The Eight C's of Engagement:

How Learning Styles and Instructional Design Increase Students' Commitment to Learning

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Something More

Every day, in every one of America's 14,000 school districts and in the majority of her three-and-a-half-million classrooms, a small to midsize miracle occurs. It begins when teachers lead discussions, deliver lectures, organize discovery labs, initiate practice sessions, or conduct student conferences. All of these activities depend on the work, participation, and often effortful engagement of students. Much of the work involved is challenging, some is necessarily a little tedious, and almost none of it resembles the activities students choose for themselves on the 185 days 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'd like, but often with grace and determination as well.

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, wondering how

the next time she might engage her students in greater depth so that they might think, achieve, or just plain see something more.

This article is about that something more. In it, we seek answers to three questions:

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

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

What Do We Mean by 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"

What's more, teachers are usually able to step back from these lists and organize their thoughts into rubric-like ladders of what they're looking for and what they would prefer to avoid. For example, here's an engagement rubric developed by a group of teachers from Upstate New York:

Figure 1: Engagement Rubric

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. Attention may be mildly distracted and they may need some added teacher attention or direction to remain on task.

Periodic Compliance: Students' attention and participation fluctuates. They appear

distractable 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. Classroom management procedures or redesign of learning activities may be required.

Does this 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 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 float 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 spent weeks collecting different uses and variations of the term *engage*. Over a two-week period, we collected nearly 55 sightings just by keeping our eyes and ears open—and by tapping into a few old memories as well. Not one scholarly journal was consulted. Here's a collection 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 debating establishing diplomatic relations with Cuba, on CNN

"Make sure brain is fully engaged before putting mouth in gear" ~Classic 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

"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 and our personal favorite...

"What do you mean we're engaged?" ~Young man to a young woman, local coffee shop

All these mixed and varied uses raise the obvious question, "What do distracted teenagers, real and fictional gears, diplomatic relationships, dating websites, and surprised fiancés have in common?" A good first answer is connection. After all, each of these examples involves subjects that are engaged to, with, or in something beyond themselves. But when we permit ourselves to repair to an etymological dictionary, the solution to the mystery of engagement takes full shape: "From Old French, engagier, to pledge." Engagement is something like a promise. It means commitment. There's our something more.

Commitment: that's what we are looking for from our students, and you'll notice that both the teachers' list of "mores" and their rubric caught the signs of this commitment nicely: ownership, energy, concentrated thought, self questioning, and an investment in quality.

Sounds good, but it leads to our second question. Is engagement up to the job? How much weight does it have to throw around?

[&]quot;Distentic contribulator"

[&]quot;Engaged"

[&]quot;Fortronic capacitator"

[&]quot;Engaged" ~Ancient science fiction movie (dialogue approximate)

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're defined in a particular study, lead invariably to gains in student achievement. In surveying the field, Fredericks, Bluemnfeld, Friedel, and Paris (2003) argue that "there is considerable evidence in the research literature between engagement and positive academic outcomes." In a more recent meta-analysis compiling the results from over 75 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" (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" (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" (45).

The reasoning behind all of this is simple: if we don't design lessons and units that will earn students' commitment to learn, then we can't 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, or the Eight C's 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 Carl Jung and
by Katherine Briggs and Isabel Myers, whose groundbreaking work in personality types we
have adapted to the specific educational context of teaching and learning and refined over
the years to make as practical and teacher-friendly as possible. Out of this work we've
identified four styles of learners: 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; and an Interpersonal style that learns
socially and by following personal feelings. (Silver, Strong, & Perini 2001a)

As an extension of this work, we began investigating the relationship between learning styles and student engagement (Strong, Silver, & Robinson, 1995; Strong, Silver, Perini & Tuculescu, 2003). We pursued this relationship between styles and engagement with the intent of helping teachers deepen their awareness of the four natural human drives (Figure 4) that are at the root of nearly all learning style models:

Figure 2: Four Human Drives

Students with a strong drive toward mastery delight in developing new competencies and mastering skills that will earn the respect of others.	Students with a strong interpersonal drive long to interact with others. They hope that their work is of value and interest to themselves and others.
Students with a strong understanding drive are compelled 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.	Students with a strong drive toward self- expression 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 natural drives that are indigenous to each of the four styles. We call

these motivators the "Eight C's of Student Engagement," and they are identified in Figure 5 below.

Figure 3: The Eight C's of Engagement

We can engage the mastery drive through	We can engage the interpersonal drive through
Competition and Challenge	Cooperation and Connections (to student's lives, feelings, and experiences)
We can engage the understanding drive through	We can engage the self-expressive drive through
Curiosity and Controversy	Choice and Creativity

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

Competition. There's 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 so many people work so hard to ski down a double black diamond slope? Why do so many students choose to play the hardest level of their favorite video games? 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 (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 (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've 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, non-routine problem-solving, metaphorical thinking (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're learning.

Cooperation. For many students, the greatest inspiration comes in knowing that they're 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're learning to their lives beyond the school walls. It doesn't 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 any lesson or unit. Work questions and activities involving students' values, priorities, and experiences into your content (When is rebellion justified? Have you ever used fractions to settle a dispute? What do you want to learn about spiders?).

Designing for Engagement

OK, so now we have Eight C's. 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 C's 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" (25). 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. Below 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've learned, form generalizations, and use their learning to develop future learning goals.

In this section, we'll look at how a teacher named Mr. Cogito uses the blueprint in conjunction with the Eight C's to design and deliver a highly engaging unit. Specifically, we'll be taking 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.

On the left side we explain where Mr. Cogito and his students are in the blueprint model, and we describe what's happening in the classroom. On the right side, we highlight the specific elements of Mr. Cogito's design – the strategies and tools he's using and the C's he's engaging.

What's Happening in the Classroom	Design Elements
Day 1 is dedicated to knowledge anticipation . Mr. Cogito	
gets the most out of this introduction to the unit by	
capturing student interest, activating their prior knowledge,	
helping them pre-assess their understanding of key	
vocabulary, and presenting the essential questions that drive	
the unit.	
Mr. Cogito begins by writing 15 key terms related to the	Tool: Hook – 15 words, title
unit on the board, one word one at a time. With each new	withheld
word, students consider what they know about the term	Engages: Curiosity, Connections
and make connections between terms to see if they can	
figure out what topic or "big idea" they will be studying.	
After the 15 words are written, the class comes to a	
consensus: the topic has something to do with	Tool: Consensus Building
"explorers." Mr. Cogito confirms his students' hypothesis	Engages: Cooperation
by telling them the name of the unit—Explorers or	
	I

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

Tools: Associations/

Learning Log/

Preliminary Definitions

Engages: Connections

Strategy: Circle of Knowledge

(mentioned only)

Engages: Controversy,

Cooperation

Strategy: Vocabulary

Knowledge Rating

Engages: Challenge

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:

- 1. What conditions made exploration possible?
- 2. Who were the explorers and what did they accomplish?
- 3. 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 develop an annotated timeline. (Mastery task)
 - Compare and contrast the time leading up to Columbus's voyage with the Space Race.

Tool: Essential Questions **Engages:** Curiosity,

Controversy

Homework: Generate a question

Engages: Connections

Homework: Preview Assessment Menu

Engages: Choice, Creativity

(Understanding task)

- Develop a flag that captures the "Spirit of the Age" and write an exploration of what 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 your 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.

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 **Tool:** Group and Label

Engages: Connections

Tool: Hook

Engages: Curiosity

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 U.S. 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 25 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."

Tool: Give One, Get One

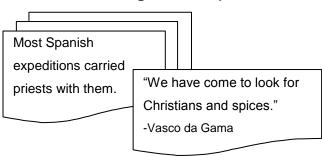
Engages: Cooperation

Strategy: Mystery

Engages: Curiosity, Creativity

Tool: Teacher Modeling

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'll 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."

Strategy: Reading for Meaning

Engages: Curiosity, Challenge

Figure 5: Sample Student Homework Entry

Hypothesis 1: Improvements in technology allowed ships to navigate across the Atlantic Ocean.

Evidence: The science of cartography, or mapmaking, had become more sophisticated and accurate by Columbus's time. New inventions, like the astrolabe and mariner's compass, made longer and more difficult voyages possible.

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 notemaking (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:

Tool: Cause/Effect Organizer

Engages: Curiosity

Figure 6: Cause/Effect Organizer

The 5 C's: 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 C's 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:

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

Strategy: New American Lecture

Engages: Curiosity, Connections 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, personal letter) and working to complete it (knowledge application).

Synthesis Task: Assessment Menu

Engages: Creativity

Before moving on to the next essential question, Mr.Cogito asks students look back on what they've learned so far (reflection). Students review the student-generated questions they recorded on Day 2 and ask themselves if they've found any answers.

Tool: Student-generated questions (revisited)

Engages: Curiosity

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

Homework: Revisit VKR

Engages: Challenge

Conclusion: 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 natural drives found in any classroom. More important, he rotates his use of the C's to engage different styles and drives. As the research of Robert Sternberg (2006) shows, teaching in this multi-style 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" (33-34).

Second, Mr. Cogito uses a wide variety of instructional tools and strategies. Mr. Cogito has a mini-library 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 & Science of Teaching* (Marzano, 2007), and *The Strategic Teacher* (Silver, Strong, & Perini, 2007). 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 pleased with the results.

Third, Mr. Cogito takes seriously the work of instructional design; he incorporates tools, strategies, and the Eight C's 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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