



IIT ROORKEE



NPTEL ONLINE
CERTIFICATION COURSE

LEADERSHIP AND TEAM EFFECTIVENESS

LECTURE – 57

Enhancing Creativity Problem Solving Skill

PROF. SANTOSH RANGNEKAR

DEPARTMENT OF MANAGEMENT STUDIES



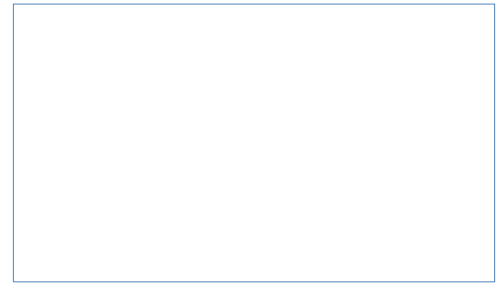
Contents

- What is Creative Problem-Solving?
- Core Principles of Creative Problem Solving
- CPS Learner's Model
- Steps in Problem Solving
- Convergent Vs Divergent Thinking
- The Creative Problem-Solving Process: Tools and Strategies
- Want To Be More Valuable In Your Career?
- How to improve your creativity skills
- 5 Ways to Sharpen Your Problem-Solving Skills
- Case Study
- Research Paper
- Book Recommendation
- References



What is Creative Problem-Solving?

- Alex Osborn, founder of the Creative Education Foundation, first developed creative problem-solving in the 1940s, along with the term "**brainstorming**." And, together with Sid Parnes, he developed the Osborn-Parnes Creative Problem Solving Process.
- Creative problem-solving is an approach that identifies unique solutions to issues through a process of problem identification and resolution planning. It goes beyond conventional approaches to find solutions to workflow problems, product innovation or brand positioning.

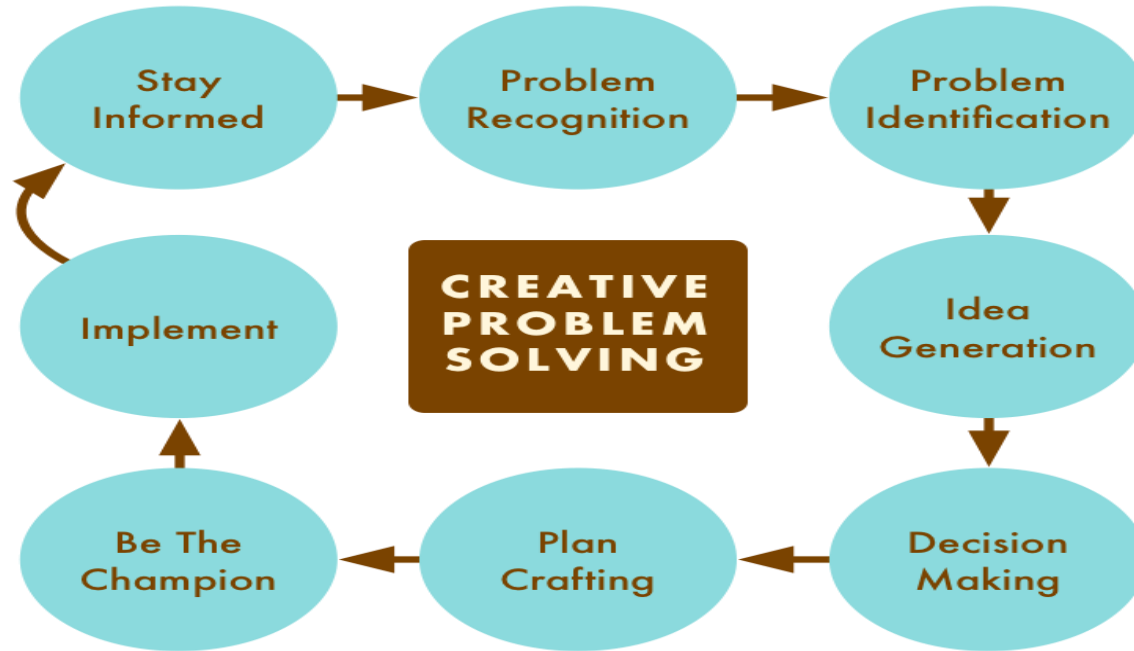


<https://www.indeed.com/career-advice/career-development/improve-creative-problem-solving-skills>

Image Source:https://images.squarespace-cdn.com/content/v1/5db9f4f13e98376a5d9aad86/1592727625540-BU4G1V9RTL5CPGCGYTOT/creative_problem_solving_skills.jpeg?format=500w



Creative Problem Solving



https://idea-sandbox.com/blog_images/cps_diagram-1.png

Core Principles of Creative Problem Solving

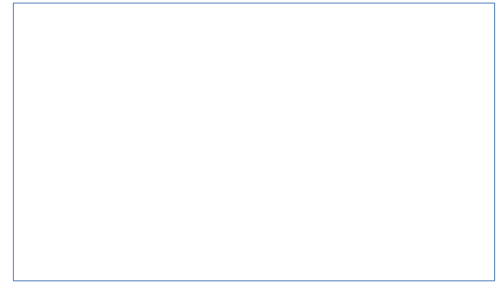
CPS has four core principles. Let's explore each one in more detail:

❖ **Divergent and convergent thinking must be balanced.**

- The key to creativity is learning how to identify and balance divergent and convergent thinking (done separately), and knowing when to practice each one.

❖ **Ask problems as questions.**

- When you rephrase problems and challenges as open-ended questions with multiple possibilities, it's easier to come up with solutions. Asking these types of questions generates lots of rich information, while asking closed questions tends to elicit short answers, such as confirmations or disagreements.



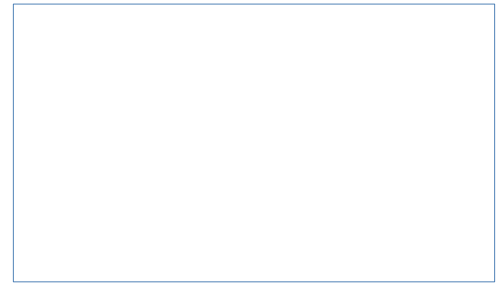
Core Principles of Creative Problem Solving

❖ Defer or suspend judgment.

- As Alex Osborn learned from his work on brainstorming, judging solutions early on tends to shut down idea generation. Instead, there's an appropriate and necessary time to judge ideas during the convergence stage.

❖ Focus on "Yes, and," rather than "No, but."

- Language matters when you're generating information and ideas. "Yes, and" encourages people to expand their thoughts, which is necessary during certain stages of CPS. Using the word "but" – preceded by "yes" or "no" – ends conversation, and often negates what's come before it.



<https://www.mindtools.com/pages/article/creative-problem-solving.htm>

CPS Learner's Model

- We can use each of the four steps of the **Creative Problem Solving (CPS)** Learner's Model (shown in figure below) to generate innovative ideas and solutions.



1. Clarify
Identifying the challenge



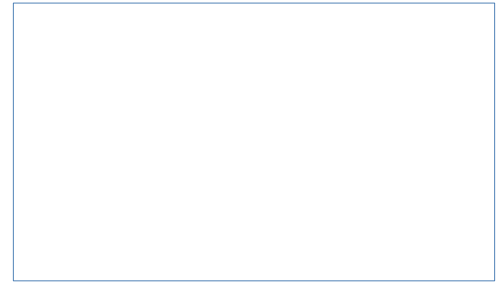
2. Ideate
Generating ideas



3. Develop
Bringing ideas to life



4. Implement
Giving ideas legs



https://slidetodoc.com/presentation_image_h/05976b9bd77c684b2ab7a978701c1977/image-48.jpg

1. Clarify

Explore the Vision- Identify the goal, wish, or challenge.

Gather Data- Describe and generate data to enable a clear understanding of the challenge.

Formulate Challenges- Sharpen awareness of the challenge and create challenge questions that invite solutions.

2. Ideate

Explore Ideas- Generate ideas that answer the challenge questions.

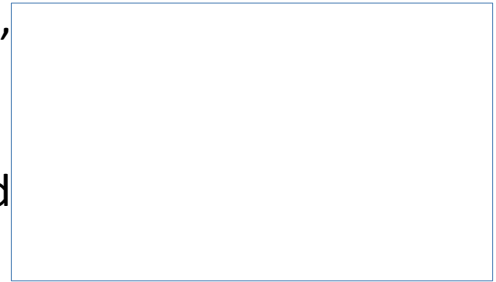
3. Develop

Formulate Solutions- To move from ideas to solutions. Evaluate, strengthen, and select solutions for best “fit.”

4. Implement

Formulate a Plan- Explore acceptance and identify resources and actions that will support implementation of the selected solution(s).

<https://www.creativeeducationfoundation.org/what-is-cps/>



Steps in Problem Solving

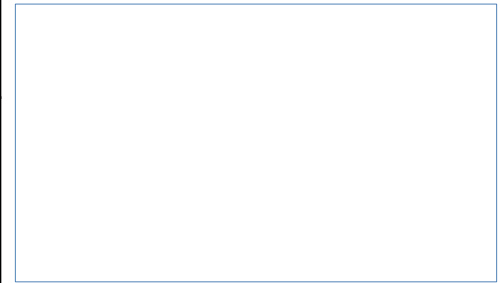
THE FIVE PRIMARY STEPS IN PROBLEM SOLVING



Convergent Vs Divergent Thinking

Convergent	Divergent
The process of figuring out a concrete solution to any problem	The process of thinking that explores multiple possible solutions in order to generate creative ideas.
It is a straight forward process that focuses on figuring out the most effective answer to a problem.	It is opening the mind in various directions and trying out multiple solutions for a problem.
Its characteristics include-speed, accuracy and logic	Its characteristics include-spontaneous, free-flowing and non-linear

<https://www.psychestudy.com/cognitive/thinking/convergent-vs-divergent>



The Creative Problem-Solving Process: Tools and Strategies

The following tools and strategies can help provide groups with some structure and can be applied at various stages of the problem-solving process.

❖ Divergent Thinking Tools:

➤ Brainstorming

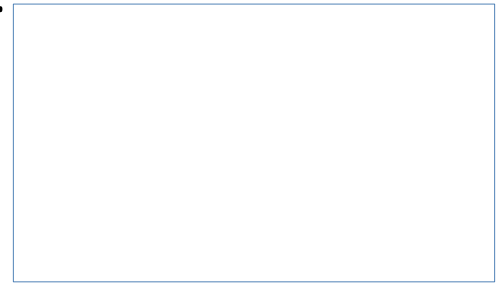
- Defined by Alex Osborn as “a group’s attempt to find a solution for a specific problem by amassing ideas”.

➤ 5 W’s and an H

- The 5 W’s and an H are Who, What, Where, Why, and How.

➤ Reverse Assumptions

- This activity is a great way to explore new ideas.



The Creative Problem-Solving Process: Tools and Strategies

❖ Convergent Thinking Tools

➤ How-How Diagram

- This is the perfect activity to use when figuring out the steps required to implement a solution.

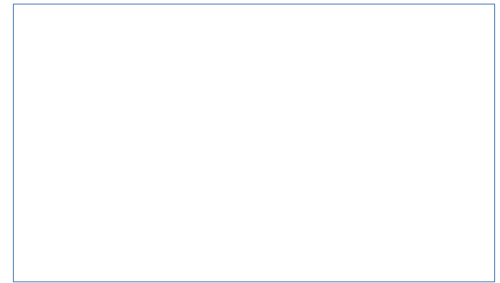
➤ The Evaluation Matrix

- Making an evaluation matrix creates a systematic way of analyzing and comparing multiple solutions.

➤ Pair & Share

- This activity is suitable to help develop promising ideas. After making a list of possible solutions or questions to pursue, each individual student writes down their top 3 ideas.

<https://www.innovativeteachingideas.com/blog/creative-problem-solving-tools-and-skills-for-students-and-teachers>



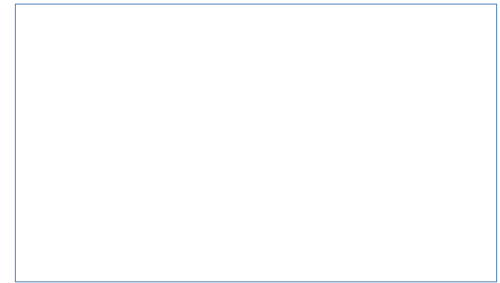
Want To Be More Valuable In Your Career?

- If you want to be more valuable in your career, then you need to understand the relationship of creativity innovation and problem-solving.
 - The formula to being more creative on purpose is a mix of **growth mindset** and **curiosity** combined with **actual problem solving tools** which hopefully yields better solutions that if implemented would be **innovative**. Sounds complicated, so lets break it down.
- ❖ **Being more creative on purpose.**
- The key here is to purposely seek out the knowledge, learning and experiences that take you down a creativity path.

Innovation, Creativity



& Problem-Solving



<http://drawsuccess.com/wp-content/uploads/2010/11/Innovation-Creativity-logo.png>

Want To Be More Valuable In Your Career?(Cont.)

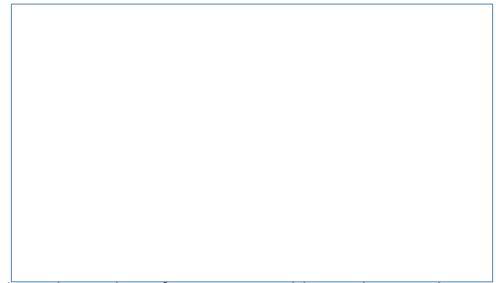
❖ Learning how to solve problems.

- You don't solve problems by pulling random people in a room and doing a brainstorming session that goes nowhere over two hours.
- First, research and learn problem solving frameworks. Second, learn how to really identify the real problem and not the symptom.

❖ Allowing innovation to happen.

- If I asked you to be more innovative, what would you do?
It's almost impossible to be innovative on purpose. This is where the formula mentioned below comes into play.

Growth mindset + curiosity + problem solving framework and tools = potential innovation.



<https://www.forbes.com/sites/bernhardschroeder/2020/04/01/want-to-be-more-valuable-in-your-career-then-you-need-to-understand-the-crazy-and-complex-relationship-of-creativity-problem-solving-and-innovation/?sh=1240c23a7900>



How to improve your creativity skills

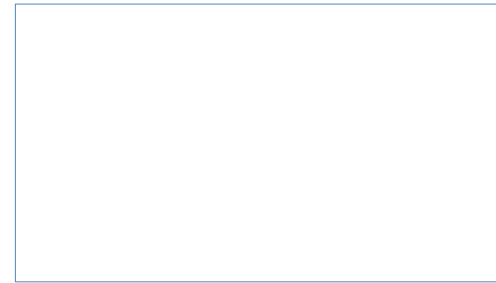
- As we've learned, creativity skills are really desirable for employers and can be incredibly useful in the workplace.
- Here is some of the points to develop our creativity in different ways.

❖ Work on your self-awareness

- Becoming self-aware and acknowledging the limitations of our own thought processes when it comes to creativity is the first step to becoming more creative and innovative.



<https://hustlertalks.com/wp-content/uploads/2020/04/how-to-improve-creative-thinking-skills.jpg>



How to improve your creativity skills(Cont.)

❖ Practise empathy

- Empathy is a key element in emotional intelligence and will allow you to understand the viewpoints of customers, clients, and co-workers.

❖ Expand your knowledge

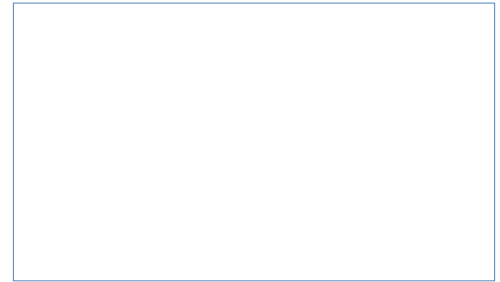
- Become an expert in your field and you'll understand every angle of a problem.

❖ Draw on your previous experiences

- Look to experiences you have had in the past, and harness your personal history to give you perspective on the situation at hand.

❖ Collaborate with others

- This is one of the best ways of conjuring creative solutions, as well as identifying potentially obvious solutions that may not have been tried before.



<https://www.futurelearn.com/info/blog/improve-workplace-creativity-problem-solving-skills>



5 Ways to Sharpen Your Problem-Solving Skills

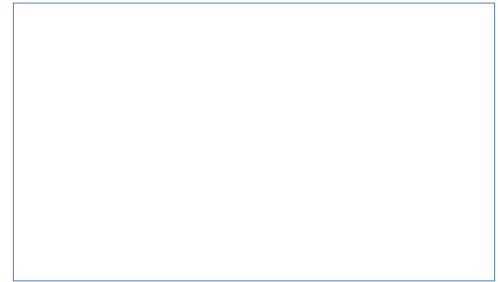
Here are 5 methods you can follow to sharpen your problem-solving skills:

1. Question the Problem Repeatedly with “Why?”

- To solve a problem, you need first to define it. To do so, start by asking yourself, “Why did this problem occur?” Follow up on your answer with another “Why?” Keep going until you dig into the root cause.

2. Draw a Mind Map to Visualize the Problem

- Take out a piece of paper, a few colored pens, and draw a mind map of the problem at hand. Make sure that your drawing includes the central idea, which is the problem itself, and that it contains the reasons for the occurrence.



5 Ways to Sharpen Your Problem-Solving Skills(Cont.)

3. List All Possible Solutions

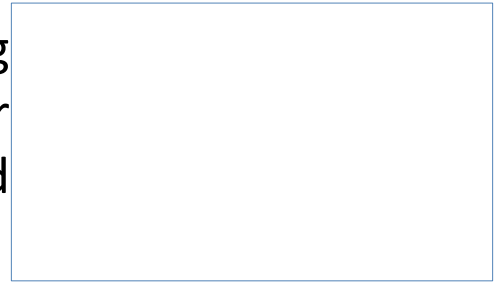
When trying to solve a problem, come up with as many solutions as possible, even if they sound ridiculous to you. Also Brainstorm bad ideas.

4. Always be Willing to Learn

Even if you're the most accomplished person on the planet, know that there's always room for improvement.

5. Give Your Brain a Good Workout with Puzzles & Brainteasers

This may sound like child's play, but doing puzzles and playing games involving logic, like chess and Sudoku, hones your problem-solving skills by helping you learn strategies and techniques that you can later apply to real-life situations.

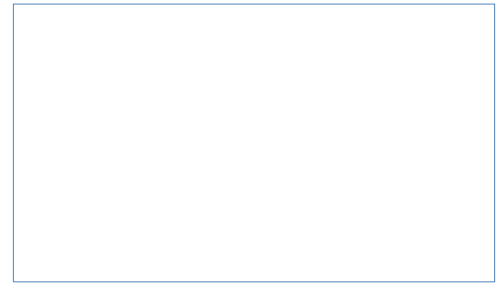


<https://www.forbes.com/sites/forbesbooksauthors/2020/01/28/5-ways-to-sharpen-your-problem-solving-skills/?sh=32ac16c143b9>

Case Study: Coke vs Pepsi

Back in the 1980s, the Coca-Cola Company became very concerned about its future. Coke held a dominant position in market share around the world with 18 percent compared to Pepsi-Cola's 4 percent. However, Coke's market share began to erode versus Pepsi until by the end of the decade, Coke had slipped to 12 percent market share while Pepsi had increased to 11 percent. More importantly, Pepsi began advertising the "Pepsi Challenge" in which consumers were asked to choose between Coke and Pepsi in blind taste tests. Pepsi claimed that its product won these tests time and time again. Even exclusive Coke drinkers, Pepsi claimed, chose the taste of Pepsi above the taste of Coke.

Coca-Cola's management claimed that these tests were rigged or were merely a marketing ploy. However, Coke secretly conducted its own tests in which cola drinkers were given two drinks—one marked M and one marked Q. They were given a drink and asked to identify the taste they preferred. To their shagrin, Coke's executives found the same result.

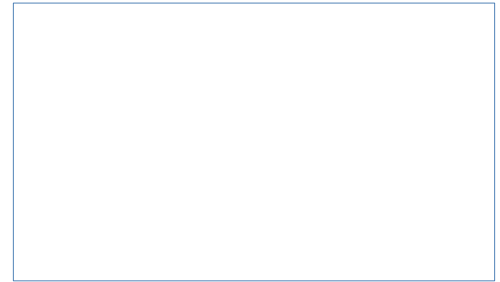


Case Study: Coke vs Pepsi

Cola drinkers preferred the taste of Pepsi 57 percent to 43 percent for Coke. The sweeter, smoother taste of Pepsi seemed to be preferred by a wide margin. In a very competitive marketplace where a tenth of a percentage point is worth millions in revenues, this gap was enormous.

One alternative for Coke was to defend its share of the marketplace by continuing to advertise and market its product, and to ensure that Coke product placement was more widespread and better positioned than Pepsi's. That is, one option was to ensure that consumers were simply more aware of Coke and had easier access to it than Pepsi.

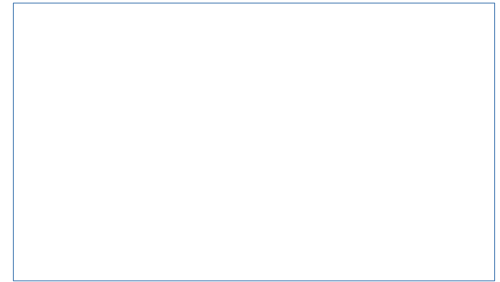
Another alternative was to engage in a massive R&D effort and find a new product that would match or exceed Pepsi's taste among cola drinkers. Coke selected this latter strategy. The R&D lab spent multiple-millions to produce a new product labelled New Coke. In blind taste tests, New Coke beat Pepsi by 6 to 8 percentage points among cola drinkers, so Coke was confident that it had a hit product on its hands.



Case Study: Coke vs Pepsi

The company's CEO, Roberto C. Goizueta, announced that this was “the surest move the company has ever made.” With a great deal of fanfare, Coke announced the release of the New Coke, assuming that it would be a major market success and blunt Pepsi's rise in market share. Instead, New Coke was a sales disaster. Sales of New Coke were abysmal and declined from the outset. Coca-Cola executives scrambled to respond to consumers demand that the original Coke be brought back. With a declining new product on the market and the abandonment of the traditional Coke, senior executives were under tremendous pressure to respond quickly.

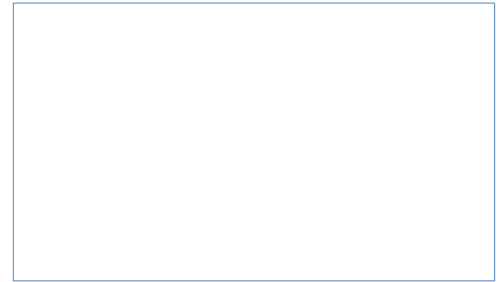
The result, as we all know, was the re-introduction of Coke Classic (a supposed inferior-tasting product) several months later in an attempt to save the company.



Case Study: Coke vs Pepsi

Discussion Questions

1. What conceptual blocks were experienced by Coke executives?
2. What is the difference between a blind taste test and taking a six-pack home and consuming the entire amount? What do you suppose were the results of that test?
3. How do explain the success of Coke versus Pepsi over the last 20 years? What would you now advise Pepsi to do?
4. How do problem-solving and decision-making processes change under time pressures or crises?
5. Knowing what you know about problem solving, what kinds of conceptual blockbusters could be useful to Pepsi executives, or to Coke executives? What rules of thumb seem relevant in these kinds of situations?



Research Paper



Team Performance Management:
An International Journal
Vol. 26 No. 7/8, 2020
pp. 451-466
© Emerald Publishing Limited
1352-7592
DOI [10.1108/TPM-06-2020-0049](https://doi.org/10.1108/TPM-06-2020-0049)

Creative problem-solving techniques, paradigm shift and team performance

Tony Proctor

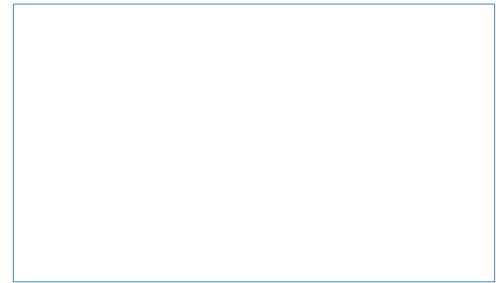
University of Chester, Chester, UK

Received 8 June 2020
Revised 11 August 2020
Accepted 13 August 2020

Purpose

This paper aims to consider why creative problem-solving techniques may not always produce useful results and sets out to explain why this might be and what steps should be taken to avoid it happening. The paper provides an understanding of how different creative problem-solving techniques are best suited to gaining insights into problems requiring different degrees of paradigm shift.

It argues that team members' personalities and thinking styles and team composition should be taken into account when using the techniques. It examines the role the facilitator plays in planning and conducting the ideation process.

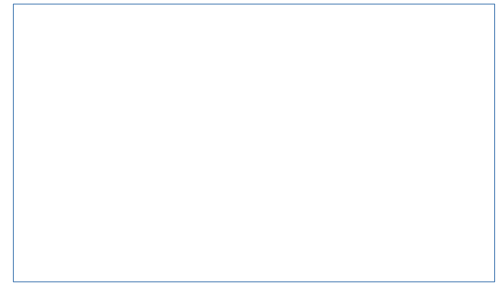


Design/methodology/approach

The paper provides simple illustrations of some of the creative problem-solving techniques. It reviews relevant literature and argues how individual differences of team members along with team composition can influence team performance in using the creative problem-solving techniques.

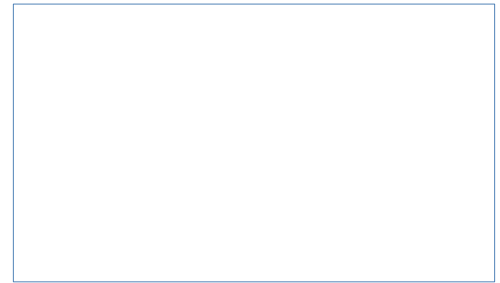
Findings

Personality, thinking styles and learning styles are relevant to the effective use of creative problem-solving techniques. Team composition, team motivation and mood factors should also be taken into account. The facilitator is key in ensuring the efficacy of the problem-solving process.



Originality/value

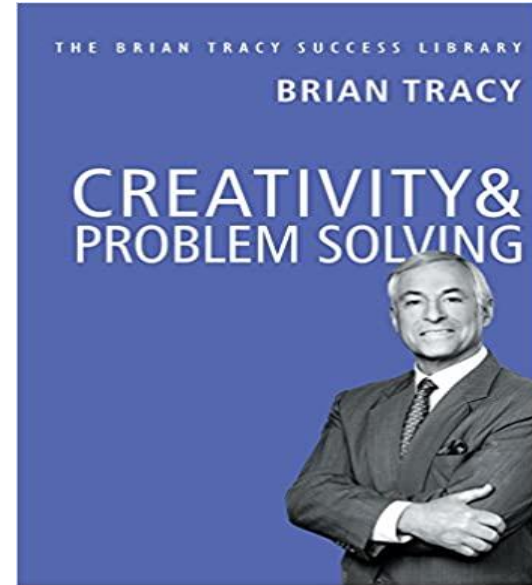
This paper will be helpful to academics who study creative problem-solving as well as informing management practitioners and trainers about the procedures and potential pitfalls to avoid.



BOOK RECOMMENDATION

Creativity and Problem Solving: The Brian Tracy Success Library

Authors: Brian Tracy
Publisher: Manjul Publishing House (5
March 2018)
Language: English
Paperback: 112 Pages
ISBN-10 : 9387383113
ISBN-13 : 978-9387383111



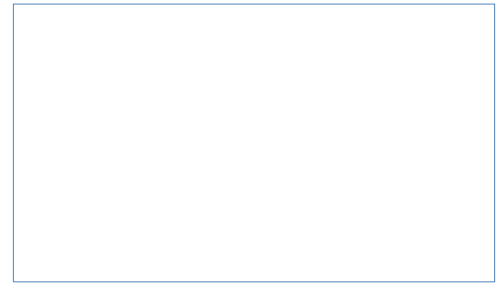
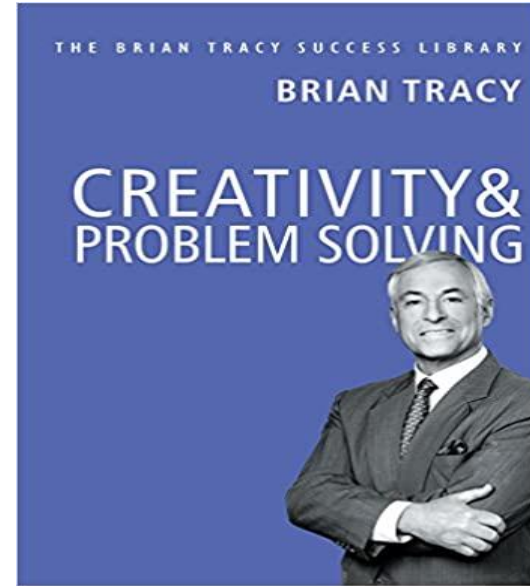
<https://www.amazon.in/Creativity-Problem-Solving-Success>

Library/dp/9387383113/ref=sr_1_3?dchild=1&keywords=creativity+problem+solving&qid=1632334145&sr=8-3



BOOK RECOMMENDATION

The Brian Tracy Success Library is a fourteen-volume series of portable, hardbound books that interweave nuggets of Tracy's trademark wisdom with engaging real-life examples and practical tools, tactics and strategies for learning and honing basic business skills. This is a powerful, handy, reference series for managers, professionals, employees—just about anyone who wants a quick, easy, reliable and effective overview of and insights into aspects critical to business. The crucial element separating an exceptional career from a lackluster one is the ability to devise innovative solutions to work challenges. With research showing the direct relationship between ideas and profitability, creative thinking skills are vital to professional advancement. As one of the world's premiere success experts, Brian Tracy knows that creativity can be developed with practice and a few helpful tools.



References

- <https://www.indeed.com/career-advice/career-development/improve-creative-problem-solving-skills>
- <https://www.mindtools.com/pages/article/creative-problem-solving.htm>
- <https://www.creativeeducationfoundation.org/what-is-cps/>
- <https://www.psychestudy.com/cognitive/thinking/convergent-vs-divergent>
- <https://www.innovativeteachingideas.com/blog/creative-problem-solving-tools-and-skills-for-students-and-teachers>
- <https://www.forbes.com/sites/bernhardschroeder/2020/04/01/want-to-be-more-valuable-in-your-career-then-you-need-to-understand-the-crazy-and-complex-relationship-of-creativity-problem-solving-and-innovation/?sh=1240c23a7900>
- <https://www.futurelearn.com/info/blog/improve-workplace-creativity-problem-solving-skills>
- <https://www.forbes.com/sites/forbesbooksauthors/2020/01/28/5-ways-to-sharpen-your-problem-solving-skills/?sh=32ac16c143b9>



References

- Hughes, R. L., Ginnette, R. C., & Curphy, G. J. (2012). LEADERSHIP: enhancing the lessons of experience. In *LEADERSHIP: enhancing the lessons of experience*.
- Robbins, S. P., & Judge, T. (2007). Organizational behavior. Upper Saddle River, N.J: Pearson/Prentice Hall.
- [Proctor, T.](#) (2020), "Creative problem-solving techniques, paradigm shift and team performance", [Team Performance Management](#), Vol. 26 No. 7/8, pp. 451-466. <https://doi.org/10.1108/TPM-06-2020-0049>



Thank You

