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Methods of teaching

PROBLEM SOLVING METHODS

Problem-solving methods are necessary in all areas of life, and classroom problem solving activities can be a great way to get students prepped and ready to solve real problems in real life scenarios. Whether in school, work or in their social relationships, the ability to critically analyze a problem, map out all its elements and then prepare a workable solution is one of the most valuable skills one can acquire in life.

Educating your students about problem solving skills from an early age in school can be facilitated through classroom problem solving activities. Such endeavors encourage cognitive as well as social development, and can equip students with the tools they'll need to address and solve problems throughout the rest of their lives.

Meaning

A problem is a task for which Problem-solving may be a purely mental difficulty or it may be physical and involve manipulation of data. , the person confronting it wants or needs to find a solution because the person has no readily available procedure for finding the solution. The person must make an attempt to find a solution. Problem solving is the act of defining a problem; determining the cause of the problem; identifying, prioritizing and selecting alternatives for a solution; and implementing a solution.

In a problem solving method, children learn by working on problems. This enables the students to learn new knowledge by facing the problems to be solved. The students are expected to observe, understand, analyze, interpret find solutions, and perform applications that lead to a holistic understanding of the concept. This method develops scientific process skills. This method helps in developing brainstorming approach to learning concepts.

Problem-solving is a process—an ongoing activity in which we take what we know to

discover what we don't know. It involves overcoming obstacles by generating hypo-theses, testing those predictions, and arriving at satisfactory solutions.

Problem-solving involves three basic functions:

1. Seeking information
2. Generating new knowledge
3. Making decisions

Teacher's Role in Problem Solving

Teacher's has a very important role in Teaching Learning Process. He or She has the duty to provide proper guideline to the students in the completion of their work. Some important roles are given below:

1. Give suggestions not answers
2. Offer a problem solving heuristic
3. Teach a variety of problem solving strategies
4. Allow time for the students to struggle with the problem
5. Choose problems that require time to think through a solution
6. Provide a variety of problems
7. Allow students time to practice a heuristic and strategies
8. Give similar or the same problem in different ways
9. Ask questions that encourage students to:
 - ❑ think divergently
 - ❑ explain how they are thinking.
 - ❑ to share strategies
 - ❑ think of other ways that the same problem could be asked
 - ❑ think of real life problems that are or relate to the problem
 - ❑ discover different problems that can be solved with the same strategy
 - ❑ discover multiple ways to solve the problem
 - ❑ reflect or check their solutions
 - ❑ reflect and discuss how they imagined a certain strategy might be possible

☐ explain why they have confidence in their solutions

10. Provide encouragement and appreciation:

☐ appreciate different solutions and strategies

☐ encourage students to find multiple solutions to a problem

☐ encourage students to take time to solve problems

☐ compliment students on good problem solving strategies whether they reach a solution or not

☐ make sure students know what a compliment or praise specifically relates to about the problem and problem solving

☐ encourage students to keep trying and to learn by correcting mistakes

☐ let students know that problem solving is difficult and rewarding

☐ share and discuss attitudes and dispositions that are conducive to problem solving

Advantages of Problem Solving Method

1. Development of Long-Term Knowledge Retention - Students who participate in PBL activities can improve their abilities to retain and recall information. This is because, while learning about something, open discussion between peers reinforces understanding of subject matter.

2. Use of Diverse Instruction Types - Grouping students together for PBL allows them to tackle tangible problems and enjoy team-based learning. You can also provide content such as videos, news articles and more.

3. Continuous Engagement - It's not hard to see the potential for engagement, as students collaborate to solve real-world problems that directly affect or heavily interest them.

Development of Transferable Skills - Using PBL to present tangible contexts and consequences can allow learning to become more profound and durable, helping students apply skills they develop to other real-world scenarios.

5. Improvement of Teamwork and Interpersonal Skills - Completing a PBL

challenge hinges on interaction and communication, meaning students should also build skills related to teamwork and collaboration.

Disadvantages of Problem Solving Method

1. Potentially Poorer Performance on Tests - Because standardized tests typically reward fact-based learning with multiple choice and short answer questions, PBL activities may not effectively prepare students.
2. Student Unpreparedness - Many students may not be prepared to participate in a PBL exercise due to immaturity, unfamiliarity with broad questions and lack of prerequisite knowledge.
3. Teacher Unpreparedness - You may have to adjust some habits, such as overtly correcting students and teaching to promote the fast recall of facts. Instead, give hints and ask questions to encourage independent thought.
4. Time-Consuming Assessment - If you choose to give marks, assessing a student's performance throughout a problem-based learning exercise demands constant monitoring and note-taking.
5. Varying Degrees of Relevancy and Applicability - It can be easy for students to divert from the challenge's objectives, possibly missing pertinent information.

Running into unanticipated obstacles when solving the problem is another possibility.