

TOPIC: PROBLEM SOLVING AND CREATIVE THINKING

Meaning of problem solving

- It is the process of analysing a situation to identify strategies that can be used to change the situation. Problem solving requires creative thinking.
- Problem solving is a mental process that involves problem finding, which is the ability to identify the problem.
- It also involves problem shaping, which is the ability to break-down the problem in such a way that a clear solution can be found.

Meaning of decision making

- Decision making is a choice made by using one's judgement.
- It is also aimed at finding a solution to a problem by choosing a best solution or course of action.

Differences between problem solving and decision making

DECISION MAKING	PROBLEM SOLVING
It is often done by one person or a member of senior management who makes it authoritarian.	Problems can be solved by a group or a team or an individual team member.
Various alternatives are considered before deciding on the best one.	Alternative solutions are generated or identified and critically evaluated.
It is part of the problem solving cycle as decisions need to be taken in each step.	It is the process of analysing a situation to identify strategies to bring about change.

Problem solving steps

- Identify the problem.
- Define the problem.
- Identify possible solutions to the problem.
- Select the most appropriate alternative.
- Develop an action plan.
- Implement the suggested solution/action plan.
- Monitor the implementation of the solution/action plan.
- Evaluate the implemented solution.
- Formulate strategy
- Implement strategy
- Evaluate strategy

NOTE: Steps can be in any order

Application/Discussion of problem solving steps**Identify the problem**

- Acknowledge that there is a problem
- Identify the exact problem
- Break down the problem into smaller parts that are easier solve separately

Define the problem

- Name the problem by stating exactly what the problem is.
- Find different ways of defining the problem.
- Define the possible causes of the problem
- The nature of the problem must be precise.
- Gather as much information as possible to establish the cause of the problem.

Identify alternative solutions

- Identify all different possible solutions
- Use creative thinking strategies to generate a wide range of solutions
- Focus on generating as many ways as possible through using creative thinking.
- Collect as many ideas as possible and find the best idea/decide on one strategy to follow.

Evaluate alternative solutions

- Use critical evaluation and analytical skills to evaluate each solution.
- Consider the advantages and disadvantages of each alternative solution.

Choose the best solution

- Set criteria for the best solution, in terms of aspects such as time/cost/risk involved
- Identify which solution will be used
- The best solution should match the size and the resources of the business.
- If the solution is not appropriate, the business should go back to defining the problem.

Formulate/Develop an action plan/strategy

- Arrange the necessary resources and delegate tasks.
- Establish a time line for implementation and set deadlines

Implement the action plan

- Carry out the planned actions/solution.
- Communicate delegated tasks/deadlines to employees.

Evaluate the solution/action plan

- Assess whether the problem has been solved partially or entirely
- Monitor/test the solution/action plan/strategy continuously.
- If problems emerge, they must recognise and re-formulate the problem for improved solutions in the future.

Problem solving techniques

- Delphi technique
- Force field analysis
- Brainstorming
- Nominal Group Technique

Application of the Delphi technique

- Businesses must invite a panel of experts to research the complaints from customers.
- Experts do not have to be in one place and will be contacted individually.
- Design a questionnaire consisting of questions on how to improve the quality of their products and distribute it to the experts.
- Request the panel to individually suggest improvements to the products and return it to the business.
- Summarise the responses from the experts in a feedback report.
- Send the feedback report and a second set of questions based on the feedback report to the panel members.
- Request panel members to provide further ideas on how to improve the quality of products after they have studied the results.
- Distribute a third questionnaire based on previous feedback from the second round.
- Prepare a final feedback report with all the methods to improve the quality of the business's products.
- The business should choose the best solution after reaching consensus.

Impact of the Delphi technique**Positives/Advantages**

- Businesses may use a group of experts without bringing them together.
- The experts will give the business clear ideas on how to improve on productivity.
- Information received from experts can be used to solve complex business problems.
- Experts may give honest opinions as they do not have a personal interest in the business.
- Conflict may be avoided especially if all employees are knowledgeable and well qualified.
- Dominating employees may not take over the process as they do not form part of the problem solving process.
- It reduces noise levels in an office environment since there is no group discussion.

Negatives/Disadvantages

- It is an expensive technique to use due to high administrative costs.
- Not all experts are interested to complete the questionnaires.
- Some experts might not have an in-depth knowledge of certain topics.
- Experts' suggestions may not be considered by some employees so consensus may not be reached.
- May be time consuming to analyse data received from experts.

Application of Force-Field Analysis

- Describe the current problem and the desired situation.
- List all driving forces (pros) and restraining forces (cons) that will support and resist change.
- Allocate a score to each force using a numerical scale, where 1 is weak and 5 is strong.
- Weigh up the positives and negatives then decide if the project is viable.
- Choose the force with the highest score as the solution.
- If the project is viable, find ways to increase the forces for change.
- Identify priorities and develop an action plan.

Impact of the Force-Field Analysis**Positives/Advantages**

- Employees feel included and understood.
- Employees develop and grow with the business.
- It provides a visual summary of all the various factors supporting and opposing a particular idea.
- Informed decisions can be made as forces for and against are critically evaluated.
- Enables businesses to strengthen the driving forces and weaken the restraining forces.
- Businesses are able to have an idea of the timeline required and the requirements of additional resources.

Negatives/Disadvantages

- Requires the participation of all business units.
- It is time consuming since the business must stabilise before more changes can be made.
- The analysis developed is entirely dependent upon the skill level and knowledge of the group working on the analysis.

Application of Brainstorming

- Define the business problem clearly, so that all participants understand the problem.
- Members state possible causes of the business problems.
- Set a time limit for each brainstorming session.
- Write ideas down, where all participants can see it.
- Use each suggestion, to inspire new ideas.
- Do not discuss the ideas, so that many ideas could be generated as quickly as possible.
- All members of the group randomly make suggestions.
- The group rates ideas according to its usefulness.
- The group evaluates all ideas, and combines similar ones.
- Discuss a plan of action on how to implement the best ideas.

The impact of Brainstorming**Positives/Advantages**

- People get ideas from others and build on them.
- Stimulates creative thinking in the workplace.

- Better solutions are developed through collective contributions.
- Combinations of ideas can be chosen after all the ideas have been written down.
- Employees are motivated as they are allowed to contribute to problem solving.

Negatives/Disadvantages

- Some team members may dominate discussion.
- Discussion may result in conflict due to differences in opinion.
- Fear of criticism may prevent full participation in brainstorming sessions.
- It may lead to some individuals not giving their opinions.
- Brainstorming is time consuming as all employees may generate too many ideas which can delay decision making.

Application of Nominal Group Technique

- Encourage group to clearly define the problem to improve the quality of their products due to various complaints so that all the small groups can work on the same problem.
- The business must divide the employees into smaller groups.
- Request each employee to silently generate many ideas on his/her own, on how the quality of the product can be improved and to write it down.
- Each employee in the small group has the opportunity to give one of his/her solution with a short explanation.
- Appoint one employee to write the solutions on a large sheet of paper for all to see.
- Allow each employee to give a second solution until all possible solutions have been recorded.
- Encourage employees to ask clarity seeking questions.
- Discourage criticism of solutions as this may prevent others from giving their solutions.
- The business must eliminate ideas that are similar.
- Each employee must read through all the suggestions and anonymously rate them giving the highest points for the best solution.
- Collect the ratings and calculate total points.

The impact of the Nominal Group Technique

Positives/Advantages

- It provides time to think about the question in silence before responding.
- Voting on the ideas is anonymous and may be more reliable.
- Strong technique for preventing conformity to group pressure.
- Each team member has a chance to participate without interference from other team members.
- Everyone in the group is given an opportunity to contribute to the discussion, while avoiding the likelihood of one person dominating the group process.
- Enables the group to generate and clarify a large amount of ideas quickly, and democratically prioritises them.
- It encourages participants to confront issues through constructive problem solving.

Negatives/Disadvantages

- Small groups limit participation and are pre-selected.
- It is time consuming, as each member must make a presentation.
- Suggestions may not be as creative as when a group throws ideas around.
- Good ideas can be voted out because its potential cannot be developed further.
- It minimises discussion, and thus does not allow the full development of ideas.
- Ideas made by members may not lead to the same solution.
- It is hard to implement it effectively with large groups unless very carefully planned beforehand.
- Requires extended advance preparation, which means that it cannot be a spontaneous technique.

Meaning of creative thinking

- Creative thinking is the ability to think of original, varied and innovative ideas.
- Creative thinking focusses on exploring ideas, generating possibilities and looking for many possible answers, not just one.

Advantages/Benefits of creative thinking

- Better or unique ideas are generated.
- Improving the quality of solutions to the problem
- Increased productivity because of motivated employees
- Complex business problems are solved.
- Improving the skills of the employees lead to a happier workforce.
- Managers and leaders can keep up with fast changing technology.
- May give the business a competitive advantage if unusual solutions are generated.
- Managers will be better leaders as they are able to handle changes positively and creatively
- Creativity may lead to new inventions which improves the general standard of living.

Ways in which a business can create an environment that promotes creative thinking.

- Emphasise the importance of creative thinking to ensure that all staff know that you want to hear their ideas.
- Encourage staff to come up with new ideas.
- Make time for brainstorming sessions to generate new ideas, e.g. regular workshops.
- Place suggestion boxes around the workplace and keep communication channels open for new ideas.
- Train staff in creative problem solving skills, e.g. lateral thinking.
- Encourage job swop within the organisation or study how other businesses are doing things.
- Encourage alternative ways of doing things.
- Respond enthusiastically to all ideas and never let anyone feel less important.
- Reward creativity by implementing a reward scheme for teams or individuals who come up with creative ideas.

TOPIC: CREATIVE THINKING – ACTIVITY

1. Evaluate the effectiveness of brainstorming to solve business problems. (8)
2. Differentiate between decision – making and problem – solving. (8)
3. Read the scenario below and answer the questions that follow.

NIMROD ALUMINIUM

Nimrod Aluminium has been experiencing a decline in sales and loss of profits. Management requested experts to suggest ways on how to solve their business problems. Employees are also encouraged to use creative thinking skills to generate new ideas on increasing sales.

- 3.1 Name the problem solving technique used by Nimrod Aluminium. Motivate your answer by quoting from the scenario above. (3)
 - 3.2 Discuss the advantages of the problem solving technique identified in question 3.1. (8)
 - 3.3 Advise the business managers on ways in which a business can create an environment that stimulates creative thinking in the workplace. (8)
4. Read the scenario and answer the questions that follow.

CHOCOLATE DELUXE Ltd.

Chocolate Deluxe Ltd. wants to change the structure of the business to be more competitive. The management of Chocolate Deluxe Ltd. has identified the pros and cons of their decision. Employees are always encouraged to come up with new ideas.

- 4.1 Identify the problem solving technique applicable to the scenario above. Support your answer by quoting from the scenario. (3)
 - 4.2 Discuss the impact of the problem solving technique identified in question 4.1. (8)
5. State **FOUR** steps in problem solving. (4)
 6. Discuss the advantages of creative thinking in the workplace. (8)
 7. Read the scenario and then answer the questions that follow.

SMART CLOTHING MANUFACTURES (SCM)

Smart Clothing Manufactures is a large business that produces winter and summer clothes for different age groups. SCM solves their complex business problems by requesting each employee to first generate ideas then share them with others.

- 7.1 Identify the problem solving technique applicable to the scenario above. Support your answer by quoting from the scenario. (3)
- 7.2 Advise SCM on the impact of the problem solving technique mentioned in QUESTION 7.1 (8)

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