year when they are not in school. And yet—here comes the miracle part—students by and large do participate, perhaps with less enthusiasm and more sarcasm than we would like, but often with grace and determination.

Since the mid- to late-1990s, student engagement has become an increasingly important issue among the research community, but teachers have always had engagement near the top of their list of concerns. In fact, the critics most likely to question teachers' power of engagement are none other than the teachers themselves. Our experience in working with teachers for nearly forty years suggests hardly a car rolls out of the school parking lot without a teacher replaying a moment, brooding over a lesson or a student, or wondering how she might engage her students in greater depth so that they might think, achieve, or just plain see "something more" the next time. This chapter is about that something more. In it, we seek answers to the following three questions:

1. What exactly is engagement?
2. What is the value of engagement?
3. How can we actively engage students in learning?

In answering this third question, we will take a close look at the roles that learning styles and instructional design can play in helping create the something more that is at work in all highly engaging classrooms.

What Is Engagement?

Over the years, we have asked thousands of teachers to describe this "more," this consequence of greater student engagement. Their lists have proved to be remarkably consistent. Below are ten of the most common responses from teachers.

If students were more engaged, they would . . .

- Show more initiative
- Stay focused and on task
- Pay attention
- Ask more questions
- Take more risks
- Find their own mistakes
- Develop their own ideas and perspectives
- Do their homework
- Take time to think
- Show more excitement

Teachers are usually able to step back from these lists and organize their thoughts into rubric-like ladders showing levels of student engagement—what they are looking for in student engagement and what they would prefer to avoid. For example, figure 1 shows an engagement rubric developed by a group of teachers from Upstate New York.

Figure 1: Rubric showing levels of student engagement.

Deep Engagement: Students take full ownership of learning activities, displaying high levels of energy, a willingness to ask questions, pursue answers, consider alternatives, and take risks in pursuit of quality.
Engagement: Students begin taking ownership of learning activities. Their involvement shows concentration and effort to understand and complete the task. They do not simply follow directions but actively work to improve the quality of their performance.
Active Compliance: Students participate in learning activities and stay on task without teacher intervention. However, their work has a routine or rote quality, and significant thought or commitment to quality is not evident.
Passive Compliance: Students follow directions in a rote or routine manner. They may be mildly distracted and thus may need some added teacher attention or direction to remain on task.
Periodic Compliance: Students' attention and participation fluctuates. They appear distractible and stall out easily when questions emerge. May require significant teacher attention and direction.
Resistance: Students appear "blocked"—unable or unwilling to participate in learning activities. May

require classroom management procedures or redesign of learning activities.

Does the rubric in figure 1 clarify what we mean by engagement? Yes, and no. Certainly the rubric gives us a clearer picture of what engagement looks like in the classroom. But engagement is a little like art: you might know it when you see it, but you have a much harder time coming up with a reliable definition. Even the research on engagement shows a kind of conceptual slipperiness, as terms like *participation*, *attention*, *interest*, and *on-task behavior* all seem to be used interchangeably throughout the literature.

This brings us to our next task, and we pursue it with insight derived from the great twentieth-century philosopher Ludwig Wittgenstein. Wittgenstein told us that a word's meaning is not found in its formal definition, but in its use. So we listened to Ludwig. We collected different uses and variations of the term *engage* from everyday life. We did not consult any scholarly journals. Over a two-week period, we recorded nearly fifty-five occurrences of the term just by keeping our eyes and ears open—and by tapping into a few old memories as well. The following are some of our favorites:

- "I'm terribly worried about her, she seems so . . . disengaged."
  —Worried parent of a teenager
- "I'll tell you what engagement doesn't mean. It doesn't mean agreement."
  —Political spokesperson on CNN debating establishing diplomatic relations with Cuba
- "Make sure brain is fully engaged before putting mouth in gear."
  —Popular 1970's bumper sticker
- "The board has engaged a young architect who has some interesting ideas about how to handle the mobile classroom situation."
  —School board member
- "Distentic contribulator"
  "Engaged"
  "Fortronic capacitator"
  "Engaged"
  —Old science fiction movie (dialogue approximated)
- "Annie Sullivan was the model of a totally engaged teacher."
  —C-SPAN book talk
- engage.com
  —Website that relies on user voting to make dating suggestions

All these mixed and varied uses of the term *engage* raised an obvious question for us: what do distracted teenagers, diplomatic relationships, gears on a spaceship, and dating websites have in common? Our first answer was *connection*. After all, each of these examples involves subjects that are engaged to, with, or in something beyond themselves. Consulting an etymological dictionary got us a little closer to solving the mystery of engagement: *engage* is from the Old

French *engagier*—to pledge. Engagement is something like a promise. And then—as it has a way of doing—life put it all together for us when Harvey's daughter announced she was engaged. That's when we finally got it. Engagement is more than a connection, more than a verbal promise. Engagement means *commitment*. This is our something more. Commitment—this is what we are looking for from our students, and you will notice that both the teachers' list of "mores" and their rubric described the signs of this commitment nicely: concentrated thought and effort, self-questioning, and an investment in quality. Sounds good, but it leads to our second question: is engagement up to the job? In other words, how much value does it really have in the classroom?

The Value of Engagement: What the Research Tells Us

Considering what we already know from listening to teachers, the research on student engagement should come as no surprise. Engaging classrooms, however they are defined in a particular study, lead invariably to gains in student achievement. In surveying the field, Fredericks, Blumenfeld, and Paris (2004) found that engagement correlates with higher levels of academic achievement and greater persistence on the part of students. In a more recent meta-analysis compiling the results from over seventy-five separate studies, Robert Marzano (2007) shows that students in highly engaging classrooms outperform their peers by an average of almost 30 percentile points. "Arguably," Marzano concludes, "keeping students engaged is one of the most important considerations for the classroom teacher" (p. 98).

The benefits of engagement go beyond grades and achievement scores. For example, a recent Michigan State University observational study of middle school teachers (Raphael, Pressley, & Mohan, 2008) showed that teachers who used a wide variety of techniques and strategies to engage students experienced almost no behavioral problems in their classrooms: "misbehaviors … were so rare in the highly motivating, engaging classrooms that we leave this study still not certain what the consequation policies were in any of the three highly engaging classrooms" (p. 53). This contrasts with classrooms defined as "low engaging" where it took "at least 10–15 minutes to begin class, which was often delayed further by behavioral disturbances" (p. 45).

The reasoning behind all of this is simple: if we do not design lessons and units that will strengthen students' commitment to learn, then we cannot expect them to take an active or in-depth approach to learning. In other words, if we fail to take student engagement seriously, then the best we can hope for from our students is superficial learning. And as Raphael, Pressley, and Mohan's (2008) study suggests, it is entirely reasonable to expect much worse.

This brings us to our third and final question: how do we actively engage students in our classrooms? Or, put into terms that align with our new understanding of engagement: how can we better earn the commitment to learn from all of our students?

Engagement Through the Lens of Learning Styles: the Eight Cs of Student Engagement

For over thirty-five years, we have been working with teachers, administrators, and their schools to help them differentiate instruction and address the needs of diverse learners. At the heart of this work has been a learning-styles model deeply influenced by the father of analytical psychology, Carl Jung (1923) and his groundbreaking theory of psychological types, which emerged from his observations on how people perceive and process information. What Jung discovered is that much apparently random human behavior is not actually random. People tend to develop clear preferences for certain kinds of behaviors and ways of thinking, or personality types. Years later, Katherine Briggs and Isabel Myers expanded on Jung's work to develop a comprehensive model of human differences embodied by their world-famous Myers-Briggs Type Indicator (1962/1998). We have adapted the work of these giants in psychology to the specific educational context of teaching and learning, and over the years we've refined our learning styles model to make it as practical and teacher-friendly as possible. Out of this work, we have identified four styles of learners (Silver, Strong, & Perini, 2001a):

- *A mastery* style that learns step-by-step and focuses on the practical
- An *understanding* style that learns by questioning and analyzing
- A *self-expressive* style that learns through innovation and imagination
- An *interpersonal* style that learns socially and by following personal feelings

As an extension of this work, we began investigating the relationship between learning styles and student engagement (Strong, Silver, Perini, & Tuculescu, 2003; Strong, Silver, & Robinson, 1995). We pursued this relationship between styles and engagement with the intent of helping teachers deepen their awareness of four natural human drives (fig. 2) that are the root sources of motivation for each style of learner:

Figure 2: The four human drives at the root of nearly all learning styles models.

Mastery learners…	**Interpersonal learners…**
are driven by *success*. They delight in developing new competencies and mastering skills that will earn the respect of others.	are driven by *relationships*. They long to interact with others, and they hope that their work is of value and interest to themselves and others.
Understanding learners…	**Self-Expressive learners…**
have a drive to *make sense of things*. This drive appears in their tendency to question, their love of puzzles, their passion for new ideas, and their sensitivity to flaws and gaps in logic.	are driven by *originality*. they long to be unique, to have their differences acknowledged, and to express those kernels within themselves that belong to them and no one else.

Since then, we have continued this investigation by using the *Learning Style Inventory for Students* (Silver & Strong, 2004) and teacher observations to identify students who show a particularly strong preference for each of the four styles. Then, through interviews with the students and their teachers, classroom observations, and analysis of the work students produced, we were able to identify a set of reliable motivators, or "levers" that teachers could pull to engage the drives that are indigenous to each of the four styles. We call these motivators the "Eight Cs of Student Engagement," and they are identified in figure 3.

Figure 3: The Eight Cs of Student Engagement.

We can engage Mastery learners' drive to succeed through… Competition and Challenge	We can engage Interpersonal learners' drive toward relationships through… Cooperation and Connections (to student's lives, feelings, and experiences)
We can engage Understanding learners' drive to make sense of things through… Curiosity and Controversy	We can engage Self-Expressive learners' drive toward originality through… Choice and Creativity

So how do we use the Eight Cs of Engagement to increase our students' commitment to learning? Here are some quick ideas to get you started.

Competition

There is no question that competition is motivating to many students, but if too extreme, competition can become a liability in the classroom. To maximize the motivational power of competition, focus classroom activities around mild and friendly forms of competition that allow everyone to experience success. For example, near the end of each unit, you might use well-designed learning games such as Teams-Games-Tournaments (DeVries, Edwards, & Slavin, 1978) or Vocabulary Jeopardy to help your students review and master key terms for the test.

Challenge

Why do people work so hard to ski down a double-black-diamond slope? Why do students choose to play the most difficult level of their favorite video games? The answer is because they love a challenge. You can increase the level of challenge in your classroom by providing tasks at three different levels and allowing students to choose the task they feel most capable of completing (called "graduated difficulty": see Silver, Strong, & Perini, 2007, based on the work of Musska Moston, 1972). More generally, you can foster a challenge-oriented classroom by letting your students know that you expect excellence and by daring them to go the extra mile.

Curiosity

Look for opportunities to puzzle your students, to engage them in solving mysteries associated with your content. For example, why not start a unit on the American Revolution with this question: How did an untested ragtag militia defeat the most powerful army in the world? Or a lesson on insects with these questions: Why do we need pests like insects, anyway? Would we be better off if we got rid of them? Provoke students to inquire, investigate, and go beyond the obvious with "Yes, but why?" questions: Yes, we use the Pythagorean Theorem to solve the problem, but why does $a^2 + b^2 = c^2$? Yes, mammals give live birth rather than laying eggs, but why?

Controversy

Our content areas are loaded with controversies, arguments, and intellectual disagreements. Invite students into the controversy. Challenge them to take and defend positions on the hot-button issues at the heart of your discipline. For example, Do women and men write differently? Was algebra invented or discovered? Is global warming more a result of human activity or natural causes?

Choice

You can easily capitalize on this powerful motivator by giving students more opportunities to make selections and decisions about their learning. Learning centers and Shared Interest Groups (small groups of students working together to learn about a topic of common interest) let students explore content in ways that work best for them, while choice-based assignments and projects offer students the chance to decide how to demonstrate what they have learned.

Creativity

Many students long to express their uniqueness and individuality. Look for ways to invite their creativity into your classroom through divergent thinking activities, nonroutine problem solving, metaphorical thinking (ask, for example, “How is a colony like a child?”), projects, and just about any way you can think of that allows students to put their own original stamp on what they are learning.

Cooperation

For many students, the greatest inspiration comes in knowing that they are part of a community of learners. Nurture this sense of belonging through cooperative learning activities, learning partnerships, small group work, and lots of classroom discussion. Or, the next time students conduct research, try Jigsaw (Aronson et al., 1978; Slavin, 1995), which organizes research projects around a highly effective cooperative structure.

Connections

Why do I need to learn this? Why does it matter to me? These are common questions from students, and in them we can hear students looking for—and not finding—a way to connect what they are learning to their lives beyond the school walls. It does not take much to let students express their own opinions or to encourage them to draw on their experiences before, during, or at the end of a lesson or unit. Include questions and activities involving students’ values, priorities, and experiences in your content. For example, When is rebellion justified? Have you ever used fractions to settle a dispute? What do you want to learn about spiders?

Designing for Engagement

We have sketched out the Eight Cs of Engagement, but the truth is, simply walking into a classroom with some good ideas for how to increase student engagement can just as easily lead to frustration as it can to active commitment from all students. And while the Eight Cs serve as a useful set of guidelines for student engagement, their real power is released through design. This correlates squarely with a key finding from the Michigan State University study of engaging teachers (Raphael, Pressley, & Mohan, 2008). All the highly engaging teachers in that study used a variety of instructional practices, which they coordinated into a well-thought-out plan. While there are several good design models, we believe that the best ones provide a simple but deep way of thinking about lessons and units. Following is the blueprint model we have developed with teachers during Curriculum Writing Camp sessions (Thoughtful Education Press, 2009).

The idea behind the blueprint is that well-designed lessons and units include five different types of learning experiences that help students construct knowledge from the ground up:

- **Knowledge anticipation,** or "hooking" students into the unit by capturing their attention, activating their prior knowledge, and preparing them for the learning to come
- **Knowledge acquisition,** whereby students actively make sense of the texts, lectures, and other sources of learning presented in the unit
- Time to **practice and process,** during which students explore content more deeply and master essential skills through modeling and coaching
- **Knowledge application**, which requires students to demonstrate the full scope of their learning through a summative assessment task, as well as track their progress along the way through formative assessments
- **Reflection**, or the opportunity to stand back from their learning so students can personalize what they have learned, form generalizations, and use their learning to develop future learning goals

In the next section, we will look at how a teacher named Mr. Cogito uses the blueprint in conjunction with the Eight Cs to design and deliver a highly engaging unit. Specifically, we will take an extended look inside Mr. Cogito's classroom over the first four days of a two-week unit on the Age of Exploration. These first four days constitute a mini-unit within the unit focused on the cultural, technological, and historical conditions that led to a new era of European exploration.

Directions: The left side side of the page explains where Mr. Cogito and his students are in the blueprint model and describes what is happening in the classroom. The right column, labeled "Design Elements," is left blank for you. As you read through Mr. Cogito's mini-unit, see if you can identify the signs of Mr. Cogito's commitment by using the right-hand column to record:

- how Mr. Cogito is engaging the various Cs;
- any tools, techniques, tasks, or strategies that Mr. Cogito uses; and
- how Mr. Cogito integrates the arts into his unit.

What Is Happening in the Classroom	Design Elements

Day One

*Day one is dedicated to **knowledge anticipation**. Mr. Cogito gets the most out of this introduction to the unit by capturing students' interest, activating their prior knowledge, helping them preassess their understanding of key vocabulary, and presenting the essential questions that drive the unit.*

Mr. Cogito begins by writing fifteen key terms related to the unit on the board, one word at a time. With each new word, students consider what they know about the term and make connections between terms to see if they can figure out what topic or "big idea" they will be studying.

After the fifteen words are written, the class comes to a consensus: the topic has something to do with "explorers." Mr. Cogito confirms his students' hypothesis by telling them the name of the unit—"Explorers or Exploiters?"—and asks, "What comes to mind when you hear this title? What do you associate with *explorer*? How about *exploiter*?" Using their learning logs, students generate a preliminary definition of both terms. After sharing and discussion, Mr. Cogito explains that this tension between exploration and exploitation will be a defining theme in the unit. "In fact," he says, "near the end of the unit, you'll be participating in a Circle of Knowledge discussion. You'll have the job of arguing whether the defining legacy of this period is exploration of new worlds or exploitation of native cultures. But before we get ahead of ourselves, let's come back to the new vocabulary words we'll be learning."

Mr. Cogito returns to the fifteen key vocabulary terms and asks students to assess their initial Vocabulary Knowledge Rating (VKR) understanding of each term using a simple VKR rating scale:

1 = I've never heard it.

2 = I've heard it, but I'm not sure what it means.

3 = I think I know it but need some clarification.

4 = I know it well and enough to explain it to others.

After rating their initial understanding of the terms, students compute and share their average VKR score for all fifteen terms. “Your challenge,” says Mr. Cogito, “will be to make sure that by the end of the unit, your total score is at least a 3.5. That way, you’ll know you have a good handle on the important terms in the unit.”

Next, Mr. Cogito presents the essential questions for the unit:

- What conditions made exploration possible?
- Who were the explorers, and what did they accomplish?
- What happened between the explorers and the native cultures they encountered? Should the explorers’ actions be admired or admonished?

“What I want you to do for homework,” he tells students, “is to review these questions carefully and to *be* a historian by asking yourself what else you would like to know about the Age of Exploration. Generate at least one more essential question of your own.”

Mr. Cogito also distributes the Assessment Menu for the unit and asks students to review it. The menu contains twelve tasks in all, four tasks for each of the three essential questions, with each task representing one of the four learning styles. For example, for the first essential question—What conditions made exploration possible?—students can:

- Select the five most important developments that led to Columbus’s voyage and create an annotated timeline. (Mastery Task)
- Compare and contrast the time leading up to Columbus’s voyage with the Space Race. (Understanding Task)

- Develop a flag that captures the "spirit of the age" and write an explanation of what the design elements represent. (Self-Expressive Task)

- Pretend they are Columbus and write a personal letter to Isabel and Ferdinand that will persuade them that the time is right for their journey. (Interpersonal Task)

Over the course of the unit, students will be able to choose their tasks, provided that they try tasks in different styles.

Day Two

On day two, Mr. Cogito focuses on ***knowledge acquisition.*** *Most of the day is dedicated to the Mystery Strategy (see Silver, Strong, & Perini, 2007) in which students work to answer the question, Why was the time right for Columbus in 1492?*

Students begin by sharing the questions they generated for homework and working with Mr. Cogito to put them into larger categories. For example, three students' questions relate to what life was like on ships at the time. "These are wonderful questions," Mr. Cogito says as he records them on a poster. "Let's keep our eye out for answers to these questions during the unit. And let's get started by getting some answers to one of our four essential questions: What conditions made exploration possible?"

Mr. Cogito shows a brief video of Neil Armstrong's walk on the moon and reads an excerpt from Kennedy's famous speech about the Space Race. Mr. Cogito then asks his class to consider this question: how could President Kennedy, in 1961, guarantee the American people that by the end of the decade the United States would safely land a man on the moon when the United States had not yet even put an astronaut into orbit? To generate some initial ideas, students use Give One, Get One: they generate two initial ideas on their own and then move around the room to collect four additional ideas from other students.

After collecting all of his students' ideas on the board, Mr.

Cogito draws a parallel between the first lunar landing and Columbus's first voyage. "Like landing a man on the moon," he says, "Columbus's journey to the New World was the result of a number of factors that came together at the right time. It's going to be your job as historians to figure out what these factors were using a strategy called Mystery. You'll be working in cooperative teams to figure out why the time was right in 1492 for the Europeans to discover two new continents." Mr. Cogito provides each team of students with an envelope of twenty-five clues to read, group, and label. After grouping and labeling the clues into categories, student teams will generate five hypotheses about why 1492 was an ideal time for Columbus's journey. Before students start working, Mr. Cogito models the thinking process involved for grouping clues. "First I read the two clues carefully. Then I ask myself, 'What is the topic? What does the clue say about the topic?' For example, these two clues both deal with religion."

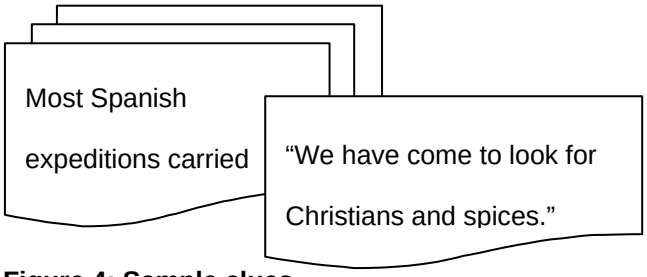

Figure 4: Sample clues.

Mr. Cogito goes on to show students how he searches for more religion clues and generates a hypothesis about the role religion may have played in Columbus's journey.

As students work to group clues and generate hypotheses, Mr. Cogito circulates around the room to listen in on groups' thinking. The class convenes so Mr. Cogito can explain that they will continue the learning process for homework: "You're going to read the first two sections of your textbook. As you read, you'll have to collect evidence that either supports or refutes each of your five hypotheses."

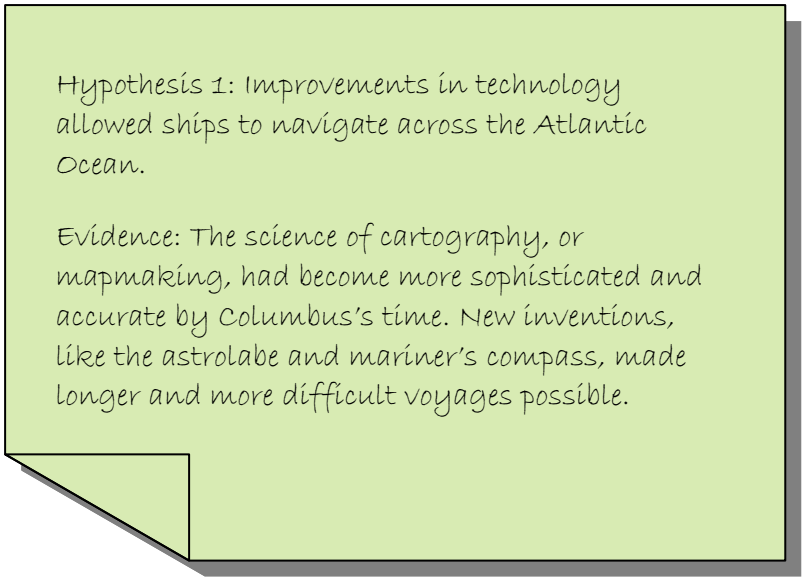

Figure 5: Sample student homework entry.

Day Three

On day three, Mr. Cogito pursues several purposes using a brain-based approach called New American Lecture (see Silver, Strong, & Perini, 2007). Mr. Cogito continues with ***knowledge acquisition,*** *while also helping students process that content more deeply through questioning and note making (****practice and process)****. The questions and students' notes also provide Mr. Cogito and students with good formative assessment information (****knowledge acquisition)****.*

Students share their hypotheses and the evidence they discovered in the textbook. After the discussion, Mr. Cogito provides his students with a cause and effect organizer that looks like this:

The 5 Cs: Why the Time Was Right for Columbus in 1492	
Causes for Exploration	*Possible Effects*

Competition among nations Control of travel to the East Commerce and middle-class comfort Creation of new technologies Courageous explorers	

He explains, “The Five Cs in this organizer correspond to the big ideas in your textbook reading.” Mr. Cogito uses New American Lecture to describe the critical information about each of the five major causes in small chunks. To both deepen and assess his students’ knowledge and understanding along the way, Mr. Cogito stops at different points throughout his lecture to pose a different question from this list:

- Why did Europeans want to travel to Asia? Which influential groups supported this travel?
- What was happening in the Middle East at the time that influenced Europeans’ desire to find a new route to the East?
- What developments made it possible for Europeans to travel where they had been unable to travel before?
- What other reasons might explorers have had for exploring new lands?

Day Four

The fourth day is dedicated to ***knowledge application*** *and* ***reflection****.*

Students synthesize what they have learned about the unit’s first essential question by choosing their first task from the Assessment Menu (timeline, comparative essay, flag, or personal letter) and working to complete it **(knowledge application).**

Before moving on to the next essential question, Mr.Cogito

asks students to look back on what they have learned so far (**reflection**). Students review the student-generated questions they recorded on day two and ask themselves if they have found any answers.

For homework, students continue their **reflection** by reviewing their VKRs to see if their understanding of the key terms has evolved.

Making the Commitment to Commitment

These are the commitments Mr. Cogito has made to his students:

First, he has a deep awareness of his students' learning styles and the learning drives that underlie them. More important, he rotates his use of the Eight Cs to engage different styles and drives. As the research of Robert Sternberg (2006) shows, teaching in this multistyle way leads consistently to the greatest gains in student achievement, because it "enables students to capitalize on their strengths and to correct or to compensate for their weaknesses, encoding material in a variety of interesting ways" (pp. 33–34).

Second, Mr. Cogito uses a wide variety of instructional tools and strategies. Mr. Cogito has a minilibrary of references on research-based instruction including *Classroom Instruction that Works* (Marzano, Pickering, & Pollock, 2001), *Tools for Promoting Active, In-Depth Learning* (Silver, Strong, & Perini, 2001), *The Art and Science of Teaching* (Marzano, 2007), and *The Strategic Teacher* (Silver, Strong, & Perini, 2007b). When it comes to delivering instruction, he relies on the tools and strategies in these texts to do most of the heavy lifting for him—and he is almost always pleased with the results.

Third, Mr. Cogito takes seriously the work of instructional design; he incorporates tools, strategies, and the Eight Cs into a cohesive model that keeps students actively engaged and allows them to make learning their own.

Mr. Cogito has made these commitments because he knows that commitment is reciprocal, that it requires mutual effort and yields mutual rewards. By making these same commitments, we encourage our students to give us that "something more" that we all hope for: their deep and abiding commitment to learn what we teach.

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