Brainstorming as a Strategy in Teaching Mathematics

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Motivation in a mathematics class is indispensable, although it is a reality that all students should be properly motivated, especially the poorly motivated ones, the teacher should not ceased in finding ways to deliver the lesson at hand deliberately and accurately. One way to do is brainstorming.

Brainstorming is a teaching strategy for releasing ingenuity and for enhancing critical thinking, especially in mathematics wherein higher order thinking skills of students should be developed. Students can use this to come up with ideas until the group decides for the best solution.

Similarly, when a teacher wants to expand a subject matter into the values arena, he or she can often use the power of brainstorming to uncover the non obvious connections. For example, a teacher might conclude a lesson in multiplication by asking students to brainstorm real-life situations in which using multiplication would be helpful. The teacher can also ask students to think open-mindedly about a topic to generate lots of ideas without worrying if any of their ideas is reasonable or not. He or she might ask students sitting in a small or large group to create a long list of alternatives, say balancing the home budget or doing long mental division.

In a study conducted by Sdouh (2013), entitled “The Effect Of Using The Strategies Of Brainstorming And Computer Education In Academic Achievement And The Development Of Creative Thinking Skills Of Sixth Grade Students In Jordan And Their Attitudes Towards Learning Mathematics.” the results showed that there are differences with statistical significance in ($\alpha \geq 0.05$) among the averages of the academic achievement as well as the skills of creative thinking of the two groups. The results went for the benefit of the experimental group that used the strategy of brainstorming. Moreover, the study showed that there are differences with statistical significance in ($\alpha \geq 0.05$) for the group that used the strategy of computer education to learn the engineering unit.

Indeed, if a mathematics teacher truly hopes to release ingenuity and encourage productive thinking, then he or she needs to use brainstorming techniques. Brainstorming is a key tool that applies to most problem solving and complicated mathematics concepts. In fact, brainstorming strategy is an assumed component in many subjects not only in education, but also in other sectors of the society.

Here are some basic rules for the teacher adopted from Osborn’s four rules:

- **CRITICISM IS RULED OUT.** Adverse judgment of ideas must be withheld until later.

- **“FREE-WHEELING” IS WELCOMED.** The wilder the idea, the better; it is easier to tame down than to think up.
The teacher explains that everyone’s ideas will be heard and recorded. One thing to make clear is that the only bad idea is the one that isn’t expressed. The goal is productive thinking.

- **QUANTITY IS WANTED.** The greater the number of ideas, the greater the likelihood of winners.

- **COMBINATION AND IMPROVEMENT ARE SOUGHT.** In addition to contributing ideas of their own, participants should suggest how ideas of others can be turned into better ideas; or how two or more ideas can be joined into still another idea.

When the brainstorming portion of the group/s is are completed, you may want them to have the group sort the suggestions by considering their probability, impact, implications, advantages, disadvantages and priorities. This part is optional. What is important is to select the best results/ answers to the problem being solved. It’s good if all groups have best answers.

**Reference:**

Walid Mahmoud Sdouh. “The Effect Of Using The Strategies Of Brainstorming And Computer Education In Academic Achievement And The Development Of Creative Thinking Skills Of Sixth Grade Students In Jordan And Their Attitudes Towards Learning Mathematics.” May 2013, University of Jerash, Jordan


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