Creative Problem Solving

Notes from Gary Davis's Creativity is Forever - 1998 Kendall Hunt

The strategy originally was formulated by Alex Osborn (1963), creator of brainstorming, founder of the Creative Education Foundation (CEF) and co-founder of a highly successful New York advertising agency. Sidney Parnes, a bright and creative person who followed Osborn as President of CEF, invested nearly 40 years teaching creativity workshops and course and thinking about the creative process.

The model is usually presented as five steps, but sometimes a preliminary step is added called mess-finding which involves locating a challenge or problem to which to apply the model.

The total six stages are:
1. Mess-finding (Objective Finding)
2. Fact-finding
3. Problem-Finding
4. Idea-finding
5. Solution finding (Idea evaluation)
6. Acceptance-finding (Idea implementation)

The steps guide the creative process. They tell you what to do at each immediate step in order to eventually produce one or more creative, workable solutions. A unique feature is that each step first involves a Divergent thinking phase in which one generates lots of ideas (facts, problem definitions, ideas, evaluation criteria, implementation strategies), and then a convergent phase in which only the most promising ideas are selected for further exploration.

Unlike many other problem-solving methods, the process emphasises the need to defer judgement on possible ideas and solutions until a final decision is made. In this way, the flow of ideas in the third step is not interrupted, and possible solutions, however, bizarre, are accepted. The teacher's role at this step is very important, creating an environment in which students can feel comfortable in making suggestions. Quantity of ideas is required in brainstorming, not quality.

The Osborne-Parnes Creative Problem Solving Process
Notes from the CPSI 1998 brochure.

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<th>IF</th>
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<td>Identify Goal, Wish, Challenge</td>
<td>Gather Data</td>
<td>Clarify the Problem</td>
<td>Generate Ideas</td>
<td>Select &amp; Strengthen Solutions</td>
<td>Plan for Action</td>
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<tr>
<td>What is the goal, wish, or challenge upon which you want to work?</td>
<td>What's the situation or background?</td>
<td>What is the problem that really needs to be focuses on?</td>
<td>What are all the possible solutions for how to solve the problem?</td>
<td>How can you strengthen the solution? How can you select the solutions to know which one will work best?</td>
<td>What are all the action steps that need to take place in order to implement your solution?</td>
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Some suggestions for activities at the various stages:
OF (Objective Finding) - Use this checklist of questions prepared by Parnes in 1981 to prod your thinking:

- What would you like to get out of life?
- What are your goals, as yet unfilled?
- What would you like to accomplish, to achieve?
- What would you like to have?
- What would you like to do?
- What would you like to do better?
- What would you like to happen?
- In what ways are you inefficient?
- What would you like to organise in a better way?
- What ideas would you like to get going?
- What relationship would you like to improve?
- What would you like to get others to do?
- What takes too long?
- What is wasted?
- What barriers or bottlenecks exist?
- What would you wish you had more time for?
- What do you wish you had more money for?
- What makes you angry, tense or anxious?
- What do you complain about?

FF (Fact Finding) - Use Who, What, When, Where, Why and How questions

- Who is or should be involved?
- What is or is not happening?
- When does this or should this happen?
- Where does or doesn't this occur?
- Why does it or doesn't it happen?
- How does it or doesn't it occur?
- ...and so on

PF (Problem Finding) - Listing alternative definitions of the problem

One principle of creative problem solving is that the definition of a problem will determine the nature of the solutions. In this step it helps to begin each statement with "In what ways might we (or I)...." (IWWMW).

- What is the real problem?
- What is the main objective?
- What do you really want to accomplish?
- Why do I want to do this?

IF (Idea Finding) - The divergent-thinking, brainstorming stage. This is where a variety of idea-generation ("creativity") techniques can be used. Ideas are freely proposed without criticism or evaluation, for each of the problem definitions accepted in the second stage.

SF (Solution Finding) - Three related steps:
1. Criteria for evaluation listed
2. The ideas are evaluated (evaluation matrix is useful)
3. One or more of the best ideas are selected

Criteria might include:
- Will it work?
- Is it legal?
- Are the materials and technology available?
- Are the costs acceptable?
- Will the public accept it?
- Will higher-level administrators accept it?

AF (Acceptance Finding) - Ways to get the ideas into action. This may involve creating an action plan, which is a plan containing specific steps to be taken and a timetable for taking them.