

GROUP 5 PRESENTATION

KCA UNIVERSITY

FOUNDATION OF CRITICAL AND CREATIVE THINKING

SEMESTER 1.2

PROBLEM-SOLVING AND DECISION MAKING

By Samuel Gathanga

Group members

1. Kurir Johnpaul Kiprono 24/07415
2. Victor Kitonga 24/08119 bisf
3. Faith Waiharo 22/04282 bisf
4. john Otieno 24/06710 bisf
5. njeru munyi 24/06610
6. Rotich Florence 24/08462 bisf
7. billow amina hassan 24/07830 bisf
8. jakes mwaniki 24/05425 bisf
9. harub Mohamed 24/04778
10. Andy ombasa 24/06668 bisf
11. Imbiru ateya jan 24/07534 bisf

- SUB TOPICS

- i. The relationship between critical and creative thinking in problem-solving.
- ii. Steps in an effective problem-solving process
- iii. Decision-making models(e.g. SWOT analysis, Six Thinking hats)

Case studies of critical and creative thinking in action

QUESTION 1

- ✓ The relationship between critical and creative thinking in problem solving.
- i. - Creative thinking allows the mind to brainstorm and explore unconventional solutions.
- Critical thinking evaluates ideas and assesses the flexibility, effectiveness and risks of those ideas.
- example: a business team brainstorming new marketing strategies(creative thinking) and analyzing their practicality and budget constraints(critical thinking).
- ii. – creative thinking is used to generate multiple ideas to give solutions to a problem.
- Critical thinking assesses the ideas and come up with the best solutions.
- scientists explore multiple treatment options for diseases and then conduct experiments and data analysis to verify the best options.

divergent thinking(creative thinking) expands possibilities, encourages out of the box ideas.

- Convergent thinking(critical thinking) narrows down options apply logic and selects the most effective solution.
- in software development, developers come up with ideas i.e. brainstorm features(divergent) and then tests and refine them to come up with viable ones(convergent).

iv. Real-life applications

- ✓ lawyers use critical thinking to analyze evidences, construct arguments and anticipate counter arguments.
- ✓ Entrepreneurs think of groundbreaking business models and conduct market research to validate them.
- ✓ Engineers design innovative structures and then use knowledge in physics and mathematics to ensure they are stable.
- ✓ Teachers develop engaging lesson plans and assess their effectiveness based on the students participation.

QUESTION 2

2. Steps in an effective problem-solving process

- ✓ Identify the problem: clearly define the issue. Understand the symptoms and the root cause of the problem and ask clarifying questions to ensure everyone understands the problem the same way.
- ✓ Analyze the problem: gather relevant information and data and break down the problem into smaller, manageable parts. Identify potential causes and contributing factors.
- ✓ generate possible solutions: brainstorm a wide range of possible solutions and encourage creativity and avoid premature judgement and also consider different perspectives and approaches.
- ✓ Evaluate and select the best solution: assess the feasibility, effectiveness and potential consequences of each solution and weigh the pros and cons. prioritize solutions based on their potential impact.
- ✓ Implement the chosen solution: develop a plan of action and assign responsibilities and set deadlines, communicate to all the shareholders. Take action and monitor progress.
- ✓ Monitor the outcome: evaluate the results, make adjustments if necessary and ensure the problem is fully resolved.

QUESTION 3

3. Decision-making models(e.g. SWOT analysis, six thinking hats

i. SWOT analysis

- SWOT(strength, weaknesses, opportunities and threats) is used for evaluating a situation, business or personal decision.
- ✓ strengths- these are the advantages that give an organization or a person a competitive edge i.e. what advantages do we have over competitors? or what do we do well?
- ✓ weaknesses- these are the areas where improvement is needed or the disadvantages hindering the success i.e. where are lacking the resources? or what can we improve?
- ✓ Opportunities- these are external conditions that an organization or individual can take advantage of to succeed i.e. are there gaps in the market?
- ✓ Threats- are external challenges that could hinder success i.e. are there new competitors in the market?
- It helps in making well informed decisions by analyzing both internal and external factors.

❖ Real life application of SWOT Analysis

• Market Analysis

- ✓ businesses uses SWOT to understand their competitive position, identify potential growth areas and recognize threats from market changes or competitors.
- ✓ it also helps in making informed decisions about entering new markets, launching new products or adjusting to the existing strategies.

• Project evaluation

- Before initiating a project, SWOT analysis can assess its feasibility and potential risks.
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 - Personal and career developments
 - i. Career planning
 - Individuals can assess their skills, identify their career opportunities by assessing their strengths and address areas where they need to improve.
 - ii. Personal Growth
 - SWOT can be used for self-reflection and personal development, helping individuals identify their strengths and weaknesses and set goals for improvements i.e. a restaurant manager can use SWOT to analyze the restraint's menu, location, customer services and competition. This can lead to decision about menu changes, marketing promotions or operational improvements.
 - ii. Six thinking hats(Edward de Bono's Model)
 - This method enhances decision-making by looking at a problem from six different perspectives each represented by a different "hat."
 - ✓ White hat(facts and information); it focusses on objective data, statistics and known facts. Usually used at the beginning of the thinking session. Everyone focusses on the information either objectively or directly or exclusively e.g. what information do we have? need? how will we obtain it.
 - ✓ Red hat(emotions and feelings); it considers feelings, intuition and emotional responses without any need to explain or justify them.
 - ✓ Black hat(caution and risks); identifies potential problems, downsides and logical concerns. It stops us from doing things we would regret in the future. It is the hat of survival (it makes us know what we need to avoid, what is going to work and what is good for us.)
 - ✓ Yellow hat(optimism & benefits); looks for positives, potential opportunities and advantages.
 - ✓ Green hat(creativity & innovations); encourages brainstorming new ideas and alternative solutions. It helps us to seek and improve on our strategies, go beyond the known, obvious and the satisfactory.
 - ✓ Blue hat(control & process); focuses on organizing thinking, defining the next steps and managing the discussion. It helps a person to summarize, create overviews and draw conclusions. It is always supposed to be used at the beginning and at the end of the thinking session.
 - This model is useful for structured brainstorming and ensuring a balanced approach to decision making.
- https://youtu.be/W3aWduLGM5I?si=wbcwjeWlbpq_kWVi more information of thinking hat.

QUESTION 4

4. **Case studies for critical and creative thinking in action**
- i. Business scenario

- ✓ cost-cutting measures: a company facing financial challenges critically analyzed operational expenses, identifying areas for potential cost reduction and creatively implementing new strategies like resource-sharing.
Market campaign: marketing team analyzing customer data to identify target demographics, then creatively designing a multi-channel campaign that leverages social media trends to reach the audience effectively.
- ii. Scientific research
 - ✓ Medical breakthrough- a research team analyzing the existing data on a disease to identify a potential new treatment pathway, then creatively designing a lab trial to test if the treatment is viable.
 - ✓ Climate change solutions: scientists critically evaluating various climate models to identify the most impactful migration strategies then creatively proposing new policies to address the issue.
- iii. Everyday situations
 - ✓ Problem solving at home: homeowner experiencing plumbing issue, critically analyze the problem by checking for leaks and potential cause then creatively using readily available materials to temporarily fix the issue before professional assistance arrives.
Decision making: a student considering to join a university/college critically evaluates factors like academic programs, fee, location and future career prospects then creatively weighing the pros and cons to come up with the best decision.

References

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