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Teaching Strategies in Math

Conventional approach- systematically going about teaching different levels of math. First start with ideas and techniques, then gradually getting into algebra, geometry, etc.

Classical education- using Euclid’s Elements way of teaching students in the Middle Ages, consisting of paradigms and reasoning.

Rote learning- teaching the students a method or equation to finding the answer without giving a meaning as to how the equation works. Basically, doing the same equation multiple times to help memorize the equation (multiplication tables, formulas, definitions, etc.)

Exercises- doing multiple exercises of the same type to reinforce the same skill.

Problem solving- solving open-ended, unusual, or unsolved problems using creative thinking and previous learned techniques. Finding the answer by one’s own technique.

New Math- focuses on abstract concepts and has the student figure out why an equation works rather than just what the right answer is. Uses set theory, functions, and bases.

Historical method- gives students a historic background on the items at hand and how the creator came up with the equation or theorem.

Standards-based mathematics- gives the students a deeper understanding of mathematical ideas and procedures. Gives the students in high school thinking about careers in math a better opportunity to learn more in high school.

Guess and Check- students are given a problem that may have more than one way to answer, but has a specific solution wanted; students must guess what could work and figure out if it is the desired answer. Ex. “You have 4 coins that add up to 45 cents, what are the coins?”

Make a table- this has students see trends that are or are not consistent. If they are consistent then it will make work much simpler in the end.

Formulas- having students use multiple formulas to find a desired answer. This is useful in pre-algebra and up. Gives the students multiple methods to get the answer as the student must identify correct usages of the formulas at hand.

Simplify the Problem- many times a problem seems very difficult at first, but students can divide up a bigger problem into simpler smaller problems.

Journaling in Math- this gives students a deeper sense of the material and has them reiterate understood ideas while bringing uncertainties to the forefront.

Theory and Evidence- students may be given problems where they will have to come up with a way of solving it using their own thoughts on how to answer and why they think that way.

Drawing Pictures- this can help students to see what is actually happening in the problem. Sometimes it is hard for a student to picture something and the measurements/quantities, so it would be easier to draw it out.

Displaying Data- showing the answer of a problem in terms of tables, charts, graphs, etc. will put a realistic vision of what is happening into the students’ heads.

Using Manipulatives- this is using objects to prove a point in a particular lesson. It gives the students a vision of what is actually going. An example would be using marbles to add and subtract.

Analyzing Data- this consists of students having the ability to look at a chart, table, or graph and know how to read it and what the data tells them.

Using Videos- videos are a good way of showing how something may work. It gives the students a better understanding of how to view something that may not be accessible to the classroom.

Classification- using the characteristics of a problem to figure out what needs to be done to it. This can be done at every level of math.

Works Cited

Ma, X. (2000). A longitudinal assessment of antecedent course work in mathematics and

subsequent mathematical attainment. Journal of Educational Research, 94, 16-29.

"Math & Science Teaching Strategies: Professional Development Resource -

TeacherVision.com." Teacher Lesson Plans, Printables & Worksheets by Grade or Subject - TeacherVision.com. TeacherVision. Web. 01 Nov. 2011. <http://www.teachervision.fen.com/math/teaching-methods/48952.html>.