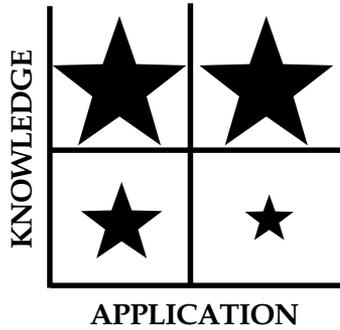


Teacher Questions



? Imaginative

? Information

? Analytical

- 1. Open-Endend Questions
- 2. Wait Time
- 3. Positive Feedback

? Opinion

? Follow-Up

? Conversational

Types of Questions

In order to ask the appropriate questions at the right times, it is important to understand the different types of questions and the kinds of information/response which they elicit. Questions can be grouped into six major types based upon the purpose in teaching and learning:

1. Information
2. Analytical
3. Imaginative
4. Follow-up
5. Opinion
6. Conversational

In the context of teaching and learning, information questions, analytical questions and imaginative questions pose the greatest potential for creating learning conversations. By using such questions, the teacher can stimulate thoughtful student reflection and learning.

Teacher questions can be a useful strategy in many aspect of teaching to:

- Increase student engagement in learning.
- Enhance the quality and depth of student thinking.
- Develop a questioning attitude in students whereby they learn to ask questions and seek answers.

Information Questions

Information questions are requests for specific information and have a narrow range of response. They are sometimes called “closed-ended questions” because there are limited responses. Such questions include “What year was the Declaration of Independence signed?” and “What is the square of 8?” Close-ended questions are precise probes for specific information and a quick response.

There are many group instruction situations where closed-ended information questions are appropriate. When seeking a simple recall of information, use a straightforward request for an answer. Closed-ended questions also are easier for students to answer than open-ended questions and can be used to build their confidence and willingness to respond prior to introducing questions that require more complex thinking.

Analytical Questions

Analytical questions serve as stimulants to students to reflect and compare information and then to form a response. Analytical questions and imaginative questions are the two types of open-ended questions where there are multiple appropriate responses to a question, or there may be no obvious answer at all.

For an analytical question, students must consider a wide range of information. This type of open-ended question attempts to create convergent thinking to bring large amounts of information to a logical response. Examples of analytical questions are: “What factors contributed to the American Revolution?” and “What were the reasons for space exploration?” This type of question requires more reflection in response.

There are several types of open-ended analytical questions that teachers can use to stimulate learning. When attempting to create thoughtful responses, it is important to be sure that the questions cannot be answered with a single fact or other simple response. Some ambiguity is appropriate, but the questions themselves should be precise enough to be understandable and should relate clearly to the topic under consideration.

Following are three types of analytical questions that can serve as guides when thinking of good questions to enhance learning.

Explanation questions encourage students to think about a process or system. By having to describe processes in their own terms, teachers can reinforce students perspectives on the essence of learning and require them to confront their own understanding of the topic.

Discovery questions require students to figure something out and examine an idea from different vantage points. These questions should present interesting problems that do not have simple or obvious solutions. They also should require students to link previously acquired information with new information.

Causation questions require students to think about possible reasons why something occurred. This type of question is ideal for making connections between human behavior and its consequences or for investigating scientific phenomena in nature.

Imaginative Questions

Imaginative questions are the second type of open-ended questions where students are challenged to consider vast amounts of information and where there are multiple correct responses. In this case, instead of stimulating convergent thinking to analyze information, the intent is to create divergent thinking and stimulate new combinations of information. Students are expected to create novel and unique responses to imaginative questions. Examples of imaginative questions are: “How could we count quantities if there were no numbers 6-10?” and “What would America be like if the British had been victorious in the American Revolution?”

Imaginative questions stimulate student thinking and lead to deeper understanding of an idea or concept. Imaginative questions can be divided into two subcategories: hypothetical and creative. In each case, students are expected think through responses that are novel or unique.

Hypothetical questions pose new situations and require students to look at topics in different ways. Rather than just recalling the facts of a lesson or other events in the class, students must link instruction to other background experiences.

Creative questions require students to design unique solutions from their own perspective. Students apply what they know about a situation to create an appropriate solution to a complex problem.

Follow-up Questions

An important aspect of teacher questions is handling student responses. Follow-up questions are those questions teachers ask following the initial student response to probe for further information, clarify misunderstandings, or redirect thinking. These questions directly relate to the initial question and are based on student responses. Examples of these questions are: “Why do you think that happened?” or “Is that the only factor?”

Depending on whether or not the student response is on target, the teacher can use one of several follow-up strategies to reinforce, probe, refocus, or redirect. If the students do not respond, use either a rephrase or redirect strategy.

Probe questions are useful if the initial student response is superficial. Probing questions make students explore their first reactions. Probes are useful to get students more involved in analyzing their own and other students’ ideas. Probes can be used to: analyze a student’s statement, make a student aware of underlying assumptions, or justify or evaluate a statement.

Refocus questions are appropriate when a student provides a response that appears out of context. The teacher can ask a refocus question to encourage the student to tie his or her response to the content being discussed. This technique is also used to shift attention to a new topic.

Redirect questions ask one student to comment on another student’s response, thus redirecting the conversation. One purpose of using this technique is to encourage more students to participate. This strategy can also be used to allow a student to correct another student’s incorrect statement or to respond to another student’s question.

Rephrasing questions are used when a student provides an incorrect response or no response. Instead of telling the student he or she is incorrect or calling upon another student, the teacher can try to reword the question to make it clearer, provide a clue, or break the question into easier parts.

Opinion Questions

Opinion questions are often not intended to probe for information, but are a way for the questioner to make known his or her own opinions. Such questions could be “Do you really believe that garbage?” or “Why does she act that way?” Opinion questions seek no real information, and often lead the person being questioned to give a predetermined response. This includes the typical rhetorical question that comes to mind in troubling personal experiences and has no answer, “Why me?”

Conversational Questions

Conversational questions are simple prompts used to facilitate conversation. The actual response is often less important than the fact that a response is made. Some examples of this type of question include such everyday expressions as “How are you?,” “Isn’t it a nice day?,” and “Are you listening to me?” These questions are used to start or redirect a conversation.

Effective Use of Information Questions

Information questions typically begin with “who,” “what,” “when,” or “where.” Examples: “Who was the first person to land on the moon?” “What is the first step in the writing process?” “When did Columbus visit America?” or “Where is the Mississippi River?”

Effective Use of Analytical Questions

Explanation questions ask students to think about a process or system. Explanation questions usually start with *How do ... ?*

Examples:

- How do you find the midpoint of a triangle?
- How do you determine the mass of an object?
- How does supply and demand affect prices of commodities?
- How does our government create new laws?

Discovery questions require students to figure something out and examine an idea from different vantage points. Discovery questions usually start with *What is...?*

Examples:

- What is the central theme of the story?
- What is the relationship between the number of sides of an object and the total degrees in all of the angles?
- What are examples of simple machines around the house?
- What is the meaning of the metaphor in the reading passage?

Causation questions require students to think about possible causes why something occurred. Causation questions usually start with *Why... ?*

Examples:

- Why did America enter the war in 1941?
- Why do compounds dissolve faster at higher temperatures?
- Why did 15th-century explorers travel the world?
- Why do some objects float in water?
- Why does lightning occur in thunderstorms?

Effective Use of Imaginative Questions

Hypothetical questions pose new situations to students and require them to look at topics in different ways. Hypothetical questions usually ask *“What”* or *“How”* and begin with a conditional clause that starts with *“If...”*

Examples:

- If a car had no speedometer, how would you measure speed?
- If you could go back in time to the era of the dinosaurs, how would you describe the world so we would know about it today?

- If you created your own language, what would you use for an alphabet?
- If Earth took 100 hours to rotate around its axis, what would be different?

Creative questions require students to design unique solutions from their own perspective. Creative questions usually start with *How would you ... ?*

Examples:

- How would you protect an endangered species of fish in a local lake?
- How would you divide a round pizza in seven equal pieces?
- How would you measure the height of a tall building?
- How would you measure the distance between two cities?
- How would you create a government where everyone had a chance to voice opinions on the issues?

Effective Use of Follow-up Questions

Even before asking follow-up questions, good instructional technique requires positive reinforcement of good student responses in order to encourage future participation. You can reinforce by making positive statements and by using positive nonverbal communication. Positive nonverbal responses include smiling, nodding, and maintaining eye contact, while negative nonverbal responses include appearing distracted by looking at notes or at the board while students speak, or by shuffling papers.

It is a good idea to vary reinforcement techniques using several verbal statements and nonverbal reactions. Try not to overuse positive reinforcement in the classroom by giving high praise to every comment. Students begin to question the sincerity of reinforcement if every response is given equal positive reinforcement.

Probe questions makes students explore initial comments.

Examples:

- What else can you tell me?
- What is an example of that concept?
- What do you mean?
- Why do you think that happened?

Refocus questions encourage the student to tie his or her response to the content being discussed.

Examples:

- How does that relate to what we saw?
- Is there a connection to the other causes?
- Is there another reason?

Redirect questions ask one student to comment on another student's response.

Examples:

- Maria, do you agree with Mark's explanation?
- Derek, from your experience, does what Markita said seem true?
- Jeff, can you give me an example of the concept that Luis mentioned?

Rephrasing questions try to reword the teacher question to make it clearer, provide a clue, or break it into easier parts.

Examples:

- Initial question: How does the Bill of Rights protect individual freedoms?
Rephrased question: What are examples of personal freedoms mentioned in the Bill of Rights?

- Initial question: What is an ecosystem?
Rephrased question : What are examples of plants and animals that need each other to survive?
- Initial question: What is the name of an eight-sided shape?
Rephrased question: What names do you know for multi-sided shapes?

General Suggestions

Do planning with other teachers to create a good list of questions. Don't just wing it with questions that pop into your head at the spur of the moment. If you want to stimulate good quality thinking with your students, plan thoughtful questions. In a group, brainstorm several possible questions and discuss those that will be the most effective. Share questions that work well, and keep a record of those good questions for future use.

Compliment students. Questions are part of creating a conversation. When used in a conversation, you should compliment students on their response. Don't routinely praise all comments, but praise students when they do contribute and compliment particularly good responses. By effectively using praise, you can stimulate more student thought and response to questions.

Give time for students to think. Don't expect an immediate response. Frequently having students think on their own and discuss their ideas in groups of two or three will enable them to think through ideas before responding in front of the class.

Wait 3-5 seconds. One factor that can have powerful effects on student participation is the amount of time you wait between asking a question and doing something else (calling on a student or rewording the question). Research on classroom questioning and information processing indicates that students need at least three seconds to comprehend a question, consider the available information, formulate an answer, and begin to respond. In contrast, the same re-

search established that on the average a classroom teacher allows less than one second of wait-time. Allow three to five seconds of wait-time following questions. Simpler questions require less wait-time, perhaps only three seconds. Complex questions may require five seconds or more. With particularly complex questions, tell students to spend two or three minutes considering the question and writing down some ideas.

Listen to the student. This helps to focus the attention of the class on the student who is responding to the question. Maintain eye contact with the student. Use nonverbal gestures to indicate your understanding, confusion, or support. Do not interrupt even if you think the student is heading toward an incorrect answer. On the frequent occasions when students do reach an incorrect answer, the other students may learn as much from that response as from a correct one. Furthermore, interrupting students does not create an atmosphere that encourages participation.

Call students by their names. This avoids confusion as to who was called upon and also helps create a positive climate where students feel you know them as individuals.

Use active listening. Wait for a second or two following a student response, paraphrase when the answer is long, and check with the student to be sure your perception of his or her response is accurate.

Encourage nonparticipants by calling on a specific student to answer a question. Ask the question, then call on the student. If you call the student's name first, the rest of the class may not listen to the question. Another way to get all students to think of a response is to pose the question and tell students to raise their hands when they have an idea or response. Wait until all hands are raised before letting a student respond.

Randomly select students to respond. Try not to follow any set pattern when calling on students.

A graphic featuring a central rectangular box with the text "Teacher Checklist" in a bold, serif font. This box is flanked by two ribbon-like shapes that appear to be tied together at the top, creating a banner effect.

Teacher Checklist

- Yes No You planned your questions through discussion with peers, considering many questions and selecting those that would best stimulate student thinking.
- Yes No You first asked a question of the class and then called on a student to respond.
- Yes No You referred to students by name when calling on them and complimented them on a response.
- Yes No You limited the use of closed-ended (information gathering) questions to instances when you clearly wanted students only to recall specific information or when you were starting students off in a discussion.
- Yes No You used open-ended questions frequently to stimulate student thinking.
- Yes No You used wait time (3-5 seconds) following a question to enable students to think about the question and responses.
- Yes No You used positive nonverbal cues to show the importance of student responses and the interest you had in them.
- Yes No You routinely probed student responses with additional questions to ensure they understood and to encourage them to think deeper.
- Yes No You used techniques to engage all students in responding to questions.
- Yes No You maintain a list of effective teacher questions to use in future lessons.