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Training session: Creative thinking tools

Creativity is the process of bringing something new into being. Creativity requires passion and commitment. It brings to our awareness what was previously hidden and points to new life.

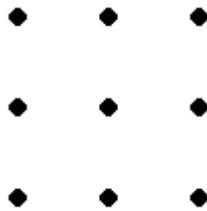
What to do to come up with something new? How can teachers and students be creative?



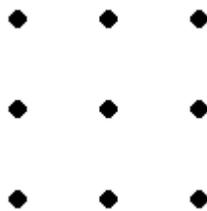
9 dots challenge

1. Your challenge is to join all the dots without taking your pen/pencil away.

You can't take the pencil off the paper. You must start from any position and draw the lines one after the other without taking your pencil off the page. Each line starts where the last line finishes.



2. Now your challenge is to join the nine dots only with 4 lines.



The most frequent difficulty people have with this puzzle is that they try to draw all the lines within the dots and they do not initially want to draw lines outside it because:

1. There is nothing outside the set of dots to associate to. There are no dots to join a line to outside the puzzle so they assume a boundary exists.
2. It is assumed that doing this is outside the scope of the problem, even though the problem definition does not say you are not allowed to.
3. You are so close to doing it that you keep trying the same way but harder.

Lessons to be learned from this puzzle

Look beyond the current definition of the problem.

- Analyse the definition to find out what is allowed and what is not.
- Are there any real rules to the problem anyway? (especially valid in human related problems - there are only perceptions, not physical rules)
- Look for other definitions of problems.
- Do not accept other people's definitions of problems. They may be either wrong or biased.
- If a problem definition is wrong, no number of solutions will solve the real problem.

Investigate the boundaries

- What are the boundaries which the solution must fit into?
- Are the boundaries your own perceptions or reality?
- What are the possibilities if you push the boundaries?
- What are the benefits of small boundary changes?

Hard work is not the solution

- Repeating the same wrong process again and again with more vigour does not work.
- You can be very close to a solution while not getting any closer to it.
- Thought is the solution, physical hard work will not work.

Mind Mapping

Mind mapping as a creative tool represents a very wide range of approaches. It has been a common sorting, organizing, and brainstorming tool in education at all levels for quite some time. The most common notion of a mind map is a web. The central idea sits in the middle, and the first layer of related topics that come to mind are listed around the outside. From there, additional ideas are listed off of each from the first layer of thoughts, and so on.

With the idea of the web, the spider or the sun are often used as visuals in drawing ideas and connections from center outward on an actual, physical chart.

Mind maps can also utilize colors as an organizing technique. This can be used as a visual for organizing ideas that might physically appear farther away from each other on the paper. Lines can be drawn across connecting ideas, but colors can allow an effective tool for identifying different threads or categories of information from different points on the map.

There are a number of interesting computer programs and apps that allow the electronic drawing and reorganizing of mind maps. They can be saved, revisited, and transferred to other media. A piece of paper and pencil work quite well with this tool, as well, though.



SCAMPER

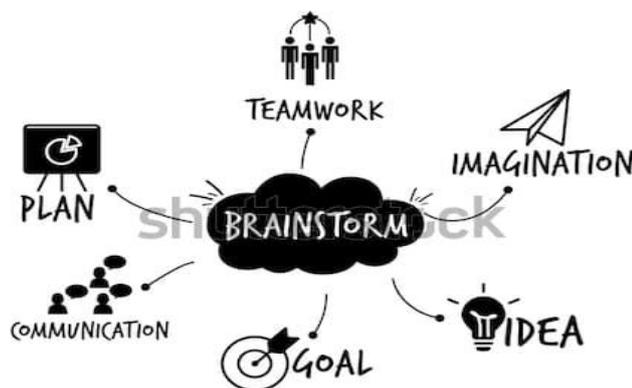
S.C.A.M.P.E.R. is essentially a process for expanding and improving upon ideas by testing and questioning them from different angles. For each letter of the mnemonic, ask yourself a related question about your project or the problem at hand:

- **Substitute**, e.g.: What would happen to the project if we swapped X for Y?
- **Combine**, e.g.: What would happen to the project if we combined X and Y?
- **Adapt**, e.g.: What changes would need to be made to adapt this project to a different context?
- **Modify**, e.g.: What could we modify to create more value on this project?
- Put to another use, e.g.: What other uses or applications might this project have?
- **Eliminate**, e.g.: What could we remove from the project to simplify it?
- **Reverse**, e.g.: How could we reorganize this project to make it more effective?

This method forces you to approach your project or problem in unexpected ways. Each question asks you to dig a little deeper into the issue and consider new possibilities.

Brainstorming

is a method of effectively using brains to storm the problem. The goal is to develop as many ideas as possible in the shortest possible time to solve a predefined problem. It is not so much about going into detail about the ideas or choosing one of them.



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Brain-Writing



In this exercise, participants simply write down a few rough ideas for solving a particular problem on a piece of paper. Each piece of paper is then passed on to someone else, who reads it silently and adds their own ideas to the page. This process is repeated until everyone has had a chance to add to each original piece of paper. The notes can then be gathered, ready for discussion.

The big advantage of brain-writing is that **it makes sure everybody is given the opportunity to have their thoughts and ideas thoroughly considered by the group.** This avoids the loudest or most extroverted people unintentionally dominating the sessions.

Bibliography and useful links:

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