

## Creative Problem Solving

Creative Problem Solving (CPS) involves breaking down a problem to understand it, generating ideas to solve the problem and evaluating those ideas to find the most effective solutions. It uses techniques to make the problem solving process engaging and collaborative.

The approach was originated by Alex Osborn in the 1940s, and further developed by Osborn and Sidney Parnes. Their Creative Problem Solving Process (CPSP) has been taught at the International Centre for Studies in Creativity at Buffalo College in Buffalo, New York since the 1950s.

CPS identifies two distinct kinds of thinking:

- Divergent Thinking: Generating lots of options (used in phase 1 of the CPS process)
- Convergent Thinking: Evaluating options and making decisions (used in phase 2 of the process)

### Phase 1

The first step in CPS is to *clarify and identify the problem*. This requires breaking down the perceived problem or challenge to understand the issue/s at its core. CPS seeks to understand problems through questions, recognising that solutions are more readily developed when challenges and problems are stated as open-ended questions with multiple possibilities. Questions that can assist us to examine a problem from new angles include: Why is this a problem? Why do I wish to achieve this goal? The more questions we ask, the more we'll be able to understand the drivers behind the problem. Don't settle for just one answer – recognise that our own responses to a problem are multi-faceted, and that it's helpful to explore all of them. Also ask questions about what you hope to achieve. For example, 'What do I really want to change? What is preventing me from solving this problem? What will change as a result of solving this problem? How are others coping with this problem?

The second step is to *research the problem*. Read, generate and assess data, consult with experts, consult with friends and colleagues – ensure you have a clear understanding of the challenge you're trying to tackle.

Third, *formulate creative challenges*. These are simple questions, focused on a single issue, and framed to encourage suggestions or ideas. Your problem might require you to address multiple issues – but formulate your questions to deal with these one at a time. Once you've generated ideas for each challenge, you may be able to find a logical approach to coordinate them, or you'll recognise that each challenge needs to be tackled separately. Don't include qualifying criteria in these questions – keep them short, simple and open-ended.

Fourth, *generate ideas*, using *divergent thinking*. Osborn coined the term brainstorm to describe this step in the process. Take each creative challenge and come up with as many ideas as possible to potentially solve the challenge. Do this alone or in a group. Write down all your ideas – in bullet points, as a mind map, or using specialized software – whatever works for you.

- Go for quantity – take time to generate a long list of potential options. This tends to go against our natural inclination, so set concrete goals, for example, 50 ideas in under 10 minutes. Explore ideas you would ordinarily never consider.
- Defer Judgment - avoid judging ideas as either bad or good. Keep an open mind.
- Seek wild ideas – while these may not work directly, going way outside the box creates space to discover extraordinary ideas
- Combine and build – use one idea as a springboard for another, combine and improve ideas

### *Phase 2*

When we have generated as many ideas as possible through divergent thinking, we need to select the best of these and assess their potential value. This requires convergent thinking, whereby we make deliberate and conscious choices. We purposefully apply appropriate criteria to screen, select, evaluate, and refine the options, while recognising that the ideas will still require further development. Criteria to judge potential solutions might include considerations such as budget and timing for example.

Go through the all the ideas and select *all* the ideas that broadly fit within your criteria. Take time to deliberate over your decision-making. Avoid snap decisions or harsh judgments. Give every option a fair chance. Combine related ideas as appropriate. Then go through each idea more carefully. Think about how ideas can be improved to best solve your problem and meet your criteria. Consider novel and original ideas and ways that these might be improved and tailored.

Refine and improve your ideas, and select those that provide the best fit to address your challenge. Draw up an action plan identifying the steps you need to take to implement your ideas. Break these down into a series of tasks to keep them manageable. And now you're ready to tackle your challenge.

### *Sources*

<http://www.innovationmanagement.se/imtool-articles/the-basics-of-creative-problem-solving-cps/>  
<http://www.creativeeducationfoundation.org/creative-problem-solving/>