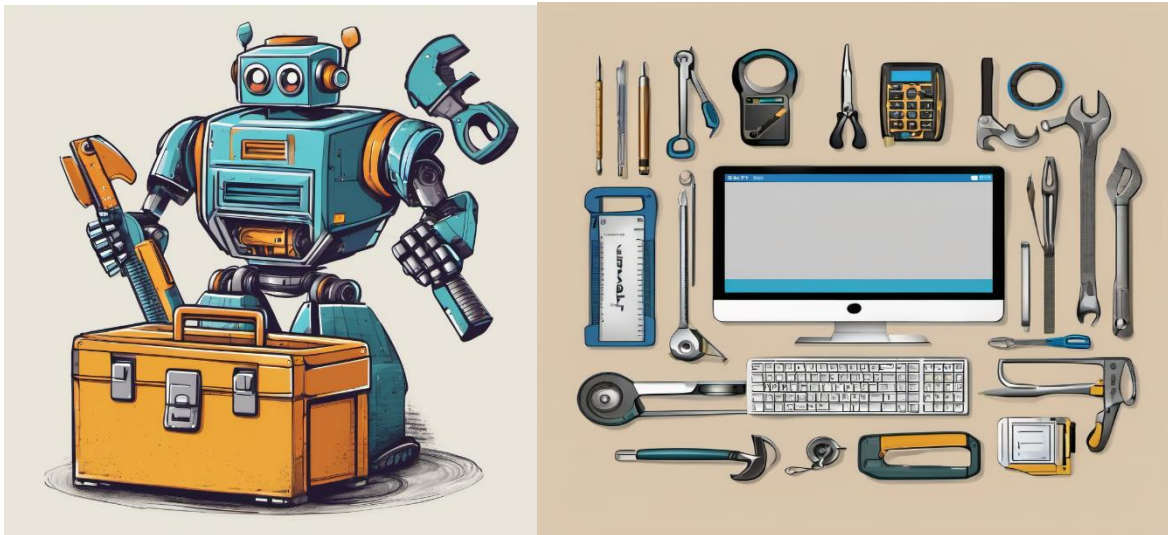




WP 4

Teaching Toolbox

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Authors: Kristina Kaučić and Crystal-Jade Leries



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Workshop Title: *EmpowerED Minds: Socratic Seminar for Youth Leadership*

Objective: Empower youth minds through critical thinking, effective communication, and collaborative problem-solving using the Socratic Seminar method.

Duration: 1 full day (8 hours)

Workshop Outline:

1. Introduction (30 minutes)

- Welcome and Icebreaker: Create a positive and inclusive atmosphere.
- Overview of the day's goals and expectations
- Introduction to the Socratic Seminar Method

2. Understanding Critical Thinking (90 minutes)

- Presentation on the importance of critical thinking in personal and professional development
- Group activities to develop critical thinking skills
- Discussing real-life scenarios that require critical thinking

3. The Socratic Seminar Approach (90 minutes)

- Explanation of the Socratic Seminar method: principles, rules and format
- Model Socratic Seminar: Demonstration by facilitators to illustrate the process



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- Q&A session to clarify any doubts or concerns

4. Preparing for the Socratic Seminars (45 minutes)

- Small group discussions: Participants analyze provided texts, articles or scenarios
- Facilitators provide guidance on extracting key points and forming questions

5. Lunch Break (60 minutes)

6. Socratic Seminar Session (120 minutes)

- Participants engage in the Socratic Seminar, taking turns to discuss and ask questions
- Facilitators observe and provide constructive feedback,
- Reflection session: Participants share their experiences and insights

7. Reflection (30 minutes)

- Guided reflection: Participants share their key learnings and personal insights
- Setting personal and professional goals based on workshop experience

8. Closing (25 minutes)

- Recap of the day's highlights
- Distribution of certificates of participation
- Information on resources for continued learning and development



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Lesson Plan: *Socratic Seminar Exploration–Solving Water Scarcity through STEM*

Time: 120 minutes

Objective:

Participants will explore the challenges of water scarcity in urban areas and discuss STEM-driven solutions with the framework of the United Nations Sustainable Development Goal 6 (SDG6)

Develop critical thinking skills through a Socratic Seminar format

Engage in hands-on STEM activities to enhance understanding and creativity

Materials:

Projector for multimedia presentation

Handouts with relevant information on water scarcity and STEM solutions

Whiteboard/blackboard/flipchart

Markers/ chalk

Introduction (15 minutes)

Interactive Icebreaker Suggestion: The Ripple Effect (5minutes)

Participants stand in a circle, and each participant will share a quick water-related fact or personal experience. As you do, toss a water-themed prop (perhaps a blue stress ball) to someone across the circle. Watch the ripple effect as ideas flow, connecting participants through the shared stories.



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Visual Exploration: Brainstorm (5minutes)

Show participants a photo of a bustling metropolis. You can generate such a photo by using AI. Ask them to discover the challenges the metropolis faces with water scarcity. Engage them in a quick brainstorm: What images or words come to mind when you think about water scarcity in a growing city? You can collect and write the ideas on the whiteboard/blackboard/flipchart.

Pair and Share: Voices of the Metropolis (5 minutes)

Turn to your neighbor and share your thoughts. What challenges do you envision? How might water scarcity impact its residents, environment, and future development? Share your thoughts within a group.

Briefly introduce the concept of water scarcity, its global significance, and the relevance of SDG6.

Suggestion: Use multimedia (images, short videos...) to create awareness and set the context.

Understanding the problem (20 minutes)

Distribute handouts with key information and statistics.

Suggestion: You can use infographics made by United Nations. [SDG6](#)

Engage participants in a short activity: "Think-Pair-Share,". Encourage them to share their thoughts, discuss with their partner, and share insights within a group.

Facilitate a brief discussion on the challenges of water scarcity in urban areas.



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STEM Solutions (15 minutes)

Group work: Participants think about STEM-driven solutions related to water scarcity, including water treatment technologies, smart water management, and environmental engineering. They discuss it within a group.

Showcase STEM in Action (10 minutes)

Groups share their ideas.

Socratic Seminar (25 minutes)

Explain the principles of a Socratic Seminar and the importance of open-ended questioning and active participation.

Focus questions:

- How can STEM contribute to sustainable water treatment technologies?
- What role do IoT devices and sensors play in smart water management?
- How can environmental engineering principles prevent water contamination?
- In what ways can data analytics improve water distribution systems?

Encourage participants to respond to each other, build on ideas, and critically analyze proposed solutions.

Hands-on STEM Activity (25minutes)

Divide participants into small groups and assign each group a specific STEM aspect (water treatment, smart water management, environmental engineering, data analytics).

Groups work collaboratively on their activity



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Each group will receive a design challenge related to their STEM aspect, framed around addressing CityX's water scarcity.

Participants transform their ideas into tangible solutions for CityX's water scarcity challenge using some exciting building materials—Lego bricks, straws, and more. In this activity each group will become the architects of change, working together to craft innovative STEM solutions.

Groups:

Water treatment group: Pure and Clean

The challenge is to design a simple, effective water treatment model using Lego Bricks, straws or any other similar provided materials. The group should consider factors like efficiency, cost-effectiveness, and environmental impact. Driving question: How can we ensure the water leaving our treatment system is pure and safe for consumption?

Smart Water Management Squad: Connect the Dots

Dive into the world of IoT (Internet of Things). Design a mock-up of a smart water management system using Lego bricks, straws, and other materials. Driving question: How can technology help us monitor water quality, consumption patterns, and potential leaks. In real-time?

Environmental Engineering Ensemble: Eco-Haven

Get creative with sustainable solutions. Design an eco-friendly infrastructure that prevents industrial pollutants from contaminating water sources using Lego bricks, straws or any other provided material. Driving question: How can we build structures that protect our water while preserving the environment?



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Dana Analytics Dream Team: Decoding Patterns

Equip yourself with the power of data. Design a simple data analytics system to predict water consumption trends and identify areas with high demand using Lego bricks, straws or similar provided material. Driving question: How can we use data to optimize water distribution in the CityX?

Hands-on crafting

Utilize Lego bricks, straws, and any additional provided materials to start building your prototype.. Be inventive!

Discuss and assign roles within your group. Who will be in charge of handling Lego bricks, straws or material of your choice. and who will be the spokesperson during the showcase?

Group Showcase (5 minutes)

Each group will present their innovative solution. Groups explain their design choices, highlight key features, and discuss how your STEM solution addresses CityX's water scarcity.

Homework/Extended Learning: Choice Bord

Participants can chose tasks they want to do. The goal is to have fun while deepening your understanding of STEM concepts. Feel free to mix and match activities based on your interests and explore new horizons in the world of science, technology, engineering, and math!



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Choice

Board

Experiment Extravaganza:

Select a simple experiment from reputable science websites or books. Create a step-by-step guide or video documenting the experiment. Include your observations and any unexpected outcomes.

Tech Tinkering:

Explore a coding platform such as Scratch or Code.org. Create a simple interactive story or game. Share your creation with a brief explanation of your coding choices.

Engineering Marvels:

Design and build a structure using household items (toothpicks, marshmallows, etc.). Take pictures of your creation from different angles. Reflect on the engineering principles applied in your design.

Math Puzzles Galore:

Solve math puzzles or brainteasers. Create a set of your own puzzles to challenge a friend or family member. Include explanations of the solutions.

STEM Book Review:

Read a STEM-related book or article. Write a book review summarizing the main ideas and your thoughts. Include how the content relates to real-world applications.

Scientific Inquiry Journal:

Choose a scientific topic that interests you. Conduct research and keep a journal summarizing key findings. Include your thoughts on potential real-world applications or implications

Virtual STEM Tour:


Explore virtual tours of science museums or STEM-related exhibits. Create a presentation or infographic highlighting interesting discoveries or exhibits. Include links to the virtual tours for classmates to explore.

Interview a STEM Professional:

Reach out to a local scientist, engineer, or technologist. Prepare questions about their career, experiences, and advice for aspiring STEM enthusiasts. Share a summary of the interview with your classmates.

Be creative



Write an opinion essay 250 words	Write argumentative essay 250 words	Complete a SWOT analysis and identify skills needed to be a changemaker
Organize an event in your school and make teachers and peers aware of the issues	Make an interview with a town mayor	Write an open letter to your MEPs or one of them and introduce the issues in our country
Create a video film trailer using the digital tool of your choice. Remember to include music to set the tone, and tell a brief story about the central conflict and characters without revealing too much! Tease the audience	Make video; motivational speech, TED talks (3min)	Be creative 



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Workshop Title: Mastering Decision-Making with Six Thinking Hats

Objective: Equip participants with the skills to enhance critical thinking and decision-making through the Six Thinking Hats method.

The Six Thinking Hats method is a powerful tool for group discussion and decision-making developed by Edward de Bono. It encourages participants to think about a problem or decision from different perspectives represented by six colored hats.

Duration: 4 hours

Workshop Outline:

Introduction (30 minutes)

Welcome and icebreaker activity

Brief overview of the Six Thinking Hats method

Importance of effective decision-making in various aspects of life

Understanding the Six Hats (60 minutes)

Explanation of each hat's role and purpose

Interactive activity: Assigning roles to participants for each hat and discussing their

expectations



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Practical Application (90 minutes)

Case study analysis: Participants apply the Six Thinking Hats method to a real-world scenario

Group discussions: Each group presents their findings, and participants share insights gained from different hat perspectives

Mini-Workshop (30 minutes)

Breakout sessions: Participants work in smaller groups to practice using the Six Thinking Hats method on specific scenarios

Feedback and discussion: Groups share their experiences and lessons learned

Reflexion and Integration (30 minutes)

Guided reflection: Participants individually reflect on how they can integrate the Six Thinking Hats method into their decision-making processes

Conclusion: Hat Reflexion Gallery

Objective: To encourage participants to actively reflect on and share their key
Summary of key takeaways: Hat Reflexion Gallery takeaways from the workshop using the Six Thinking Hats method.

Set up six stations or designated areas in the room, each representing one of the Six Thinking Hats. Use visuals, colored props, or simple decorations to distinguish each station. Place flip charts, markers, and sticky notes at each station.

Divide the summary session into six rounds, one for each Thinking Hat. For each round, ask participants to move to the station representing the hat they feel most connected with or learned the most from during the workshop. At each station, participants are given a specific prompt related to that hat.



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Example:

White Hat: Share a key fact or piece of information you found valuable

Red Hat: Express your emotional response to the workshop or a specific activity.

Black Hat: Highlight a critical consideration or concern you gained insights into.

Yellow Hat: Share a positive outcome or optimistic perspective you discovered.

Green Hat: Present a creative idea or solution inspired by the workshop.

Blue Hat: Reflect on the overall process and facilitation, providing suggestions for improvement.

Gallery Walk: (20 minutes)

After each reflective round, participants rotate to the next station and continue the process. Encourage participants to read and respond to the reflections left by others at each station. Participants can use sticky notes to add comments or questions to the reflections on the flip charts.

Group Discussion: (15 minutes)

Gather the participants back as a whole group. Facilitate a discussion where each station briefly shares the key takeaways and insights from their hat's perspective. Encourage cross-hat discussions by asking participants to connect ideas or respond to insights from other hats.

Synthesis (10 minutes)

Facilitate a synthesis of the key takeaways by identifying common themes or patterns that emerged across different hats. Ask participants to contribute to a collaborative summary.



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Workshop Title: Empowering Youth For Sustainable Innovation

Objective: Empower participants to apply Design Thinking principles to create innovative solutions aligned with Sustainable Development Goals

Duration: One day (6-8 hours) or two days (4+4 hours)

Tentative schedule:

1. Introduction (30 minutes)

- Welcome and Icebreaker activity
- Overview of the workshop objective and agenda
- Introduction to Design Thinking , STEAM and SDGs

2. Understanding SDGs (60 minutes)

- Brief explanation of 17 SDGs
- Group discussion: Selecting a specific SDG of Interest
- Activity: Brainstorming current challenges related to the chosen SDG

3. Design Thinking Basics (60 minutes)

Introduction to the Design Thinking process (Empathize, Define, Ideate, Prototype, Test Interactive activity: "Empathy Mapping" for better understanding of users and challenges.



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4. Lunch Break (60 minutes)

5. Applying Design Thinking (120 minutes)

Group work: Defining the problem related to the chosen SDG
Ideation session_: Generating innovative solutions.
Selecting the most promising idea

6. STEAM Integration (90 minutes)

Introduction to STEAM and its role in innovation
Hands-on activity: Integrating a STEAM component into the chosen solution
Group discussions on the potential impact of the solution.

7. Prototyping and Testing (60 minutes)

Practical session: Building a prototype of the solution.
Testing and iterating based on feedback

8. Presentation and Reflection (30 minutes)

Each group presents their solution and prototype.
Group discussion: Reflection on the design process, challenges faced, and lessons learned.



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Example: One interconnected theme that aligns with multiple SDGs and can be addressed using STEAM and Design Thinking is Sustainable Urban Living.

SDG 11: Sustainable Cities and Communities

Problem: Addressing challenges related to urbanization, inadequate housing, and lack of basic services.

STEAM Component: Use technology and engineering for sustainable architecture and urban planning. Integrate arts to beautify public spaces

Design Thinking: Empathize with urban dwellers, define their needs, ideate innovative solutions for affordable housing, transportation, and green spaces

SDG 12: Responsible Consumption and Production

Problem: High levels of waste generation and unsustainable consumption patterns in urban areas

STEAM Component: Technology for waste management, engineering for recycling solutions, and arts for promoting sustainable lifestyles.

Design Thinking: Empathize with urban residents to understand their consumption habits, ideate on reducing waste, and prototype solutions for responsible consumption.

SDG 7: Affordable and Clean Energy

Problem: Access to affordable and clean energy sources in urban areas



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STEAM Component: Engineering solutions for renewable energy sources, integrating technology for smart energy grids, and using arts to raise awareness.

Design Thinking: Identify energy needs in urban communities, ideate on sustainable energy solutions, and prototype systems for renewable energy integration.

Icebreaker: Human Bingo – Sustainable Edition

Objective: Encourage participants to interact with each other, learn about sustainable practices, and find common ground.

Instructions:

1. Prepare bingo cards with a grid (5x5 or 4x4) containing sustainable actions, habits, or experiences in each square (e.g., "Uses a reusable water bottle," "Composts at home," "Has participated in a community cleanup," etc.
2. Distribute a bingo card and a pen to each participant as they enter the workshop
3. Explain that their goal is to find people in the room who match the descriptions in the bingo squares
4. Participants must mingle and talk to each other to find someone who fits a particular description. When they find a match, they write that person's name in the respective square.
5. The first person to complete a row (horizontal, vertical, or diagonal) shouts "Bingo!" and shares a fun fact about themselves related to the sustainable actions they found.



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After the game, gather participants and discuss some of the interesting sustainable habits or experiences they discovered about their peers. Relate the icebreaker to the workshop theme by highlighting how small individual actions contribute to larger sustainable goals.

Bingo card suggestion:

Use Canva to create Human Bingo Template

Include following statements:

Uses a reusable water bottle

Rides a bike to reduce emissions

Composts kitchen waste.

Plants trees or participates in tree-planting activities

Shops with a reusable bag

Has participated in a community cleanup event

Takes public transportation

Uses energy-efficient lightbulbs

Eats a plant-based meal.

Participates in a clothing swap

Has a home garden.

Reduces single-use plastic consumption.

Repurposes or upcycles items.

Takes part in meatless Mondays

Attends environmental workshops.

Conserves water at home.



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Shops for secondhand items.

Supports sustainable brands.

Participates in Earth Hour.

You can also add or modify them based on the preferences or focus areas of your workshop participants

Examples for Empathy Mapping:

1. User Persona Creation

Participants create a detailed persona of their target user. They include demographics, behaviors, needs, and goals.

Encourage them to think about the user's daily life, challenges, and aspirations.

2. Interview and Reflection

Participants conduct mock interviews where they play both the interviewer and the user.

After the interview participants reflect on what they learned, focusing on the user's feelings, thoughts, and pain points.

3. Storyboarding

Participants create a storyboard that illustrates a day in the life of the user.

They visualize key moments, emotions, and interactions the user might have with the product or service.



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4. Photo Journaling

Participants to take photos throughout their day that represent different

During the empathy mapping session, use the photos as prompts to discuss emotions, routines, and challenges.

5. Role-playing

Create scenarios related to the problem space and have participants role-play as users. Encourage them to embody the emotions and perspectives of the user during the role-play.

Suggested scenarios:

Scenario: Sustainable Living: SDG 12 - Responsible Consumption and Production

Your user is passionate about living sustainably but faces difficulties in making eco-friendly choices due to limited options in their local community. Role-play scenarios where the user tries to make sustainable choices in various aspects of their life, such as shopping, transportation, and waste management.

Scenario: Accessibility in Technology: SDG 10 - Reduced Inequality

Your user is a person with a disability who encounters barriers when using technology. Role-play scenarios involving accessing websites, using mobile apps, and interacting with digital devices to highlight the challenges faced by individuals with disabilities.

Scenario: Urban Mobility: SDG 11 - Sustainable Cities and Communities



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Your user is a daily commuter in a busy urban environment who faces challenges in transportation, such as traffic congestion and limited public transit options. Role-play scenarios involving the user's daily commute and their efforts to make it more efficient and sustainable.

6. Mind Mapping

Use a mind map to visually represent different aspects of the user's experience. include categories such as feelings, actions, environment, and relationships to explore the user's world comprehensively.

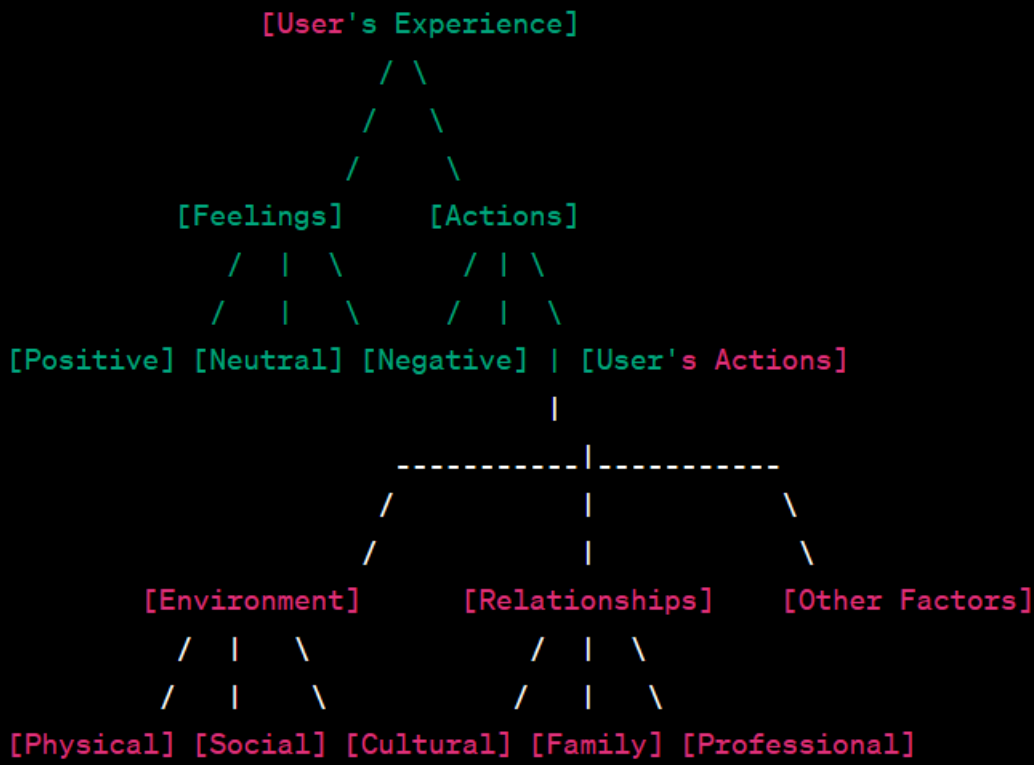
Suggestion: Use Canva to Create a template for mind mapping. You can also use already made templates or adapt them to your needs.



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User's Experience Mind Map



A Problem Tree

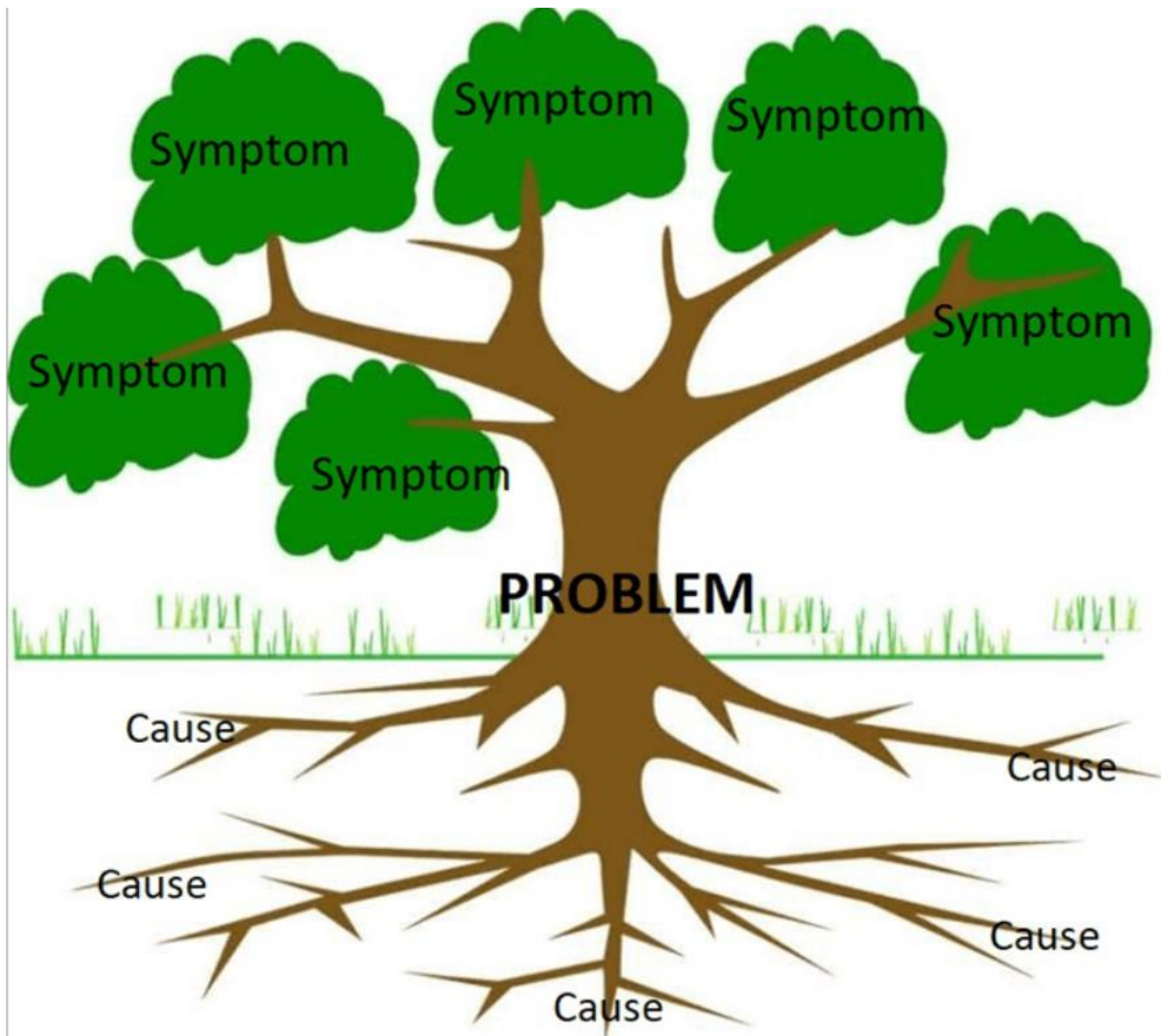
A Problem Tree is typically created during the "Empathize" and "Define" stages, where participants seek to understand the user's needs and define the problem space.

The Problem Tree (issue tree, casual tree) is a visual tool used to analyze and understand the root causes of a problem. Participants typically create a Problem Tree during the initial stages of a project or workshop when they are defining the problem and conducting problem analysis. Here are some key points on when participants should create a Problem Tree.



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Participants should create a Problem Tree early in the project or workshop during the problem definition phase. It helps them clarify and articulate the core problem they are trying to address. This workshop often follows the initial stages of problem identification and allows participants to dive deeper into the causes and consequences of the identified problem. The creation of a Problem Tree can be part of the project kick-off process. Before moving into the ideation and solution generation phase, participants should have a solid understanding of the root causes of the problem. Creating a Problem Tree is often a



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collaborative activity involving team members and relevant stakeholders. Participants may revisit and refine the Problem Tree throughout the project as they gather more information or as their understanding of the problem evolves.

Lesson plan: Exploring Sustainable Development Goals (SDGs) through STEAM to Tackle Polarization in Schools and Communities

Lesson model: 5E (engage, explore, explain, elaborate, evaluate)



Engage:

Title: What are Sustainable Development Goals (SDGs)?

Objective: Students will be introduced to the concept of SDGs and understand their importance in addressing global challenges.

Activity:

- Show a short video explaining the background and significance of SDGs.
1. Video suggestions: **"The Sustainable Development Goals: 17 Goals to Transform Our World" by the United Nations:**
 - **Link:** [Watch on YouTube](#)
 - **Description:** This official UN video provides a brief overview of the 17 SDGs and their importance in addressing global challenges.
 2. **"What are the Sustainable Development Goals?" by The Global Goals:**
 - **Link:** [Watch on YouTube](#)
 - **Description:** This animated video gives a concise explanation of the SDGs and why they matter.



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3. "Introduction to the Sustainable Development Goals" by the United Nations Development Programme (UNDP):

- **Link:** [Watch on YouTube](#)
- **Description:** This video provides an introduction to the SDGs, their background, and the role they play in creating a sustainable future.

These videos are all under five minutes long .

- Discuss as a class what students already know about SDGs and why they are important.



Explore:

Title: Analyzing Polarization in Schools and Communities

Objective: Students will analyze the factors contributing to polarization within educational settings and communities.

Activity:

- In groups, students will research and discuss different forms of polarization they observe in schools and communities.

🔍 In their groups, students should discuss and identify different forms of polarization they observe in their school and community. Topics to explore may include:

- Political polarization
- Socioeconomic divisions
- Cultural and ethnic differences
- Gender and sexuality issues
- Religious beliefs

🔍 **Guiding Questions:** Provide each group with a set of guiding questions to help focus their discussion:



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- What examples of polarization have you seen or experienced in your school or community?
 - How do these forms of polarization affect relationships and interactions?
 - What are some underlying causes of these divisions?
 - How do media and social networks contribute to polarization?
- Each group will present their findings to the class.



Explain:

Title: The Role of STEAM in Tackling Polarization

Objective: Students will understand how integrating STEAM (Science, Technology, Engineering, Arts, Mathematics) can help address polarization challenges.

Activity:

- Facilitate a Socratic seminar discussing the potential impact of STEAM education in promoting inclusivity and diversity.
- Provide examples of STEAM projects that have successfully addressed social issues.



Elaborate:

Title: Group Work: Designing a STEAM Project to Address Polarization

Objective: Students will collaborate in groups to create a STEAM project proposal aimed at reducing polarization in their school or community.

Activity:

- Each group will brainstorm project ideas, allocate roles, and outline their project proposal.
- Groups will present their proposals to the class for feedback and discussion.



Evaluate:

Title: Hands-On Activity: Implementing the STEAM Project

Objective: Students will implement a hands-on activity based on the STEAM



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project proposal to experience firsthand the process of addressing polarization through collaborative efforts.

Activity:

- Students will work together on their STEAM project, incorporating elements of science, technology, engineering, arts, and mathematics.
- After completion, students will reflect on their experience and evaluate the effectiveness of their project in promoting unity and understanding.

This lesson plan aims to address polarization in schools and communities through the exploration of Sustainable Development Goals (SDGs) and the integration of STEAM (Science, Technology, Engineering, Arts, Mathematics) education. By engaging students in discussions, research, collaborative projects, and hands-on activities, several interpersonal competencies can be developed:

1. Communication Skills:

- **Engage:** Discussing what students already know about SDGs and their importance encourages students to articulate their thoughts and listen to others.
- **Explore:** Researching and presenting findings about polarization requires clear and effective communication within groups and to the larger class.
- **Explain:** Participating in a Socratic seminar helps students practice active listening and articulate their viewpoints clearly and persuasively.
- **Elaborate:** Presenting project proposals to the class fosters skills in public speaking and persuasive communication.
- **Evaluate:** Reflecting on their experience and evaluating the project's effectiveness involves expressing insights and feedback constructively.

2. Organizational Skills:

- **Explore:** Organizing research and discussions about different forms of polarization in a structured manner.



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- **Elaborate:** Brainstorming project ideas, allocating roles, and outlining project proposals require planning and coordination.
- **Evaluate:** Implementing the STEAM project involves managing time, resources, and tasks effectively.

3. Teamwork & Collaboration:

- **Explore:** Working in groups to research and discuss polarization fosters teamwork and the ability to collaborate towards a common goal.
- **Elaborate:** Collaborating in groups to design a STEAM project promotes cooperative learning and the sharing of responsibilities.
- **Evaluate:** Implementing the STEAM project as a team encourages collaboration and collective problem-solving.

4. Sociability & Collegiality:

- **Engage:** Class discussions about SDGs build a sense of community and shared purpose.
- **Explore:** Group research and presentations help students build positive relationships with peers.
- **Elaborate:** Collaborative project work fosters a supportive and collegial atmosphere.
- **Evaluate:** Reflecting on the project and celebrating achievements together enhances sociability and camaraderie.

5. Empathy & Compassion:

- **Explore:** Analyzing factors contributing to polarization encourages students to consider different perspectives and develop empathy for others' experiences.
- **Explain:** Discussing the role of STEAM in promoting inclusivity and diversity fosters understanding and compassion.
- **Elaborate:** Designing projects aimed at reducing polarization encourages students to think about the needs and feelings of others.
- **Evaluate:** Reflecting on the impact of their project helps students understand the importance of empathy and compassion in creating positive social change.



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