

Comprehension to What End?

Stephanie Harvey

A handwritten signature in light gray ink that reads "Stephanie Harvey". The signature is written in a cursive, flowing style.

When the quantum physicist and Nobel Laureate Richard Feynman was ten years old, he developed a reputation around the neighborhood as the kid who could fix anything. From as early as he could remember, Feynman loved to take things apart and put them together—toasters, lamps, you name it. Rumors spread that this boy was some sort of genius who seemed to be able to make anything work. A skeptical neighborhood businessman got wind of him, knowing that if there was even a smidgen of truth to these rumors, a kid who could fix anything would be pretty useful around the office. So one morning he asked young Richard to come by and take a look at a broken radio.

Feynman rotated the radio in his hands repeatedly and stared at it for what seemed like an eternity. Exasperated, the businessman finally asked “What are you doing? What is taking you so long? Can you fix it or not?” Feynman paused, looked up at him, and said simply “I’m thinking.” After several more moments engrossed in thought, Feynman attached a few wires and repaired it expeditiously. He soon became known

not only as the kid who fixed things, but *the kid who fixed things by thinking* (Feynman 1997).

Thinking! What a concept.

A similar story recounts how Albert Einstein's mother would put her five-year-old to bed each night by kissing his forehead, saying good night, and turning out the light. Young Albert, however, did not doze off. An hour or so later when his mother checked on him before turning in herself, she generally found him with his eyes wide, staring at the ceiling. One night she asked him, "Albert what's the matter? Why are you still awake?"

"I am wondering something," he answered.

"What could you possibly be wondering at this hour?" she implored.

"I'm wondering where the light goes."

"What do you mean where the light goes?"

"I am wondering what happens to the light when you flip the switch each night. Where does the light go?" (Harvey 1998).

Thinking and curiosity shine through in these stories and the innovations of these two physicists are a testimony to how inquisitiveness and thoughtfulness can lead to major contributions and big things in life. Unfortunately, when it comes to education, thinking and wonder have been in short supply of late. Real questions and deep thought have evaporated in many schools and been replaced by mind-numbing daily routines—filling in bubbles and blanks, finding the main idea in a paragraph, and listening endlessly to a teacher talk (Pianta et al. 2007) What a shame! Of all places that should be havens for thinking and incubators for wonder, schools ought to top the list.

But too often, it is the schools themselves that drum the thoughtfulness and curiosity right out of kids. Who can't picture a class full of charged-up kindergarteners bursting into school in September brimming with questions: Why is the ocean blue? Why do only tigers and zebras have stripes? Where did the cowboys go? Endless questions that might even drive us nuts, if they were not so enduringly charming. By fifth grade, however, the questions have all but disappeared. Kids get the idea that it is the teacher's job to ask the questions and their job to answer them.

So do schools actually kill off curiosity? Perhaps, but maybe they just wound it, since curiosity and the need to know, though gasping for air, are resilient dispositions. In her essay "The Curiosity Coma," Barbara Logan notes "How do children go from wanting to know everything under the sun to having so few questions? It is very simple. They learn it" (2010,1). Sadly, conventional schooling can suck the life out of wonder and amazement. But

Logan also reminds us that “most kids’ curiosity has not been killed: It has simply diverted into a coma. Their questions are trapped inside, awaiting a focused adult to release them” (1). Good news! Unlike death, we can emerge from comas.

In late 2009, on his CNN Sunday morning news show *GPS*, Fareed Zakaria asked Google CEO Eric Schmidt what he thought education should look like going forward. Schmidt answered succinctly: “Teaching will be learning how to ask the right questions. I was taught to memorize. Why remember it? Now you just need to learn how to search for it. Instantaneous access really changes your life. What never changes is the need for curiosity. What you really need to do is teach people to be curious.”

Curiosity and thoughtfulness are at the center of engaged teaching and learning. No two dispositions will better prepare our kids for what lies ahead. Education is always rife with buzzwords: outcome-based education in the 1980s, scientifically based research in the 2000s, and twenty-first-century skills and career and college readiness in 2010. Regarding the current college and career readiness message, who would argue with creating a curriculum that supports kids to be both career and college ready in the twenty-first century? But what does that look like, exactly? April 2010 marked the twenty-fifth anniversary of the Internet. Hard to believe that during my first twelve years of teaching, online research was not even a concept—let alone an option. Facebook only erupted onto the scene in 2004. Google didn’t exist in the early 1990s and now it’s a verb. Phones were stationary, for goodness sake. The careers of the future are as much a mystery to us now as Google, Facebook, and iPhones were ten years ago.

In November of 2009, Kylene Beers—the well-known educator, author, and outgoing president of the National Council of Teachers of English (NCTE)—gave her final presidential address. Standing in front of two giant screens, she spoke eloquently as slides of images rolled by, searing the speech in our minds. One of the first images to appear was a medieval map with primitively etched nation states and roiling blue waters rife with dragons and sea monsters. As a portrait of Christopher Columbus followed next, Beers asked us to consider Columbus’s plight. He may not have known what lay out there beyond the horizon—*here there be dragons*—but he knew how to read the night sky, how to use a sextant, how to watch the clouds. He knew sailing (Beers 2009).

And although we may not know what our kids will be doing when they leave school in 2012 and beyond, we know kids and we know teaching and

And it’s time for us to wake up!

—*Stephanie*

learning. So as the high-speed train of time and technology blur, we may not know what careers lay out there undiscovered beyond the horizon, but there is no doubt that our kids will always need to think and to wonder. Yong Zhou, the author of *Catching Up or Leading the Way: Education in the Age of Globalization*, shares that for the United States to remain the world leader in innovation and creativity, it must “cherish individual talents, cultivate creativity, celebrate diversity and inspire curiosity” (Richardson 2009/2010). Passion and wonder are contagious. It is our job as teachers to unleash every ounce of passion and wonder we can muster so our kids catch the curiosity bug rather than lapse into the curiosity coma—or worse, languish as curiosity dies on the vine. Teaching kids to think strategically and ask questions ranks at the top of our list of responsibilities in the twenty-first century.

Teachers get this. In the past twenty years, we have witnessed a “comprehension revolution” (Pearson 2008) in this country. Empowered by the research of P. David Pearson and his many colleagues (Pearson and Gallagher 1983; Pearson et al. 1992; Pearson and Duke 2001) and the work of literacy specialists and classroom practitioners across the country, as well as the authors of this book, great numbers of teachers have implemented explicit comprehension instruction in their literacy practice as well as in their content-area teaching. In the belief that thinking matters, and with a commitment to employing teaching practices based on sound research, they have built in time to teach kids comprehension strategies—to ask questions, make connections, draw inferences, evaluate and synthesize information, and (above all) to monitor their own thinking.

Even in this test-frenzied culture, where too many kids have been driven back to their seats for endless test prep and fill-in-the-blank drill sheets, many teachers have continued to push the comprehension movement forward by teaching their kids to think strategically and wonder expansively across the curriculum. And many report that reading has fundamentally changed in their classrooms as kids learn to think about text—about how it connects to their world, how it spurs questions and wonder, and how it nudges them to infer underlying themes and big ideas. But many also ask, “So what’s next? I’ve taught the comprehension strategies. Now what?”

So thirty years into this comprehension movement and counting is probably as good a time as any to stop and reflect on comprehension instruction. We can begin by asking ourselves, “Comprehension, to what end?”

Comprehension: To What End?

As in previous years, the content/process battle rages in education circles. The content folks stress that *what* we learn matters most, the content of learning. The process group emphasizes that *how* we learn is most critical. But frankly, this is a sham. Neither is useful without the other. Content and process both matter. Arthur Costa says “Cognition and content are inseparable” (2008, 22). We don’t teach kids to think so they can ponder their belly button. And there’s no good reason to memorize a bunch of disconnected facts without thinking about the information and putting it to work in some way.

Today, even in classrooms where teachers implement explicit comprehension instruction, strategies are too often viewed as an endpoint rather than a starting point. Strategy instruction even becomes perfunctory—kids making connections for the sake of it, teachers designing strategy units replete with fill-in-the-blank inferring packets, districts creating a comprehension scope and sequence that assigns strategies to grade levels (connecting in kindergarten, visualizing in first grade, questioning in second grade), and so on. We don’t teach a strategy and then clap our hands together with a “been there, done that” exclamation point. If teaching comprehension means getting out the lesson plans for the synthesizing unit and moving lockstep through it, the “comprehension revolution” has sputtered.

A number of years ago, a middle school teacher raised her hand in a workshop I was leading and explained that she had been teaching synthesizing for about eight weeks. She was wondering when she could quit the synthesizing strategy and move on to something else. This rattled me and I can’t actually recall my response. But her sincerity struck me. As an educator, teachers’ questions and my attempts to address them drive my thinking and writing. This very question has haunted me for years and has, in many ways, informed much of my recent work. Apparently, I had not been explicit enough about the recursive and dynamic nature of comprehension strategy instruction, about the purpose of teaching kids to be aware of their thinking, about the need to watch kids and listen to them carefully to ascertain whether they are using strategies to gain understanding or just “talking the talk,” and about strategies as a means to an end rather than an end in themselves.

We don’t teach strategies for strategies’ sake. We don’t teach kids to make connections so they can be the best connectors in the room. Although we may launch a single strategy to give kids a chance to familiarize

I have noticed this same debate raging in the English language acquisition communities as if the learning of a second language can be accomplished without finding meaning in the words and syntax.

—*Maya*

themselves with it and practice, we don't teach strategies in isolation. We work to give kids a repertoire of strategies that they can use flexibly and thoughtfully across various texts, disciplines, and contexts over time. Truly proficient readers use multiple strategies at once, orchestrating their use to construct meaning and expand thinking (Pressley 2002; Guthrie 2003). We teach kids to connect, question, and synthesize—so they can integrate that thinking, acquire knowledge, and act.

A classic story of how strategic thinking leads to understanding and action involves Richard Feynman and retired Air Force General Donald Kutyna, both members of the Space Shuttle Challenger commission. General Kutyna collected and worked on junk cars as a hobby. One day when Feynman was visiting, Kutyna showed him a carburetor and mentioned that some of the seals had disintegrated due to the low temperatures the previous night. These broken seals led the general to make a connection to the shuttle seals; he wondered if perhaps the low temperatures had something to do with the shuttle disaster. The Challenger launch temperature was a mere thirty-six degrees, fifteen degrees cooler than any previous launch. Feynman followed this lead and discovered a weakness in the O-rings—they lacked elasticity in low temperatures and did not seal properly, thus resulting in the catastrophic shuttle explosion. Feynman later shared this at a televised congressional hearing when he simply dropped the O-ring into a glass of ice water and showed how it cracked apart. The shuttle investigation had begun with the question “Why did Challenger explode?” Through their collaboration, Feynman and the general laser-focused on the question, investigated multiple possibilities, connected the carburetor seals and the shuttle O-rings, and ultimately synthesized the information to solve the problem (Feynman 2001).

The threads of strategic thinking weave together in an intricate mental tapestry to address and solve problems. The goal is not completing and getting an A on the inferring packet. Strategy instruction is useful only insofar as it leads our kids to better understand the text, the world, and themselves so they can gain insight and even anticipate hurdles and solve pressing problems.

Harvard professor David Perkins says “Learning is a consequence of thinking . . . Far from thinking coming after knowledge, knowledge comes on the coattails of thinking . . . Knowledge does not just sit there. It functions richly in people's lives so they can learn about and deal with the world” (1992, 8). If General Kutyna had not made the connection between his carburetor and the shuttle and Feynman had not synthesized the information, who

knows how long it might have taken to solve the shuttle tragedy? Going way beyond the idea of strategies for the sake of it, we teach kids to make connections and employ thinking strategies so “knowledge does not just sit there”—so they can think about information, learn content, and apply what they know by putting that knowledge to work in the real world every day.

A Comprehension Continuum

Comprehension is not about spitting out facts and filling in blanks. Comprehension is about understanding. When our kids think deeply and expansively about issues, ideas, and concepts, they come to care about them and apply that care and learning to the circumstances in their own situations and experiences (Harvey and Goudvis 2007). We teach comprehension strategies to our students so that they turn information into knowledge and actively use it. Ultimately the goal of comprehension instruction is to foster the active use of knowledge.

To further explore this, let’s take a look at a continuum of comprehension (p. 118). This comprehension continuum is comprised of five processes—answering literal questions, retelling, merging thinking with content, acquiring knowledge, and actively using knowledge. The processes along this continuum move from the most elementary to the most sophisticated. But they are not necessarily sequential. Kids do not need to be able to answer literal questions before they can retell, for instance. And we know that children can merge their thinking with information at a very young age, long before being exposed to literal, end-of-text comprehension questions. But they do need to think about information before they can acquire and use knowledge. This continuum represents an array of comprehension processes, a spectrum of understanding. It also includes the teacher language that is associated with each one of these five processes. The more sophisticated the process, the more sophisticated the teacher’s questions. Harvey Daniels and I first published this comprehension continuum in our book *Comprehension and Collaboration: Inquiry Circles in Action* (2009). I take this opportunity to expand on the idea here.

Answering Literal Questions

Answering literal questions is the least sophisticated level of comprehension because it does not guarantee understanding or expanded thinking. If a reader can answer a list of literal questions after reading, they might have

◀ We already have enough “selfish” readers that take information in, but do nothing with it. We have to raise readers to take action with the knowledge they gain from text—putting it to work in the world by treating others with more empathy, engaging in powerful discourse, and taking action to improve everything they touch.

—*SM*

◀ The continuum on p. 118 really helps classroom teachers like me ask myself: “How many times have I asked students to merely retell or summarize?” and “What can I do to move kids to a deeper understanding of text?”

—*Brad*

Comprehension Continuum

Answering Literal Questions

Answering literal questions shows that learners can skim and scan for answers, pick one out that matches the question, and have short-term recall. Does not demonstrate understanding.

Teacher Language

- How many . . . ?
- What is . . . ?
- Where did . . . ?
- Who was . . . ?
- When did . . . ?

Retelling

Retelling shows that learners can organize thoughts sequentially and put them into their own words. Shows short-term recall of events in a narrative and bits of information in nonfiction. Does not, in and of itself, demonstrate understanding.

Teacher Language

- What happened in the story?
- What was it about?
- What happened first? Next? Last?
- What did the character do after that?
- Retell what you read or heard.
- Try using your own words to explain what happened.

Merging Thinking with Content

Real understanding takes root when learners merge their thinking with the content by connecting, inferring, questioning, determining importance, synthesizing, and reacting to information. Understanding begins here.

Teacher Language

- What do you think?
- What did the text make you think about?
- What does this remind you of?
- Has anything like this ever happened to you?
- What do you wonder?
- What do you visualize?
- What can you infer from this?
- How does it make you feel?
- Do you have any reactions? Say more about that . . .

Acquiring Knowledge

Once learners have merged their thinking with the content, they can begin to acquire knowledge and insight. They can learn, understand, and remember. Shows deeper understanding.

Teacher Language

- What did you learn that you think is important to remember?
- What if anything new did you learn?
- Why does it matter?
- What do you think the author most wants you to get out of this?
- What do you think are some of the big ideas here?
- What do you think is the main issue here? Why?
- What makes you think that?
- How did you come up with that?

Actively Using Knowledge

With new insights and understandings, learners can actively use knowledge and apply what they have learned to the experiences, situations, and circumstances in their daily lives to expand understanding and even take action.

Teacher Language

- Why do you want to remember this?
- What do you want to do about this?
- Why do you care?
- How do you think you can help?
- Is there a way you can get involved?
- Do you think you can make a difference?
- What is your plan?

From *Comprehension Going Forward*. Portsmouth, NH: Heinemann. © 2009 by Stephanie Harvey and Harvey Daniels from *Comprehension and Collaboration*. Heinemann, Portsmouth, NH.

understood the material *or not*. If they can't answer those questions, they still might have understood it *or not*. But most frequently, a student can easily answer literal questions but doesn't understand the information. If we ask the question "What is symbiosis?" after repeating the definition on numerous occasions during a two-week unit on marine biology, most kids can quite readily pick out the correct multiple choice answer: "(C) A long-term interaction between species that results in a persistent relationship from which both organisms benefit." But if we ask them to write a paragraph explaining how symbiosis impacts ocean ecology, blank stares often greet us. A question of that sort requires thinking and understanding.

So what *does* answering literal questions reveal? It might show that the learner has some short-term recall. Or recently, particularly in the test reading department, it shows that the reader can skim and scan the answers and pick out the one that best matches the test question. Ultimately, the most useful reason to ask a literal question may be to find out if the student even read it: "Hey Jake, where did that story take place?" "Uhhh, Alaska?"—and it was set in Hawaii; now that's diagnostic information. Simply put, recall does not equal understanding.

The questions that teachers ask to get at literal comprehension are as low level as the process itself—the What? Where? Who? When? questions that permeate conventional comprehension tasks and reduce the text to its lowest common denominator: Where did Atticus go to law school? What color was Scout's bedroom? Who washed Dill's shirts? (Lee 1960). Every time we give kids a list of those literal end-of-text comprehension questions, we are implicitly telling them that their thinking doesn't matter. Kids learn that their questions must not be that important and that the questions that matter come from the teacher, the publisher, or the test. These literal questions narrow kids' thinking channels rather than expand them. They limit imagination and curiosity rather than driving it. So sadly, many kids quit asking their own.

Retelling

Retelling is a more sophisticated process than merely answering literal questions. Retelling calls for the reader to put the ideas into their own words and shape them into their own thoughts: "Retellings require children to think more conceptually, to look at the bigger picture rather than answering specific questions about the text" (Gibson, Gold, and Sgouros 2003). And there is abundant evidence to suggest that retelling can improve comprehension.

But in primary grades, we have elevated retelling to the crowning achievement in reading comprehension! Just because students can retell a story doesn't mean they understand it. Let me illustrate with a retelling of *Goldilocks and the Three Bears*. A basic retelling might go like this: "A girl wanders into a cabin in the woods and discovers that no one is home. She eats the soup, sits in a chair, breaks it, and goes to sleep in a bed upstairs. Soon three bears come home and chase her off." A more elaborate retelling follows here: "A spirited child in a pink-checked pinafore skips merrily through the woods, her long golden locks bouncing on her shoulders. She catches a glimpse of an inviting log cabin in the distance. As she approaches, she notices a crack in the front door and peers in. Her nostrils meet the curling steam of porridge simmering on the stove. She tiptoes in and dips the ladle into the porridge, taking a sip that warms her through and though as she sits down on a small wooden chair . . ." You get the drift of this more elaborate retelling and it is likely that a child who creates this second retell may grasp the story more completely than the child who provided the more basic retell. However, neither of these retellings definitively demonstrates understanding. A more complete understanding of the story might be revealed through an inference or a synthesis such as "It is not a very good idea to go sneaking into people's houses when they are not at home." A quick gist that illuminates the lesson or underlying theme might provide better evidence of pure understanding than either of these Goldilocks retellings.

We can get some good information from retelling, however. According to Owocki, retelling helps children think their way through a text, thereby enhancing their understanding (1999). Retelling the events of a story or the sections of a chapter shows that the learner can organize thoughts sequentially. And recalling some facts in a nonfiction piece shows that the reader has some short-term memory of fragments of information. Additionally, a great way to find out if a child has read or heard a story is to ask them to retell what they remember. But probably the best information we can get from retelling is identifying kids who can't do it. Most kids should be able to retell pieces of a story they have heard or provide some basic information from a reading. Kids who *repeatedly* have difficulty retelling a story or picking out some information to share either orally, in writing, or through drawing may need a closer look.

Teacher's questions such as "What happened in the story?" "What was it mostly about?" and "What happened first, next, and last?" are the kinds of questions we associate with retelling. Although more sophisticated than

literal comprehension questions, since they require the learner to shape the answer into their own thought, these retelling prompts do not necessarily get at the deeper, more expansive meaning we hope our kids glean as they read, listen and view. But these retelling questions can alert us to whether the student has a general idea of the content of the piece. In the end, retelling is a foundational skill that is undoubtedly higher-level than answering literal questions. But retelling in and of itself does not demonstrate understanding.

Merging Thinking with Content

True comprehension *begins* here. Real understanding takes root when learners merge their thinking with the content and react to the information. According to Costa, “Learning to think begins with recognizing how we are thinking, by listening to ourselves and our own reactions and realizing how our thoughts encapsulate us” (2008, 23). “Comprehension is the inner conversation we have with text, the voice in our head that speaks to us as we read, listen, and view. It is the voice that says *Huh, I don’t get this part* when we are confused, the voice that says *Wow, I never knew that before* when we meet new information, the voice that says *If anything ever happens to this character, I will never get up in the morning*. That’s comprehension—how our thinking evolves, expands, and changes” (Harvey and Daniels 2009, 29).

We explicitly teach kids to stop, think, and react (STR) to information encouraging them to merge their thinking with text, images, videos, artifacts, and any other resources. We teach the terminology associated with thinking. We might ask, “Did you remember to merge your thinking with the information? Do you have any reactions? What are you wondering?” Jotting or drawing reactions, thoughts, ideas, and questions leads to engaged thinking and active reading. When kids add their own thinking to the text, images, and features, they construct meaning by paying attention to their inner conversation rather than merely running their eyes across the page, passively reading words but not thinking about the ideas behind them.

When beginning a content unit, we often have kids jot their reactions to images. When launching a World War II social studies unit, for example, we might distribute different images related to the time period—D-Day, Japanese internment, Navajo code talkers, Tuskegee airman, Nazi SS troops. We encourage kids to jot down anything they wonder, connect to, or infer from the images. When showing videos, we encourage kids to stop, jot their

Steph, this is a core truth. We proficient readers really do have a voice in our heads (the comprehension one, not the crazy one) that’s in dialogue with any text we read. But because veteran readers do this cognitive work mostly unconsciously, we may even deny it is happening. That’s why it is so important, as Cris and Ellin discuss on page 181, that teachers occasionally read some really hard text, to remind ourselves of the strategies being deployed in our own heads.

—Smolkey

thinking, and turn and talk to a partner so they can process the information. They can use the same annotation technique with text—jotting thoughts and questions in the margins as well as on sticky notes. Active learners interact with text and resources. The comprehension strategies we have written about reflect the most common ways that learners interact and merge their thinking—connecting, questioning, visualizing, determining importance, inferring, and synthesizing.

When nudging learners to merge their thinking with the content, we concentrate on asking questions that prompt thinking and draw kids out. Questions such as “What does this remind you of?” “What are you wondering?” and “What can you infer from this?” nudge learners to consider their own thoughts and questions as they respond. These questions are derived mostly from the language and underlying concepts that kids have experienced through their comprehension strategy learning. Questions such as these expand thinking rather than limit it.

Acquiring Knowledge

Once readers begin to consciously merge their thinking with the content, they are able to acquire knowledge and gain insight. Active learners turn information into knowledge by merging their thinking with the content. Indeed, a primary reason to read, listen, view, and think is to gain knowledge. Not so in my youth, however. A decent school player, I merely wrote down what the teacher said and crammed on Thursday night to get ready for the test. In fact, in my case, knowledge did sit there *just* long enough for Friday’s quiz, but then promptly vanished just in time for Friday night lights! My grades were fine; I learned little. Memorizing discrete isolated facts does not help us acquire lasting knowledge; that requires thinking about the information and working with it. As we acquire knowledge and think about what we are learning, new insights and understandings emerge and we can generate new knowledge.

Content matters. As a matter of fact, it is the content that is seductive. I have never met a child that I cannot interest in something in this wild, wonderful world. Kids show up every day eager to learn and ready to explore—black holes, the Civil War, African animals, ancient Greece. Kids have a deep need to know. We must be those “focused adults” to whom Barbara Logan refers in “The Curiosity Coma,” teachers who set up an environment that nurtures their natural curiosity. You can’t think about

Steph hits the nail on the head! We don’t read in the abstract. We read to deepen and broaden our understanding of this complex, marvelous world we live in. Great material, fiction and nonfiction, is what will grab kids’ imaginations and pique their passions.

—*Steph*

nothing. Classrooms that stimulate wonder are filled to bursting with texts, images, and artifacts on every imaginable topic so kids always have much to ponder.

When we walk into a classroom that promotes active learning and knowledge acquisition, we know it. No kids sitting quietly in rows, raising their hands while waiting for the teacher to call on them, or laying splayed across the desk twirling their hair and staring out a window. Instead they are spread throughout the room—one small group hovers over an aquarium, taking notes on the tadpoles in a spirited exchange about what they notice; a pair of kids at the computer discover why malaria wrecks such devastation in third-world countries and consider what can be done; several students on the floor, paintbrushes in hand, add the final touches to a map of ancient Egypt as sticky notes with question marks spill out of their mummy books; three kids at the smart board devise multiple ways to solve an equation rather than merely one way; a lone student curled up in the reading corner devours *The Secret Garden*.

The teacher is not up front with a whip and chair all day. She gathers the kids to model her thinking, share her own curiosity, and teach. But she doesn't hold them too long. As if fishing for trout, it is "catch and release" as I have heard Cris Tovani say. She catches them briefly to model a strategy or share some information, and then releases them to do the work as she moves about the room—checking in with small groups and touching base with individuals and pairs as they read, write, draw, view, talk, listen, investigate, think, and work their way through the day. Classrooms that promote active learning fairly burst with enthusiastic, curious kids who simply can't resist investigating the questions, issues, ideas, and topics at hand. In classrooms like this, kids work hard and never lack for thinking because there is so much to think about.

So what does the teacher's language sound like in an active learning room like this? The questions ratchet up, incorporating both content and process and prompting both thinking and learning: What did you learn that you think is important to remember? What do you think the writer most wants you to get out of this? What do you think are some of the big ideas here? Why does this matter? These questions require a consideration of both content and process. To answer, kids have to deal with the content they have learned as well as their thinking about the content—deciding what is important to remember, considering the writer's ideas, and merging their thinking with the information to infer the big ideas. All of these actions

combine their strategy knowledge with their content knowledge to address questions and ideas. Rather than content and process as polar opposites, they are interdependent and inextricably linked.

Actively Using Knowledge

With new knowledge comes insights that can potentially change the way humans function in the world. As David Perkins puts it, “There is little gain in simply having knowledge and even understanding it for a quiz if that same knowledge does not get put to work on a more worldly occasion: puzzling over a public issue, shopping in a supermarket, deciding for whom to vote . . . and so on” (1992, 6). When we think about information and acquire knowledge, we can integrate it and actively apply it to experiences, situations, and circumstances in our daily lives. We can make informed choices about how to act, behave, persuade, and take action.

P. David Pearson reminds us that “rich talk about text” is central to learning and understanding. When kids interact with each other—discussing ideas, issues, and topics of significance—learning and understanding soar. “Discussion with peers serves as both a forum through which students can sharpen their cognitive skills and deepen their involvement and a motivation for engagement in reading” (Pearson, Cervetti, and Tilson 2008, 76). When learners merge their thinking with the themes in literature, the big ideas in history, or the concepts in science and engage in spirited discussions with each other, they are more likely to acquire knowledge and act.

Sometimes the active use of knowledge means kids learn something new, incorporate that information, and apply it in their daily lives. Listening to and having a lively discussion about Tomie DePaola’s *The Art Lesson* (1997) is a wonderful way for first graders to learn about how passion and practice can lead to excelling at something, possibly applying this new insight in their own lives when the time arises. Reflecting on Jacqueline Woodson’s *The Other Side* (2001)—a story of how two girls in the deep South, one white and one black, forge a friendship in spite of segregation laws—can lead sixth graders to a deeper understanding of that time period as well as a heightened sensitivity about how to treat one another now. Reading and discussing Michael Pollan’s *Food Rules* (2009) might spearhead high school kids to make better, more informed choices about the food they eat every day.

Other times, the active use of knowledge means that kids are inspired to make a difference in the world, form a plan, and take action. A group of

The active use of knowledge means that kids are inspired to make a difference in the world.

middle-class eighth graders in south Florida read an article and discovered that kids in poor communities have less access to books than kids in middle-class neighborhoods. The article suggested that the achievement gap between middle-class kids and kids in poverty was in large part due to this very fact. It had never occurred to these eighth graders that any kids in America lacked books. They pretty much took for granted their own extensive school libraries, as well as their personal collections. This new information hit them like a ton of bricks. They immersed themselves in the topic, reading, viewing, talking, and listening to everything they could get their hands on. Some were saddened, some were outraged; all were disillusioned by the inequities. They took several tacks in response, including raising money to buy books for a nearby Title 1 school, selecting many of the books personally after reading and reviewing them, and writing letters to the state school board demanding an explanation of why their school library collection was far superior to that of the less affluent school. Acquiring new knowledge led them to care, which spurred them to take action.

When teachers foster an environment that encourages kids to take action, the questions evolve as well. Questions such as “Why do you care?” “What do you want to do about this?” and “What is your plan?” echo throughout the room. These questions are the avenues that navigate a way into action.

Concluding Thoughts

As we consider these five processes on the comprehension continuum, one can't help but notice that even today there are schools and districts whose entire comprehension curriculum consists of merely answering literal questions and retelling. Worse, when I started teaching in 1972, answering literal questions was it; retelling was nary a blip on the radar screen. Understanding will suffocate in rooms like these and curiosity will lapse into coma. Comprehension gets a foothold when learners merge their thinking with the information, *but that is not the end of comprehension. That is just the beginning.*

Strategies alone do not improve learning. Understanding is a recursive and dynamic process, not a linear one. For learning to flourish, we must foster a culture of thinking where our kids are continually interacting with the text, the teacher, and each other. We model our thinking, share our own curiosity, and flood the room with compelling text, media, and resources so that our kids can immerse themselves in rich content, read about it, connect

to it, wonder about it, talk about it, infer from it, investigate it, and build a knowledge base that may spur them to act on it. When we model and practice thinking as a means to actively using knowledge, kids who have read and discussed *The Other Side* might think more carefully about racism today, high schoolers who have read Michael Pollan just might eat healthier, and eighth graders who have looked poverty in the eye may stand up against issues of inequity that they were blind to before their newfound knowledge.

In the early summer of 2010, Larry King interviewed Microsoft founder Bill Gates and his father on his show one night. He asked the senior Mr. Gates if there was anything that still surprised him about his son. Bill Gates' father answered that he was still astonished by his son's curiosity—"My son is the most curious person I have ever met," he said proudly. For the "comprehension revolution" to continue its forward march, we need to be astonished by our kids' curiosity and amazed by the superb quality of their thinking. We need to focus on their thinking, revel in their wonder, teach strategies for understanding, foster deep conversation, and support them to turn information into knowledge. If we do this, they will undoubtedly be ready for whatever comes their way in the twenty-first century.

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