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tech.k12 / Joyce Kasman Valenza

For the best answers, ask tough questions

Technology can make it easy for students to take it easy. Teachers need to challenge them to think and analyze.

"Asking questions is a very good way to find out about something." - Kermit the Frog

If my teacher asked me to write a report about a president or an animal or a state or a country, I would balk. What's the point? That work has already been done. Ask me those questions and I would be tempted to hand back any one of the many excellent printouts from Encarta or Britannica or Grolier.

Those of us who work with technology-savvy students are seeing plagiarism on the rise as students complete topical assignments by cutting and pasting together pieces of text from several digital sources.

It's our own fault. Topical research assignments are exercises in paraphrasing.

Simply going to the library or using the Internet to find facts about a topic does little to encourage learning in an information-rich world. Real life is about problem-solving and decision-making. It is more than reporting facts.

With basic information so easy to access, shouldn't we now focus our students' attention on questions that will challenge them to use information meaningfully - to think, analyze, evaluate and invent?

"Questions may be the most powerful technology we have ever created," said Jamie McKenzie, editor of the educational technology journal *From Now On*. McKenzie's new book, *Beyond Technology: Questioning, Research and the Information Literate School* (FNO Press, 2000), explores the effect of "data smog" and the importance of engaging students in higher-level questioning and research activities. McKenzie recently established a Web site devoted to the power of questioning, at <http://questioning.org>

"Questions allow us to control our lives and allow us to make sense of a

confusing world," he said. "They are tools that lead to insight and understanding. If all you have is the technology, you are not an information producer, you are just a consumer."

McKenzie is concerned that while our schools focus more attention on funding information technology, few of them focus any real attention on teaching the types of information-literacy skills that inspire meaningful learning. "In the past, so much information came to students like processed cheese," McKenzie said. "We used to do most of the thinking for the kids." McKenzie noted that many states are changing their standardized tests to require more original thought and inferential reasoning. The difference between asking topical questions and asking thought-provoking questions is, McKenzie said, "the difference between microwaving dinner and cooking spaghetti sauce from scratch."

So what kind of questions lead to better sauce? The questions come in a variety of familiar flavors.

"Which one" questions ask students to collect information and make informed decisions. Instead of asking me to "do a report on Philadelphia," ask me to decide which city in the Mid-Atlantic region is the best place to live. Instead of "Do a report on AIDS," ask me which serious disease most deserves research funding.

"How" questions ask students to understand problems, to weigh options, perhaps from various points of view, and propose solutions. Instead of asking me to do a report on pollution, ask me to propose a solution to an environmental problem in my neighborhood. Ask me how I would invest a windfall of money.

"What if," or hypothetical, questions ask students to use the knowledge they have to pose a hypothesis and consider options. Ask me "What if the Declaration of Independence abolished slavery?" or "What if the Germans hadn't sunk the Lusitania?"

"Should" questions ask students to make a moral or practical decision based on evidence. Ask me "Should we clone humans?" or "Should we discontinue trade with China?"

"Why" questions ask students to understand cause and effect. "Why" helps us understand relationships; it helps us get to the essence of an issue. Ask me: "Why do people abuse children?" "Why is the mortality rate higher in one Third World country than another?"

Instead of simply asking better questions, encourage me to design my own questions. Teach me how to look for patterns in information. Teach me how to take notes with a purpose, how to organize my ideas as I take notes. Ask me to defend my choice in the form of a presentation. Students unfamiliar with exploring big questions will need practice and guidance. They will need assurance that there may be many right answers. They need to understand that, in order to answer the big questions, they need to identify and address the smaller, subsidiary questions. That question about which city is the best place to live could not be answered without asking, "What does best mean?" The criteria might include weather, number of hospitals, major-league sport teams, or access to Gap stores. Then the question arises: How can I locate information about the criteria I have selected? My search for information should lead me to a wide variety of sources - census data, weather sites, business home pages, chambers of commerce. I will need to ask myself: Which three cities in this region do I think would be good candidates to explore and compare?

Instead of merely collecting printouts about those three cities, it makes sense to guide this kind of research with a scaffold, or organizer. A scaffold for this project might take the form of a grid with the names of three cities across the top and the criteria for selecting listed down the side. Students would use the boxes to collect and compare evidence. And, if teachers use the scaffold for assessment, they can offer students guidance as projects unfold, and thereby avoid a disaster in the final product that might otherwise be revealed too late.

After students finish data collection, they should be able to examine their columns and make a decision about which city they should further explore. And then - yet another question - how do I best communicate my choice to the class?

Holly Perry is the principal at Academy for Middle Years (AMY Northwest), an alternative middle school in Philadelphia serving students in grades six through eight, where the curriculum emphasizes inquiry. Perry and the faculty of AMY Northwest joined the Coalition of Essential Schools in 1988 after questioning whether the school was living up to its dreams. The coalition's schools share a philosophy of 10 common principles, at <http://www.essentialschools.org/aboutus/phil/10cps.html>, inspired by the research of Ted Sizer, chairman of Brown University's education department and director of the coalition. Instruction in the coalition's schools is based on inquiry, on students' asking and teachers' guiding the exploration of "essential questions." Perry said: "We started out with each team raising its own essential questions. Helping kids to find their own voices. We ask: 'What is it

that you think? What is your evidence? And what are the consequences of you holding these ideas?' "

Perry and her staff avoid posing "skinny" questions. "When was the Declaration of Independence signed?" is a skinny question, Perry said. "But 'What would have happened had we not signed it? Was everyone covered equally?' These open-ended questions, which can be argued supported by evidence, are fat questions."

Perry's students come from several elementary schools. For many, this kind of open-endedness is new. "Now they have the responsibility of posing questions and determining what makes a difference to them," Perry said. "Some are longing for us to tell them what to do. Do we tell them? No, of course not." An inquiry approach takes extra effort. Perry and librarian Janet Malloy are always looking for high-quality research materials and resources that elicit open-ended questioning. They emphasize primary sources. They require the use of note-taking tools such as graphic organizers or scaffolds.

I asked Perry how students respond to the inquiry-based approach at AMY Northwest. She said: "We hear them say, 'You make us think. You help us think. We like to think.' "

About asking questions

Questioning.org <http://questioning.org/>

Essential Questions (Bellingham Schools) <http://www.gen.bham.wednet.edu/essenque.htm>

Exploratorium Institute for Inquiry <http://www.exploratorium.edu/IFI/index.html>

Framing Essential Questions (From Now On) <http://www.fno.org/sept96/questions.html>

Asking the Essential Questions (Horace) <http://www.essentialschools.org/pubs/horace/05/v05n05.html>

Asking Essential Questions <http://www.biopoint.com/ibr/askquestion.html>

Generating Essential Questions
http://www.mdk12.org/practices/good_instruction/projectbetter/information_literacy/il-26-27.html

Introduction to Problem-Based Learning <http://www.imsa.edu/team/cpbl/whatis/whatis/slide1.html>

Inquiry-Based Learning and Teaching <http://www.bsu.edu/teachers/burris/iwonder/>

KanCRN Collaborative Research Network <http://kancrn.org>

Problem-Based Learning http://hale.pepperdine.edu/~ammowad/problem-based_learning.htm

Resources for Inquiry-Based Language

<http://www.ed.uiuc.edu/projects/inquiry/resources/resources.html>

Using the Internet to Promote Inquiry-Based Learning <http://www.biopoint.com/ibr/startup.html>

WebQuest Page <http://edweb.sdsu.edu/webquest/webquest.html>

Web sites to aid students in organizing research

Concept Mapping Homepage http://www.to.utwente.nl/user/ism/lanzing/cm_home.htm

Graphic Organizer Index <http://www.graphic.org/goindex.html>

Graphic Organizers <http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1grorg.htm>

K-W-L-H Technique <http://www.ncrel.org/sdrs/areas/issues/students/learning/lr1kwlh.htm>

SCORE Graphic Organizers <http://www.sdcoe.k12.ca.us/score/actbank/torganiz.htm>

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Question Brainstormer for Students

	Topic #1	Topic # 2
Which one?		
How?		
What if?		
Should?		
Why?		

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