



Using Questions, Data to Develop Creative Problem-Solving Skills

by Cindy McClung and Bob Hoglund

Creativity has become a buzzword in the education community. When teachers are told they need to be creative, they often envision art projects, music or—for teachers who cringe at the word—an out-of-control classroom where students are creatively designing their own curriculum but are not necessarily learning the skills needed to be successful in life.

If we refer to the dictionary, however, we find several meanings for the word—among them are, “able to create,” “new and original” and “resourceful.” It is important we keep all of these meanings in mind as we attempt to engage students and urge them to expand their thinking.

An easy way to begin the process of helping students increase their creative abilities is to engage them in class meetings. William Glasser identified three types of class meetings: open-ended, problem-solving and educational-diagnostic.¹ This article concentrates on the open-ended meeting.

Open-ended meetings are designed to help students explore their beliefs and values, and hear others' points of view. Open-ended topics do not have correct answers, which allows students to think more broadly or creatively.

Glasser identified the three main components of questions used in an effective class meeting:

1. **Define the problem or issue.** For example, what is the definition of quality?
2. **Personalize the problem or issue.** For example, how has working for quality helped or hurt you?
3. **Create challenges to stimulate thought and discussion.** For example, is there an inherent goodness to the word quality? In other words, does quality apply to drug dealers, murderers and thieves?

At the beginning of the school year, some questions for each component might include:

Define:

- What does it mean to have a good school year?
- What things are important for us to accomplish this year?
- What type of an environment do we want to have in our classroom?

Personalize:

- What was your favorite year in school?
- What are your goals for this year?
- How do you like to be treated in school?

Challenge:

- What are some ways we can work together to have a good year?
- How can we accomplish the goals we set this year?



- How will we know if we have the type of classroom we want?

These questions are designed to set the stage to help students define goals, design action plans to meet those goals, and collect and analyze data to monitor their progress. Subsequent class meetings can be used as a framework to begin this process. As the students become more adept at analyzing data, meetings can be used to discuss the learning process, including topics such as what strategies work best for specific students, what types of data-collection tools work best for assessing different types of information and ways to increase class and individual achievement. This is another way of encouraging resourcefulness.

For a quality culture to be created or maintained, students must be involved and take responsibility for their learning. They should be able to answer these questions:

- What measured benefit is derived from including students in a goal-setting process if there is no measurement of growth?
- What is the benefit derived from collecting student data and not including them in a reflection, evaluation and planning process?

Through an emphasis on questioning, self-evaluating and using data and tools, educators can help students focus on internal motivation and decrease the use of external rewards and controls.

The following example begins to address these areas. It could also be separated into several shorter meetings, used as writing prompts or discussion points in an individual student conference.

Define:

- What is data?
- Why do we take tests such as state standardized tests?
- Why is data important?

Personalize:

- What learning, grades or test scores do you want to have?
- What data are important to you? How have you used that data to improve?
- What goals and action steps do you have?
- How do you know if you are making good progress?

Challenge:

- How can you use data to increase your learning?
- What are the best tools for collecting data on class or individual progress? Why is it important to use the best collection tools?
- Is it important to compare your own progress to that of others? Why or why not?

Class meetings are an important ingredient in helping all students learn to think in more open and creative ways, and to begin to look at topics from a variety of perspectives. They also help students develop a



comfort level with answering questions. Too often, students believe if they are asked to explain why they chose a certain answer or made a certain decision, they must have done something wrong. Using questions in the nonthreatening atmosphere of a class meeting eases students' concerns and familiarizes them with the self-evaluation process.

The self-evaluation process can be effectively taught using a questioning process Glasser developed. The four basic questions can be used with an individual student or with a whole class, with very little adaptation:

- What do you want?
- What are you doing to get what you want?
- Is what you are doing getting you what you want?
- What is your plan to accomplish and stay focused on your goal?

The questions are not sequential nor are they scripted in their application. In fact, you should rarely begin a conversation with a want question, and there are several ways to ask it, such as, "What is important to you?" or "What is your goal?" This particular order simply shows how the questions were developed to help people evaluate what is important to them and to determine the best way to obtain it.

The questions can be used in a whole class setting to involve students in reflection, evaluation and planning. Here is a sample of the teacher's part of the class discussion:

Our graph indicates the percentage of students who reached the 80% learning goal last week. Let's look at our data.

Did our line go up or down?

Did we improve from the last time?

Are you personally satisfied with our results?

How many of you followed our class plan?

Did the plan work?

How do we know if it worked or not? Did enough people follow the plan to know?

What do we need to do this week to be successful?

Using these questions encourages students to analyze the data and think creatively about ways to improve.

The questioning process is particularly effective when conferencing with individual students. With practice, educators will be able to effectively use the process with cooperative and uncooperative students in academic and behavioral situations.



The following is an example of how to use the questioning process in a short, quarterly academic conference with a student who wants to do well and learn:

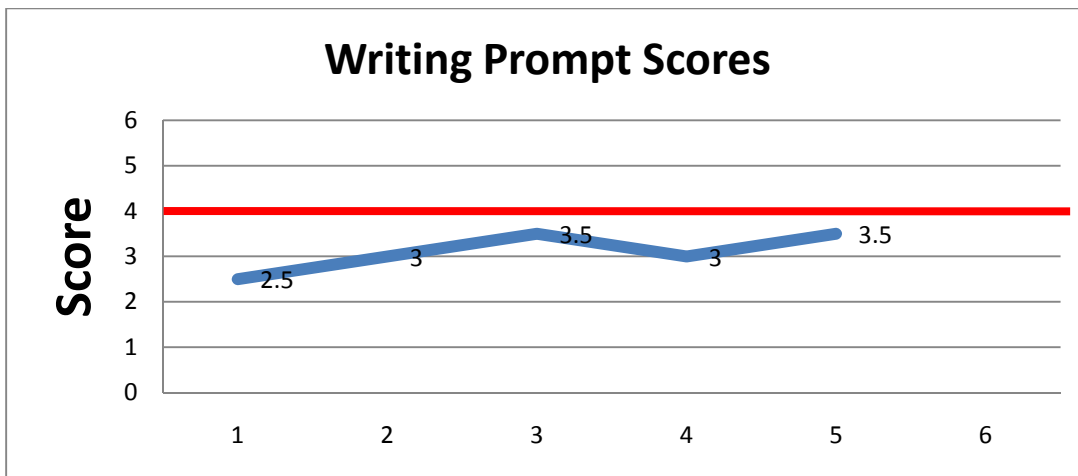
Class goal: By the end of the third quarter, 100% of the class will master the skill of persuasive writing, as demonstrated by scoring at least a 4 on the writing rubric.

Student's goal: The student will master writing a persuasive essay by the end of the third quarter, as demonstrated by scoring at least a 4 on the writing rubric.

Student's action plan:

1. Study the writing rubric before each writing assignment.
2. Use words from the persuasive vocabulary list.
3. Read feedback from each essay.
4. Rewrite each essay, using suggestions from the feedback.
5. Resubmit for grading.

Results



(T=teacher, S=student)

T: Tell me about your progress in persuasive writing so far this quarter.

S: Well, I've gotten to a 3 twice and to a 3.5 twice.

T: Did that meet your goal?

S: No.

T: Are you satisfied with that?

S: No.

T: Have you been following your plan?

S: Sort of.

T: Tell me if you followed each of the steps last week.

S: Well, I looked at the rubric, and I knew it was a persuasive essay, so I used words from the list you gave us, but I only got a 3.5.



T: What feedback did I provide on your paper?

S: You said I used good words, but I needed better organization in the paper, and I needed to stay on topic. That's what you usually say about my papers.

T: So have you been working on those things for your rewrite?

S: Well, I don't really have time to rewrite the papers, so I usually just change a couple of things and turn them back in.

T: Has changing a couple of things improved your organization?

S: No.

T: Has it helped you stay on topic?

S: Not really.

T: So, you usually have the same two comments. If you think about it, how do you think they are related?

S: Well, maybe if my paper were more organized, I could stay on topic better.

T: What would you have to do for the paper to be more organized?

S: Maybe if I did an outline of my paper first, it would keep me on topic.

T: Do you know how to do that?

S: Yes.

T: How might that help you in terms of your rewriting?

S: If I organized my paper better and stayed on topic, I shouldn't have much to rewrite.

T: That sounds like a good plan. Will you follow it this week?

S: Yes.

T: Great. Let's check back after the next paper.

Notice the questions are short and the student must think about the answers and accept responsibility for what has or has not been done. The student is also asked to find a solution, rather than being told what to do.

Think back to the multiple definitions of creative at the beginning of this article. Using questions and data to help students evaluate their learning meets all three definitions. It encourages them to be resourceful, to be able to create their own paths for learning and to seek new and original strategies for improvement.

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Reference

1. William Glasser, *Schools Without Failure*, Harper and Row, 1969.