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MODULE 2

REASONING, PROBLEM-SOLVING AND IDEATION	
Duration:	6 hours
Learning objectives/outcomes:	1. Critically assess business challenges and opportunities, especially related to environmental and resource. management, using logical reasoning and analytical frameworks 2. Use structured problem-solving methods to identify, analyze, and address sustainability-related issues within own business. 3. Generate innovative ideas for eco-friendly products, services, and processes that can reduce environmental impact and promote sustainable growth. 4. Use digital tools for collaboration, problem-solving, and tracking the impact of green business initiatives, fostering a culture of continuous learning and improvement.
Sub-Modules:	2.1 Critical Thinking: Enhancing analytical skills and logical reasoning 2.2 Problem-solving Skills: Methods and tools for effective problem solving 2.3 Creative Thinking: Ideation ad innovation 2.4 Integrating creativity and critical thinking skills for Entrepreneurial mindset
Resources and devices:	• Kahneman, D. (2011). Thinking, Fast and Slow – Focus on chapters about cognitive biases. • Banaji, M. R., & Greenwald, A. G. (2013). Blindspot: Hidden Biases of Good People – Understanding how hidden biases affect decision-making.

	• Hinderer, D. (2005) Building arguments. • Sinnott - Armstrong, W. (2018) Think Again: How to Reason and Argue. • Alexander Osterwalder & Yves Pigneur (2010). Business Model Generation. • Oliver Gassmann, Karolin Frankenberger, and Michaela Csik (2014). The Business Model Navigator: 55 Models that Will Revolutionize Your Business. • Michael, Kallet (2014). Think Smarter: Critical Thinking to Improve Problem-Solving and Decision-Making Skills. • Morgan D., Jones. (1998). The Thinker's Toolkit: 14 Powerful Techniques for Problem Solving. • Daniel, Kahneman (2013). Thinking, Fast and Slow. • Tom, Kelley, David, Kelley (2013). Creative confidence: unleashing the creative potential within us all. • Clayton M., Christensen, Marc, Benioff (2024). The innovator's dilemma: When new technologies cause great firms to fail. • Tim, Brown (2019). Change by design: How design thinking transforms organisations and inspires innovation. • EC, Joint Research Centre (2020). EntreComp Playbook. • Eric, Ries (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.
Assessment approach:	Quizzes Peer review/feedback Post-activity reflection

	Case study analysis Group presentation Business model canvas submission
Skills/abilities developed:	Critical thinking Logical reasoning Problem-solving Analytical thinking Decision-making Creative thinking

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: Identifying and challenging biases and assumptions
Duration: 0,5 hour
Specific Learning Objectives 1. Recognize common biases and their influence on sustainable business decisions. 2. Identify personal assumptions that may affect their approach to sustainability and digital transformation. 3. Apply techniques to mitigate biases and assumptions for more objective and inclusive decision-making. 4. Appreciate the role of critical thinking in supporting green and digital transition efforts.
Methodology, Resources and Devices **Methodologies:** lecture, case study scenario, reflection, debrief **Tools used:** presentation slides, worksheet, example case study
Description of the activity and Key Concepts **Description:** • Begin by briefly introducing the concept of cognitive biases and assumptions in decision-making. Include examples specific to sustainable business. Use a quiz where participants answer a few questions related to common biases. • Introduce the case study, provide instructions and tools for the exercise, gather feedback on biasis participants recognize in their own thinking. • Summarize the main biases and assumptions observed, emphasize the importance of challenging assumptions for effective green and digital transitions, and provide a set of best practices. **Key concepts:** cognitive biases, common biases, assumptions, sustainable decision-making.
Assessment Self-assessment, checklist-based assessment, multiple choice quiz, peer-review and self-reflection.

Skills/Abilities developed

Critical Thinking: Recognizing and challenging biases to improve decision quality.
Problem-Solving: Applying bias mitigation techniques to support green and digital transitions.
Self-Awareness: Identifying personal biases and assumptions to foster more objective decision-making.
Perspective-Taking: Understanding how diverse viewpoints can reduce bias and support inclusive, sustainable solutions.

Further readings, activities, materials, best practices

Readings, materials, best practices:

- Kahneman, D. (2011). *Thinking, Fast and Slow* – Focus on chapters about cognitive biases.
- Banaji, M. R., & Greenwald, A. G. (2013). Blindspot: *Hidden Biases of Good Peopl*e – Understanding how hidden biases affect decision-making.
- YT video: 12 Cognitive Biases Explained - How to Think Better and More Logically Removing Bias (https://www.youtube.com/watch?v=wEwGBIr_RIw)
- YT video: Overcoming Cognitive Biases in Business (https://www.youtube.com/watch?v=YJsVYE_uHq0)

Activities:

- Bias Identification in Real-World Decisions: Ask participants to identify a recent decision they made and analyze potential biases.
- Role-Playing: Simulate a business meeting where participants argue for/against digitalizing sustainable products, exploring bias and assumption impacts.

TRAINING TOOLBOX MATERIAL

Identifying and challenging biases and assumptions

Description	Methodology	Time	Material
Introduction to biases and assumptions Briefly introduce the concept of cognitive biases and assumptions in decision-making. Provide short description for common biases and assumptions. Use a quiz where participants connect examples with related biases/assumptions to build rapport and ensure understanding.	Lecture	5 min	Slides & quiz *(annex 1)*
GreenPack Ltd: Case study with worksheet Present the case of GreenPack Ltd, that is considering several changes. Use a worksheet with presented descriptions of their decisions and associated questions to help explore possible biases and assumptions.	Experiential learning	12 min	Case study document & Worksheet *(annex 2)*
Reflection Once participants complete the case study exercise, they can answer the following questions to reinforce learning: 1. Which bias was the most surprising to you, and why? 2. Can you think of a way to reduce this bias when making business decisions? 3. How might recognizing these biases benefit GreenPack Ltd as they pursue sustainable and digital business transformations? 4. Describe a time when you realized a bias might have influenced one of your decisions.	Q & A / Discussion	10 min	Discussion board / forum
Debrief and key concepts Summarize the main biases and assumptions observed. Emphasize the importance of challenging assumptions for effective green and digital transitions. Provide a set of best practices.	Flipped classroom	3 min	Downloadable handout *(annex 3)*

Annex 1

Quiz on biases and assumptions

Connect the examples with the related bias or assumption.

List of selected biases and assumptions

Projection Bias
Optimism Bias
Availability Heuristic
Confirmation Bias
Anchoring Bias
Status quo bias
Sunk cost bias
Groupthink
Assumptions about customers

List of examples

1. A company executive may assume customers will prioritize sustainability over price because they, personally, value eco-friendly choices. However, customers might actually prioritize affordability over environmental impact. (Projection Bias)
2. A business owner might believe that automating production will only benefit the company by increasing efficiency and cutting costs, without considering potential employee resistance or the costs of implementation. (Optimism Bias)
3. After hearing positive feedback from a few large clients about a potential digital transformation, a company leader might assume the entire customer base is ready for digital services, without gathering broader data. (Availability Heuristic)
4. If a manager believes that customers care most about eco-friendly packaging, they may focus on feedback that supports this view and overlook or dismiss any feedback suggesting price sensitivity is more important. (Confirmation Bias)
5. When deciding on pricing for a new recyclable product line, a team might rely too heavily on the pricing of their existing products, which were aimed at a different market, without adequately considering competitive prices or customer willingness to pay. (Anchoring Bias)
6. A packaging company might continue using traditional materials instead of exploring biodegradable options because decision-makers feel comfortable with the current process, even though customers are increasingly interested in sustainable packaging. (Status quo bias)
7. After investing heavily in a physical retail location, a business might hesitate to shift its focus to digital sales, even if online demand is growing faster than foot traffic, because they feel the need to “justify” the initial investment in the store. (Sunk cost bias)
8. During a team meeting about launching a new green product line, if the majority supports the idea, individual team members with concerns about pricing or market readiness might avoid raising them, fearing it will disrupt group consensus. (Groupthink)
9. A company might assume that all customers are willing to pay more for green products, not realizing that while some are, others prioritize cost savings over sustainability. Without solid customer data, these assumptions can lead to pricing or product decisions that don’t resonate with the target market. (Assumptions about customers)

Annex 2

Case Study Document: GreenPack Ltd

Company overview:
GreenPack Ltd, based in Nairobi, Kenya, specializes in eco-friendly packaging solutions for various industries, including food and retail. They aim to reduce plastic waste by offering sustainable alternatives, such as biodegradable and recyclable materials. With a strong market position locally, the company is exploring ways to expand internationally while increasing its digital presence.

Situation:
The leadership team at GreenPack is committed to enhancing their environmental impact and sees digital transformation as a way to streamline operations and reach a global audience. However, several strategic decisions have sparked debate within the team, especially around assumptions and potential biases that might be influencing these choices.

Worksheet for case study GreenPack Ltd.: Identyfing biases and assumptions
For each decision, review the assumptions GreenPack may be making. Use the multiple-choice and matching questions to connect each decision with possible biases or assumptions.

Decision 1: Expanding Product Line with Recyclable Materials
The team is considering expanding their product line to include packaging made from fully recyclable materials. However, they assume their existing customer base will prioritize eco-friendly options over cost, despite the higher price point. This decision is based on previous market research indicating a rising interest in sustainability, though this research was conducted only within Nairobi.

1. What bias might influence the assumption that customers will pay more for eco-friendly products?
    - A) Anchoring Bias
    - B) Status Quo Bias
    - C) Projection Bias
    - D) Optimism Bias
2. Which assumption is GreenPack making in this decision?
   Select all that apply.
    - A) Customers place a high value on sustainability.
    - B) All regions will react similarly to eco-friendly products.
    - C) Sustainability concerns outweigh price concerns for all customers.

Decision 2: Digital Transformation Plan
GreenPack wants to increase its digital footprint by creating an e-commerce platform and digitizing customer service operations. Leadership assumes that their customers, including local businesses and small retailers, are ready for a fully digitalized system. The decision was driven by anecdotal feedback from a few large customers but lacks comprehensive market research.

1. What bias might be influencing the assumption about customer digital readiness?
    - A) Availability Heuristic
    - B) Sunk Cost Fallacy

    - C) Groupthink
    - D) Optimism Bias
2. Match each assumption with its potential risk:
    - Assumptions:
        - (1) All customers are ready for a digital platform. (A)
        - (2) Large clients' feedback applies to all customers. (B)
    - Risks:
        - (A) Digital transition may alienate small or local customers. (1)
        - (B) Over-reliance on anecdotal feedback could result in an unsuccessful rollout. (2)

Decision 3: Investment in Automation

To cut down production costs and meet higher demand, GreenPack plans to invest in automated manufacturing processes. The CEO assumes automation will not only improve productivity but also reduce costs in the long term. However, there's concern that this shift could lead to job losses, potentially impacting their reputation as a socially responsible employer.

1. What bias might be affecting the CEO's perspective on automation?
    - A) Status Quo Bias
    - B) Sunk Cost Fallacy
    - C) Optimism Bias
    - D) Availability Heuristic
2. Which of these assumptions could cause issues with GreenPack's workforce and reputation?
    - A) Automation won't impact jobs significantly.
    - B) Production improvements outweigh social considerations.
    - C) No risks are associated with automating production.

Decision 4: Sustainability Marketing Campaign

The marketing team believes that a strong sustainability message will differentiate GreenPack in the market. They plan to launch a campaign emphasizing their eco-friendly materials. The team assumes that consumers will value the sustainability angle over other factors, such as durability or aesthetics.

1. Which bias could influence the assumption that sustainability is a primary customer priority?
    - A) Anchoring Bias
    - B) Confirmation Bias
    - C) Optimism Bias
    - D) Projection Bias
2. Match each assumption with its potential limitation:
    - Assumptions:
        - (1) Customers value sustainability over durability. (A)
        - (2) A green marketing approach will resonate broadly. (B)
    - Limitations:
        - (A) Customers may prioritize other qualities like price or durability. (1)
        - (B) Market research might reveal varying levels of interest in sustainability. (2)

Annex 3
Takeaway handout

Identifying and Challenging Biases & Assumptions for Green and Digital Transitions

Successful green and digital transitions require us to identify, challenge, and move beyond common biases and assumptions. When businesses recognize and manage these cognitive shortcuts, they're better positioned to make informed, effective decisions that align with both sustainability goals and customer needs. Implementing structured decision-making frameworks help them minimize the impact of biases on their sustainability choices. These frameworks provide a systematic approach to evaluating options, considering consequences, and incorporating stakeholder input. By using tools such as cost-benefit analysis or life cycle assessment, you can make decisions that are more transparent, consistent, and aligned with your sustainability goals.

Key Biases & Assumptions in Business Decision-Making

1. Status Quo Bias
    - Definition: Preference for keeping things as they are, even if change could be beneficial.
    - Example: Continuing with traditional practices instead of adopting sustainable options due to comfort with existing systems.
2. Sunk Cost Bias
    - Definition: Continuing an investment due to previously committed resources, even if it's no longer viable.
    - Example: Sticking with outdated infrastructure because of past investments, rather than switching to eco-friendlier or digital alternatives.
3. Groupthink
    - Definition: When a desire for consensus prevents the group from critically evaluating ideas.
    - Example: Employees refrain from questioning a green marketing campaign's assumption because they fear disrupting the group's harmony.
4. Projection Bias
    - Definition: Assuming others share our beliefs, preferences, or attitudes.
    - Example: Believing all customers will pay more for sustainable products because decision-makers value sustainability.
5. Optimism Bias
    - Definition: Overestimating the likelihood of positive outcomes and underestimating potential risks.
    - Example: Assuming a new digital tool will improve productivity without considering training or implementation challenges.
6. Availability Heuristic
    - Definition: Relying on recent or memorable information to make decisions.
    - Example: Assuming customers want more digital services based on feedback from a few large clients, without broader data.
7. Assumptions about Customers
    - Definition: Believing we understand customer needs without validating them through research.

    - Example: Assuming all customers are willing to pay for green products without confirming with market data.

Why Challenging Assumptions Matters

Challenging these biases and assumptions is crucial for:

- Aligning with Customer Needs: Uncovering actual customer values ensures offerings are relevant.
- Fostering Innovation: Overcoming biases like status quo bias and sunk cost bias can lead to breakthrough innovations.
- Enhancing Responsiveness: Avoiding groupthink and optimism bias helps teams address risks early, making transitions smoother.

Best Practices for Overcoming Biases and Assumptions

1. Encourage Diverse Perspectives: Bring together diverse team members to gain multiple viewpoints and challenge groupthink.
2. Validate Customer Insights with Data: Conduct regular surveys, interviews, or use data analytics to test assumptions about customer needs and preferences.
3. Use Decision-Making Frameworks: Apply structured frameworks like SWOT analysis to objectively evaluate options and mitigate optimism bias.
4. Encourage ‘Devil’s Advocacy’: Assign a team member to critique proposed strategies to ensure all assumptions are thoroughly examined.
5. Pilot Changes Before Full Implementation: Start with small-scale trials to test assumptions on a manageable scale and gather real data to inform larger decisions.
6. Reflect on Previous Decisions: Regularly review past decisions to identify patterns of biases and assumptions, using these insights to inform future choices.

By staying aware of biases and assumptions, companies can make more informed, resilient decisions that support both green initiatives and digital transformation goals.

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IDENTIFYING AND CHALLENGING BIASES AND ASSUMPTIONS

WHAT ARE BIASIS AND ASSUMPTIONS

BIASES

Cognitive shortcuts that lead us to favor certain information or perspective, often subconsciously, which can distort decision-making.

- *Can lead to overlooking important insights, reducing innovation, or alienating certain customer groups.*

ASSUMPTIONS

Beliefs or ideas we accept as true without questioning or validating, often based on prior experiences or incomplete data.

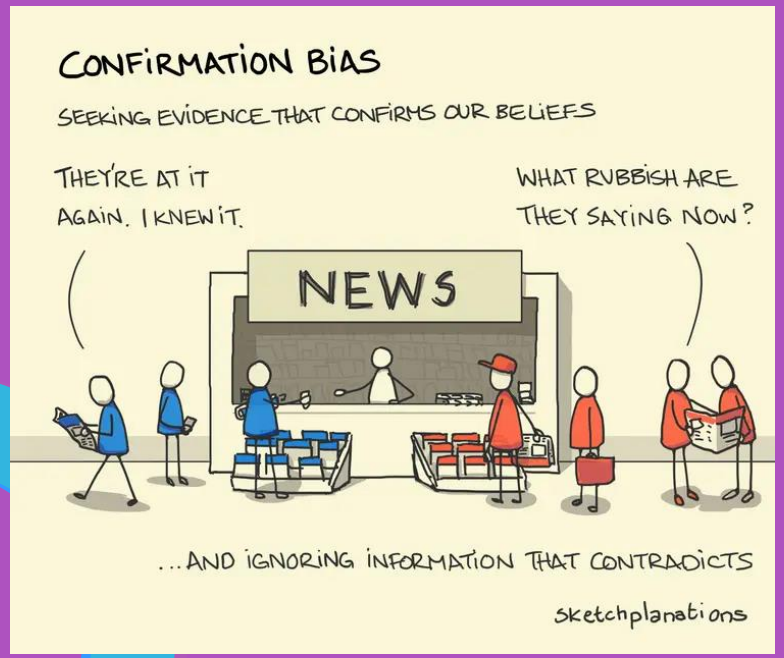
- *Can limit problem-solving options, stifle creative thinking, and reduce the effectiveness of green and digital strategies.*

WHY ADDRESS BIASES & ASSUMPTIONS?

Understanding and challenging biases and assumptions can make or break effective transitions.

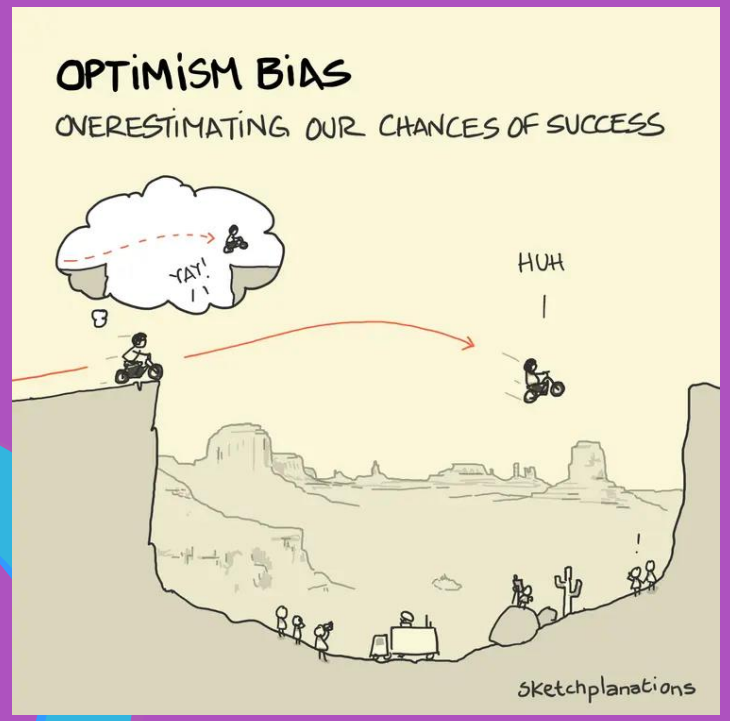
- Aligns decisions with actual customer needs
- Encourages innovation and agility
- Supports data-driven strategies

KEY BIASIS IN DECISION-MAKING



- **Status Quo Bias:** Preferring the current state, even when change is beneficial
- **Sunk Cost Bias:** Sticking with unproductive investments due to past spending
- **Groupthink:** Avoiding dissent within teams, which stifles critical evaluation
- **Projection Bias:** Assuming others think like us
- **Confirmation Bias:** Focusing on information that confirms existing beliefs and ignoring contradictory evidence

KEY BIASIS IN DECISION-MAKING



- **Optimism Bias:** Overestimating positive outcomes, underestimating risks
- **Availability Heuristic:** Relying on recent information over comprehensive data
- **Assumptions about Customers:** Assuming we understand customer needs without validation
- **Anchoring Bias:** Relying too heavily on the first piece of information (the “anchor”) when making decisions

Addressing biases improves decision-making and fosters a culture of growth.

- Better alignment with customer values
- More innovative solutions
- Increased responsiveness and adaptability

IMPORTANCE OF CHALLENGING ASSUMPTIONS

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CRITICAL THINKING: ENHANCING ANALYTICAL SKILLS AND LOGICAL REASONING

Activity 2: Constructing and evaluating arguments

Duration: 0,5 hour

Specific Learning Objectives

1. Understand the structure and components of a logical argument (claim, evidence, reasoning).
2. Identify strengths and weaknesses in arguments related to green and digital solutions.
3. Develop clear, persuasive arguments that advocate for sustainable practices within their business.
4. Evaluate the effectiveness of arguments by assessing clarity, logic, and supporting evidence.

Methodology, Resources and Devices

Methodologies: lecture, case study scenario, interactive exercise, reflection
Tools used: presentation slides, worksheet, example case study

Description of the activity and Key Concepts

Description: Begin by briefly explaining what constitutes a strong argument, breaking down components like claim, evidence, and reasoning. Present the tools for evaluating arguments, like logic and fallacies cheat sheet and SWOT analysis. Introduce the case study, provide instructions and tools for exercise, gather feedback on decision-making build on arguments.
Reflect on participants' decision-making regarding their own business.
Key concepts: claim, evidence, reasoning, logical fallacies, analysis.

Assessment

Online quizz, case study analysis, peer review.

Skills/Abilities developed

Analytical Thinking: Breaking down complex information into structured components.
Logical Reasoning: Creating coherent, logically sound arguments.
Evaluation Skills: Identifying weaknesses or biases in reasoning.
Sustainability-Oriented Thinking: Applying critical analysis to sustainability issues in business.

Further readings, activities, materials, best practices

Readings, materials, best practices:

- Hinderer, D. (2005) *Building arguments*.
- Sinnott - Armstrong, W. (2018) Think Again: *How to Reason and Argue*.

- YT video: Constructing Arguments (https://www.youtube.com/watch?v=_7iN6D4pgbs)
- YT video: Understanding and Evaluating Arguments (https://courses.lumenlearning.com/olemiss-readinganthology/chapter/understanding-and-evaluating-arguments/)

Activities:

- Reasoning: Interactive article review where learners critique arguments related to green business practices in provided articles.
- Best Practice Case Study: Examples of Kenyan businesses that have successfully implemented digital solutions to reduce their carbon footprint.

TRAINING TOOLBOX MATERIAL

Constructing and evaluating arguments

Description	Methodology	Time	Material
Introduction to arguments Briefly explain what constitutes a strong argument, breaking down components like claim, evidence, and reasoning. Present tools for evaluating arguments, like logic and fallacies cheat sheet and SWOT analysis.	Lecture	3 min	Slides
Case study and reflection Learners will read a case study that tells the story of a Kenyan entrepreneur considering whether to switch to solar energy for his business. The case study will provide both the arguments for (e.g., long-term cost savings, environmental benefits) and arguments against (e.g., high upfront costs, maintenance challenges) making the switch. Learners will answer reflection questions: • What are the strengths of the arguments for switching to solar energy? • What are the weaknesses or missing evidence in these arguments? • Are there any logical flaws (e.g., hasty generalizations, unsupported assumptions) in the reasoning? Learners will then reflect on these points, identifying how certain evidence may not fully support the claim or how certain counterarguments may have been overlooked. By analyzing this case, learners will practice identifying logical flaws or gaps in reasoning, helping them to see how missing evidence or weak reasoning can undermine the effectiveness of an argument.	Case study	10 min	
Argument construction exercise Learners are provided with a prompt on a digital solution that improves business efficiency while reducing the carbon footprint (e.g., adopting a cloud-based project management tool to reduce paper usage). Learners will be asked to construct either an argument for or against the solution, ensuring they: • Clearly state the claim (position on the solution).	Practical exercise	10 min	argument-mapping tool

• Provide solid evidence to support their claim (e.g., data on carbon savings or business efficiency). • Develop reasoning that explains how the evidence connects to the claim. Learners will use an argument-mapping tool to visualize their argument. This tool will allow them to break down the key components (claim, evidence, reasoning, counterarguments) and connect them in a logical and coherent structure.			
Self-assessment quiz The quiz introduces learners to common logical fallacies (e.g., hasty generalization, slippery slope, false dichotomy) that can weaken an argument. The quiz includes multiple-choice questions where learners need to identify the fallacy in various argument examples. Learners will also be asked to reflect on whether any of these fallacies appeared in their own arguments during the earlier activities.	Evaluation	5 min	Self-assessment quiz

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CONSTRUCTING AND EVALUATING ARGUMENTS

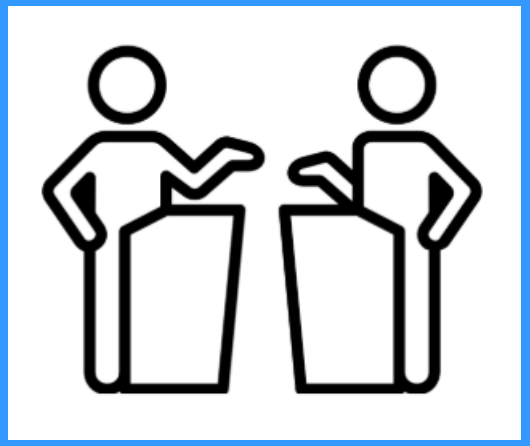
WHAT MAKES A STRONG ARGUMENT?

Key components:

- **Claim:** A clear position or conclusion.
- **Evidence:** Factual or logical support (data, case examples).
- **Reasoning:** How the evidence supports the claim.

Effective arguments are:

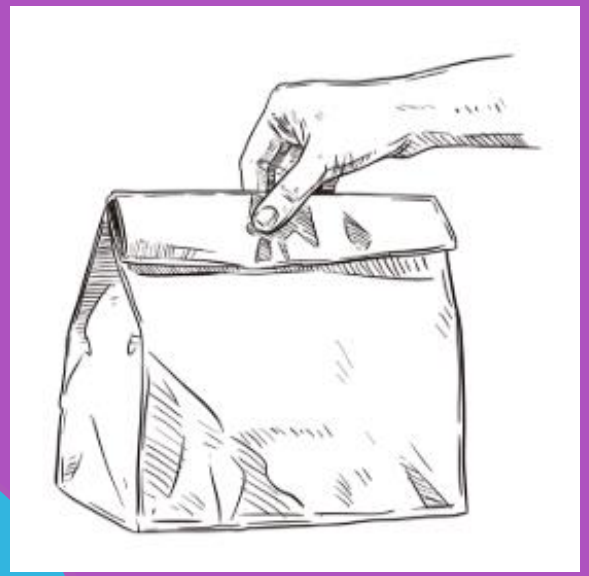
- Clear
- Supported
- Logically sound



COMMON LOGICAL FALLACIES TO AVOID

- **Hasty Generalization** – Basing a conclusion on limited examples
- **Slippery Slope** – Assuming one action will lead to drastic consequences
- **False Dichotomy** – Presenting two options when more exist
- **Ad Hominem** – Attacking the person, not the argument
- *Why avoid them?* They weaken your credibility and logical structure.

KEY TAKEAWAYS



- Good arguments = clarity, evidence, and logical connection.
- Argument skills help in business proposals, pitching, and sustainable advocacy.
- Watch for common fallacies – they're easy to fall into!
- Practice builds confidence and critical awareness.

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Activity 3: Analytical frameworks

Duration: 0,5 hour

Specific Learning Objectives

1. Identify key elements of analytical frameworks used in decision-making.
2. Apply a sustainable business model canvas to analyze green and digital business opportunities.
3. Evaluate the potential impact of business decisions on environmental sustainability and digital innovation.

Methodology, Resources and Devices

- Self-directed, guided learning with interactive digital resources.
- Case study analysis supported by an interactive template.
- Reflection questions encourage application to real-world contexts.

Description of the activity and Key Concepts

In this activity, learners first watch a 5-minute video tutorial introducing analytical frameworks, focusing on the Sustainable Business Model Canvas and the integration of green and digital solutions into a business model. They then analyze a case study about a Kenyan entrepreneur who transitioned their business to a green and digital model, using the canvas to assess decisions related to solar power and mobile payments. Finally, learners reflect on how the framework can be applied to their own business context, identifying opportunities, challenges, and potential solutions, and submitting their reflections through an online form or discussion board.

Key Concepts

- Sustainable business model canvas: A framework for designing business models that prioritize sustainability alongside profitability.
- Scenario planning: Using analytical tools to anticipate potential future business outcomes.
- Green business practices: Strategies that reduce environmental impact, such as energy efficiency, waste reduction, and the use of renewable resources.
- Digital transformation: The integration of digital technologies to improve business operations, customer engagement, and innovation.

Assessment

Online quizz, case study analysis, peer review, business model canvas submission.

Skills/Abilities developed

Critical thinking: Learners will strengthen their ability to analyze business decisions and consider their long-term impacts.

Decision-making: Learners will practice making decisions that balance sustainability with business growth.
Strategic planning: Learners will gain the skills needed to develop business models that incorporate both green and digital elements.
Reflection and self-assessment: Learners will enhance their ability to reflect on their decisions and identify areas for improvement.

Further readings, activities, materials, best practices

- Alexander Osterwalder & Yves Pigneur (2010). Business Model Generation.
- Oliver Gassmann, Karolin Frankenberger, and Michaela Csik (2014). The Business Model Navigator: 55 Models that Will Revolutionize Your Business.
- Eric Ries (2017). The Lean Startup.

Materials:

- Sustainable Business Model Canvas (Downloadable template).
- Case Study on Green Business in Kenya (Real-life example).
- SWOT Analysis Template (For evaluating business strengths, weaknesses, opportunities, and threats).

TRAINING TOOLBOX MATERIAL

Analytical frameworks

Description	Methodology	Time	Material
Introduction to the framework Provide an understanding of analytical frameworks and their application in sustainable business decision-making. Prepare for learners a 5-minute video tutorial that explains key concepts, including: • Sustainable business model canvas: A tool for mapping out critical elements of a sustainable business, such as the value proposition, key resources, and stakeholder engagement. • Green and digital transition: The process of integrating environmentally friendly and digital solutions into a business model. • Key concepts: Value proposition, resource efficiency, digital integration, stakeholder engagement, sustainability metrics.	Presentation	5 min	Video
Analyzing case study Apply the learned framework to a real-world scenario and assess the business decisions made by a Kenyan entrepreneur. Learners will download and read a case study about a Kenyan entrepreneur who successfully transitioned their business to a green and digital model (e.g., a business that uses solar-powered mobile payment kiosks). Using the Sustainable Business Model Canvas template, learners will analyze the entrepreneur's decisions. They'll focus on: • How the business integrates green technologies (e.g., solar power) to reduce environmental impact. • How the business embraces digital solutions (e.g., mobile payments) to increase efficiency and market reach. • The decision-making process involved in choosing these sustainable and digital solutions. • Potential opportunities and challenges the entrepreneur faced.	Analysis exercise	15 min	Case study (Annex 1)
Reflect and apply Encourage learners to reflect on how the framework applies to their own business context. After analyzing the case study, learners will answer reflection questions, such as:	Reflection	10 min	

• Which parts of the framework were most useful in identifying opportunities for green and digital innovation? • How could this framework apply to your business context? • What challenges would you face in integrating green and digital strategies, and how could you address them? Learners then submit their reflections via an online form or a discussion board, where they can also share insights and collaborate with peers.			

ANNEX 1: Analytical frameworks

Case Study: Solar-Powered Mobile Payment Kiosks in Kenya

Background:

Company Name: *EcoPay Solutions*
Founder: *Nia Mwangi*
Industry: *Mobile Payments*
Location: *Nairobi, Kenya*

EcoPay Solutions is a mobile payment service that provides convenient and secure transaction services to individuals and small businesses in rural and underserved urban areas in Kenya. The company initially started with traditional mobile payment kiosks powered by grid electricity, but Nia Mwangi, the founder, realized that many of the areas where her kiosks were located had unreliable electricity, and the environmental impact of using non-renewable energy sources was a growing concern.

The Challenge:

Nia's business was expanding quickly, but the costs of maintaining the traditional kiosks were high, and the environmental impact of the energy consumption was unsustainable. Additionally, many areas where the kiosks were located faced frequent power outages, affecting the availability and reliability of the service. Customers were dissatisfied with the interruptions, and Nia knew that something had to change.

The Green and Digital Transition:

After conducting market research and exploring various energy-efficient alternatives, Nia decided to transition her business to a solar-powered mobile payment kiosk system. The new kiosks would run entirely on solar energy, which would be more sustainable and cost-effective in the long run.

Additionally, Nia embraced mobile payment solutions, allowing customers to make payments using mobile phones and digital wallets rather than traditional cash transactions.

This digital solution helped reduce the need for physical infrastructure, made transactions faster, and allowed Nia’s business to scale quickly by reaching more customers in remote areas without the need for extensive physical infrastructure.

The Decision-Making Process:

1. Environmental Impact: Nia wanted to reduce the carbon footprint of her business and cut down on energy consumption. By shifting to solar power, EcoPay Solutions could rely on renewable energy sources, significantly reducing its environmental impact.
2. Digital Efficiency: Mobile payments allowed the business to cater to a larger market of tech-savvy customers, especially in rural areas, where access to physical banks was limited. Digital payments increased the speed of transactions, reduced the need for cash handling, and enabled the company to gather valuable data for improving services.
3. Cost Efficiency: The switch to solar power helped lower electricity bills and reliance on grid power, which was unreliable in many areas. Moreover, the digital shift reduced the need for physical infrastructure and the associated maintenance costs.

Opportunities:

- Scalability: The digital nature of the business allowed for rapid expansion without the need for significant physical infrastructure. Nia was able to set up more kiosks in remote areas, increasing her customer base.
- Environmental Responsibility: By utilizing solar power, EcoPay Solutions positioned itself as a leader in environmentally conscious business practices, attracting customers who prioritized sustainability.
- Financial Savings: Reduced energy costs and fewer maintenance expenses helped improve profit margins over time.

Challenges:

- Initial Investment: The switch to solar-powered kiosks required a significant upfront investment for solar panels, batteries, and other infrastructure.
- Technological Barriers: Some of the rural customers were initially unfamiliar with mobile payment systems, requiring additional investment in training and education.
- Maintenance of Solar Systems: Ensuring the solar-powered kiosks remained operational in remote locations, where access to technical support was limited, was a challenge.

Conclusion:

Despite the challenges, Nia's decision to integrate green technologies and digital solutions into EcoPay Solutions has proven to be a success. The transition has led to increased customer satisfaction, greater environmental responsibility, and improved business efficiency. Nia continues to innovate by exploring new ways to expand her business while maintaining a commitment to sustainability and digital inclusion.

Instructions for Learners:

- Step 1: Download and read the case study above.

- Step 2: Use the Sustainable Business Model Canvas template to analyze the decisions made by Nia Mwangi. Focus on how the business incorporated green technologies (solar power) and digital solutions (mobile payments) to enhance business operations and sustainability.
- Step 3: Address the following questions in your analysis:
    1. Green Technologies: How did the use of solar energy contribute to reducing the environmental impact of the business?
    2. Digital Solutions: How did the mobile payment system improve efficiency and expand the market reach of the business?
    3. Decision-Making Process: What factors influenced the decision to transition to solar power and mobile payments?
    4. Opportunities and Challenges: What are the key opportunities Nia seized in making the transition, and what challenges did she face in implementing the changes?

Sustainable Business Model Canvas Template

- Value Proposition
- Customer Segments
- Channels
- Customer Relationships
- Revenue Streams
- Key Resources
- Key Activities
- Key Partnerships
- Cost Structure
- Environmental Impact and Sustainability Metrics

This case study allows learners to apply the concepts of the Sustainable Business Model Canvas to a real-world scenario, analyzing how a Kenyan entrepreneur successfully integrated green and digital strategies into her business model.

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ANALYTICAL FRAMEWORKS FOR GREEN AND DIGITAL ENTREPRENEURSHIP

Purpose: improve decision-making through structured thinking.

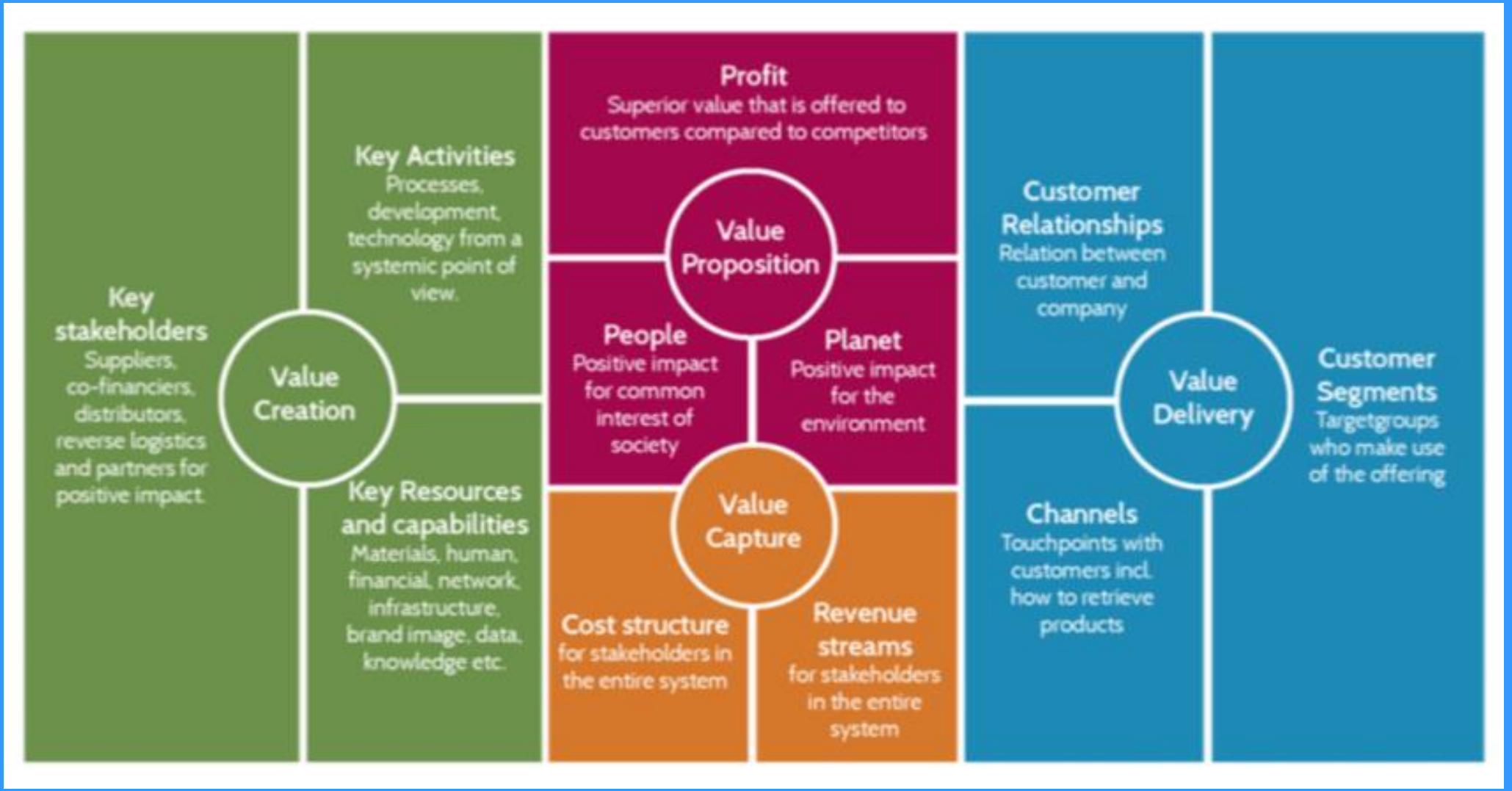
What they help with:

- Analyzing opportunities.
- Balancing sustainability and profitability.
- Structuring business model innovation.

Key framework introduced: Sustainable Business Model Canvas.
Focus areas: Environmental impact, digital integration, stakeholder engagement.

WHY USE ANALYTICAL FRAMEWORKS

SUSTAINABLE BUSINESS MODEL CANVAS



Source: Bocken et al. (2018)

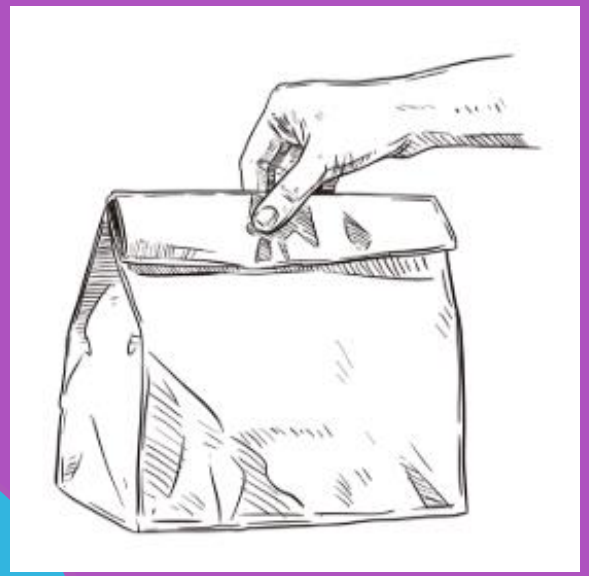
FRAMEWORK IN ACTION

Case overview

- Business: Mobile payment kiosks
- Founder: Nia Mwangi
- Challenge: Unreliable grid power and high maintenance costs

Green Solution: Solar-powered kiosks
Digital Solution: Mobile payment systems
Result: Improved efficiency, customer satisfaction, and environmental impact

KEY TAKEAWAYS



- Analytical frameworks guide sustainable innovation.
- Balancing green and digital strategies is key to future-fit businesses.
- Real-world cases like EcoPay help apply structured thinking tools.
- Frameworks promote reflection and strategic planning for entrepreneurs.

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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 for sustainable entrepreneurship
Duration: 1,5 hour
Specific Learning Objectives 1. Identify and define business problems related to sustainability in the context of entrepreneurship. 2. Analyze the root causes of business challenges using problem-solving tools such as the 5 Whys and SWOT Analysis. 3. Develop creative, sustainable solutions that balance profitability with environmental and social responsibility. 4. Evaluate potential solutions based on their feasibility, scalability, cost-effectiveness, and sustainability. 5. Apply the problem-solving framework to real-life business scenarios and propose actionable solutions.
Methodology, Resources and Devices **Methodologies:** Asynchronous Learning: Participants will work at their own pace, engaging with the content through videos, reading, and interactive activities. Case-Based Learning: A practical case study will be presented for participants to apply problem-solving techniques in real-world contexts. Problem-Solving Framework: Emphasis on structured thinking, using tools like SWOT, 5 Whys, and Root Cause Analysis to systematically break down issues and generate solutions. **Tools used:** online tools for mind mapping, SWOT analysis, Fishbone diagrams, case studies.
Description of the activity and Key Concepts **Description:** This activity will guide participants through problem-solving techniques essential for sustainable entrepreneurship, providing practical tools to identify challenges, analyzing them critically, and developing innovative, eco-friendly solutions that align with both business goals and environmental sustainability.

Participants will assume the role of an entrepreneur running an eco-friendly fashion business in Kenya. The business faces challenges in sourcing sustainable materials at an affordable price. Participants will:

1. Define the Problem: Identify the core issue the business is facing (e.g., high costs of sustainable material sourcing).
2. Analyze the Problem: Use the 5 Whys method to understand why this issue is occurring (e.g., local supply chain limitations, high transportation costs).
3. Develop Solutions: Brainstorm potential solutions, considering sustainable alternatives like local material sourcing, partnerships with NGOs, or innovative use of recycled fabrics.
4. Evaluate Solutions: Assess the feasibility of each solution using sustainability, cost, and scalability criteria.
5. Action Plan: Develop a plan to implement the chosen solution, including timelines and resource allocation.

Key concepts:

Problem Definition: Accurately identifying the real issue, not just its symptoms.
Root Cause Analysis: Using tools like the 5 Whys to dig deeper into the underlying causes of a problem.
Sustainable Solutions: Solutions that not only solve the problem but also align with long-term environmental, social, and economic goals.
Evaluation Criteria: Factors like cost, scalability, impact, and sustainability to assess potential solutions.
Action Plan: Concrete steps and timelines for implementing the solution.

Assessment

Self-assessment, multiple choice quiz, case study analysis report, peer review & feedback.

Skills/Abilities developed

Critical Thinking: Ability to break down complex problems and analyze their components systematically.
Creative problem-Solving: Developing innovative solutions that are sustainable and adaptable to challenges.
Decision-making: Evaluating potential solutions based on multiple criteria to make the best choice for business and the environment.
Action Planning: Crafting clear, actionable steps for implementing solutions.

Further readings, activities, materials, best practices

Readings, materials, best practices:

- Michael, Kallet (2014). Think Smarter: Critical Thinking to Improve Problem-Solving and Decision-Making Skills.
- Morgan D., Jones. (1998). The Thinker's Toolkit: 14 Powerful Techniques for Problem Solving.
- Daniel, Kahneman (2013). Thinking, Fast and Slow.
- DecisionSkills. "How to solve a problem in four steps: The IDEA Model, https://www.youtube.com/watch?v=QOjTJAFyNrU."

Best practices:

- Sustainability Integration: Always include environmental, social, and economic considerations when solving business problems.
- Iterative Problem-Solving: Continuously assess and refine your solutions to ensure they remain effective and sustainable over time.
- Collaboration and Networking: Engage with local stakeholders, including suppliers, community organizations, and other entrepreneurs, to strengthen the sustainability of your solutions.

TRAINING TOOLBOX MATERIAL

Problem-solving for sustainable entrepreneurship

Description	Methodology	Time	Material
Introduction to problem-solving for entrepreneurs Briefly introduce key concepts: • *What is Problem-Solving?* Problem-solving is the process of identifying a challenge, analyzing the root causes, and applying effective solutions. For sustainable entrepreneurship, the goal is to solve business problems in a way that supports long-term environmental, social, and economic health. • *Importance for Entrepreneurs:* Every business faces challenges. As an entrepreneur focused on sustainability, you must find solutions that balance profit with the well-being of people and the planet. *Provide an example:* A local startup in Kenya faces challenges in waste management but can solve this by creating a recycling business that provides both value to the community and an eco-friendly solution.	Lecture	10 min	Slides
Problem-solving framework Explain the problem-solving framework and use examples from sustainable business in each step: 1. Define the Problem • *Action:* Clearly identify the problem you are trying to solve. • *Questions to ask:* o What is the core issue? o How does this problem affect your business and the environment? *Example:* A small agricultural business struggles with soil degradation. The problem is not just low crop yields, but also long-term environmental impact. 2. Analyze the Problem • *Action:* Break down the problem into smaller parts. Understand the root causes, not just the symptoms. • *Tools:* o 5 Whys: Ask “why” five times to explore the cause of the problem.	Lecture with examples	20 min	Slides

○ SWOT Analysis: Evaluate strengths, weaknesses, opportunities, and threats related to the problem. *Example:* By asking "why" repeatedly, the farmer realizes the degradation is due to overuse of chemical fertilizers, not crop rotation. **3. Develop Solutions** • *Action:* Come up with creative solutions that address both the problem and its root causes. • *Tips for Sustainable Solutions:* ○ Focus on environmentally friendly solutions (e.g., reducing waste, using renewable resources). ○ Prioritize low-cost, high-impact solutions. *Example:* The farmer might shift to organic fertilizers, introduce crop rotation, or use mulching to preserve soil health. **4. Evaluate Solutions** • *Action:* Assess the feasibility of each proposed solution. • *Evaluation Criteria:* ○ Impact: Will the solution positively affect the environment? ○ Cost: Is the solution affordable for your business? ○ Scalability: Can the solution be scaled as your business grows? ○ Sustainability: Does the solution align with long-term sustainability goals? *Example:* While organic fertilizers might be more expensive than chemicals, their long-term benefits for soil health and lower environmental impact make them a better choice.			
Tools and Techniques for Effective Problem-Solving Explain different tools and techniques for effective problem-solving like. 1. Mind Mapping • Action: Visualize the problem and its solutions by creating a mind map. This	Lecture	10 min	Slides

helps you organize thoughts and identify connections. • Tool: Use tools like XMind or MindMeister to create digital mind maps. 2. Root Cause Analysis • Action: Identify the root cause of the problem using tools like the Fishbone Diagram (Ishikawa) or the 5 Whys. 3. Brainstorming • Action: Brainstorm potential solutions. The goal is to come up with as many ideas as possible, and later refine them. • Tip: Include eco-friendly alternatives in your brainstorming sessions to align with sustainable business practices.			
Apply Problem-Solving to a Case Study Present the case study of an eco-friendly fashion startup in Kenya. The business faces the problem of sourcing sustainable materials that are both affordable and eco-friendly. The local supply chain for eco-friendly fabrics is weak, and transportation costs for importing materials are high. Use a worksheet with following taks: 1. Define the problem: What are the main issues you're facing? Use the root cause analysis - 5 Whys method. 2. Analyze the problem: Break down to understand its components and causes. Use SWOT analysis or Fishbone diagram (Ishikawa). 3. Generate possible solutions: Brainstorm at least three sustainable solutions to address the problem. Use techniques like Mind Mapping or SCAMPER. 4. Evaluate solutions: Analyze the feasibility, effectiveness, and impact of each solution. Use evaluation criteria like cost vs. benefit or risk assesment. 5. Suggest an action plan: Create a step-by-step action plan to implement your chosen solution.	Experiential learning	45 minutes	Case study document & Worksheet
Conclusion and key takeaways Summarize the topic and present key takeaways: Problem-solving is a key skill for entrepreneurs, especially those focused on sustainability. By analyzing problems systematically and developing creative, eco-friendly solutions, you	Presentation	5 minutes	slides

can create a business that not only survives but thrives in the long term. Always consider the environmental, social, and economic impacts of your solutions.			

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PROBLEM SOLVING FOR SUSTAINABLE ENTREPRENEURSHIP

WHY PROBLEM-SOLVING MATTERS IN SUSTAINABLE BUSINESS

What is problem-solving?

The process of identifying challenges, analyzing root causes, and applying effective, sustainable solutions.

Why it matters for entrepreneurs:

- Navigating resource constraints
- Balancing profit with planet and people.
- Driving innovation through challenges.

Example:

Startup in Kenya solving waste issues through a recycling business.

Steps and key questions

Define the problem
What is the real issue?

Analyse the problem
Use tools like 5 whys, SWOT, …

Develop solutions
Encourage creative, eco-friendly ideas

Evaluate solutions
Based on impact, cost, scalability and sustainability.

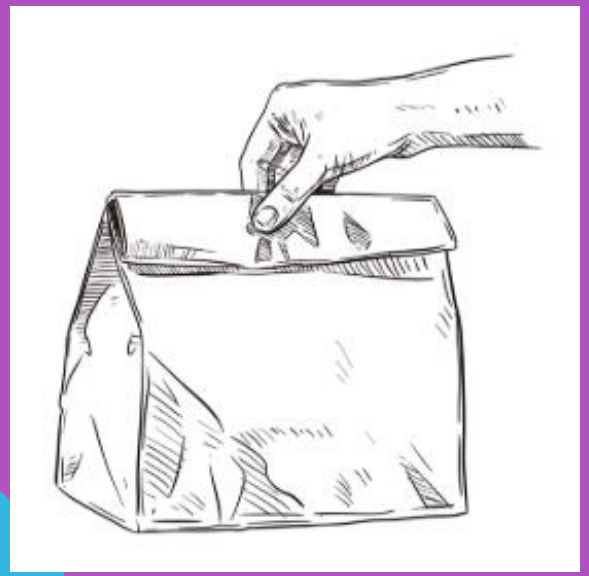
Action plan
What are the next steps?

THE PROBLEM-SOLVING FRAMEWORK

TOOLS FOR EFFECTIVE PROBLEM-SOLVING:

- **Mind mapping:** organize ideas and explore connections
- **5 Whys:** get to the root cause.
- **SWOT analysis:** Understand internal/external factors
- **Fishbone Diagram:** Visualize causes
- **Brainstorming/SCAMPER:** Encourage creativity

KEY TAKEAWAYS



- Sustainable problem-solving = strategic, creative and responsible.
- Use frameworks and tools to tackle business shallenges.
- Solutions should align with profitability, environmental care and social impact.
- Iteration, collaboration, and systems thinking are key.

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Submodule 2.3

Creative thinking: Ideation and innovation

→ **skills:**

1. Creative thinking

CREATIVE THINKING: IDEATION AND INNOVATION
Activity 1: Innovate & ideate: Unlocking creative solutions
Duration: 1,5 hours
Specific Learning Objectives 1. Develop innovative ideas by thinking outside the box. 2. Apply creative thinking techniques to generate diverse solutions for complex problems. 3. Collaborate effectively in groups to brainstorm ideas and refine them into actionable concepts. 4. Critically evaluate ideas for their potential to address real-world challenges.
Methodology, Resources and Devices **Methodologies:** This activity will be conducted using an *online collaborative* approach, utilizing digital tools for brainstorming, ideation, and feedback. Participants will work in virtual break-out rooms, using online whiteboards and other tools to facilitate creativity and collaboration. Steps: - Introduction - Warm-up exercise - Ideation session - Sharing and feedback - Final refinement - Wrap-up and reflection **Tools used:** online platforms (Zoom, Miro, Mural), Google docs.
Description of the activity and Key Concepts **Description:** In this online activity, participants will engage in a dynamic, collaborative ideation process designed to foster creative thinking and innovation. The session begins with an interactive icebreaker to stimulate out-of-the-box thinking, followed by a group brainstorming session using digital tools like Miro or Google Jamboard. Participants will generate ideas for a specific challenge, organize them through mind mapping, and refine them using the SCAMPER technique. Afterward, groups will present their top ideas in the main session, receiving constructive feedback

from peers and the facilitator. Based on this input, they will work together to finalize their concepts and develop an action plan or simple prototype. The activity concludes with a reflection session where participants share insights and discuss how to apply these creative methods in real-world scenarios, ensuring an engaging and impactful virtual experience.

Key concepts:
Creative thinking: The ability to think in novel and unconventional ways.
Ideation: The process of generating ideas, often with the use of techniques like brainstorming or mind mapping.
Innovation: The process of turning creative ideas into practical, useful solutions.
SCAMPER: A creative thinking tool that encourages modification and exploration of existing ideas.
Design thinking: A user-centered approach to solving problems creatively.

Assessment
Self-assessment, multiple choice quiz, group presentation, peer review & feedback.

Skills/Abilities developed
Creative problem-solving: Thinking differently to address challenges in a virtual setting.
Collaboration in digital spaces: Using online tools for brainstorming, collaborating, and sharing ideas effectively.
Idea evaluation: Critically assessing the feasibility and originality of ideas in an online environment.
Communication: Presenting ideas and receiving feedback in a virtual space.
Adaptability: Refine ideas and solutions based on virtual collaboration and feedback.

Further readings, activities, materials, best practices
Readings, materials, best practices:

- Tom, Kelley, David, Kelley (2013). Creative confidence: unleashing the creative potential within us all.
- Clayton M., Christensen, Marc, Benioff (2024). The innovator's dilemma: When new technologies cause great firms to fail.
- Tim, Brown (2019). Change by design: How design thinking transforms organisations and inspires innovation.
- TEDy Talks, Giovanni Corazza. "Creative thinking – how to get out of the box and generate ideas, https://www.youtube.com/watch?v=bEusrD8g-dM."

Best practices:

- Nzambi Matee and Gjenge Makers: Nzambi Matee, a Kenyan engineer and environmentalist, founded Gjenge Makers to tackle plastic waste pollution. Her company recycles plastic waste into durable building materials, such as bricks that are stronger than concrete. This creative

approach not only reduces environmental pollution but also provides affordable construction materials.

- Lorna Rutto and EcoPost: Lorna Rutto established EcoPost, a social enterprise that transforms plastic waste into eco-friendly fencing posts. By repurposing waste materials, EcoPost addresses deforestation and plastic pollution while creating employment opportunities in marginalized communities.
- Kreativepreneurship Program by ISBI Kenya: The International School of Business and Innovation (ISBI) in Kenya offers the Kreativepreneurship program, designed to empower creatives to build sustainable businesses from their talents and hobbies. This initiative bridges the gap between creative potential and actual earnings in the industry, fostering sustainable entrepreneurship among Kenyan youth.

TRAINING TOOLBOX MATERIAL

Innovate & ideate: Unlocking creative solutions

Description	Methodology	Time	Material
Introduction to creative thinking Provide a brief overview of creative thinking and its importance in problem-solving and innovation. Introduce the tools used for the activity (e.g., Zoom, Miro, Mural).	Lecture	10 min	Slides
Warm-up Exercise Use a fun, interactive icebreaker to get participants thinking creatively. For example, a quick virtual poll on creative uses for everyday items, where participants answer via chat or sticky notes. *Example*: "What other uses can you think of for a paperclip?"—allowing participants to share answers in the chat or via sticky notes on an online board.	Exercise	10 min	Mural, Miro
Ideation Session Divide participants into small break-out groups (3–5 people). Using the digital tools, participants will work in break-out rooms to brainstorm and generate ideas. The facilitator will guide them through the process of mind mapping and using the SCAMPER method to refine their ideas. - *Brainstorming:* Using Mural, Miro, or another digital tool, each group will generate as many ideas as possible for a given challenge or problem. - *Mind Mapping:* Groups will visually organize their ideas on the online tool. - *SCAMPER:* Groups will use this method to refine their ideas by substituting, combining, adapting, modifying, putting to another use, eliminating, or reversing elements of their ideas.	Group work	30 min	Mural, Miro
Sharing and Feedback Groups will reconvene in the main session, where each group will present their most innovative ideas using the screen-sharing feature or by uploading their materials to a shared online space (e.g., Miro or Mural). Presentations can be done using shared screens or slides. Facilitators and peers will	Discussion	15 minutes	slides

provide feedback in the chat or through voice discussion.			
Final Refinement Based on feedback, groups will revise their ideas and develop an action plan or concept prototype (e.g., a simple sketch, a flowchart, or a detailed outline of how the idea could be implemented). Groups will use the online platform for collaborative work (e.g., Google Docs for writing a plan).	exercise	20 minutes	Online platform for collaboration
Wrap-up and reflection A brief reflection discussion on the ideation process, what was learned, and how these creative techniques can be applied in real-world scenarios. Participants share their insights via chat or a post-training survey.	Discussion	5 minutes	

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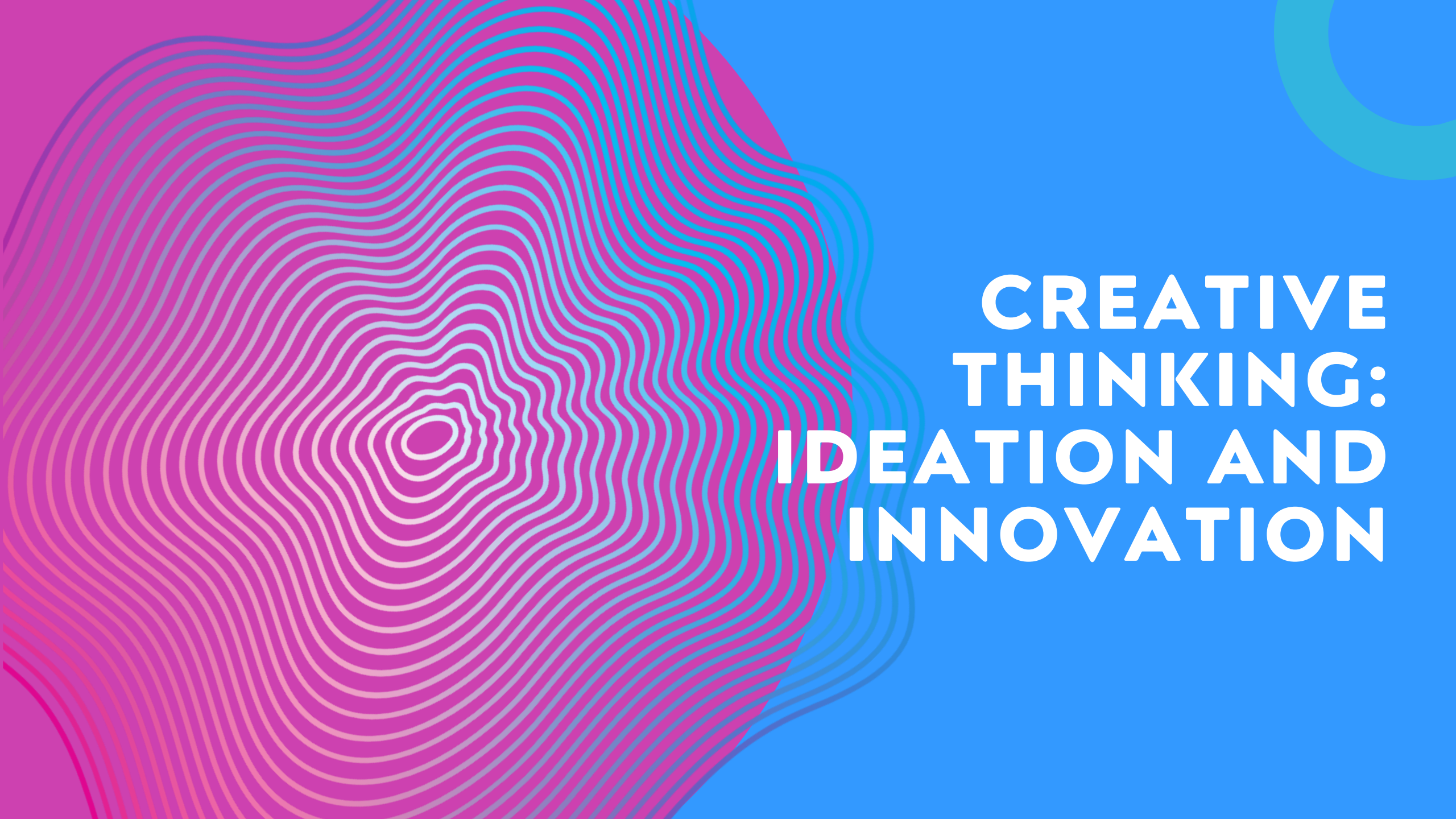

CREATIVE THINKING: IDEATION AND INNOVATION

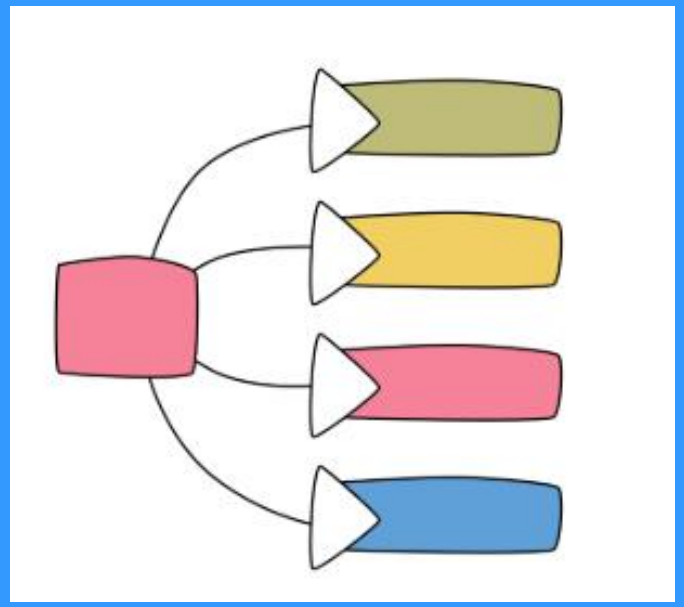
WHY CREATIVE THINKING MATTERS

Creative thinking is the ability to approach problems in novel and unconventional ways.

Why it's essential:

- Drives innovation and adaptability.
- Helps tackle complex challenges.
- Essential in sustainable entrepreneurship.

TOOLS & TECHNIQUES:



- **Digital tools:** Zoom, Miro, Mural, Google doca
- **Ideation techniques:**
  - ***Mind mapping*** – visual organisation of ideas
  - ***SCAMPER*** – creative transformation through substitute, combine, adapt, modify, put to another use, eliminate, reverse
- **Best practices:** Think visually, collaborate openly, challenge assumptions.

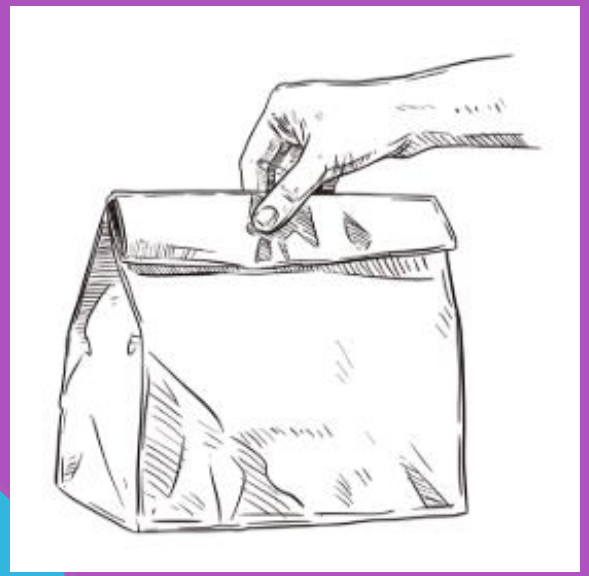
REAL-WORLD APPLICATIONS

Case Examples from Kenya

- Gjenge Makers (Nzambi Matee): *Plastic waste into bricks*
- Kreativepreneurship Program (ISBI): *Turning talent into sustainable business*

Impact: Innovation can solve environmental, social, and economic challenges.

KEY TAKEAWAYS



- Everyone has creative potential – it’s a skill to be practiced.
- Tools like SCAMPER and mind maps help structure ideation.
- Collaboration and feedback enrich the creative process.
- Creativity fuels practical innovation.

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Submodule 2.4

Integrating creativity and critical thinking skills for Entrepreneurial mindset

→ **Skills:**

1. Creativity
2. Critical Thinking

INTEGRATING CREATIVITY AND CRITICAL THINKING SKILLS FOR ENTREPRENEURIAL MINDSET
Activity 1: Sustainable business innovation challenge
Duration: 1,5 hour
Specific Learning Objectives 1. Identify opportunities for sustainable entrepreneurship in local contexts. 2. Develop innovative ideas to address sustainability challenges by integrating creative and critical thinking. 3. Visualize a sustainable future and design solutions that align with long-term environmental and social goals. 4. Understand how to leverage digital tools, team collaboration, and local assets for sustainable ventures. 5. Plan actionable steps for implementing and evaluating sustainable business solutions. 6. Reflect on the activity to identify lessons learned and areas for improvement.
Methodology, Resources and Devices **Methodologies:** Opportunity-driven learning: Focus on identifying sustainability challenges in Kenya as potential business opportunities. Collaborative innovation: Encourage teamwork to co-create solutions, leveraging diverse perspectives. Critical evaluation: Use structured frameworks (e.g., SWOT, PESTLE) to assess ideas for feasibility and impact. Practical application: Simulate real-world entrepreneurial tasks to apply learning in a controlled environment. **Tools used:** online tools like Miro and Mural, SWOT analysis.
Description of the activity and Key Concepts **Description:** The activity begins with an introduction to the importance of sustainability in entrepreneurship, highlighting successful Kenyan businesses like solar energy startups and eco-friendly packaging companies. Participants are then presented

with a scenario: developing a sustainable solution for water scarcity in rural Kenya, balancing profitability, environmental impact, and community needs. In groups, they brainstorm creative ideas and critically evaluate them for feasibility, sustainability, and market potential. Each group presents their solution, receives peer feedback, and reflects on how creativity and critical thinking contribute to overcoming entrepreneurial challenges. The session concludes with a summary of key takeaways.

Key concepts:
Sustainability in business: Understanding environmental, social, and economic sustainability.
Creative problem-solving: Techniques like brainstorming and mind mapping.
Critical thinking: Evaluating evidence, arguments, and assumptions.
Entrepreneurial mindset: Risk-taking, innovation, and resilience.

Assessment
Self-assessment, multiple choice quiz, group presentation, peer review & feedback.

Skills/Abilities developed
Creativity and innovation in addressing sustainability challenges.
Analytical skills to assess the feasibility of business ideas.
Collaborative problem-solving and teamwork.
Communication and presentation skills.

Further readings, activities, materials, best practices
Readings, materials, best practices:

- EC, Joint Research Centre (2020). EntreComp Playbook.
- Eric, Ries (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.
- Articles from *The Conversation Africa* on entrepreneurship in Kenya.

Best practices:

- *M-KOPA Solar:* provides affordable, off-grid solar energy solutions to households in rural Kenya. Customers can purchase solar kits on a pay-as-you-go basis via mobile money platforms like M-Pesa. This innovative business model has made clean energy accessible to low-income families while reducing reliance on kerosene.
- *Sanergy:* builds low-cost, portable toilets for informal settlements in urban Kenya. The waste collected is processed into organic fertilizer and biogas, creating a circular economy. The initiative has improved sanitation while generating value from waste.
- *Twiga foods:* connects small-scale farmers to urban markets using a digital platform. By streamlining the supply chain, it reduces food waste, cuts costs, and ensures fair pricing for farmers.
- *EcoPost:* turns plastic waste into durable fencing posts, offering an eco-friendly alternative to timber. This initiative not only reduces plastic waste but also helps combat deforestation.

TRAINING TOOLBOX MATERIAL

Sustainable business innovation challenge

Description	Methodology	Time	Material
Introduction Briefly introduce sustainable entrepreneurship, emphasizing the importance of aligning profitability with social and environmental impact. Share real-world examples of successful sustainable businesses in Kenya, such as eco-friendly packaging companies, solar energy startups, or water purification businesses. Define key concepts like creativity, critical thinking, and sustainability, linking them to the entrepreneurial mindset. **Interactive poll:** Use a digital polling tool (e.g., Mentimeter, Slido) to ask participants about their familiarity with sustainability challenges in Kenya. Display live results to spark initial discussions and set the stage for the challenge.	Presentation	15 min	Slides
Scenario presentation Present the following **scenario:** “You are part of a team tasked with addressing water scarcity in rural Kenya. Your goal is to create a sustainable business solution that balances profitability, environmental sustainability, and community needs. The solution must be realistic, innovative, and capable of being implemented in the Kenyan context.” Provide participants with supplementary data or infographics (e.g., water access statistics, insights into rural economies, environmental impact considerations) to ground their ideas in reality. Set clear **guidelines for the challenge:** • Focus on feasibility, creativity, and sustainability. • Collaborate actively with team members, leveraging diverse perspectives.	Scenario presentation	10 min	
Group challenge Divide participants into small teams of 4-5 people. Each team is tasked with brainstorming and evaluating potential solutions. Phase 1 (15 minutes): Brainstorming Creative Ideas:	Group work	30 min	

• Use digital collaboration tools such as Miro, or MURAL to allow teams to visualize their ideas. • Encourage participants to use creative techniques like: *Mind Mapping*: Generate a wide range of ideas by exploring connections between water scarcity, technology, and local needs. *Reverse Thinking*: Ask, "What would make water scarcity worse?" and then reverse the solutions. Phase 2 (15 minutes): Critical Evaluation of Ideas: Teams critically assess their brainstormed ideas using a structured framework such as: • SWOT Analysis: Evaluate strengths, weaknesses, opportunities, and threats of each idea. • Impact Feasibility Grid: Rank solutions based on their potential impact and feasibility.			
Presentations and peer review Each team presents their proposed solution in a 3-minute pitch, explaining: • The idea and how it addresses water scarcity. • Its sustainable elements (economic, environmental, and social). • Potential challenges and how they plan to address them. After each presentation, other teams provide peer feedback using the "Glow and Grow" method: • *Glow*: Highlight what was strong or innovative about the idea. • *Grow*: Suggest areas for improvement or additional considerations.		20 minutes	
Reflection and wrap-up Facilitate a group discussion to reflect on the activity: • What did participants learn about integrating creativity and critical thinking? • How did collaboration enhance the process? • How can these skills be applied to their entrepreneurial journeys? Summarize the key takeaways: • Creativity and critical thinking are essential for addressing complex sustainability challenges.	Discussion	15 minutes	Value proposition canvas, business model canvas (templates)

• Entrepreneurial opportunities often emerge from local problems. • Collaboration and structured evaluation are crucial for refining ideas into actionable solutions. Provide participants with downloadable templates (e.g., Value Proposition Canvas, Business Model Canvas) and encourage them to refine their ideas further as a follow-up assignment.			

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GSMESKILL

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

INTEGRATING CREATIVITY AND CRITICAL THINKING SKILLS FOR ENTREPRENEURIAL MINDSET

- Addresses environmental, social, and economic challenges.
- Builds resilient businesses with long-term impact.
- Enhances community well-being and resource efficiency.

WHY SUSTAINABILITY MATTERS

THE ROLE OF CREATIVITY AND CRITICAL THINKING

- **Creativity**: Generates innovative ideas to address challenges with fresh perspectives.
- **Critical Thinking**: Evaluates ideas for feasibility and impact.

Both skills are vital for developing unique, sustainable solutions.

WHAT IS CREATIVE THINKING?

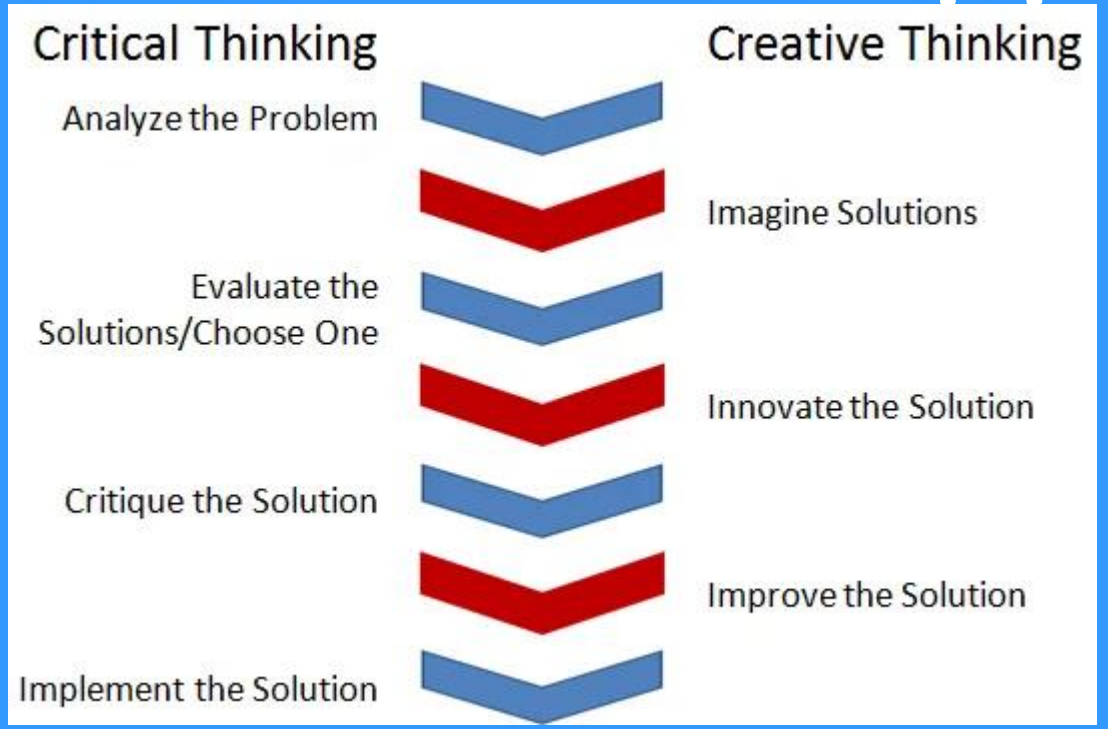
- **Definition:** The ability to think in innovative and original ways, exploring new ideas and approaches.
- **Purpose:** Helps solve problems by generating fresh, valuable solutions.
- **Process:** Involves connecting seemingly unrelated concepts and thinking beyond conventional norms.
- **Relevance for Entrepreneurs:** Drives innovation, identifies new opportunities, and creates competitive advantages.

BENEFITS OF CRITICAL THINKING

- Helps to improve decision-making
- Enhances problem-solving ability
- Refine your research skills
- Polishes your creativity
- Stimulates curiosity

- Identify innovative solutions to sustainability challenges.
- Analyze market needs, environmental impact, and resources.
- Develop actionable strategies balancing innovation and feasibility.

Creativity and critical thinking drive sustainable innovation!



COMBINING CREATIVITY AND CRITICAL THINKING

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