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1. What are at least (3) shortcomings of the Teach by Telling approach?

- It conveys that there is only one correct solution to the issue, distorting the subject of mathematics and disempowering students who might naturally wish to try to find a different approach.
- Instead of presenting the student as an autonomous thinker with the capacity and responsibility for solving the problem, it casts them as a passive learner who is dependent on the teacher to provide ideas.
- By giving students clear instructions on how to tackle an issue, it reduces the possibility that they will try a new challenge. However, determining a strategy to solve the current issue is what mathematics is all about.

2. Give an example (your own) of a math problem with multiple entry and exit points.

two numbers have a sum of 78, what could those two numbers be?" a possible solution could be 77+1 = 78. Or 75+3 =78 or even 79-1=78

Add 2 three-digit numbers that have a sum of 987. What can the two numbers be? Find as many solutions as you can.

3. What is the role of literature in the math classroom?   The role of literature in math is to provide additional comprehension using literacy methods such as identifying unfamiliar vocabulary, decoding the text, and identifying and analyzing the author's purpose or perspective.

4. What are 2 different ways the "scarf problem" can be solved? (p. 46). Anthony is knitting scarves for gifts for his sisters. Each scarf is one yard long and he can knit 1/4 of a scarf each day. How long will it take him to make 3 scarves (3 yards)?

     i.   Method One: I know that 1/4 is a quarter of a yard which equates to four parts as a whole. Therefore it will take him 4 days to complete one scarf and 4 x3 scarves equal to 12 days.

    ii.   Method Two: Since a yard has four parts, if Anthony is knitting ¼ each day, he will need 4 days to make one scarf. Since he needs to make 3 scarves he will need :4 + 4+4 =12 days to make 3 scarves.

5. How does a teacher decide what student learning objectives should be used for a given lesson? In other words, where do these objectives come from? (chap. 4)

- Activate Prior Knowledge.

  This means both reminding them of what they have already learned and connecting it with their personal experiences. What form this might take will vary from subject to topic, and may include vocabulary and tools that might be used for the focus task.

- Be Sure the Task Is Understood.

  You must be sure that students understand the problem before setting them to work on it. Time spent building understanding of the task is critical to the rest of the lesson. The more questions raised and addressed prior to the task, the more engaged students will be in the during phase.

- Establish Clear Expectations.

  The process of setting expectations involves two parts: (1) the manner in which students are to work and (2) the materials they are to prepare for the discussion. When students work in groups, there is the possibility of some not contributing or

learning. On the other hand, when students work alone, they have no one to look

to for an idea. So it is essential to have students be individually accountable and

also work together. One effective strategy is to have each student write and

illustrate their solution independently, then present the team's solution as a group.

Writing supports student learning in mathematics, and having multiple ways to

demonstrate knowledge is important for providing access to all learners.

Reference

SanGiovanni, J. J., Katt, S., Knighten, L. D., & Rivera, G. (2022). *Answers to your biggest questions about teaching elementary math*. Corwin.