

***Professional Development Activities for
Classroom Instruction That Works***

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**Sponsored by the
Office of Catholic Education
Cleveland, Ohio
May 1 & 2, 2008**

Factor 1: Identifying Similarities and Differences

Part One: Comparing, Contrasting, and Classifying

Directions:

1. Form a pair or trio with other participants at your table.
2. Read and discuss the proverbs presented below.
3. Find as many similarities and differences between and among them as you can.
4. Then, identify categories into which you might classify these proverbs.
5. Be prepared to share with the whole group: (a) significant similarities and differences your group discovered and (b) classification categories (and attributes for each category) you all agree would be useful for classifying this list.

Greek

- The heart that loves is always young.

Hebrew

- He who spares the whip hates his son.

Japanese

- A single arrow is easily broken, but not ten in a bundle.
- Fall seven times, stand up eight.

Korean

- A stranger nearby is better than a far-away relative.

Latin

- If there is no wind, row.

Libyan

- Instruction in youth is like engraving in stone.

Malay

- Don't think there are no crocodiles because the water is calm.

Native American

- If you see no reason for giving thanks, the fault lies in yourself.
- Man has responsibility, not power.

Nigerian

- He who is being carried does not realize how far the town is.

Romanian

- Adversity makes a man wise, not rich.

Scottish

- With lies you can go ahead in the world, but you can never go back.

Spanish

- Don't speak unless you can improve on the silence.

Swedish

- Go often to the house of a friend, for weeds soon choke up the unused path.

Yiddish

- If you sit in a warm bath, you think the whole town is warm.

Part Two: Classifying**Directions:**

1. Form a pair or trio with other participants at your table.
2. Review the list of literary works below.
3. Use the following categories to classify items in this list: "Blue," "Red," "Yellow," and "Black."
4. Begin by determining your criteria for each of these four categories. For example, how would your group describe a "Blue" v. a "Red" work?
5. Be prepared to share with the whole group: (a) your criteria for each of the four categories and (b) how you decided to classify each item on the list.

Literary Works for You to Classify:

1. *Hamlet*
2. *Huckleberry Finn*
3. *Moby-Dick*
4. *Where the Red Fern Grows*
5. *The Scarlet Letter*
6. *Harry Potter and the Sorcerer's Stone*
7. *To Kill a Mockingbird*
8. *1984*
9. *The Catcher in the Rye*
10. *A Tale of Two Cities*
11. *The Grapes of Wrath*
12. *The Art and Science of Teaching*
13. *Crime and Punishment*
14. *The Diary of Ann Frank*
15. *Wuthering Heights*
16. "Letter from a Birmingham Jail" (M L. King)
17. *The Hobbit*
18. *The Odyssey*
19. *Silas Marner*
20. *The Great Gatsby*

Part Three: Working with Metaphors and Analogies

Directions:

1. Form a pair with someone else at your table.
2. Review the list of concepts presented below.
3. Select one of them and create a metaphor or simile to represent it.
4. Then, choose another item on the list and try your hand at creating an analogy to represent that concept.

Concepts for You to Select from:

1. the current U.S. presidential campaign process
2. the caucus process used in the recent Iowa primary
3. teaching students who are not fluent in English
4. the 2008 sub-prime mortgage situation
5. the Internet
6. being a first-year teacher in schools today
7. the concept of economic recession
8. the aging of the Baby Boomer generation
9. *a concept(s) from the subject matter you currently teach*

A Metaphor Starter:

_____ is a (an) _____.

A Simile Starter:

_____ is like a (an) _____.

An Analogy Starter:

_____ is to _____ as

_____ is to _____.

Factor One implications for ELL students in your classroom and/or school:

Factor 2: Summarizing and Note Taking

ACTIVITY ONE:

Directions:

1. Read and reflect upon the quotes presented below from the Wallis and Steptoe Time Magazine article by Claudia Wallis and Sonja Steptoe, “How to Bring Our Schools Out of the 20th Century” (Time, December 18, 2006, pp. 50-56).
2. How would you summarize the main ideas that underlie these quotes?
3. How would you paraphrase Wallis and Steptoe’s conclusions to another member of your table group?

Quotes from the Article:

1. “American schools aren’t exactly frozen in time, but considering the pace of change in other areas of life, our public schools tend to feel like throwbacks. Kids spend much of the day as their great-grand parents once did: sitting in rows, listening to teachers lecture, scribbling notes by hand, reading from textbooks that are out of date by the time they are printed. A yawning chasm (with an emphasis on yawning) separates the world inside the schoolhouse from the world outside.” (P. 52)
2. “This is a story about the big public conversation the nation is *not* having about education, the one that will ultimately determine not merely whether some fraction of our children ‘get left behind’ but also whether an entire generation of kids will fail to make the grade in the global economy because they can’t think their way through abstract problems, work in teams, distinguish good information from bad or speak a language other than English.” (P. 52)
3. “Today’s economy demands not only a high-level competence in the traditional academic disciplines but also what might be called 21st century skills. Here’s what they are (pp. 52-53):
 - Knowing more about the world.
 - Thinking outside the box.
 - Becoming smarter about new sources of information.
 - Developing good people skills.”
4. “Kids need to learn how to leap across disciplines because that is how breakthroughs now come about. It’s interdisciplinary combinations—design and technology, mathematics and art—that produce YOUTUBE and MYSFACE.” (P. 52)
5. “Many analysts believe that to achieve the right balance between...core knowledge and what educators call ‘portable skills’—critical thinking, making connections between ideas and knowing how to keep on learning—the U.S. curriculum needs to become more like that of Singapore, Belgium and Sweden...Classes in these

Dr. John L. Brown (Association for Supervision and Curriculum Development)

countries dwell on key concepts that are taught in depth and in careful sequence, as opposed to a succession of forgettable details so often served in U.S. classrooms.” (P. 54)

6. “Classes like this, which teach key aspects of information literacy, remain rare in public education, but more and more universities and employers say they are needed as the world grows ever more deluged with information of variable quality.” (P. 56)
7. “‘In the 21st Century, the ability to be a lifelong learner will, for many people, be dependent on their ability to access and benefit from online learning,’ says Michael Flanagan, Michigan’s superintendent of public instruction, which is why Michigan’s new high school graduation requirements, which roll out next year, include completing at least one course online.” (P. 56)
8. “Teachers need not fear that they will be made obsolete. They will, however, feel increasing pressure to bring their methods—along with the curriculum—into line with the way the modern world works. That means putting a greater emphasis on teaching kids to collaborate and solve problems in small groups and apply what they’ve learned in the real world. Besides, research shows that kids learn better that way than with the old chalk-and-talk approach.” (P. 56)

Factor Two implications for ELL students in your classroom and/or school:

Factor 3: Reinforcing Effort and Providing Recognition

Directions:

1. Find a partner at your table.
2. Decide who will be the “coach” and who will become the “coached.”
3. Discuss with your partner what you both consider to be the characteristics of effective coaching, including strategies effective coaches used to reinforce effort and provide recognition to students for their accomplishments.
4. Then, complete the two-part “Trivial Pursuit” activity posted on the screen.
5. Be prepared to share with the rest of the group your observations about what effective coaches do to promote student engagement and motivation.
6. What are the implications of this process for ELL students?

Factor Three implications for teachers working with ELL students:

Factor 4: Homework and Practice

Directions:

1. Select a member of your table group who has expertise in a particular skill or procedure.
2. Have this individual teach your table group how to perform this skill or procedure.
3. This individual should begin by modeling the skill or procedure, clarifying key steps and showing the rest of the group how to perform each of them.
4. Then, members of the table group should practice replicating the steps and models he or she presents.
5. As members become more comfortable with the skill or procedure, they should try out variations, including making suggestions for ways in which they improved their performance.
6. By the end of this practice session, all of the table group members should be at a “shaping” phase of learning and should be able (if they keep practicing) to move on toward internalized, automatic use.

Factor Four implications for teachers working with ELL students:

Factor 5: Nonlinguistic Representations

Directions:

1. Individually or with a partner, examine the types of graphic organizers presented on pages **121-122** of the text, *Classroom Instruction That Works with English Language Learners*.
2. Use the chart below to consider which of these graphic organizers has particular significance for your ELL students. Consider the purpose for which each of them is designed and the achievement gaps they can help students to overcome.
3. Be prepared to share your conclusions with your team members or table group participants.

Type of Graphic Organizer	Intended Purpose(s)	Achievement Gap Focus Area(s)
1. Vocabulary Term or Phrase (page 121)	Describes the most important characteristics of a term or phrase, with examples that further describe it.	Designed to help students develop a deepening understanding of key academic terms and overcome misconceptions and surface-level understandings. <i>Useful in overcoming vocabulary gaps and misunderstandings.</i>
2. Time Sequence (page 121)	Visualizes a chronology of important events, including plot events within a narrative sequence.	Reinforces students' understanding of primary vs. secondary events. <i>Useful in developing students' concept of chronology and sequencing, including identification of main ideas within a narrative structure.</i>
3. Episodes (Episode Map) (page 122)	Used to describe and analyze time-specific events (e.g., a science lab, an historical occurrence, a key event from a fictional narrative).	Enhances students' understanding of episodes within an overall timeframe. <i>Helps students to synthesize information, including cause-effect patterns, time sequences, and significant individuals/characters and their contributions.</i>
4. Generalizations/Principles (page 122)	Helps students articulate generalizations with examples and principles that communicate observed relationships.	Useful for improving students' understanding of writing structures, particularly relationships between topic sentences and supporting details. <i>Reinforces students' understanding of organization within written and oral communication.</i>

5. Cause/Effect Sequence (page 122)	Used to help students analyze connections between precipitating causes and related outcomes and/or products produced.	Provides students with a visual structure to differentiate primary vs. secondary causal patterns that produce observable results. <i>Extremely useful when students' language fluency impedes their ability to identify and describe simple cause-effect patterns (e.g., within a narrative) as well as complex networks of causal chains (e.g., events leading to a significant historical outcome or event such as the U.S. Civil War).</i>
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Factor Five implications for teachers working with ELL students:

Factor 6: Cooperative Learning

Directions:

1. You and your table group members will form a cooperative learning JIGSAW team.
2. Each of you will become an “expert” in one of the “Types of Summary Frames” presented on pages 123-126 of *Classroom Instruction That Works with English Language Learners*.
3. Determine which of the summary frames each of you will examine, analyze, and present to your table group team: (a) The Narrative Frame (pp. 123-124); (b) The Topic-Restriction-Illustration Frame (P. 124); (c) The Argumentation Frame (P. 125); (d) The Problem-Solution Frame (P. 125); or (e) The Conversation Frame (P. 126).
4. As you present your summary, help your team members answer the questions presented in the comparison matrix below.
5. At the conclusion of all presentations, facilitate a discussion of the implications of these summary frames for your ELL students. For example, which ones seem to have the greatest immediate value? What achievement or performance gaps could each summary frame help to address in your school?

Type of Summary Frame	What Are Its Intended Purpose(s), Key Elements, and Frame Questions?	How Might We Use This Summary Frame with Our ELL Students?
1. The Narrative Frame (pp. 123-124)		
2. The Topic-Restriction-Illustration Frame (P. 124)		
3. The Argumentation Frame (P. 125)		
4. The Problem-Solution Frame (P. 125)		

5. The Conversation Frame (P. 126)		
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Factor Six implications for teachers working with ELL students:

Factor 7: Setting Objectives and Providing Feedback

Directions:

1. In addition to being clear with ELL students about the learning goals for which they are responsible, a major part of any successful ELL program involves parent and community involvement.
2. With members of your table group or school team, read and discuss Appendix C from the text (pages 127-131). You may wish to use the graphic organizer presented below to guide your discussion.
3. Use the suggestions in this section of the text to answer the following questions:
 - ❑ What is our shared vision for ensuring that we offer a comprehensive ELL program at our school, one that addresses the six types of involvement identified in this section?
 - ❑ What are our shared objectives related to each of the six types of involvement presented in this section?
 - ❑ How effectively are we already addressing the recommendations presented in each of the six sections?
 - ❑ What is a preliminary timeline we can agree to for each of our identified objectives?
 - ❑ What kinds of feedback, including performance data, can we collect to monitor how successfully we are achieving our objectives?
4. Be prepared to share your conclusions, recommendations, and timelines with the whole group.

Our Three-Year ELL Parent and Community Involvement Plan

Involvement Priority	Objectives	Suggested Activities, Timeline, and Possible Feedback Data Sources
<u>Type 1</u> : Parenting (P. 128)		
<u>Type 2</u> : Communicating (pp. 128-129)		

<u>Type 3</u> : Volunteering (P. 129)		
<u>Type 4</u> : Learning at Home (pp. 129-130)		
<u>Type 5</u> : Decision Making (P. 130)		
<u>Type 6</u> : Collaborating with the Community (pp. 130-131)		

Factor Seven implications for teachers working with ELL students:

Factor 8: Generating and Testing Hypotheses

Directions:

1. Form a pair or trio with other participants at your table.
2. Read and discuss the quotes presented below from the Susan Jacoby article in *The Washington Post* (Sunday, February 17, 2008, Pages B1 and B5).
3. What conclusions does your group arrive at? What hypotheses can you generate, based upon Jacoby's ideas and statistics?
 - ❑ "More than 40 percent of Americans under 44 did not read a single book—fiction or non-fiction—over the course of a year."
 - ❑ "The proportion of 17-year olds who read nothing (unless required to do so for school) more than doubled between 1984 and 2004. This time period encompasses the rise of personal computers, Web-surfing, and video games."
 - ❑ "In a recent study released last August, University of Washington researchers found that babies between 8 and 16 months recognized an average of six to eight fewer words for every hour spent watching videos."
 - ❑ "No wonder negative political ads work. With text, it is even easy to keep track of differing levels of authority behind different pieces of information. A comparison of two video reports, on the other hand, is cumbersome. Forced to choose between conflicting stories on television, the viewer falls back on hunches, or on what he believed before he started watching."
 - ❑ "Harvard University's Kiku Adatto found that between 1968 and 1988, the average sound bite on the news for a presidential candidate—featuring the candidate's own voice—dropped from 42.3 seconds to 9.8 seconds. By 2000, according to another Harvard study, the daily candidate bite was down to just 7.8 seconds."
 - ❑ "According to a 2006 survey by National Geographic-Roper, nearly half of Americans between ages 18 and 24 do not think it necessary to know the location of other countries in which important news is being made. More than a third consider it 'not at all important' to know a foreign language, and only 14 percent consider it 'very important.'"
 - ❑ "That leads us to the third and final factor behind the new American...arrogance about the lack of knowledge. The problem is not just the things we do not know (consider the one in five American adults who, according to the National Science Foundation, thinks the sun revolves around the Earth), it's the alarming number of Americans who have smugly concluded that they do not need to know such things in the first place."

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Factor 9: Cues, Questions, and Advance Organizers

Overview

Higher order questions promote student learning and significant levels of achievement, including positive gains on tests involving both factual recall and student application of thinking skills and processes. At the same time, many research studies of classroom practices confirm that on average, only 20 percent of classroom questions posed by teachers require more than simple factual recall. Specifically, we now know that a predominant use of higher order questions and related teaching-learning techniques and strategies greatly expands all learners' deep processing of core information and independent use and transfer of significant skills and procedures.

The activities presented in this section are designed to provide a rationale for emphasizing higher order questions in classrooms and to synthesize what current educational research tells us about their contribution to student achievement. Specifically, the resources provided here will reinforce the following assertions about higher order questions and research-based techniques for ensuring student proficiency in responding to them:

- Students' development of higher order reasoning skills and cognitive processes depends significantly upon their continuing work with higher order questions.
- Higher order questions can take a wide range of forms and structures, depending upon the curriculum content and context being emphasized. Such questions can range from analytical, synthesis, and evaluative formats to questions that require students to engage in various forms of interpretation and inductive and deductive reasoning.
- Higher order questions can become powerful cueing tools to help students understand what is significant or important in the content they are studying. Essential questions, for example, reflect the big ideas and understandings at the heart of a discipline or academic area. When teachers use them as advance organizers, they can guide and inform student investigation, inquiry, and analysis of themes, patterns, issues, and perspectives underlying significant curriculum content within and across units, courses, and grade levels.
- Specific research-based teaching techniques can accompany instructional use of higher order questions. Such techniques include Wait Time, follow-up question probes, and emphasis upon students' responsiveness to such questions by presenting valid and reliable evidence.

The materials and activities in this section will help you to explore the research underlying the use of higher order questions to enhance student understanding, including their relationship to student achievement on standardized tests and related assessments. They will also assist you and members of a study group or professional learning community to reflect on the extent to which research-based practices involving higher order questions and related teaching-learning techniques are currently operational within your classrooms, school, or district. In addition, you will discover a range of possible higher order questions you can use to enhance student learning and achievement, organized to promote students' ability to:

- Analyze, synthesize, and evaluate key information and significant skills and procedures.

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- Interpret information in a variety of formats, providing claims and assertions about the meaning of that information and supporting them with appropriate evidence.
- Understand the underlying big ideas, themes, and patterns underlying the curriculum content they study, enhancing their conceptual grasp of how academic content and disciplines are organized and interrelated.
- Respond to test-based questions that require higher order reasoning skills and processes and such habits of mind as metacognitive reflection, self-regulation, and critical and creative thinking.

The Materials

The materials included in this section have been developed and sequentially organized to help you explore key issues and strategies related to promoting students' response to higher questions and related instructional techniques and practices. Included are:

- Higher Order Questioning Techniques and Their Impact upon Student Achievement (with Suggested References)
- How Do You Currently Use Higher Order Questioning Techniques in Your Classroom?
- A Framework for Reflecting on Higher Order Questions and Questioning Techniques
- A Planning Guide for Using Different Higher Order Questioning Techniques in Teaching

Possible Activities

The materials in this section are organized sequentially from an initial synthesis of research literature to specific examples of higher order questions and their various uses in the classroom. Individual educators can study them to develop a deeper understanding of the range of available questioning types and their potential impact upon student achievement. However, study groups and entire professional learning communities can collaboratively use these resources. As a team, educators can use these resources to assess how they can improve their learning organization's use of higher order questions and related techniques to enhance student performance, including aggregate and disaggregated results on criterion- and norm-referenced tests. Suggested activities include:

1. Individual analysis or small group (i.e., grade level, departmental) discussion of the research findings presented in Activity 1.
2. Inquiry team applications of the research conclusions in Activity 1 to investigate their implications for student achievement in various grade levels and content areas.
3. Administration of the questionnaire in Activity 2 to all staff members (or representative staff members organized by grade level, department, study group, etc.).
4. Analysis of staff members' responses to the Activity 2 questionnaire to identify patterns for discussion and follow-up via professional development related to the use of higher

Dr. John L. Brown (Association for Supervision and Curriculum Development)

- order questions and related techniques (including staff responses to the resources included in this section).
5. Staff reflections on the forms of higher order questioning and related techniques presented in Activity 3, including discussion and exploration of emphasizing higher order questioning can be used to improve student understanding.
 6. Application of the planning guide presented in Activity 4 to lesson and unit design with follow-up peer discussion to sustain staff implementation and students' use of various forms of questions and associated techniques to enhance student learning.
 7. Continuing monitoring of the correlation between enhanced classroom-based staff and student use of higher order questions and improved student achievement results, including increases in standardized testing data.

Activity 1:

Higher Order Questioning Techniques and Their Impact upon Student Achievement

Materials Needed

- Handout: “What Does the Research Tell Us About Us About Higher Order Questioning Techniques and Their Impact upon Student Achievement?”
- Suggested References Related to Higher Order Questioning Techniques, Their Impact upon Student Achievement, and Related Educational Research
- Newsprint and markers

Introduction

Educational research powerfully confirms the value of emphasizing higher order questions to enhance the teaching-learning process. When students have regular opportunities to interpret, analyze, synthesize, and evaluate the content they are studying via a variety of question formats, they reinforce their understanding of the big ideas, patterns, and connections underlying the content they are studying. The research also reinforces the value of emphasizing higher order questions to improve student achievement as measured by standardized assessments, including criterion- and norm-referenced tests. This activity will help individual educators, study groups, and entire professional learning communities to investigate, discuss, and analyze what the research tells us about the relationship between higher order questions, related teaching-learning techniques, and student achievement.

Procedure

Read and discuss the research conclusions presented in the handout for this activity, highlighting key words, concepts, and generalizations. Consider the implications of these research conclusions for your classroom or school. Ask participants to share their reactions and their conclusions about what the research implies for student achievement. At the conclusion of the paired or small-group discussions, ask table groups to summarize their reactions and suggestions using the newsprint and markers provided. If time permits, generate action steps for future study group sessions. Individual educators, study groups, and/or action research teams can also use the references presented here as a basis for further investigation and discussion.

Handout for Activity 1:

What Does the Research Tell Us About Higher Order Questioning Techniques and Their Impact upon Student Achievement?

Directions:

- You may elect to study and reflect upon the following research conclusions independently as part of your own professional growth and development.
- However, this handout can also be used in a variety of professional development settings and contexts related to collaborative investigation of ways to improve student achievement within and across content and discipline lines.
- For example, with a partner or in table groups, you might review each of the following research conclusions about higher order questioning techniques and their relationship to student achievement. What are your conclusions and reactions to the ideas presented here? What implications can you identify for your classroom or school?

Key Research Conclusions About the Impact of Higher Order Questions and Related Instructional Techniques:

1. Thoughtful questions help students to move beyond the level of recall, repetition, and paraphrasing. The more students receive modeling and shaping experiences involving their ability to respond to thoughtful, higher order questions, the greater their level of understanding of the content they are studying and the higher their ability to apply and transfer it.
2. According to Barry K. Beyer, a noted authority on thinking skills and higher order reasoning strategies in the classroom: “[A thoughtful question] requires students to go mentally where they have not been before, to use information they may not have yet encountered, or to restructure information with which they are not already familiar in order to produce something they did not know when that question was raised. Thoughtful questions make students think deeply and keep on thinking” (pp. 30-31).
3. Beyer defines a thoughtful question as “one that stimulates students to think further and deeper than recall; it generates a variety of views and opinions; and it fosters discussion and exchange of information and views. Answering a thoughtful question necessitates finding and reorganizing information and data as well as evaluating the data and the questions derived from or based on them.” (P. 32)
4. Teachers’ effective use of a variety of higher order questions can overcome the brain’s natural tendency to limit information. In turn, students’ minds can become more open to new ideas and creative mental habits. Current research on the relationship between brain stimuli and the learning process suggests that the use of a variety of higher order questions in an open-ended and nurturing educational environment strengthens the brain—creating more synapses between nerve cells—just as exercise builds muscle tissue.

Dr. John L. Brown (Association for Supervision and Curriculum Development)

5. A synthesis of studies related to Wait Time I (i.e., the time elapsed between a teacher posing a question and eliciting student responses) and Wait Time II (i.e., the time between a student's response to a question and teacher/student reactions to that response) confirms the following benefits of Wait Time use by teachers:
 - a. The length of student responses increased.
 - b. More frequent, unsolicited contributions (relevant to the discussion) were made.
 - c. An increase in the logical consistency of students' explanations occurred.
 - d. Students voluntarily increased the use of evidence to support inferences.
 - e. The incidence of speculative response increased.
 - f. The number of questions asked by students increased.
 - g. Greater participation by all learners occurred.
6. According to Bransford (et al.) in the ground-breaking publication *How People Learn: Brain, Mind, Experience, and School*: "In order to develop strategic competence in learning, children need to understand what it means to learn, who they are as learners, and how to go about planning, monitoring, revising, and reflecting upon their learning and that of others." (P. 100) Students' work with a variety of question types—especially those requiring them to be self-reflective and metacognitive in their thinking—contributes significantly to their development as purposeful, strategic, and self-regulating learners.
7. The use of higher order questions reinforces students' capacity for complex reasoning skills (e.g., comparison, classification, inductive and deductive reasoning, analysis of errors), reasoning processes (e.g., problem solving, decision making, investigation, systems analysis), and productive habits of mind (e.g., self-regulation, critical and creative thinking) (Marzano et al., 1993).
8. According to Grant Wiggins (in Beyer, 1997, P. 32), effective higher order questions:
 - a. Deal with the most important topics or issues of a discipline or subject.
 - b. Have no obvious, single, prescribed correct answer.
 - c. Require analysis, evaluation, and/or synthesis as well as other types of complex thinking.
 - d. Allow personalized responses because there is no one correct way to go about developing an adequate response.
 - e. Require the production or construction of new knowledge—knowledge presumably unknown by the students prior to receiving the question.
 - f. Advance students toward a deeper understanding of the subject on which they focus.
9. In order to improve students' responses to higher order questions, teachers need to model the steps or stages in "unpacking" the question and its implicit requirements. The more students have opportunities to extend and refine their practice with such questions, the greater their capacity for responding to complex and open-ended questions in new and unanticipated situations and contexts.
10. One of the biggest problems associated with the improvement of standardized test scores involves students' capacity for comprehending the question(s) posed to them on a particular test. As students extend and refine their work with thoughtful, higher order questions, they expand their ability to discern the requirements and nuances of complex and multi-component testing prompts.

Suggested References for Activity 1:

What Does the Research Tell Us About Higher Order Questioning Techniques and Their Impact upon Student Achievement?

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Dr. John L. Brown (Association for Supervision and Curriculum Development)

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Activity 2:

How Do You Currently Use Higher Order Questioning Techniques in Your Classroom?

Materials Needed

- Handout: “A Self-Reflective Questionnaire: How Do You Currently Use Higher Order Questioning Techniques in Your Classroom?”
- Handout: “Question Types and Related Prompts to Promote Students’ Higher Order Thinking Skills and Processes”
- Handout: “Techniques for Promoting Student Success with Higher Order Questions”
- Newsprint and markers

Introduction

As the research suggests, students’ work with higher order questions greatly enhances their capacity for transfer, independent application, and deep understanding of the content they study. Such questions can also reinforce students’ ability to apply higher order reasoning skills and processes essential for academic achievement. This activity is designed to encourage educators to reflect upon the range of question structures and related techniques for enhancing students’ response to higher order questions. By assessing the level of current use within individual classrooms, educators and administrators can explore potential areas for expansion and professional development within their school or related learning community.

Procedure

1. If you are exploring higher order questions and related instructional techniques independently, use the questionnaire and related resources as an opportunity for self-reflection and self-evaluation. If you are working as a member of a study group or professional development team, ask individual teachers in your grade level, department, or school to use the following questionnaire and related resources collaboratively.
2. Analyze levels of current use and implementation of various higher order questions and related instructional techniques.
3. If participants complete the questionnaire and related resources as part of a staff development workshop or training session, ask table groups (organized by grade level or content area) to share their responses and summarize them responses on newsprint.
4. When groups have completed their newsprint summaries, have them post their work products and ask the entire training group to complete a gallery walk, examining and discussing conclusions and implications. For example: *How can expanding our use of the suggested strategies for using higher order questions contribute to student achievement results? How can we study staff members’ pre-/post-implementation of each question type and related techniques to assess their potential “value-added,” i.e., their correlation with student achievement gains in specific content areas and grade levels?*

Dr. John L. Brown (Association for Supervision and Curriculum Development)

How Do You Currently Use Higher Order Questioning Techniques in Your Classroom?

Part I: A Self-Reflective Questionnaire

Directions: Use the following rating scale to assess your current level of use for each of the following strategies related to higher order questions. When you have finished, compare your results with other educators in your school. What conclusions can you draw? What patterns of use are evident?

3=Extensively: This is a consistent practice in my classroom.

2=Periodically: I sometimes use this strategy, but there are occasions when I could use it with my students but do not.

1=Rarely: I only use this strategy once in a while, but it is not a consistent part of my teaching practice.

0=Never: I never use this strategy.

To what extent do I currently:

- _____ 1. Make certain that all students develop a deep understanding of key declarative (i.e., facts, concepts, generalizations, and principles) and procedural (i.e., skills, processes, and procedures) knowledge by emphasizing higher-order questioning?
- _____ 2. Encourage discussion in my classroom by using open-ended questions?
- _____ 3. Decide on the goals or purposes of my questions?
- _____ 4. Choose important—rather than trivial—material to emphasize students' in-depth exploration of essential/key questions?
- _____ 5. Avoid “yes” and “no” questions and encourage students to support their responses with evidence?
- _____ 6. Use “probe” questions to encourage students to elaborate and support assertions and claims?
- _____ 7. Ensure that students clearly understand my questions—and avoid a “guessing game”?
- _____ 8. Avoid questions that “contain the answer”?
- _____ 9. Anticipate students' responses to my questions, yet allow for divergent thinking and original responses?
- _____ 10. Use purposeful strategies for helping students deal with incorrect responses?
- _____ 11. Make effective use of Wait Time I and II?
- _____ 12. Vary my question structures to include, where appropriate, questions that reinforce students' application of a variety of thinking skills and processes (e.g., analysis, synthesis, evaluation, interpretation, application, explanation)?
- _____ 13. Make certain that my students understand and can articulate the type(s) of questions to which they are responding and the elements required for a complete and valid response?
- _____ 14. Reinforce students' understanding and ability to describe the relationship between significant question types and the curriculum content we are studying?
- _____ 15. Align my use of higher order questions with the big ideas and understandings implicit in the content we are studying and investigating?
- _____ 16. Coach and prepare my students for high stakes accountability tests by extending and refining their work with higher order question types typically encountered on these assessments?

Part II: Question Types and Related Prompts to Promote Students' Higher Order Thinking Skills and Processes

Directions: Examine each of the following question types and related starter prompts. To what extent do you currently emphasize each of these structures in your classroom?

Comparing and Classifying:

How is _____ similar to/different from _____?

How might we organize into categories _____?

Identifying Attributes and Components:

What are the characteristics/parts of _____?

Ordering:

How would you arrange _____ into a sequence according to _____?

Identifying Relationships and Patterns:

How would you develop an outline/diagram/web of _____?

Representing:

In what other ways might we show/illustrate _____?

Identifying Errors:

What is wrong with _____?

Inferring:

What might we infer from _____?

What conclusions might be drawn from _____?

Predicting:

What might happen if _____?

Elaborating:

What ideas/details can you add to _____?

What is an example of _____?

Evaluating and Establishing Criteria:

What criteria would you use to judge/evaluate _____?

Verifying:

What evidence supports _____?

How might we prove/confirm _____?

Finding Patterns:

What interconnections and patterns can you see in _____?

What are the underlying big ideas and themes in _____?

My Reflections and Suggestions:

Part III: Techniques for Promoting Student Success with Higher Order Questions

Directions: There are numerous techniques that teachers can use to promote students' ability to respond to higher order questions and to make their classrooms less "imperative" and more "interrogative." To what extent do you make use of each of the following techniques and strategies in your classroom?

1. Use the think-pair-share strategy to allow students to respond to questions cooperatively.
2. Avoid predictable question patterns by calling on students randomly and allowing for student calling.
3. Ask students to "unpack their thinking" by describing how they arrived at an answer.
4. Promote active listening by asking for summaries of individual and class responses to key questions.
5. Ask students why they hold a particular position or point of view on a subject.
6. Survey the class (e.g., How many of you agree? —Thumbs up, thumbs down...)
7. Encourage student-constructed questions.
8. Emphasize "why?" (i.e., cause-effect) and "how?" (i.e., process) questions.
9. Use hypothetical thinking: What would happen if...? What if this had happened?
10. Employ reversals: What happens if we reverse the steps?
11. Apply different symbol systems: How can we present these ideas in graphic form?
12. Use analogies: How is this like ____?
13. Analyze points of view: What else might account for this? How would Hamlet view these events?
14. Employ completion activities: Before we read the conclusion, what ending would you recommend?

My Reflections and Suggestions:

Activity 3:

A Framework for Reflecting on Higher Order Questions and Questioning Techniques

Materials Needed

- Handout: “A Framework for Reflecting on Higher Order Questions and Questioning Techniques”

Introduction

Higher order questions take many forms and are extraordinarily useful in promoting student understanding and transfer. Selecting the most appropriate forms of questions for particular tasks and curriculum content is both a challenge and opportunity when designing effective instructional and learning activities. This activity provides hands-on experience in designing higher order questions. By creating various forms of higher questions yourself, you can become familiar with the challenges that students will confront when asked to respond to them and support their conclusions in your classroom.

Procedure

1. Read the descriptions and examples of the various forms of higher order questions.
2. Consider the curriculum you teach, and determine which forms of questions are most closely aligned with various aspects of it.
3. Try your hand at creating examples of higher order questions related to the content for which you are responsible.
4. With a job-alike group (grade level, content area), share your examples and initial reflections on the current and potential role of higher order questions in your grade level or content area.
5. In a grade level or department meeting, use newsprint and markers to create a visual summary of your job-alike group’s reactions, suggestions, and examples. This initial investigation can become the catalyst for later work with curriculum mapping focused on: (a) revisiting the scope and sequence of your curriculum content and (b) related higher order questions that can be used to cue and frame students’ study of that content.

A Framework for Reflecting on Higher Order Questions and Questioning Techniques

Question Type and Definition:	Examples:	My Examples and Suggestions for Use in the Curriculum I Teach:
<p>1. <u>Application:</u> Questions designed to help students apply essential knowledge and skills to new settings and contexts.</p>	<ol style="list-style-type: none"> 1. How could you apply these grammar and usage principles to your essay? 2. How could you demonstrate an original use of this concept? 3. How would you illustrate this process in action? 4. What can we generalize from these statistics? What patterns can we identify? 5. What is a real-world situation in which you could use this algorithm? 	
<p>2. <u>Analytical:</u> Questions that ask students to dissect key information and analyze essential concepts, themes, and processes.</p>	<ol style="list-style-type: none"> 1. How are these characteristics alike and different? 2. What is an analogy that might represent this situation? 3. How would you classify these literary works and characters? 4. What are the major conflicts that precipitated this sequence of events? 5. What are the major causes of this situation? 	
<p>3. <u>Synthesis:</u> Questions that require students to formulate a holistic summary of key ideas, make references, or create new scenarios.</p>	<ol style="list-style-type: none"> 1. What would you hypothesize about these unusual events and their causes? 2. What do you infer from her statements? 3. Based upon these facts, what predictions would you make? 4. How do you imagine the space ship would look? 5. What do you estimate will be the costs for this project? 6. How might you invent a solution to this ecological problem? 	

<p>4. Interpretive: Open-ended questions that require students to formulate and defend opinions in response to text and life experiences.</p>	<ol style="list-style-type: none"> 1. What does Robert Frost mean when he says: “I have miles to go before I sleep”? 2. Why does this photographer emphasize only his subject’s eyes? 3. How would you explain the first line of the Declaration of Independence to someone from another country? 4. Why is Hamlet so indecisive? 5. What is the writer implying in this passage about the character’s motivation? 	
<p>5. Evaluative: Questions requiring students to formulate and justify judgments and criticisms based upon clearly-articulated evaluative criteria.</p>	<ol style="list-style-type: none"> 1. Why did you decide to choose that course of action? 2. How would you rank these choices in order of their potential effectiveness? 3. How might you defend—or reject—that character’s choice of action? 4. How would you verify your conclusions? 5. What is your critique of that work of art? 6. How would you approach this assignment if you had it do over again? 	
<p>6. Essential: Open-ended, interpretive questions that promote student inquiry into the big ideas and understandings at the heart of a content area or academic discipline.</p>	<ol style="list-style-type: none"> 1. What makes great literature great? 2. How does mathematics function as the universal language of science? 3. To what extent is war inevitable? 4. How do great writers hook and engage their readers? 5. How do scientists discover and study patterns in the physical universe? 6. How do our health and nutrition requirements vary according to our age, heredity, and physical condition? 	
<p>Techniques for Helping Students Respond to</p>	<p>Reflections upon My Current Use of</p>	

Higher Order Questions	These Techniques
1. Use Wait Time I and II: (a) Before calling on students, pose the question and allow a minimum of 2-3 seconds to pass before calling on someone to respond (Wait Time I); (b) Give students time to frame an answer and allow other students time to reflect upon that response before reacting to it (Wait Time II).	
2. Encourage students to identify the type of question being asked and active prior experiences in responding to similar types of questions (activating schema).	
3. Discuss with students the value of understanding various question types and strategies for responding effectively to each type.	
4. Use a variety of question probes (i.e., follow-up techniques) to encourage students to “unpack” their thinking and justify their responses to significant questions.	
5. Help students to organize their thinking and understanding related to the content and academic discipline they are studying by using essential questions to cue them into the big ideas, patterns, and themes that underlie and unify their curriculum.	
6. Engage students in debriefing sessions (including think-pair-share responses and writing logs) in which they reflect on their reactions to different forms of questions and follow-up question probes.	
7. Ask students to design and share higher order questions extending from the content they are studying.	
8. Model the sequence of strategies that can be used to unpack a particular question type and respond to it effectively.	
9. Help students to find and present evidence to back	

up and support their conclusions and responses to open-ended and higher order questions.	
10. Encourage students to use a range of evidence (e.g., facts, examples, statistics, quotes, summaries, paraphrases, reflections from authorities) to support claims and assertions related to various forms of questions.	
11. Create with students word walls and other visual displays of different forms of higher order questions.	
12. Incorporate higher order questions into constructed-response test items that parallel the types of items encountered on high-stakes accountability tests.	
13. Design academic prompts that encourage students to respond to higher order questions within the context of a given format, audience, topic, and purpose.	
14. Use culminating performance tasks and projects as summative assessments to monitor students' understanding of essential questions underlying the content for a unit or set of units.	
15. Ask students to create a list of higher order questions for students who will study the same content in future classes.	

Activity 4:

A Planning Guide for Using Different Higher Order Questioning Techniques in Teaching

Materials Needed

Handout: “A Planning Guide for Using Different Higher Order Questioning Techniques in Teaching”

Introduction

Different question types and related instructional techniques can help students extend and refine their learning and lead to their greater understanding of core content and related performance standards. Determining which questions and related questioning techniques are appropriate for a particular curriculum context—and teaching students to respond to them effectively with elaboration and evidence—is part of the challenge of making use of higher order questions. This activity will provide a planning process for educators to investigate the rich varieties of question types and their varied uses for enhancing the teaching-learning process.

Procedure

In this activity, you can explore the actual use of higher order questions and related instructional techniques in your work with students. An open discussion of question types and related instructional practices is useful, but if you prefer a more structured approach, the following planning guide and suggested steps might be useful:

1. First, individually review the curricula you teach, considering which question types and related techniques would be most appropriate for particular content emphases. For example, application questions can be extremely useful in promoting student understanding and transfer of curriculum content to new and independent settings and situations. Similarly, evaluative questions can be excellent tools for helping students to critique and judge information and compare various perspectives related to a specific controversial issue, topic, or event.
2. Share what you have written with others in your grade level, content area, or department. What similarities do you find in your choices? Any differences? Are there patterns that emerge where essential questions may serve as curriculum cueing tools to help organize students’ understanding of core content?
3. Consider as a group any initial instruction you would provide to students so that they can respond effectively to various forms of higher order questions and provide relevant and complete evidence to support their conclusions.
4. When giving students an assignment requiring their response to one or more forms of higher order questions, how would you design and present the assignment? What would you say to the students to reinforce their understanding of the relevance and purposes of

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various forms of questions? How would you use question probes (follow-ups) to facilitate student inquiry, discussion, and debate?

A Planning Guide for Using Different Higher Order Questioning Techniques in Teaching

Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Application Questions		
<p>Planning Questions Related to Application Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon application questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce application questions to students? 4. How can I use application questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use application questions to extend and refine my students' learning? 		
Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Analytical Questions		
<p>Planning Questions Related to Analytical Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon analytical questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce analytical questions to students? 4. How can I use analytical questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use analytical questions to extend and refine my students' learning? 		

Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Synthesis Questions		
<p>Planning Questions Related to Synthesis Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon synthesis questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce synthesis questions to students? 4. How can I use synthesis questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use synthesis questions to extend and refine my students' learning? 		
Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Interpretive Questions		
<p>Planning Questions Related to Interpretive Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon interpretive questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce interpretive questions to students? 4. How can I use interpretive questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use interpretive questions to extend and refine my students' learning? 		

Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Evaluative Questions		
<p>Planning Questions Related to Evaluative Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon evaluative questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce evaluative questions to students? 4. How can I use evaluative questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use evaluative questions to extend and refine my students' learning? 		
Type of Question and Technique(s)	Description, Examples, Key Ideas for Potential Uses	Potential Topics and Curriculum Focus Areas for Use with Each Type
Essential Questions		
<p>Planning Questions Related to Essential Questions:</p> <ol style="list-style-type: none"> 1. What aspects of my curriculum lend themselves to emphasis upon essential questions? 2. During this academic year, when would these curriculum areas be taught? 3. How can I introduce essential questions to students? 4. How can I use essential questions to reinforce the purpose(s) and goal(s) of my lesson(s) or unit(s)? 5. How can I use essential questions to extend and refine my students' learning? 		