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# Module 2



| REASONING, PROBLEM-SOLVING AND IDEATION | |
|---|---|
| Duration: | 8 hours |
| Learning objectives: | 1. Enhancement of analytical skills and logical reasoning<br>2. Understanding and application of critical thinking in various contexts<br>3. Acquiring effective Problem-solving skills<br>4. Integration of creativity and critical thinking skills |
| Sub-Modules: | **2.1 Critical Thinking**: Enhancing analytical skills and logical reasoning.<br>→ *Skills*: Critical thinking, logical reasoning<br><br>2.2 Problem-Solving Skills: Methods and tools for effective problem-solving<br>→ *Skills*: Problem-solving, analytical thinking, decision making<br><br>**2.3 Creative Thinking**: ideation and innovation<br>→ *Skills*: Creative thinking<br><br>**2.4 Integrating creativity and critical thinking skills for Entrepreneurial mindset** (see Entrecomp) |
| Resources and devices: | • Slide presentations for each submodule<br>• Lecture notes and reading handouts<br>• Online video tutorials<br>• Articles<br>• Textbooks |

| | |
|---|---|
| Assessment approach: | The module employs formative, learner-centred assessment principles, aimed at reinforcing applied understanding and self-evaluation. Assessment is embedded throughout the learning process via reflective writing, scenario-based exercises, peer feedback, and short quizzes. Emphasis is placed on real-life applicability, with a focus on skill acquisition, problem-solving, and personal development. |
| Skills/abilities developed: | 1. Ability to apply analytical reasoning to assess information, identify patterns, and draw logical conclusions.<br>2. Competence in using critical thinking strategies to evaluate arguments, challenge assumptions, and make informed decisions.<br>3. Capacity to approach complex problems with structured, creative, and evidence-based solutions.<br>4. Skill in integrating creative thinking with critical analysis to generate innovative ideas and improve decision-making processes.<br>5. Development of reflective thinking to continuously assess and enhance personal reasoning and problem-solving capabilities. |

# Submodule 2.1

## Critical Thinking: Enhancing analytical skills and logical reasoning.

→ **Skills:**

1. Critical Thinking
2. Logical Reasoning

| **CRITICAL THINKING: ENHANCING ANALYTICAL SKILLS AND LOGICAL REASONING** |
|---|
| **Activity 1: Understanding and Applying Critical Thinking** |
| **Duration**: 2 hours |
| **Specific Learning Objectives**<br>Upon completing this activity, participants will have developed:<br>1. Understanding of the importance and benefits of critical thinking<br>2. Awareness of the components of logical reasoning (inductive, deductive, abductive)<br>3. Ability to analyze arguments and identify reasoning flaws<br>4. Skills in applying critical thinking to solve problems and make decisions<br>5. Reflective thinking to evaluate their own thought processes |
| **Methodology, Resources and Devices**<br><br>This activity follows a blended instructional method, combining brief lecture input, multimedia resources, and structured individual and group reflection.<br><br>The session is supported by a short video and explanation of critical and logical thinking concepts, followed by guided reading and small group discussion.<br><br>Interactive methods are used to deepen engagement and challenge participants' assumptions. Through peer dialogue and targeted questioning techniques, learners explore real-life cases and abstract reasoning scenarios, enhancing their ability to assess and construct arguments.<br><br>Resources include video tutorials, textbook readings, case examples, PowerPoint slides, and reflective prompts. |
| **Description of the activity and Key Concepts**<br>Critical thinking is presented as a self-directed and disciplined process of evaluating information and drawing reasoned conclusions. Logical reasoning is framed as a core subcomponent of this process, useful for both everyday decision-making and complex business problem-solving.<br><br>Part 1: Video & Conceptual Introduction |

Participants view a short training video explaining the relationship between logical and critical thinking. A brief instructor-led lecture introduces key reasoning types (inductive, deductive, abductive) and the importance of recognizing bias and evidence quality.

Part 2: Guided Reading & Discussion
Participants read an article and selected slides from the provided materials. They then discuss real-world applications of critical thinking in professional and entrepreneurial contexts.

Part 3: Socratic Questioning and Case Work
Participants engage in Socratic questioning activities based on examples from the presentation. In small groups, they analyze case scenarios to identify arguments, clarify assumptions, and propose reasoned solutions.

Part 4: Reflection
Learners complete a short self-assessment and write a reflection on how their reasoning skills have developed, including areas for personal growth.

**Key Concepts**: Argument analysis, logical fallacies, reasoning types, source evaluation, evidence, Socratic method, decision-making, reflective thinking.

**Assessment**
Assessment is formative and integrated throughout the session:

- Group discussion and feedback on case analysis
- Socratic questioning engagement and responses
- Reflective writing on personal application and learning
- Self-assessment

**Skills/Abilities developed**

1. Analytical thinking and problem-solving
2. Application of inductive, deductive, and abductive reasoning
3. Recognition and avoidance of logical fallacies
4. Evaluation of sources and arguments
5. Structured reflection on cognitive processes
6. Clear, logical communication in professional settings

**Further readings, activities, materials, best practices**
Video: Understanding Logical Thinking (YouTube, 4 min)
Article: Five Top Critical Thinking Skills and How to Improve Them – Indeed
Materials below: Presentation “Critical and Logical Thinking Skills” and Presentation “Socratic Questioning Model”

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## Developing VET Entrepreneurial Green Mindset and skills for Small-Business Development

**2.1** Critical Thinking: Enhancing analytical skills and logical reasoning.

→ *Skills*: Critical thinking, logical reasoning

# CONTENTS

- Critical thinking skills

# DEFINITION AND IMPORTANCE

**What is critical thinking?**

Critical Thinking refers to the ability to analyze information thoroughly, evaluate evidence objectively, and draw logical conclusions, essentially encompassing both "critical thinking" and "logical reasoning" as key skills within this broader concept; it involves actively questioning assumptions, considering multiple perspectives, and making informed judgments based on evidence.

→ It involves evaluating sources such as data, facts, observable phenomena, and research findings. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking.

# UNDERSTANDING LOGICAL THINKING - VIDEO CONTENT

This video is from the Understanding Logical Thinking online training course. Logical thinking is very important in the workplace because it requires problem solving, critical thinking, creativity and reasoning skills. Let's examine each of these skills more closely. Logical thinking helps problem solving skills by breaking problems down into smaller parts and using systematic approaches. It allows us to identify issues and find effective solutions. This skill is especially useful when faced with challenges at work. Logical thinking and critical thinking go together. Critical thinking involves evaluating information, questioning assumptions, and making reasoned judgments. By using logical thinking, we can carefully analyzed situations. Consider different perspectives and make informed decisions. Critical thinking also helps us spot biases or errors in reasoning. Logical thinking is not just about being rational and structured. It also involves creativity. It helps us Generate innovative ideas, make connections between different concepts and think outside the box. Combining creativity with logical reasoning allows us to develop new solutions and improve our problem-solving abilities at work. Reasoning skills are important for logical thinking. They include drawing logical conclusions, establishing cause and effect relationships, and using deductive or inductive reasoning. Reasoning skills enable us to evaluate evidence, make logical connections between ideas and present coherent arguments. These skills are valuable for effective communication and decision making in the workplace. Integrating logical thinking with problem solving critical thinking, creativity, and reasoning skills brings many benefits. For example, logical thinking provides structure so we can make sound choices that align with our organization's goals. This leads to better problem solving and improved outcomes at work. It allows us to organize our thoughts, present ideas logically and support arguments with evidence. When we use logical reasoning, we can make rational decisions on how to allocate time, money and other resources. This kind of thinking encourages adaptability and fosters innovation. Developing logical thinking skills contributes to individual and organizational success in a dynamic work environment. You've now completed understanding logical thinking. We've discussed what logical thinking is and its impacts on your professional life. You now know the difference between logical thinking and critical thinking, and you can also differentiate between inductive, deductive and objective reasoning. We talked about rational decision making, including the identification of alternatives, evaluating options, and selecting the best course of action based on logic and reasoning. You've learned what claims reasons and evidence are in terms of logical thinking. You're now better prepared to build your problem-solving skills, critical thinking skills, creativity and reasoning skills in the workplace.

# UNDERSTANDING LOGICAL THINKING

WATCH ONLINE YOUTUBE TUTORIAL (4 MIN):
HTTPS://WWW.YOUTUBE.COM/WATCH?V=CZ5VLYUVCUY

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Developing VET Entrepreneurial Green Mindset and skills for Small-Business Development

# CONTENTS

# DEFINITION AND IMPORTANCE

## What is critical thinking?

Critical thinking is the ability to analyze information objectively and make a reasoned judgment. It involves evaluating sources such as data, facts, observable phenomena, and research findings. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking.

# WHY IS IT IMPORTANT IN PERSONAL AND PROFESSIONAL CONTEXTS?

Critical Thinking is crucial because it enables individuals to make well-informed decisions, solve problems effectively, and think clearly and rationally. in personal contexts, it helps in making better life choices and understanding the consequences of actions. professionally, it enhances problem-solving skills, improves communication, and fosters innovation and creativity.

# BENEFITS OF CRITICAL THINKING

- **Improved Decision Making**: Helps in making better, more informed decisions.
- **Problem Solving**: Enhances the ability to solve complex problems efficiently.
- **Effective Communication**: Promotes clear and logical communication.
- **Creativity**: Encourages innovative thinking and the generation of new ideas.
- **Self-Reflection**: Aids in self-assessment and personal growth.

# ACTIVITIES

Enhancing critical thinking skills can be both fun and rewarding! Here are some activities that can help:

1. **Brain Teasers and Puzzles**: Engaging in brain teasers, logic puzzles, and riddles can sharpen your analytical skills and improve problem-solving abilities.
2. **Debates and Discussions**: Participating in debates or group discussions on various topics encourages you to consider different perspectives and develop well-reasoned arguments.
3. **Case Studies and Real-World Examples**: Analyzing case studies or real-world scenarios helps you apply theoretical knowledge to practical situations, enhancing your critical thinking.
4. **Reflective Journaling**: Writing about your experiences and thoughts can help you reflect on your decision-making processes and identify areas for improvement.

# ACTIVITIES - CONTINUE

5) **Socratic Questioning**: This method involves asking and answering questions to stimulate critical thinking and illuminate ideas. It encourages deep thinking and self-reflection.

6) **Problem-Based Learning**: Tackling complex, real-world problems in a structured way can develop your ability to think critically and creatively.

7) **Creative Writing**: Engaging in creative writing exercises can help you explore different viewpoints and think outside the box.

8) **Mind Mapping**: Creating mind maps to organize information visually can help you see connections between ideas and improve your analytical skills.

# SOCRATIC QUESTIONING

Socratic questioning is a method of asking open-ended, thought-provoking questions to stimulate critical thinking and illuminate ideas. This technique, rooted in the teachings of the ancient Greek philosopher Socrates, encourages deep reflection and self-examination.

Here are some key aspects of Socratic questioning:

1. **Clarification Questions**: These questions help to clarify thoughts and ideas. For example, "Why do you say that?" or "Can you explain that further?".
2. **Assumption Probing**: These questions challenge the assumptions behind thoughts. For instance, "What could we assume instead?" or "How can you verify or disprove that assumption?".
3. **Evidence and Reasoning**: These questions seek evidence and reasons. Examples include "What evidence supports this idea?" or "Why do you think this is true?".

# SOCRATIC QUESTIONING

4. **Perspective Questions**: These questions explore different viewpoints. For example, "What is an alternative way of looking at this?" or "How might someone else view this situation?".
5. **Implication and Consequence**: These questions examine the implications and consequences of ideas. For instance, "What are the consequences of this action?" or "How does this affect other things?".
6. **Questioning the Question**: These questions reflect on the initial question itself. Examples include "Why do you think I asked this question?" or "What does this question assume?".

Socratic questioning is widely used in education, therapy, and coaching to promote deeper understanding and critical thinking. It can be particularly effective in helping individuals explore their beliefs and assumptions, leading to greater self-awareness and problem-solving skills.

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# Submodule 2.2

## Problem-Solving Skills: Methods and tools for effective problem-solving

→ **Skills:**

1. Problem-solving
2. Analytical thinking
3. Decision making

| **PROBLEM-SOLVING SKILLS: METHODS AND TOOLS FOR EFFECTIVE PROBLEM-SOLVING** |
|---|
| **Activity 1: Problem Solving** |
| **Duration**: 2 hours |
| **Specific Learning Objectives**<br><br>1. **Develop Problem-Solving Skills:**<br>o Understand the problem-solving process.<br>o Identify and analyze problems effectively.<br>2. **Enhance Analytical Thinking:**<br>o Apply critical thinking to evaluate information.<br>o Use logical reasoning to break down complex issues.<br>3. **Improve Decision-Making Abilities:**<br>o Make informed decisions based on data and analysis.<br>o Evaluate the outcomes of decisions and adjust strategies accordingly.<br><br>**Learning Outcomes:**<br><br>Upon completing this module, the student should be able to<br>1. **Identify and Analyze Problems:** Recognize and break down complex problems effectively.<br>2. **Apply Analytical Thinking:** Use critical thinking and logical reasoning to evaluate information.<br>3. **Make Informed Decisions:** Utilize data and analysis to make sound decisions.<br>4. **Implement Problem-Solving Techniques:** Apply practical tools and techniques to solve real-world problems.<br>5. **Collaborate and Communicate:** Work effectively with others to solve problems and make decisions. |
| **Methodology, Resources and Devices**<br>Appropriate methodologies to apply: Lecture, Self-study, think-pair-share, peer sharing and discussions.<br>Tools to be used include: Links to YouTube videos, books, online articles. |

**Methodology**

**Blended Learning**

- **Combine Theory and Practice**: Use both theoretical explanations and practical exercises to reinforce learning.
- **Interactive Workshops**: Encourage participants to engage in real-world sce narios through workshops and role-playing activities.
- **Case Studies  RealLife Examples**: Provide case studies relevant to

**Group Discussions**: Facilitate discussions to analyze these cases, promoting criti cal thinking and practical application of concepts.

**Resources**

- **Reading Materials:** Articles, books, and research papers on problem-solving and decision-making.
- **Videos:** Instructional videos and lectures on analytical skills and logical reasoning.
- **Interactive Tools:** Online quizzes, exercises, and simulations to practice problem-solving skills.

This video explains a simple yet effective four-step problem-solving process using the IDEA model (Identify, Develop, Execute, Assess) It illustrates a highly sought after skill, learn a simple yet effective four step problem solving process using the concept IDEA to identify the problem, develop solutions, execute a plan and then assess your results. The IDEA model is a linear, rational approach that is best suited for well-structured problems.

https://www.youtube.com/watch?v=QOjTJAFyNrU

**Find Problem, Solve Problem | Ariana Glantz | TEDxMemphis (5,36 min)**
**https://youtu.be/LaYVqj1El1A**

**5 Steps to Fix Any Problem at Work | Anne Morriss | TED (11,52 min)**
**https://youtu.be/V7pf3oT2_dE?si=vHuYpgoUtX-gGg2m**

**Description of the activity and Key Concepts**

The activity is divided into four sections

Content:

- Listening to the video talks and make notes
- Study the notes made from all three video talks/presentations
- Mock exercise / Case study: real life scenary to solve  a problem/challenge
- Activity: Icebreaker - Share a personal experience of a problems experienced

**Assessment**

Assessment methods and conduction include:

Self-assessment through question at the end of submodule

- Group discussions
- Role play
- Case studies
- Reflective writing
- Quizzes: Short quizzes to test understanding of key concepts.
- Assignments: Written assignments requiring problem-solving and decision-making.
- Final Project: A comprehensive project that applies problem-solving skills to a real-world problem.

**Skills/Abilities developed**

Upon completing this module, the student should be able to

1. **Identify and Analyze Problems:** Recognize and break down complex problems effectively.
2. **Apply Analytical Thinking:** Use critical thinking and logical reasoning to evaluate information.
3. **Make Informed Decisions:** Utilize data and analysis to make sound decisions.
4. **Implement Problem-Solving Techniques:** Apply practical tools and techniques to solve real-world problems.
5. **Collaborate and Communicate:** Work effectively with others to solve problems and make decisions.

**Further readings, activities, materials, best practices**

Material: Presentation “Problem Solving” (include other materials, such as online videos).

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## Developing VET Entrepreneurial Green Mindset and skills for Small-Business Development

SUB-MODULE TITLE 2.2

Problem-Solving Skills: Methods and tools for effective problem-solving

→ Skills: Problem-solving, analytical thinking, decision making

# CONTENTS

- Definition
- Introduction to problem-solving
- Analytical thinking
- Decision-making
- Practical tools and techniques
- Real world applications
- Four step problem solving process
- A solution minded point of view
- 6 steps to fix any problem at work

# OVERVIEW

This session is designed to enhance participants' problem-solving skills, analytical thinking, and decision-making abilities. Through a combination of theoretical knowledge and practical exercises, participants will learn effective methods and tools for tackling complex problems.

# DEFINITION

The term problem solving has a slightly different meaning depending on the discipline. For instance, it is a mental process in psychology and a computerized process in computer science. There are two different types of problems: ill-defined and well-defined; different approaches are used for each. Well-defined problems have specific end goals and clearly expected solutions, while ill-defined problems do not. Well-defined problems allow for more initial planning than ill-defined problems.[2] Solving problems sometimes involves dealing with pragmatics (the way that context contributes to meaning) and semantics (the interpretation of the problem). The ability to understand what the end goal of the problem is, and what rules could be applied, represents the key to solving the problem. Sometimes a problem requires abstract thinking or coming up with a creative solution.

Problem solving has two major domains: mathematical problem solving and personal problem solving. Each concerns some difficulty or barrier that is encountered.

(Wikipedia)

# 1. INTRODUCTION TO PROBLEM-SOLVING

- DEFINITION AND IMPORTANCE: UNDERSTANDING WHAT PROBLEM-SOLVING ENTAILS AND ITS SIGNIFICANCE IN VARIOUS CONTEXTS.
- PROBLEM-SOLVING PROCESS: STEPS INVOLVED IN IDENTIFYING, ANALYZING, AND SOLVING PROBLEMS.

# 2. ANALYTICAL THINKING:

- **Critical Thinking:** Techniques to evaluate information critically.
- **Logical Reasoning:** Methods to break down and analyze complex issues.

# 3. DECISION-MAKING:

- **Data Analysis:** Using data to inform decision-making.
- **Evaluation Techniques:** Assessing the effectiveness of decisions and making necessary adjustments.

# 4. PRACTICAL TOOLS AND TECHNIQUES:

- **Root Cause Analysis:** Identifying the underlying causes of problems.
- **Brainstorming:** Generating creative solutions.
- **SWOT Analysis:** Evaluating strengths, weaknesses, opportunities, and threats.
- **Fishbone Diagram:** Visualizing cause-and-effect relationships.
- **PDCA Cycle (Plan-Do-Check-Act):** Implementing continuous improvement.

# 5. REAL-WORLD APPLICATIONS:

- **Case Studies:** Analyzing real-world examples of problem-solving.
- **Role-Playing:** Engaging in scenarios that require problem-solving and decision-making.
- **Group Discussions:** Collaborating with peers to solve problems and make decisions.

# FOUR-STEP PROBLEM-SOLVING PROCESS USING THE IDEA MODEL

This video explains a simple yet effective four-step problem-solving process using the IDEA model (Identify, Develop, Execute, Assess) It illustrates a highly sought after skill, learn a simple yet effective four step problem solving process using the concept IDEA to identify the problem, develop solutions, execute a plan and then assess your results. The IDEA model is a linear, rational approach that is best suited for well-structured problems.

**https://www.youtube.com/watch?v=QOjTJAFyNrU**

# A SOLUTION-MINDED POINT OF VIEW

Ariana shares her approach to tackling each day's problems with a solution-minded point of view, what she calls a "Figure-it-out-able" outlook. The talk is rooted in the actions we take and something that is familiar to all: challenges. Challenges come in all shapes and sizes and can be our collective common denominator. Our choice, then, is in how we approach each challenge with a solution minded framework.  she thought that there is a solution to everything. This talk was given at a TEDx event using the TED conference format but independently organized by a local community.

**Find Problem, Solve Problem | Ariana Glantz | TEDxMemphis (5,36 min)**

**https://youtu.be/LaYVqj1El1A**

# 5 STEPS TO FIX ANY PROBLEM AT WORK

**5 Steps to Fix Any Problem at Work | Anne Morriss | TED (11,52 min)**

In a practical, playful talk, leadership visionary Anne Morriss reinvents the playbook for how to lead through change -- with a radical, one-week plan to build trust and fix problems by following a step per day.

**https://youtu.be/V7pf3oT2_dE?si=vHuYpgoUtX-gGg2m**

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# Submodule 2.3

## Creative Thinking: Ideation and Innovation

→ **Skills:**

1. Creative thinking

| **Creative Thinking: ideation and innovation** |
|---|
| **Activity 1** |
| **Duration**: 2 hours |
| **Specific Learning Objectives**<br>1. **Develop Creative Thinking Skills:**<br>o Understand the principles of creative thinking and innovation.<br>o Learn techniques to generate and develop innovative ideas.<br>2. **Enhance Ideation Skills:**<br>o Apply brainstorming, mind mapping, and other ideation techniques.<br>o Foster a creative mindset and approach to problem-solving.<br>3. **Implement Innovation Strategies:**<br>o Use design thinking to develop innovative solutions.<br>o Apply creative thinking to real-world scenarios and projects |
| **Methodology, Resources and Devices**<br>Most appropriate methodology to apply: Lecture, Self-study, think-pair- and share, peer sharing and discussions,<br>Tools used: Links to YouTube videos, books, online articles,<br><br>**Resources:**<br>● **Reading Materials:** Articles, books, and research papers on creative thinking and innovation.<br>● **Videos:** Instructional videos and lectures on ideation techniques and design thinking.<br>**Interactive Tools:** Online quizzes, exercises, and simulations to practice creative thinking skills. |
| **Description of the activity and Key Concepts**<br>The activity is divided into four sections: |

**1. Introduction to Creative Thinking:**

- **Definition and Importance:** Understanding what creative thinking is and why it is crucial in various contexts.
- **Principles of Innovation:** Exploring the key principles that drive innovation.

**2. Ideation Techniques:**

- **Brainstorming:** Techniques to generate a large number of ideas in a short period.
- **Mind Mapping:** Visualizing ideas and their connections.
- **Lateral Thinking:** Approaching problems from new and unconventional angles.
- **Root Cause Analysis:** Identifying the underlying causes of problems to generate innovative solutions.

**3. Design Thinking:**

- **Empathize:** Understanding the needs and perspectives of users.
- **Define:** Clearly defining the problem to be solved.
- **Ideate:** Generating a wide range of ideas and solutions.
- **Prototype:** Creating prototypes to test and refine ideas.
- **Test:** Evaluating the effectiveness of solutions and making necessary adjustments.

**4. Real-World Applications:**

- **Case Studies:** Analyzing real-world examples of creative thinking and innovation.
- **Role-Playing:** Engaging in scenarios that require creative problem-solving.
- **Group Discussions:** Collaborating with peers to develop and refine ideas.

**Videos**

- **Creative Thinking - How to Get Out of the Box and Generate Ideas by Giovanni Corazza (TEDxRoma):**
    - **Overview:** This TEDx talk by Giovanni Corazza explains how to think creatively and generate new ideas by overcoming the boundaries of our knowledge and fear of failure.

- Watch on YouTube https://www.youtube.com/watch?v=bEusrD8g-dM

- **Creative and Innovative Thinking by Daniel Cole (TEDxUniversityOfSouthAfrica, Duration 14:29 min):**

  Do you think you are creative or not? In this talk Daniel highlights common misconceptions that people have about creative thinking and suggest ways of accessing creativity and innovative thinking. Along the way he highlights what NFT's are and how creatives can use it to support the way the distribute their content. Daniel is the founder of the International Institute of Personal Development, South Africa and an International Columnist. He writes for Caribbean Newspaper in Toronto Canada, by the name Toronto Carib. His weekly South African column, "Pathways to Success" of over 35,000 copies in print, is read and distributed around Johannesburg, South Africa. He's a published author and regional manager, southern Africa of TigerWit Africa. Daniel Cole is a weekly guest at Alex FM (89.1), and he speaks on the subject of peak performance, creative thinking, success, personal development, and innovation with a listenership of over 130,000. This talk was given at a TEDx event using the TED conference format but independently organized by a local community. Learn more at https://www.ted.com/tedx

  - **Overview:** Daniel Cole highlights common misconceptions about creative thinking and suggests ways to access creativity and innovative thinking.
  - Watch on YouTube https://www.youtube.com/watch?v=A824fSmckyA

- **Creativity and Innovation: Tips for Creative Thinking by ABC Life Literacy Canada:**

  - **Overview:** This video provides tips on how to see, hear, or think about things in new and different ways to solve problems and come up with new ideas.
  - Watch on YouTube: https://www.youtube.com/watch?v=Vrd_LLT_0nA

These activities and videos should help enhance the learning experience and provide practical ways to apply creative thinking skills

**Assessment**

Assessment methods and conduction include:

- Self-assessment through question at the end of submodules
- Quiz – test your knowledge
- Group discussions
- Role play

- Case studies
- Reflective writing
- Assignments**:** Written assignments requiring creative thinking and ideation.
- Final Project: A comprehensive project that applies creative thinking skills to a real-world problem.

**Skills/Abilities developed**

By the end of this module, participants will be able to:

1. **Generate Innovative Ideas:** Apply various ideation techniques to generate a wide range of ideas.
2. **Develop Creative Solutions:** Use creative thinking to develop innovative solutions to real-world problems.
3. **Apply Design Thinking:** Implement the design thinking process to enhance creativity and innovation.

**Collaborate and Communicate:** Work effectively with others to brainstorm, develop, and implement creative ideas.
matching learning objectives, reflect on learning and own shortcomings

**Further readings, activities, materials, best practices**
Material 1: PPT on Creative Thinking: ideation and innovation

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Developing VET Entrepreneurial Green Mindset and skills for Small-Business Development

## 2.3 Creative Thinking: ideation and innovation

→ ***Skills*: Creative thinking**

# CONTENTS

- Definitions
- Module design
- Introduction to creative thinking
- Ideation techniques
- Design thinking
- Real world applications
- Out of the box thinking (video)
- Misconceptions about creative thinking
- Practical tips how to apply creative thinking skills

# Definition: Ideation

Ideation is the creative process of generating, developing, and communicating new ideas, where an idea is understood as a basic unit of thought that can be either visual, concrete, or abstract. Ideation comprises all stages of a thought cycle, from innovation, to development, to actualization. Ideation can be conducted by individuals, organizations, or crowds. As such, it is an essential part of the design process, both in education and practice.

# DEFINTION: INNOVATION

**Innovation** is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services.[1] ISO TC 279 in the standard ISO 56000:2020 defines innovation as "a new or changed entity, realizing or redistributing value".[2] Others have different definitions; a common element in the definitions is a focus on newness, improvement, and spread of ideas or technologies.

Innovation often takes place through the development of more-effective products, processes, services, technologies, art works[3] or business models that **innovators** make available to markets, governments and society.

Innovation is related to, but not the same as, *invention*:[4] innovation is more apt to involve the practical implementation of an invention (i.e. new / improved ability) to make a meaningful impact in a market or society,[5] and not all innovations require a new invention

# MODULE DESIGN

This module is designed to foster creative thinking, ideation, and innovation skills. Participants will learn various techniques to generate and develop innovative ideas, apply creative thinking to real-world problems, and enhance their ability to think outside the box.

# 1. INTRODUCTION TO CREATIVE THINKING:

- **Definition and Importance:** Understanding what creative thinking is and why it is crucial in various contexts.
- **Principles of Innovation:** Exploring the key principles that drive innovation.

# 2. IDEATION TECHNIQUES:

- **Brainstorming:** Techniques to generate a large number of ideas in a short period.
- **Mind Mapping:** Visualizing ideas and their connections.
- **Lateral Thinking:** Approaching problems from new and unconventional angles.
- **Root Cause Analysis:** Identifying the underlying causes of problems to generate innovative solutions.

# 3. DESIGN THINKING:

- **Empathize:** Understanding the needs and perspectives of users.
- **Define:** Clearly defining the problem to be solved.
- **Ideate:** Generating a wide range of ideas and solutions.
- **Prototype:** Creating prototypes to test and refine ideas.
- **Test:** Evaluating the effectiveness of solutions and making necessary adjustments.

# 4. REAL-WORLD APPLICATIONS:

- **Case Studies:** Analyzing real-world examples of creative thinking and innovation.
- **Role-Playing:** Engaging in scenarios that require creative problem-solving.
- **Group Discussions:** Collaborating with peers to develop and refine ideas.

# CREATIVE THINKING - HOW TO GET OUT OF THE BOX AND GENERATE IDEAS

## BY GIOVANNI CORAZZA (TEDXROMA):

- **Overview:** This TEDx talk by Giovanni Corazza explains how to think creatively and generate new ideas by overcoming the boundaries of our knowledge and fear of failure.
- Watch on YouTube
- https://www.youtube.com/watch?v=bEusrD8g-dM

# CREATIVE AND INNOVATIVE THINKING BY DANIEL COLE (TEDXUNIVERSITYOFSOUTHAFRICA, DURATION 14:29 MIN):

**Overview:** Daniel Cole highlights common misconceptions about creative thinking and suggests ways to access creativity and innovative thinking.

Do you think you are creative or not? In this talk Daniel highlights common misconceptions that people have about creative thinking and suggest ways of accessing creativity and innovative thinking. Along the way he highlights what NFT's are and how creatives can use it to support the way the distribute their content. Daniel is the founder of the International Institute of Personal Development, South Africa and an International Columnist. He writes for Caribbean Newspaper in Toronto Canada, by the name Toronto Carib. His weekly South African column, "Pathways to Success" of over 35,000 copies in print, is read and distributed around Johannesburg, South Africa. He's a published author and regional manager, southern Africa of TigerWit Africa. Daniel Cole is a weekly guest at Alex FM (89.1), and he speaks on the subject of peak performance, creative thinking, success, personal development, and innovation with a listenership of over 130,000. This talk was given at a TEDx event using the TED conference format but independently organized by a local community. Learn more at https://www.ted.com/tedx

- Watch on YouTube https://www.youtube.com/watch?v=A824fSmckyA

# CREATIVITY AND INNOVATION: TIPS FOR CREATIVE THINKING BY ABC LIFE LITERACY CANADA:

- **Overview:** This video provides tips on how to see, hear, or think about things in new and different ways to solve problems and come up with new ideas.
- Watch on YouTube: https://www.youtube.com/watch?v=Vrd_LLT_0nA

These activities and videos should help enhance the learning experience and provide practical ways to apply creative thinking skills

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# Submodule 2.4

## Creativity and Critical Thinking Skills for an Entrepreneurial Mindset

→ **Skills:**

1. Creativity
2. Critical Thinking

| **Integrating creativity and critical thinking skills for an Entrepreneurial mindset (see Entrecomp)** |
|---|
| **Activity 1: Integrating creativity and critical thinking skills for an Entrepreneurial mindset (see Entrecomp)** |
| **Duration**: 2 hours |
| **Specific Learning Objectives**<br><br>1. **Develop Creative Thinking Skills:**<br>  ○ Understand the principles of creative thinking and innovation.<br>  ○ Learn techniques to generate and develop innovative ideas.<br>2. **Enhance Critical Thinking Skills:**<br>  ○ Apply critical thinking to evaluate information and situations.<br>  ○ Use logical reasoning to break down complex issues.<br>3. **Foster an Entrepreneurial Mindset:**<br>  ○ Act on opportunities and ideas to create value for others.<br>  ○ Develop competencies for entrepreneurial action and value creation. |
| **Methodology, Resources and Devices**<br>Most appropriate methodology to apply: Lecture, Self-study, think-pair-share, peer sharing and discussions,<br>+ tools used: Links to YouTube videos, books, online articles,<br><br>Mobilizing resources" is one of 15 competences that any learner can develop to become entrepreneurial, according to the European Commission Entrepreneurship Competence Framework (http://europa.eu/!tx78fG), known as the EntreComp.<br><br>In this video, Rebecca Weicht, Head of Operations at Bantani Education (https://bantani.com/), explains how important is to approach the gathering of resources as a creative process and not only as a matter of planning and organizing the resources at hand.<br><br>Explore the EntreComp framework: https://ec.europa.eu/jrc/entrecomp<br>https://www.youtube.com/watch?v=IHa4MzggFN8 |

+ **Resources**

- **Reading Materials:** Articles, books, and research papers on creative thinking, critical thinking, and entrepreneurship.
- **Videos:** Instructional videos and lectures on ideation techniques, critical thinking, and entrepreneurial mindset.
- **Interactive Tools:** Online quizzes, exercises, and simulations to practice creative thinking and critical thinking skills.

**Description of the activity and Key Concepts**

The activity is divided into three sections:

1. The Entrepreneurship Competence Framework, also known as EntreComp
2. Reading and Studying THE ENTRECOMP FRAMEWORK document: https://eufordigital.eu/library/entrecomp-the-entrepreneurship-competence-framework/
3. PowerPoint: EntreComp competences into practical learning activities and case studies, providing a comprehensive approach to developing entrepreneurial skills.

**Content**

**1. Introduction to Entrepreneurial Mindset: (see powerpoint presentation)**

- Definition and Importance: Understanding what an entrepreneurial mindset is and why it is crucial in various contexts.
- EntreComp Framework: Exploring the key principles and competencies outlined in the EntreComp framework.

**2. Creative Thinking Techniques:**

- Brainstorming: Techniques to generate a large number of ideas in a short period.
- Mind Mapping: Visualizing ideas and their connections.
- Lateral Thinking: Approaching problems from new and unconventional angles.

**3. Critical Thinking Techniques:**

- Data Analysis: Using data to inform decision-making.
- Evaluation Techniques: Assessing the effectiveness of decisions and making necessary adjustments.
- Root Cause Analysis: Identifying the underlying causes of problems to generate innovative solutions.

**4. Real-World Applications:**

- Case Studies: Analyzing real-world examples of entrepreneurial action and value creation.

- Role-Playing: Engaging in scenarios that require creative problem-solving and entrepreneurial thinking.
- Group Discussions: Collaborating with peers to develop and refine ideas

**Assessment**

Assessment methods and conduction include:

- Self-assessment through question at the end of submodules
- Group discussions
- Role play
- Case studies
- Reflective writing
- Quizzes: Short quizzes to test understanding of key concepts.
- Assignments: Written assignments requiring creative thinking, critical thinking, and entrepreneurial action.
- Final Project: A comprehensive project that applies creative thinking and critical thinking skills to a real-world problem.

**Skills/Abilities developed**
**Learning Outcomes**

By the end of this module, participants will be able to:

1. **Generate Innovative Ideas:** Apply various ideation techniques to generate a wide range of ideas.
2. **Develop Creative Solutions:** Use creative thinking to develop innovative solutions to real-world problems.
3. **Apply Critical Thinking:** Use critical thinking and logical reasoning to evaluate information and situations.
4. **Foster an Entrepreneurial Mindset:** Act on opportunities and ideas to create value for others.
5. **Collaborate and Communicate:** Work effectively with others to brainstorm, develop, and implement creative ideas.

**Further readings, activities, materials, best practices**

Materials 1,2 below: Integration of EntreComp competencies into practical learning, The Entrepreneurship Competence (EntreComp) framework

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# CONTENTS

# 1.INTRODUCTION TO ENTREPRENEURIAL MINDSET:

- **Definition and Importance:** Understanding what an entrepreneurial mindset is and why it is crucial in various contexts.
- **EntreComp Framework:** Exploring the key principles and competencies outlined in the EntreComp framework.

# ENTREPRENEURIAL MINDSET

- An "entrepreneurial mindset" refers to a specific way of thinking and approaching situations that is characterized by a willingness to identify opportunities, take calculated risks, be innovative, adapt to change, learn from failures, and persevere through challenges, essentially embodying the traits needed to successfully start and run a business; it involves a combination of creativity, resilience, and a proactive attitude towards problem-solving.

- Key aspects of an entrepreneurial mindset:
- Opportunity recognition: Actively looking for potential gaps in the market and new ideas to develop into ventures.
- Risk tolerance: Being comfortable with taking calculated risks to pursue opportunities, even if there is potential for failure.
- Creativity and innovation: A drive to generate new ideas and approaches to solve problems.
- Resilience: The ability to bounce back from setbacks and learn from failures.
- Adaptability: Being flexible and willing to adjust strategies as circumstances change.
- Proactive attitude: Taking initiative and not waiting for things to happen.
- Passion and drive: Having a strong enthusiasm for the idea and the energy to pursue it.

- **2. CREATIVE THINKING TECHNIQUES:**

  - BRAINSTORMING: TECHNIQUES TO GENERATE A LARGE NUMBER OF IDEAS IN A SHORT PERIOD.

  - MIND MAPPING:
  VISUALIZING IDEAS AND THEIR CONNECTIONS.

  - LATERAL THINKING: APPROACHING PROBLEMS FROM NEW AND UNCONVENTIONAL ANGLES.

# 3. CRITICAL THINKING TECHNIQUES:

- **Data Analysis:** Using data to inform decision-making.
- **Evaluation Techniques:** Assessing the effectiveness of decisions and making necessary adjustments.
- **Root Cause Analysis:** Identifying the underlying causes of problems to generate innovative solutions.

# 4. REAL-WORLD APPLICATIONS:

## 4. Real-World Applications:

- **Case Studies:** Analyzing real-world examples of entrepreneurial action and value creation.
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Developing VET Entrepreneurial Green Mindset and skills for Small-Business Development

# CONTENTS

This module integrates EntreComp competences into practical learning activities and case studies, providing a comprehensive approach to developing entrepreneurial skills.

# THE ENTREPRENEURSHIP COMPETENCE FRAMEWORK

The Entrepreneurship Competence Framework, also known as EntreComp, offers a tool to improve the entrepreneurial capacity of European citizens and organisations.

The framework aims to build consensus around a common understanding of entrepreneurship competence by defining 3 competence areas, a list of 15 competences, learning out-comes and proficiency levels, which current and future initiatives can refer to.

# INTRODUCTION

This module is designed to enhance the entrepreneurial capacity of participants by developing their skills in resource mobilization, entrepreneurial competence, and strategic thinking. utilizing the entrepreneurship competence framework (entrecomp), this module provides a comprehensive approach to understanding and applying key competences in real-world scenarios.

# MODULE OBJECTIVES

- Understand the principles of resource mobilization.
- Develop entrepreneurial competence.
- Enhance strategic thinking skills.

# COMPETENCE AREAS AND LEARNING OUTCOMES

1. Ideas and Opportunities:

Spotting Opportunities:

Objective: Recognize and act on opportunities to mobilize resources.

Learning Outcome: Ability to identify and evaluate potential opportunities for resource mobilization.

# 2. RESOURCES:

Mobilizing Resources:

Objective: Gather and manage the necessary resources for entrepreneurial initiatives.

Learning Outcome: Proficiency in securing financial, human, and material resources.

Financial and Economic Literacy:

Objective: Understand financial concepts crucial for resource mobilization.

Learning Outcome: Ability to interpret financial statements and create budgets.

Mobilizing Others:

Objective: Inspire and motivate others to contribute to resource mobilization efforts.

Learning Outcome: Skills in leadership and team-building.

# 3. INTO ACTION:

Strategic Thinking:

Objective: Develop and implement effective strategies for resource mobilization.

Learning Outcome: Ability to plan, execute, and adapt strategic initiatives.

Taking Initiative:

Objective: Proactively pursue resource mobilization opportunities.

Learning Outcome: Demonstrated ability to lead resource mobilization projects.

# PROFICIENCY LEVELS

Foundation: Basic understanding of resource mobilization concepts.

Intermediate: Application of skills in familiar contexts.

Advanced: Proficiency in various contexts and complex situations.

Expert: Leading, innovating, and influencing others in resource mobilization.

# LEARNING MATERIALS AND ACTIVITIES

1. Spotting Opportunities:

Activity: Analyze case studies of successful resource mobilization efforts.

Example: Study how a non-profit organization identified and acted on funding opportunities.

Outcome: Enhanced ability to spot and evaluate opportunities.

# 2. MOBILIZING RESOURCES:

Activity: Develop a resource mobilization plan for a hypothetical project.

Example: Create a plan to secure funding, volunteers, and materials for a community initiative.

Outcome: Practical experience in gathering and managing resources.

# 3. FINANCIAL AND ECONOMIC LITERACY:

Activity: Interpret financial statements and create a budget.

Example: Review the financial statements of a successful SME and create a budget for a new project.

Outcome: Improved financial literacy and budgeting skills.

# 4. MOBILIZING OTHERS:

Activity: Role-playing exercises to practice leadership and motivation.

Example: Simulate a scenario where participants must inspire a team to support a fundraising campaign.

Outcome: Enhanced leadership and team-building skills.

# 5. STRATEGIC THINKING:

Activity: Develop and present a strategic plan for resource mobilization.

Example: Create a strategic plan to secure long-term funding for a social enterprise.

Outcome: Improved strategic planning and execution skills.

# CASE STUDY- RESOURCE MOBILIZATION PLAN: A SUCCESSFUL TVET INITIATIVE – PART 1

Background: A TVET institution in South Africa aimed to expand its vocational training programs but faced financial constraints.

Objectives:

- Secure R1,000,000 in funding within six months.
- Partner with local businesses to provide internships and job placements.

# CASE STUDY- RESOURCE MOBILIZATION PLAN: A SUCCESSFUL TVET INITIATIVE - PART 2

Strategy:

Spotting Opportunities: Identified grants from the Department of Higher Education and Training and international donors.

Mobilizing Resources: Developed a comprehensive proposal and budget plan.

Mobilizing Others: Engaged local businesses and community leaders to support the initiative.

Strategic Thinking: Created a detailed timeline and action plan to execute the project.

# CASE STUDY- RESOURCE MOBILIZATION PLAN: A SUCCESSFUL TVET INITIATIVE PART 3

Results:

- Raised R1,200,000 in funding.
- Established partnerships with 10 local businesses.
- Expanded vocational training programs, benefiting 200 students.

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