AN ABSTRACT OF

THE SCIENTIFIC METHOD:

A

GENERAL TOOL FOR SOLVING PROBLEMS

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Education must teach youngsters to think. Today's youngsters will be tomorrow's leaders faced with numerous problems. The need to think critically will be of prime importance. This thesis was written to show how the scientific mathod, as a technique for solving problems, can be taught to youngsters. The scientific method of problem-solving can be a foundation for an organized and logical approach to the solution of all problems.

Encouraging children to use the scientific method will also develop scientific attitudes such as, curiosity, open-mindedness, and suspended judgment. It is important that children have enough training in the scientific attitudes and method to realize the importance of securing information on all crucial matters from authorities instead of being swayed by emotions, superstitions, or unfounded opinions.

The scientific method promotes critical thinking. It guides children into determining what is reliable and what isn't reliable.

Thinking and action would be more effective if the problem-solving method were more generally understood and used. Decisions would then be made more objectively, with less chance of prejudice or emotion coloring them.

Educating children to think intelligently will enable them to use foresight in the direction of their activities. It is essential that they be intelligent about planning for the future and the conclusions they reach.

Chapter two examines the techniques of teaching the use of this method of problem-solving in the classroom.

There are numerous ways in which schools and teachers can assist children to use the scientific method in solving problems. The school should provide a rich and varied experience background for all children. This will open the door to a wide range of problems that will challenge and stimulate a child's curiosity.

Children need to know how to find the facts which relate to their problems and how to organize these facts after they have been assembled. For this purpose, the school must develop all "information-getting skills".

Teachers should focus their own attention on this method and the scientific attitudes in order to see that they are being developed. The teacher should solve problems for children. The teacher should function as a guide, helping children to draw on their own resources and come to their own decisions.

With the right type of teaching-learning situation, this method of problem-solving will be carried over into all areas of study, functioning in the solution of all kinds of problems.

Chapter three helps pupils and teachers evaluate their growth in the understanding and utilization of this process.

As children and teachers use the scientific method for solving problems, they should evaluate the ways in which they have planned together and the results of the procedures they have undertaken.

A teacher must not only evaluate her pupils' growth in problem solving, but she should also appraise her own teaching process.

As a guide for evaluating the teaching-learning process, the author of this thesis has compiled four charts. These charts appraise (1) the growth in skills, (2) growth in working independently and with a group, (3) growth in the application of the scientific method, and (4) a teacher's self-evaluation form appraising the teaching process.

This chapter shows how each form is to be used, the purpose of each chart, and the conclusions garnered from each evaluation. Through use of these check lists, teachers can help their pupils become self-directing and more self-reliant.

If a child is given considerable practice in solving a wide variety of problems, he will grow in his ability to approach any new problem through the use of the scientific method. If children have challenging experiences in school and receive adequate guidance from their teachers, they will progress successfully toward becoming independent thinkers capable of planning intelligently.