

# Effective instruction



In a situation where they are giving a correct response, but cannot explain why they are getting the correct response, the teacher needs to use sound questioning techniques to help the students understand if they are using the correct reasoning and steps to arrive at the answer. This is more important now than ever before, because many state proficiency tests spawned by the No Child Left Behind law require students to show and explain their work in order to receive full credit on some questions.

One effective questioning technique helps the students utilize the problem solving technique of solving the problem backwards. In this case, after asking several students in class why they chose 7 as the correct answer but found they could not describe how they arrived at the answer, the teacher could ask the student to approach the problem from a different angle. He could inquire if they could explain why they thought the numbers 5 or 6 was the incorrect answer. Based on the student response, the teacher may be able to discover the source of the student misunderstanding. If they gave an answer implying that 5 and 6 are lower numbers than 7, then the teacher would see clearly that students were missing the main point of the probability exercise. If the student's response was heading in the right direction, meaning they were showing an understanding of the probability problem, but were struggling with the proper terminology, then the teacher could re-work the problem with the class, once again using the proper steps and terminology.

In general, the questioning technique that is most useful in this situation is one that asks very general questions at first, and then begins to ask more specific questions as the students continue to struggle to grasp the concept. Asking questions that are too specific too soon robs the student of the

chance to think the problem through and discover the solution themselves (Polya, 1957).

In the example provided, if the students' answers as to how they solved the problem indicate a real lack of understanding of the basics of probability, then returning to the original material and re-teaching it a different way would be recommended. One way of re-teaching using a powerful questioning technique would be to approach the problem from an inductive reasoning point of view. Instead of defining probability, and forcing the steps of solving the problem again the way you have already done, encourage the students to think about answers to leading questions that will guide them through the steps and to a final conclusion of their own realization.

Give the students two dice and ask them to find out how many different combinations can result in the number 5, how many can result in the number 6 and how many can result in the number 7. Guide students that are struggling with this task by taking one die and asking If I roll a 1, what do you need to roll to result in a 5? Repeat the questions until the students can see all possible combinations. If the dice are differentiated (i. e. one red and one blue) then they will find that 5 and 6 have eight different combinations, while 7 will result in twelve different combinations. This is where the students need to understand that the higher the number of possible combinations for each number means the probability of rolling that number is higher. Questions can be asked to see if the students are making this connection. If they are, then the original question can be stated again, this time with the students responding correctly and being able to explain how they arrived at their answer.

Work Cited

<https://assignbuster.com/effective-instruction/>

Polya, G. (1957). In the classroom. In Polya, G., How to solve it (pp. 1-32).

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