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Making Thinking Visible

by David Perkins

Consider how often what we learn reflects what others are doing around us. We watch, we imitate, we adapt what we see to our own styles and interests, we build from there. Now imagine learning to dance when the dancers around you are all invisible. Imagine learning a sport when the players who already know the game can't be seen. Bizarre as this may sound, something close to it happens all the time in one very important area of learning: learning to think. Thinking is pretty much invisible. To be sure, sometimes people explain the thoughts behind a particular conclusion, but often they do not. Mostly, thinking happens under the hood, within the marvelous engine of our mindbrain.

Not only is others' thinking mostly invisible, so are many circumstances that invite thinking. We would like youngsters, and indeed adults, to become alert and thoughtful when they hear an unlikely rumor, face a tricky problem of planning their time, have a dispute with a friend, or encounter a politician's sweeping statement on television. However, research by our group and others shows that people are often simply oblivious to situations that invite thinking. For a number of years, we have been building what is called a dispositional view of good thinking that pays as much attention to people's alertness and attitudes as it does to thinking skills as such. We ask not only how well do people think once they get going but how disposed are they in the first place to pay attention to the other side of the case, question the evidence, look beyond obvious possibilities, and so on. Our findings argue that everyday thinking may suffer more from just plain

missing the opportunities than from poor skills (Perkins, Tishman, Ritchhart, Donis, & Andrade, 2000; Perkins & Tishman, 2001).

Fortunately, neither others' thinking nor opportunities to think need to be as invisible as they often are. As educators, we can work to make thinking much more visible than it usually is in classrooms. When we do so, we are giving students more to build on and learn from. By making the dancers visible, we are making it much easier to learn to dance.

There are many ways to make thinking visible. One of the simplest is for teachers to use the language of thinking (Tishman & Perkins, 1997). English and all other natural languages have a rich vocabulary of thinking consider terms like hypothesis, reason, evidence, possibility, imagination, perspective and routine use of such words in a natural intuitive way helps students catch on to the nuances of thinking and thoughtfulness that such terms represent.

Using the language of thinking is one element of something even more important: being a model of thoughtfulness for one's students. Teachers who do not expect instant answers, who display their own honest uncertainties, who take a moment to think about "What if" or "What if not" or "How else could this be done?" or "What's the other side of the case?" express respect for the process of thought and implicitly encourage students to notice problems and opportunities and think them through.

Another way to make thinking visible is to surface the many opportunities for thinking during subject matter learning. Thinking routines are helpful tools in this process. Thinking routines are simple patterns of thinking that can be used over and over again and folded easily into learning in the subject areas. They have a public nature, so that they make thinking visible, and students quickly get used to them (Ritchhart, 2002).

One thinking routine that we have found to be useful in many settings involves two key questions: "What's going on here?" and "What do you see that makes you say so?" (Tishman, 2002). It was adapted for teaching thinking from a routine for examining works of art developed by Philip Yenawine and Abigail Housen (Housen, 1996; Housen, Yenawine, & Arenas, 1991). For example, a teacher might show students a satellite photograph of a hurricane without identifying it, and ask, "What's going on here?" One student says, "That's a storm over Florida." The teacher asks, "What do you see that makes you say so?" The student points out the distinctive profile of Florida, visible through the clouds. Another student says, "It's a hurricane." The teacher: "What you see that makes you say hurricane?" The student mentions the size of the cloud structure and its spiral formation. Another student adds by identifying the eye in the middle.

To generalize, this pair of questions asks students in informal language for interpretations and supporting reasons. As students respond, one can easily label their suggestions as hypotheses and support for their hypotheses as reasons,

bringing the language of thinking into play. One can foreground disagreements and call for evidence on both sides. The same pair of questions, with no, or only slight modifications, works very well across a range of subject matters and draws rich responses from young children through graduate students.

Of course, there are many thinking routines. For another example, teachers with whom we have worked have had good success with the "circle of viewpoints." This routine fits situations that involve multiple viewpoints, as with political controversies, interpretations of history, understanding works of art, and interpersonal disputes. Often working in small groups, students brainstorm different points of view for a topic. For example, if the topic is slavery, they might mention the slave's point of view, the owner's point of view, the merchant's point of view, political points of view, religious points of view, moral and humanitarian points of view. Students are asked to pick a point of view and speak from it (which does not, of course, mean that they agree with it). A summary discussion at the end asks students to think about what they learned from looking across the points of view.

Another routine, called Powerful Questions, was developed by my Venezuelan colleague Beatriz Capdevielle and me a few years ago, as mentioned by her in a recent issue of New Horizons for Learning Online Journal (Capdevielle, 2003). Powerful Questions can be used in quite a elaborate way, but in its simplest version the teacher provokes students to address in turn three kinds of questions about an important topic: questions of exploration, connection making, and conclusion. The aim is to encourage the students themselves to formulate and then pursue the questions. The teacher facilitates the process without either providing the questions or answering them.

To continue with the slavery topic as an example, after an exploration of slavery in the United States through questions of exploration, a teacher might call for questions of connection: "Now that we understand more about slavery, how does this connect to other things? What questions can you ask about that... and then we'll pursue them?" Students might ask, for instance, "Is there slavery anywhere in the world today?" (Regrettably, yes.) "Are there situations kind of like slavery but not quite, and how are they different?" (For instance, child labor practices in some countries, indentured servitude in medieval times.) "When we make prisoners work in prison, is this slavery? Why not?" (The prisoners are not property; they cannot be bought and sold.)

As these examples suggest, an important characteristic of thinking routines is their ease of use. Typically, a thinking routine does not need to be taught at all as such. A teacher can put it to work right away with no introduction: "We have just read this short story. It's kind of mysterious. Now what do you think is going on here?" Or, "We just read this short story. People might feel pretty differently about what happened at the end. What might be different viewpoints about this story say as a parent, or as a minister, but who else?"

Once one begins a campaign to make thinking visible, the opportunities seem to be endless. But what does all this add up to? The ultimate aspiration is building a strong culture of thinking in the classroom. Culture, after all, is the great teacher. We learn both many concrete practices and fundamental attitudes from the ethnic, national, and family cultures within which we grow up. The Russian psychologist Vygotsky (1978) emphasized the fundamental learning process of internalization: making part of one's silent repertoire cognitive processes played out through social interaction. Students learn a lot from the classroom cultures around them, which carry the "hidden curriculum" of conventions and expectations. In order to ensure that they learn what we would really like them to, we need to take responsibility for building that culture, making it a strong culture of thinking.

Research shows that especially artful teachers establish cultures of thinking from the very first class days of the year (Ritchhart, 2002). For instance, they may discuss with students directly the value of attitudes of curiosity, inquiry, and playing with ideas – important thinking dispositions. They may put an openended problem on the table and engage students in wrestling with it, without coming to any final solution that day. They may lead Socratic dialogues that unpack a complicated issue. Then, as the school year unfolds, they continue and extend these practices.

In the quest for a culture of thinking, the notion of visible thinking helps to make concrete what such a classroom should look like and provides a kind of compass to point the way. At any moment, we can ask, "Is thinking visible here? Are students explaining things to one another? Are students offering creative ideas? Are they, and I, using the language of thinking? Is there a procon list on the blackboard? Is there a brainstorm about alternative plans on the wall? Are students debating interpretations?"

When the answers to questions like these are consistently yes, in our experience students are more likely to show interest and commitment as learning unfolds in the classroom. They find more meaning in the subject matters and more meaningful connections between school and everyday life. They begin to display the sorts of thinking dispositions we would most like to see in young learners not closedminded but openminded, not bored but curious, neither gullible nor sweepingly negative but appropriately skeptical, not satisfied with "just the facts" but wanting to understand.

With persistent and ardent attention, all this can flow from making thinking visible. However, to get that far, one has to get past the problem of invisibility. A large part of the challenge is that the very invisibility of thinking is itself invisible. We don't notice how easily thinking can stay out of sight, because we are used to it being that way. As educators, our first task is perhaps to see the absence, to hear the silence, to notice what is not there. The Chinese proverb tells us that a journey of one thousand miles begins with but a single step. Seeing the absence is an excellent first step. Without it, the journey is not likely to happen. With it, and

the direction and energy the realization brings, we are on our way to making thinking visible.

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