Professional Certificate in Innovation and Future Foresight

Creative Problem Solving

Creative Problem Solving (CPS) is a structured approach to solving problems and generating new ideas. Here are some key terms and vocabulary related to CPS:

1. **Divergent Thinking**: Divergent thinking is the ability to generate many different ideas or solutions to a problem. It is a key component of CPS and is often contrasted with convergent thinking, which involves finding a single, correct answer to a problem.
2. **Convergent Thinking**: Convergent thinking is the process of narrowing down and evaluating ideas to find the best solution to a problem. It is an important part of CPS, as it helps to ensure that the most effective and feasible solution is chosen.
3. **Problem Statement**: A problem statement is a clear and concise description of the problem that needs to be solved. It should include information about the problem, its causes, and its effects. A well-crafted problem statement is essential for effective problem solving, as it helps to focus the problem-solving process and ensure that everyone involved is working towards the same goal.
4. **Idea Generation**: Idea generation is the process of generating many different ideas or solutions to a problem. It is often done through techniques such as brainstorming, mind mapping, or the use of random stimuli. Idea generation is a key component of CPS, as it helps to ensure that a wide range of potential solutions are considered.
5. **Idea Evaluation**: Idea evaluation is the process of evaluating and selecting the best ideas or solutions from the ones generated. It typically involves criteria such as feasibility, effectiveness, and impact. Idea evaluation is an important part of CPS, as it helps to ensure that the most effective and feasible solution is chosen.
6. **Implementation**: Implementation is the process of putting the chosen solution into action. It involves planning, resource allocation, and execution. Implementation is a key component of CPS, as it is the final step in the problem-solving process and is essential for achieving the desired outcome.
7. **Divergent and Convergent Phases**: CPS is typically divided into two main phases: the divergent phase and the convergent phase. The divergent phase is focused on idea generation, while the convergent phase is focused on idea evaluation and selection.
8. **Random Stimuli**: Random stimuli are objects, images, or ideas that are unrelated to the problem at hand and are used to stimulate creativity and idea generation. They can be used in a variety of ways, such as by asking participants to come up with ideas related to the stimulus or by using the stimulus as a starting point for a brainstorming session.
9. **Brainstorming**: Brainstorming is a technique for generating ideas that involves a group of people coming together to share and build on each other's ideas. It is typically done in a structured way, with a facilitator leading the session and encouraging participation from all members of the group.
10. **Mind Mapping**: Mind mapping is a visual technique for organizing and exploring ideas. It involves

creating a diagram that shows the relationships between different ideas and concepts. Mind mapping can be done individually or in a group, and is often used to help generate and organize ideas during the idea generation phase of CPS.
11. **Prototype**: A prototype is a preliminary version of a solution that is used to test and refine the idea. It is typically created during the implementation phase of CPS and is used to identify any issues or challenges that may arise during the actual implementation of the solution.
12. **Iterative Process**: CPS is an iterative process, meaning that it involves repeating the same steps multiple times to refine and improve the solution. This allows for continuous improvement and adaptation of the solution as new information and insights are gained.
13. **Stakeholders**: Stakeholders are the individuals, groups, or organizations that are impacted by the problem or the solution. Identifying and involving stakeholders in the CPS process is important for ensuring that the solution is feasible, effective, and accepted by those who will be impacted by it.
14. **Facilitator**: A facilitator is a neutral third party who leads the CPS process and helps the group to stay on track. The facilitator's role is to ensure that everyone has an opportunity to participate, that the process is fair and inclusive, and that the group stays focused on the problem and the solution.
15. **Groupthink**: Groupthink is a phenomenon that occurs when a group of people, working together on a problem, become so focused on reaching a consensus that they fail to consider alternative solutions or viewpoints. Groupthink can lead to poor decision making and the rejection of good ideas.
16. **Debriefing**: Debriefing is the process of reflecting on and learning from the CPS process. It involves discussing what went well, what didn't, and what could be improved in the future. Debriefing is an important part of CPS, as it helps to ensure that the group learns from the experience and is better prepared for future problem-solving challenges.

Challenges:

* One challenge of CPS is that it can be time-consuming and resource-intensive. It requires a significant investment of time and effort to properly identify the problem, generate ideas, evaluate and select the best solution, and implement it.
* Another challenge of CPS is that it requires a high degree of collaboration and communication. This can be difficult to achieve, especially in large groups or in organizations with a hierarchical structure.
* A third challenge of CPS is that it requires a willingness to consider and explore new and unconventional ideas. This can be uncomfortable for some individuals or organizations, especially if they are used to a more conservative or risk-averse approach to problem solving.

Practical Applications:

* CPS can be used in a variety of settings, including business, education, healthcare, and government.
* It can be used to solve complex problems, generate new ideas, and drive innovation.
* CPS can also be used to improve decision making, increase collaboration and communication, and build more effective teams.

Example:

* A company is looking to improve its customer service process. They use CPS to identify the problem, generate ideas, evaluate and select the best solution, and implement it. Through this process, they identify that the root cause of the problem is a lack of training for customer service representatives. They generate ideas such as providing additional training, creating a more structured onboarding process, and implementing a mentorship program. They evaluate and select the best solution, which is to provide additional training and create a more structured onboarding process. They then implement this solution and see a significant improvement in their customer service process.

In conclusion, Creative Problem Solving is a structured and iterative process for solving problems and generating new ideas. It involves divergent and convergent thinking, idea generation and evaluation, and implementation. CPS is a valuable tool for addressing complex problems, driving innovation, and improving decision making. However, it requires a significant investment of time and resources, as well as a high degree of collaboration and communication. Despite these challenges, CPS is a powerful approach to problem solving that can deliver real and lasting results.