Creative Problem Solving

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Throughout history, many different people have tried to map problem solving as a process which individuals and groups could follow to success. As Alex Osborn's efforts to promote creativity and brainstorming to American business and education grew in impact, there was a demand to go beyond the simple process of brainstorm ideas, then select the most useful.

As business and education leaders came together at the Annual Creative Problem Solving Institute's which Osborn organized in Buffalo in the mid-1950's, they shared their methods and techniques, developing courses in creativity which would be useful to the general population. Eventually tested by Sidney Parnes in his research on the effects of creativity training on college students, the steps were actually named by Bert Decker, an Air Force Lt. Colonel, systems engineer, and semantics buff. The names of the steps fit the acronym "OFPISA" as in the Leaning Tower of Pisa. They were called:

Objective Finding

Fact Finding

Problem Finding

Idea Finding

Solution Finding

Acceptance Finding

In each of the steps, people repeated the brain-storm and select process, focusing on divergent thinking, then convergent thinking, with each step forming the creative foundation for the next.

This process, often called the "Osborn-Parnes Creative Problem Solving" model has been taught around the world as a simple, general model of problem solving. Of course, the many creative people of the world have also developed their own versions of this plan to better fit the particular problems and situations they face.

Usage: Problem Type

This process is generally used to guide a team of people in solving the problem of an individual problem solver. It is also very powerful for individuals trying to develop their own innovative solutions. The process is less effective when several participants face the problem, and they have different perspectives, goals, and values. In such a "co-creative" situation it may be better to do Objective **Sharing**, Fact **Sharing,** Problem **Sharing,** Idea **Sharing,** Solution Consensus **Development**, and Acceptance **Planning.**

In each convergence phase, you will need to do consensus building rather than judgment. This requires a very mature group or a very skilled facilitator.

Usage: Timing

The first time through this process can take about one to two hours. With an experienced facilitator, it can be accomplished in 30 - 60 minutes with simpler problems. With training, individuals can do the process with one minute per step, completing the process in six to ten minutes. One great training gimmick is to train individuals to spend ten seconds per step, finishing a problem in a minute. For many real problems, this may be enough.

On the other hand, for larger problems, a week or so may be necessary. The best process is to think of the process as one large run through, but with an idea finding phase which consists of many run throughs on sub problems of the whole, then a long integrating solution finding step, followed by a thorough acceptance plan.

THE OSBORN-PARNES CREATIVE PROBLEM SOLVING PROCESS

Step: Objective Finding

Discuss the situation you are concerned about and brainstorm a list of objectives or goals which you might have for your creative effort. Through some process, come to consensus on one or more objectives the group is willing to attempt.

Step: Fact Finding

Brainstorm all the facts which might even remotely be related to the objective. Make sure that each perspective and participant is represented on the listing. Take some time for the participants to point out which facts they feel are most relevant to the objective and its eventual solution.

Step: Problem Finding

One of the most powerful aspects of creativity is rephrasing the problem definition to one which is both closer to the real problem and which makes obvious more solutions. One techniques for this is to brainstorm different ways to state the problem. Most people recommend that the problem statement be written as; "**In What Ways Might We..."** Pay particular attention to changing the verbs and the nouns in the problem statement. Asking "Why?" and "How?" will also result in some interesting problem statements. Have the owner of the problem select the statement or statements which seem to best capture the "real" problem.

Step: Idea Finding

In this step, ideas are listed which might be solutions to the problem statement. This is a very important brainstorming step. Every effort should be made to diverge as effectively as possible, writing down every idea which occurs, no matter how irrelevant it may seem. Often a silly statement or idea will actually trigger a great idea which eventually becomes the solution. After diverging, take some time to begin the convergence phase, sorting out the ideas which seem to have potential from those which do not. One technique is a quick evaluation of the idea as to whether it should be considered further. If there is any question, it is a maybe.

Step: Solution Finding

In this step, the ideas with the greatest potential are evaluated and the problem owner selects an idea or set of ideas to take action on. One of the most effective methods for this step is to brainstorm the criteria which determine the best idea, like cost, appearance, etc., then select the most useful criteria. These criteria are then used in a decision matrix in which every idea is evaluated on every criteria and the judgments combined to select the idea most worth putting into action.

Step: Acceptance Finding

In this phase, the problem solvers consider the real world issues of the change from the old way to the proposed new way and problem solve on various issues of acceptance and implementation. The ideas developed in this step are then integrated into the plan, increasing it's likeliness of success.

Further Resources

For further information on using this process and its variations:

1. Parnes, Sidney J. *Source Book for Creative Problem Solving.* Buffalo: Creative Foundation Press, 1992.
2. Van Gundy, Jr. Arthur B. *Techniques Structured Problem Solving, Second Edition.* New York: Van Nostrand Reinhold, 1988.