

# Creative problem-solving at work

## Abstract

With recent changes and an unpredictable economy, organisations are turning to innovation and creativity to improve their efficiency and effectiveness at work. One way of harnessing the creativity of staff is to develop creative problem-solving skills. Getting staff involved in group-based creative problem-solving can be effective in gathering ideas from differing perspectives and ensuring that there is buy-in to any changes and improvements that take place. Here, we outline the various phases in creative process and three creative problem-solving tools that can easily be implemented. These are brainstorming, reversal and stretch imaging. All three tools encourage a contribution from colleagues and have a practical output. They will enable you to generate alternative hypotheses, challenge assumptions and confront dominant patterns of thinking. This will help to create genuinely innovative solutions to the issues faced at work. Looking differently at how general practices are organised and thereby finding new ways of working may be vital given the threat of government-imposed change and private competitors.

## Keywords

brainstorming – creativity – originality – problem-solving

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## Box 1. Central concepts of creative problem-solving

- Creativity is about developing original and useful ideas; as such, it underpins creative problem-solving
- Creativity tools are not limited to 'creative' or 'artistic' work domains and can be applied to any work domain
- The capacity for creative thinking and problem-solving is normally distributed, so the minds of creative people do not function in different ways from those of other individuals
- Knowledge of a specific domain is fundamental to solving problems creatively, but too much knowledge can block creativity

**W**orldwide, organisations are now operating in an unpredictable and rapidly changing economic landscape. In order to adapt quickly and flexibly, organisations in all sectors have embraced innovation and creativity to sustain growth, effectiveness and improved performance. Enhancing levels of innovation by harnessing the creativity of staff is crucial, and one way to do this is through developing the creative problem-solving abilities of employees.

## What is creativity and creative problem solving?

Creativity is the development of original ideas that are useful or influential,<sup>1</sup> so creative thinking often underlies problem-solving (Box 1). In creative problem-solving, alternative hypotheses are produced, assumptions are challenged, and the prevailing idea is teased out and examined.<sup>2</sup> This can be extremely useful in a work context where processes have become 'stale' or the same problems crop up time and again.

In recent decades, researchers have recognised the value of solving problems creatively in the workplace, and the ability to tap into the knowledge and creativity of employees is a particularly valuable resource.<sup>3</sup> Nevertheless, myths abound that this resource is limited only to the 'creative' or 'artistic' work domains; however, this is not the case as creativity and creative problem-solving have successfully been applied to a wide range of domains.<sup>4</sup>

These myths may have been fuelled by some of the early work in this field proposing that creativity equals high intelligence<sup>5</sup> or that creativity is an aspect of genius.<sup>6</sup> There have been several negative stereotypes associated with highly creative people, such as being an 'oddball'. However, there is little evidence to substantiate this, and researchers now maintain that intelligence is a necessary, but not sufficient, condition for creativity.<sup>3</sup> In short, highly creative people do not have minds that function in a fundamentally different way from that of others, and to a large extent creative problem-solving can be trained.

Another important ingredient is domain-specific knowledge. Knowledge of a particular domain and

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understanding of the context are a fundamental requirement for creating something new: creative problem-solvers need to have enough domain knowledge to develop and identify useful solutions in that context.<sup>7</sup> However, research also shows that too much knowledge and expertise in a particular area can in fact block to creativity.<sup>8</sup>

### The creative problem-solving process

Recent psychological research shows that the creative problem-solving process is a complex and iterative process that consists of three main stages – problem identification and idea generation, followed by implementation of solutions (Figure 1).<sup>9</sup>

Different resources come into play at each step in the process. For example, idea generation involves creative thinking, which is influenced by aspects of cognition and knowledge (as outlined above). The implementation of solutions requires support from others and may rely on other factors such as access to relevant resources; it may also require persuading key people of the value of new ideas.<sup>10</sup>

### Creative problem-solving in action

Colleagues are an important source of new and different ideas, and these can be harnessed to address work-related issues. In developing the creative ideas of your workforce, you can create efficient and original solutions. In addition, by including your colleagues in the problem-solving process, you can gain buy-in to changes and improvements that you might want to make.

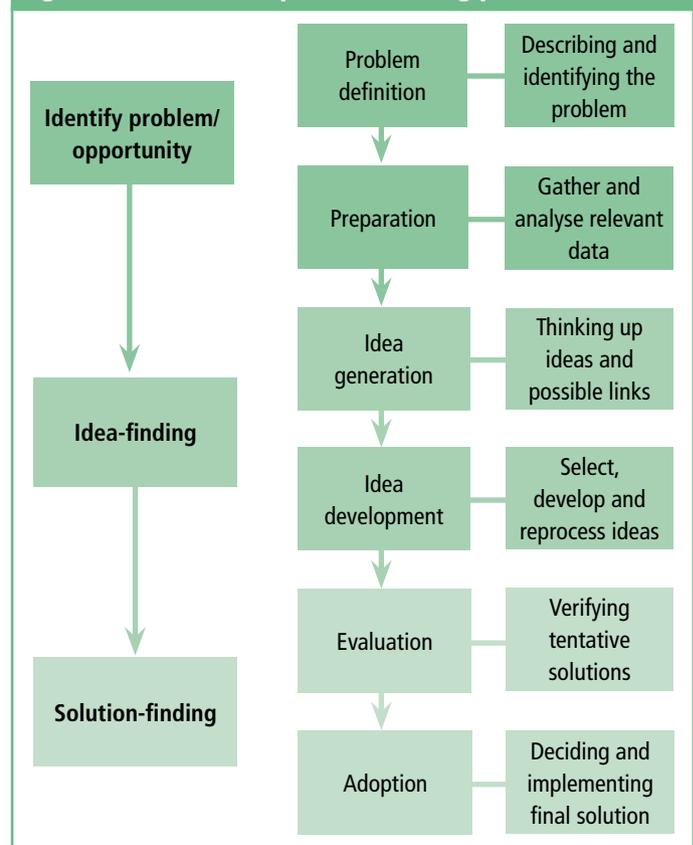
Encouraging input from everyone within your practice will also foster effective working relationships because all members of the practice team will feel like they have contributed to the creation of workable solutions. Research shows that participative work cultures and a sense of shared objectives lead to more innovative working. Multidisciplinary teams provide a unique forum for creative problem-solving, particularly if every member's contribution is solicited.<sup>9</sup> This can provide new ways of 'seeing' challenges and their associated solutions.

So how can you enhance creative problem-solving abilities to benefit you and your team? Below we outline three different creative problem-solving techniques that are easy to implement and have also been shown to be beneficial within a range of different occupations.

#### Classical brainstorming

Classical brainstorming is a method popularised by Alex Osborne in the 1930s and is still used extensively in organisations. Brainstorming is a way to generate

Figure 1. The creative problem-solving process



numerous radical and useful ideas, and it can be used to develop highly creative solutions to a particular problem. The main focus is on quantity of ideas rather than evaluating ideas too early. It can be particularly helpful when you need to break out of old and established patterns of thinking so that you can develop a new way of looking at things.

Brainstorming is a process of 'out-of-the-box' thinking and asks people to put forward ideas and thoughts that at first glance might first appear 'crazy' or 'whacky'. However, the key feature of brainstorming is that judgement and evaluation are suspended and there should be no criticism of ideas because this will stem the flow of ideas. It is only at the end of the session that ideas are evaluated, exploring solutions further at this stage. Here, outputs can be improved into ideas that are useful and original.

To run a brainstorming session effectively, you must:

- have 'quantity of solutions' as a stated goal;
- encourage all group members to contribute to and develop ideas;
- encourage colleagues to have fun while brainstorming. Encourage them to come up with as many ideas as possible, from soundly practical

ones to wildly impractical ones. Welcome and encourage original thinking;

- encourage colleagues to develop other people's ideas, or to use other ideas to create new ones;
- ensure that judgements about ideas are withheld until all ideas have been generated; in particular, there should be no criticism of ideas;
- manage the silences – give time for people to think before closing a session too early;
- appoint one person to facilitate the discussion and note down ideas. After the brainstorming session, these can be studied and evaluated, which in turn can lead to more idea generation.

### Reversal (or negative brainstorming)

This technique is a particularly useful tool for examining ways to improving processes and services. The aim is to list as many issues as possible – in a similar way to brainstorming. In order to elicit the responses, you should pose the opposite question to the one you want to ask. Again, ensure that judgement is suspended.

This is illustrated in the following example. Imagine that you are in a situation where you want to improve the responsiveness of a patient service. Using reversal, you might ask the following question 'How can I reduce patient satisfaction?' After considering this question, you might give the following answers:

- Do not return phone calls in a timely manner.
- Have people with no service knowledge to answer the phone.
- Use rude staff.
- Give the wrong advice.

This method is often more productive in the quantity of ideas produced than with classical brainstorming.

Similarly, once participants have pursued all angles, the group can then turn to exploring possible ways to overcome, improve or correct each of the issues. This phase is about being constructive and finding ways around some of the identified problems. The outcome of this particular scenario might be to set up a training programme to ensure that appropriate staff are giving accurate and effective advice, and are also handling phone calls in an efficient and pleasant way.

### Stretch imaging

We have developed this technique that encourages you to consider how the world might look in the future. By creating a 'vision of the future world', you are able to challenge your current thinking. Imagining the world in the future encourages you to rethink what you are doing at present, thereby promoting new thinking. This exercise can be done either individually or in groups. There are three stages involved.

**Stage 1** First of all, imagine that the year is 2025 and then focus on what the world might look like by then. Consider some of the following questions in order to create your image:

- Which country is the most economically powerful in the world?
- What types of social policy exist in the UK?
- What does the 'working week' look like?
- Which industries are the most successful?
- What does the 'average' family look like now?
- In what ways has the education system changed?
- In what ways has the health system changed?

Try to ensure that your descriptions are realistic when you tackle stage 1. You should be able to provide a

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rationale based on your current knowledge for why certain things have changed. The vision should be consented by the whole group.

**Stage 2** Now that you have developed a vision of the world in 2025, apply this to your own situation. You may want to consider the following questions:

- In 2025, has the local community changed? What does this mean for your practice?
- What are the major health issues in future?
- How have the political changes affected this?
- What impact has this had on your job role?

**Stage 3** In the final stage, consider what you can do in order to meet these particular challenges in the future. Is there anything you can create in order to meet these needs? The idea for stage 3 is to generate novel approaches, processes and products that will be useful in a rapidly changing environment.

### Evaluating the evidence

Some researchers have criticised the productivity of brainstorming, particularly in groups where there are differences in status and authority. Here, evaluation apprehension can occur – where employees may not want to contribute because of a concern that they may look stupid and their ideas may not be valued.

Another difficulty is ‘production blocking’, where one individual can inhibit other people during a group discussion. For example, if six people are in a group and one person is talking about his or her idea, the other five people are ‘blocked’ and less able to provide their own creative input. They may not have time to think of an idea, or they may be distracted or forget about their

idea before they have an opportunity to share it.

Social psychologists have described the concept of ‘social loafing’: the phenomenon of people making less effort to achieve a goal when they work in a group than when they work alone. This is one reason groups are sometimes less productive than the combined performance of their members working as individuals. All of these problems can be overcome with professional facilitation of the process. Electronic brainstorming tools (e.g. <http://www.groupsystems.com/brainstormer>) have recently become available to enhance creative problem-solving; with these, brainstorming can be done anonymously and can be highly productive.

This is a flavour of some of the many tools that can be used to encourage creative problem-solving. Over time, you can develop your own approaches to enable you to generate alternative hypotheses, challenge assumptions and confront dominant patterns of thinking. This will help you to create genuinely creative solutions to the issues you might face at work. ■

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