FIVE ITEA GALLUP POLL QUESTIONS THAT WILL IMPROVE INSTRUCTION

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The ITEA Gallup Poll has allowed students at this school to gain a much broader view of what technology and design are.

The International Technology Education Association (ITEA) commissioned the Gallup Organization in the spring of 2001 to research American citizens' knowledge and attitudes about technological literacy (Dugger & Rose, 2002). Technology is important in everyone's lives, whether they are aware of it or not and regardless of the need or desire to understand their surroundings (Starkweather, 2002). During the spring of 2004, the same poll was conducted with students at a small rural school district located in the northeastern region of the United States. There were 56 students in Grades 9-12 participating. The goal was very similar to the poll administered by ITEA: to determine the students' understanding and perception of technology. Just as in the two Gallup polls administered by ITEA, what the students thought is not what is necessarily true. Surveys are not about fact; they are, instead, about what people think (Rose, Gallup, Dugger & Starkweather, 2004).

Five questions were selected from the Gallup poll. Then these five questions, shown in Table 1, were used to improve instruction inside the technology education classroom. They were chosen specifically because they cover some of the basic concepts students should know about technology. Not only the national ITEA Gallup poll but also the school district poll revealed that there is some confusion pertaining to the teaching of technology. Starkweather concluded that: "If our field is to progress, clear up confusing terminology, and become a solid core subject in the school curriculum, then we must start by

creating model teaching and learning environments in a curriculum to reflect technological literacy" (2002, p.33). Using these questions as a way of improving instruction can help accomplish this task. Another reason these questions were selected was because they can serve as a springboard to explaining the connections that the content of technology has with science, mathematics, and engineering. Finally, these questions can be used to analyze student interest in technology education activities being taught in the classroom.

The results from the poll are presented in a similar format to that of the national poll. The numbers in black represent the student Gallup poll while the numbers in italics represent the national Gallup poll.

After the results were analyzed for Question 1, a difference was noted between the national and the student polls. The percentage was less when answering that, "computers" is the first thing that comes to mind when they hear the word "technology." Perhaps the reason for the discrepancy is because, at the beginning of their technology courses, it is emphasized that computers are one of many technological tools.

After reviewing Question 2, the instructor was able to learn of a way that teaching could be improved. When the technological design process and the technological problem-solving methods were taught to students, many of the examples given pertaining to design were similar to blueprints and drawings from which

1. When you hear the word "technology," what first comes to mind?

2. When you hear the word "design" in relation to technology, which one are you more likely to think of—"a creative process for solving problems" or "blueprints and drawings from which you construct something?"

3. Which of the following statements best describes your attitude toward the various forms of technology you use in your everyday lives? (Question 3, p.7)

4. To which of the following do you feel technology is of the most importance and has the greatest effect? (Question 4, p.8)

5. If you believe that technology should be part of the curriculum, should the study of technology be made part of other subjects like science, math, and social studies, or should it be taught as a separate subject?

Table 1. The five ITEA Gallup poll questions used.

something is constructed, indicating a probable explanation for the similarity between results. Many of the design activities in which the students participate involve creating sketches and drawings from which they are going to build something. In the future, when the design process is explained, it will add examples of designs that do not necessarily involve creating a blueprint or a sketch.

Question 3 of the Gallup poll can be used as one way to measure student interest in classroom activities. Very similar to the national poll, a large percentage of students answered that they would like to know something about how various forms of technology work. The high school students answering these questions were in an elective class, as is the case with many high school courses within a technology education program. If an instructor were to give this poll to students and the results indicated by a larger percentage that "they did not care how the technology worked as long as it worked," compared to "would like to know something about how it worked," it may be an indication that the classroom activities are not sparking the students' interest. In this case, the instructor should consider changing some of them. It is evident that if the students are interested, they have a much better chance of learning, compared with students who are not interested.

The fourth question of the Gallup poll asked students where they felt technology had the greatest effect. In a response very similar to the national poll, students answered "society." Also, the percentage that answered "the environment" doubled that of the national poll. One reason for these results may be that the students heard the teacher stress that technology does have an enormous effect on our society and the environment. Many of these students also participated in technology activities that dealt with impacts pertaining to the environment and society.

Question 1.
When you hear the word "technology," what first comes to mind?

List of Options	Total %	Male %	Female %
Computers	44(67)	41	58
Electronics	29(4)	13	14
Education	1(2)	---	14
New Inventions	17(2)	17	14
Internet	---(1)	---	---
Science	2(1)	1	---
Space	4(1)	5	---
Job/work	2(1)	3	---

Question 2.
When you hear the word "design" in relation to technology, which one are you more likely to think of—"a creative process for solving problems" or "blueprints and drawings from which you construct something"?

		% Selecting	
Selection	Total %	Male %	Female %
A creative process for solving problems.	40(41)	44	14
Blueprints and drawings from which you construct something.	54(59)	51	72
Don't know/refused	6(---)	5	14

Question 3.
Which of the following statements best describes your attitude toward the various forms of technology you use in your everyday lives?

Attitude	Total %	Male %	Female %
You don't care how it works as long as it works.	17(24)	7	72
You would like to know something about how it works.	77(75)	86	28
Don't know/refused	6 (1)	7	---

The final question was selected to improve instruction pertaining to teaching technology through integration with other content areas or as a separate discipline. The students' answers to this question were in dramatic contrast to the national results. Many of them believed that technology should be taught as a separate subject. This indicates that students do not see the important connection between technology and other subjects, such as mathematics and science. Students also do not see the connection that technology has with engineering. Therefore, it is important that students participate in activities that integrate other areas of learning as well as being informed how these connections are made. Teaching activities that incorporate other disciplines also helps validate a technology education program. This also can be used to show the importance of

Question 4.
To which of the following do you feel technology is of the most importance and has the greatest effect?

Selections	% Selecting
Our society	63(*62*)
Our environment	10(*20*)
The individual	10(*17*)
Don't know/refused	17(*1*)

Question 5.
If you believe that technology should be part of the curriculum, should the study of technology be made part of other subjects like science, math, and social studies, or should it be taught as a separate subject?

Preference	% Selecting
Teach as part of other subjects	20(*63*)
Teach as separate subject	66(*36*)
Don't know/Refused	13(*1*)

teaching technology to people who believe it is not as important as some of the other teaching disciplines.

Historically, the teaching of technology has not been valued as highly as science or engineering. The realization that technology is all around us, impacts us, and is a major factor in our lives largely goes unrecognized in education (Starkweather 2002). Another value of conducting technological activities that integrate other subject areas is to assist students in the preparation for standardized tests. Currently, in the state where this poll was administered, students are assessed on reading, writing, and mathematics. Teaching technological activities that incorporate these subjects promotes the value of a technology education program.

So how does a technology education teacher use the ITEA Gallup poll to improve instruction? The first step is to administer these same poll

questions to his or her students. It is recommended that these exact questions be given to students no lower than the middle school level. If they were to be given to students at the elementary school level, the questions should be modified so they are more simplistic and easier for students of that age to understand. Once these questions are administered, the results should be tallied in a format similar to that used by ITEA. The results of these questions should then be analyzed.

If some of the results are not what was expected, determine if the following five benchmarks are being delivered within the activities of your classes.
- Make sure that the students are aware of the role that computers play in the field of technology education.
- When explaining design, give students examples of design other than creating a set of blueprints or drawings to construct something. Also be sure to conduct design activities that do not involve creating blueprints or drawings for something to be constructed. (This is not saying activities that involve designing blueprints or drawings for something to be constructed should be eliminated, but rather should include activities that involve different types of design.)
- Evaluate student interest with the activities that are currently being conducted. If a lack of student interest is being exhibited, alternative technology activities should be considered.
- Conduct technology education activities that allow students to understand the impact that technology has on society, the environment, and the individual.
- Integrate math and science when students are participating in technology education activities.

If the results are similar to the desired answers of the poll, it is a safe assumption that these five benchmarks are being met. It is also a

strong possibility that some of the desired results will be met. If this is the case, some minor tweaking may be all that is necessary to improve instruction. The possibility is also very strong that, if these benchmarks are being accomplished, the standards for technological literacy are also being met.

In conclusion, the use of the ITEA Gallup poll has now allowed students at this school to gain a much broader view of what technology and design are. Another area that has been emphasized, since administering this survey, is that science and mathematics play a major role in the study of technology. It is planned that this poll will be administered again in several years, and a comparison will be made between those results and the results of the current poll. Technology education teachers everywhere are encouraged to use this poll to improve instruction. There is evidence present that the data received will be interesting as well as beneficial when teaching students technology.

References:

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