Instructional Scenarios for Benchmark 3C (3-5)#5

Instructional Scenario A

Mr. Brandt's class of 4th and 5th graders had worked in the computer laboratory twice a week for six months. The students also used the four computers in their classroom. Sometimes all students did the same activity, and sometimes they worked on individual projects.

Today, however, was different. Mr. Brandt showed the class a videotape about the history of computers. The students were amazed at the large size of early computers. They also discussed how the prices of computers had gone down.

"What would life be like without computers?" Mr. Brandt asked.

"We would have to write everything on paper," Alethia said.

"We couldn't try different things with our database on mammals," commented Antonio.

"Let's take a tour of the school and see how computers help us in many different aspects of our school life," Mr. Brandt suggested.

The class found computers being used in many different settings: cafeteria, furnace room, auditorium, staff development room, and office, as well as in most classrooms.

For homework that day Mr. Brandt asked the students to write an essay on "The Benefits of Computer Technology for Students."

Instructional Scenario B

Mr. Avery showed his 5th-grade class a picture of a family riding in a wagon pulled by a horse.

"Long ago," he said, "this is how many families traveled. Now we have cars. How many of you will ride somewhere in an automobile today?"

Most students raised their hands.

Mr. Avery then asked the students to work in their groups to brainstorm a list of the ways in which cars help us. Such benefits as the following were listed:
- Cars get us to where we want to go faster than walking.
- You don't get wet when you ride in a car and when it's raining.
- You can carry a lot of your things in your car.
- It's easier to ride than walk.

Next Mr. Avery requested lists of problems caused by cars. The students' responses included:
- You can have accidents and people can get hurt.
- It takes a long time to pay for a car.
- Cars cause air pollution.

- It's hard to get rid of old, worn-out cars.

"So," continued Mr. Avery, "are cars good for us or bad for us?"

After the class had decided that cars are both helpful **and** harmful, Mr. Avery asked students to consider how people are working to find some solutions to the problems cars cause us. He obtained appropriate articles from his magazine and newspaper file. Then, he organized the students into groups to study ways of lowering the accident and injury rates, reducing air pollution from automobiles, and disposing of discarded cars.

Using the jigsaw cooperative learning model, the students worked on the project for an hour each day for a week. They then shared their findings with the whole class.

After the presentations, each student completed a journal entry supporting the statement, *new technology can cause us both benefits and problems; sometimes we can find ways of solving the problems.*

Instructional Scenario C

Ms. Wong held up the newspaper. "**CAR EXHAUST MAJOR CAUSE OF AIR POLLUTION**," said the headline.

"In our health unit," the teacher commented to her 5th-grade class, "we have been talking about illnesses caused by pollution. Here is an article about one cause of air pollution. Let's read the article," she said, "to see what experts are suggesting we do about this problem."

Ms. Wong gave out copies of the article, and the students read it. Amy, who was vision-impaired and had read from a large print copy, raised her hand.

"It says we could limit traffic in downtown areas," she said. "Maybe we'd have to walk in some parts of the city instead of driving."

"The article also suggests car pools," commented Lorraine. "I think that would be better."

"I read in my father's science magazine about a neat thing for cars called a CVT," said Jerome. "My dad says it's good because it will reduce pollution. I could bring the article in."

"Please do that, Jerome," said Ms. Wong. "Cars help us in many ways, but they also cause problems, like pollution. Then people have to find ways to solve those problems."

"Can you think of another invention," she continued, "that is very useful but also causes problems? Take some think time before you answer."

After a few minutes Amy volunteered. "Radios," she said. "They're great because you can listen to your favorite group. And my mother likes to hear the news every morning. But sometimes you have to listen to a lot of commercials, too. And sometimes people play radios too loud, so you have noise pollution."

"For homework," said Ms. Wong, "please identify something in your house that was invented to help people. List the ways in which this thing is helpful, but also list any problems this thing has caused. We'll share our findings tomorrow."

Instructional Scenario D

"Last week we listed all the examples of technology we could observe in our own classroom," said Dr. Opara to her 4th grade class. "We mentioned the pencil sharpener as an example of technology. I'm sorry to tell you that our pencil sharpener has to be repaired, and we will not have it back for a week."

When the students looked at the place where the pencil sharpener had been, they saw only the holes for the screws that which had attached it to the wall.

"But I need to sharpen my pencil," said Juanita.

"And I will need to pretty soon," added Albert.

"I believe we shall all need to sharpen our pencils before long," said Dr. Opara. "What shall we do about our problem?"

"Maybe we could get some ideas if we try think-pair-share," suggested Joel.

"Let's try that," agreed Dr. Opara.

After students had considered the problem and shared ideas with partners, the pairs shared ideas with the whole class. Dr. Opara listed the ideas on the board:
- Write with pens.
- Borrow a pencil sharpener.
- Use slates and chalk.
- Call the repair person to see whether we could get the sharpener back sooner.
- Don't write much, so our pencils will last.
- Bring more pencils from home.
- Ask the teacher next door if we can use her pencil sharpener.
- Write with crayons.

"You have some good ideas," Dr. Opara said. "I must tell you, however, that the repair person said the sharpener could not be fixed in less than a week. Why don't we try the other ideas?"

The students found that they could not borrow a pencil sharpener. Mrs. Milburn next door allowed them to come in to sharpen pencils only before school and at the end of the day. Most students used two or more of the other strategies during the week.

When the students entered a week later to find the repaired pencil sharpener installed, they applauded. Dr. Opara applauded the students.

"It wasn't pleasant, being without our pencil sharpener," she observed. "We depend a lot on this, as well as on many other examples of technology. How do you suppose people sharpened their pencils before there were pencil sharpeners?"

The students did not know, but wanted to find out. Dr. Opara assigned the question as their next investigation.