

## **Negotiating a Problem-Solving Teaching Approach Model: Exploring Ideas (Workshop)**

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### **Abstract**

This aims of this workshop are: (1) To explore the differences between problem solving and problem solving teaching approach; and to (2) develop a model of problem solving teaching approach which could help teachers to inculcate problem-solving teaching skills in their teaching—that is in their lesson introduction, development, and conclusion.

### **Introduction**

In many classrooms, especially those of developing countries, the problem solving process may not be feasible because of factors beyond teachers' control. However, this does not mean that learners in such countries should be disadvantaged from learning or acquiring skills that the problem-solving process offers. Learners can still attain such skills if teachers employ the problem-solving teaching approach. In this kind of teaching, teachers' techniques, especially their questioning styles, can help learners develop critical and logical thinking, as well as the ability to generalize.

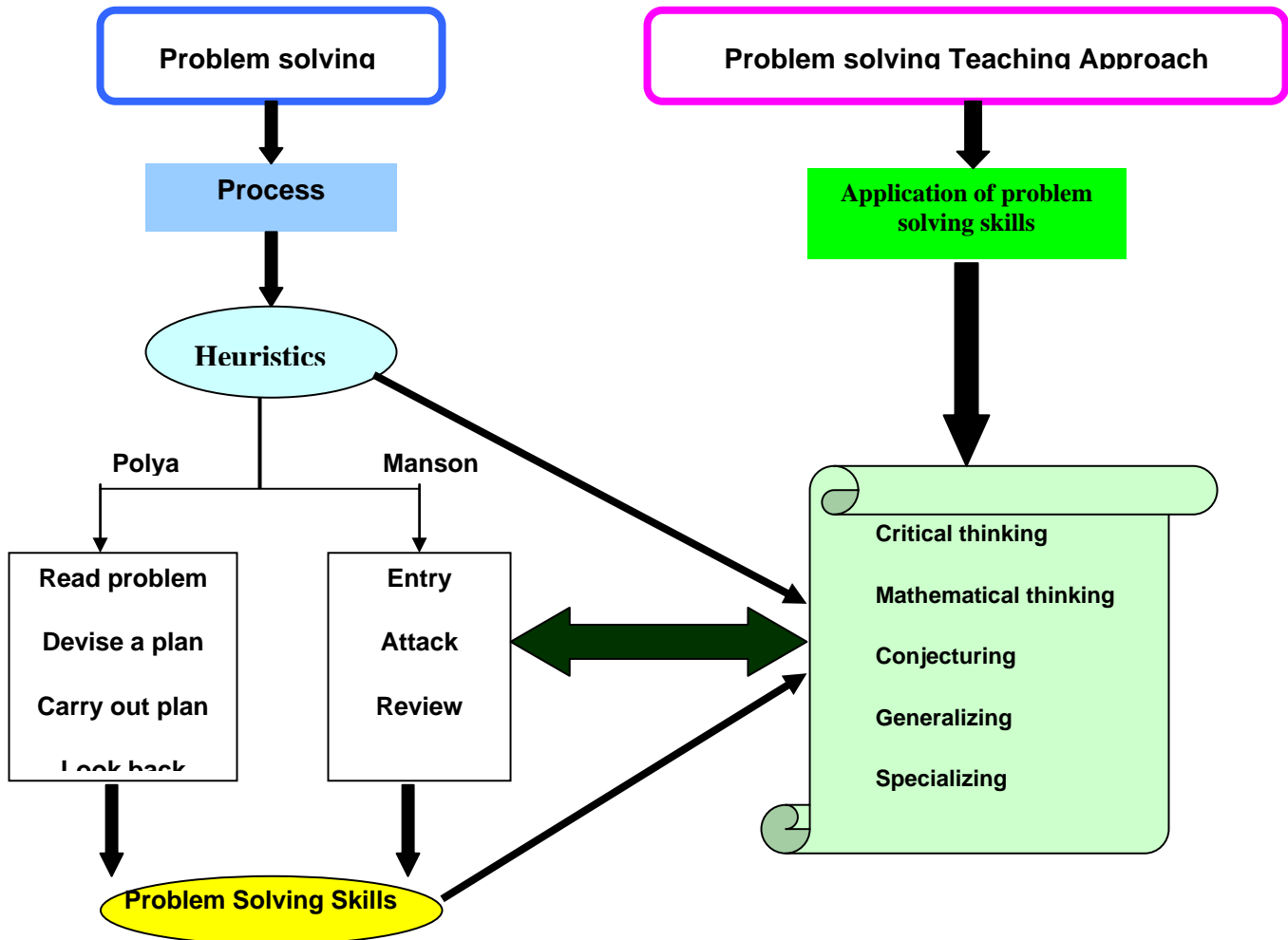
### **Background**

Problem solving and problem solving teaching approach are usually used interchangeably in the literature. However, this should not be the case. Both Polya's (1945) and Manson's (1985) books have depicted problem solving as a process which learners could engage in to solve problems that are not routine. Reading Polya's book at a glance may convey a somewhat linear model of problem solving. However, Manson's book provides a clear picture that the process of problem solving is not linear but both dynamic and cyclic. Nonetheless, both authors depict problem problem-solving as a process and that it can be taught as well as being incorporated in the traditional teaching of mathematics.

The literature also makes a distinction between problem solving and problem solving teaching approach; for instance the works of Margaret Taplin. Whereas the former is separate and identifiable content, the later is the application of the former where skills such as critical thinking, creativity, generalization, become inseparable from 'normal' teaching. Therefore, it can be construed as a teaching style. Figure 1 below shows elements of both problem solving and problem solving teaching approach.

Unlike developed countries such as United States of America and United Kingdom, teachers in Botswana public schools experience challenges of large class size, wide mixed ability classes, examined syllabus, etc . These challenges obstruct them from teaching and/or incorporating problem solving in their classes (Garegae, 2005; Chakalisa, Kyelve & Matongo, 2000). We believe that students should not be denied skills developed through learning problem solving just because of these challenges. For this reason, we posit that problem solving teaching approach is suitable for developing countries particularly Botswana, and should be used to imbue students with necessary skills, hence the rationale for this workshop.

Figure 1: Elements of problem solving and problem solving teaching approach



**Target audience**

The workshop will be of interest to teachers, teacher educators, mathematicians and curriculum developers and those whose interest is in secondary mathematics teaching.

**Bibliography**

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