TRANSFORMING EDUCATION, EMBRACING DIVERSITY

BridgeAI

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BridgeAI WP3 : Syllabus, Module 1 Presentation

Beyond the Code: AI's Role in Education, Inclusion, and Democracy

1. Introduction

In this module, we'll learn about:
What is artificial intelligence and how does it work?

What are the fundamental concepts of artificial intelligence? What is its historical trajectory? How do we use artificial intelligence in our daily lives?

What is the role of artificial intelligence in education and social life? What are the opportunities it will create for us, and what risks these opportunities carry?

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2. Objectives

The objectives of this module are:

- What artificial intelligence **means**
- The **roles** of artificial intelligence in **education** and **social life**
- The **opportunities** and **risks** that artificial intelligence presents us

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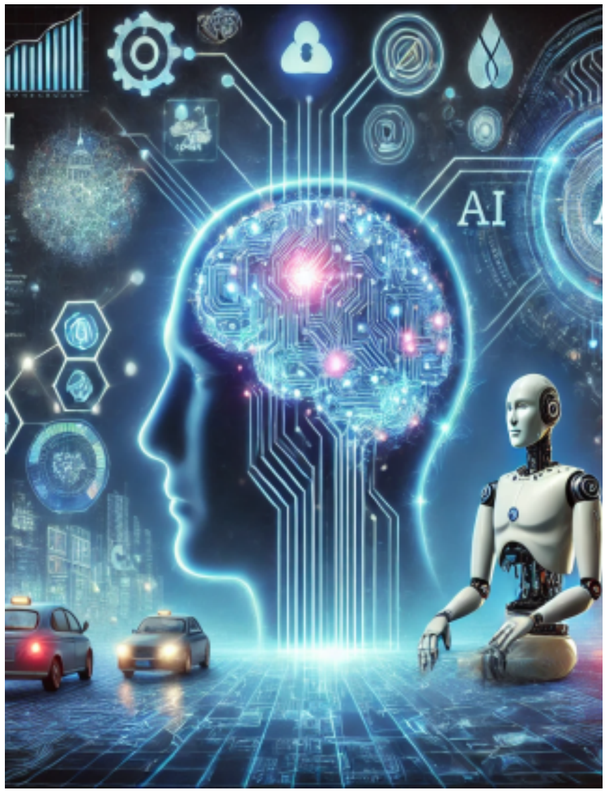
3. Why It Matters ?

Artificial intelligence enables accurate decisions by quickly processing large amounts of data.

It automates repetitive tasks and increases efficiency. It empowers people and helps build more secure systems. It offers personalized learning opportunities in education and improves early diagnosis and treatment processes in healthcare.

It also creates new opportunities for society and the economy by laying the foundation for future technologies.



"Artificial intelligence, with its potential to provide solutions to the most complex problems facing humanity by making sense of data, is not just a technology; it is the key to the future."

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4. Key Concepts / Tools

🧠 **Machine Learning (ML):** This method allows computers to learn from data without being explicitly programmed. A model learns to distinguish "7" from "1" by seeing thousands of handwritten digits.

🤖 **Deep Learning (DL):** This is a subfield of machine learning. It learns complex tasks with multi-layered artificial neural networks. Autonomous vehicles recognize objects in traffic.

🔗 **Neural Networks:** These are algorithms that mimic neurons in the human brain. As the number of layers increases, they become deep learning. A neural network can learn to recognize faces in photographs.

🗣️ **Natural Language Processing (NLP):** This allows computers to understand, interpret, and produce human language. ChatGPT understands questions and responds with natural language.

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5. Strategies / Good Practices

1 Activity to Mimic the Personalized Learning Process with AI

Key Concept: Understanding how artificial intelligence learns with data.

Tool example: ChatGPT

The teacher gives a short presentation: "Artificial intelligence enables machines to learn with data."

Students select and read the text appropriate to their level.

After reading the text, they answer the following questions:

1. How does artificial intelligence learn?

2. What does the "cat photo" example illustrate?

3. What other examples can be used to teach?

In groups, build a "mini AI model":

- You are an artificial intelligence.
- Your friends provide you with data for a simple task, such as "distinguish fruits."
- After each data example, explain what you "learned."

2 What is Artificial Intelligence Used For?

Key Concept: Students will recognize the uses of artificial intelligence in daily life and other fields.

Example tools: Voice assistants, YouTube recommendation system

Students will select and read a text appropriate to their level and answer the following questions.

1. In what areas is artificial intelligence used?

2. Do you have an example of artificial intelligence used at home or at school?

3. Where would you like to see artificial intelligence in the future?

Design your dream AI:

- What would its name be?
- What would it do?
- Who would use it?

Recognize the real-world impact of artificial intelligence.

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6. Interactive Activity Overview

"Design a Presentation on the History of Artificial Intelligence"

Step 1: Choose the topic "History of Artificial Intelligence" in a science or IT class.
Step 2: Identify ChatGPT as a tool for accessing information and simplifying text.
Step 3: Make the content translated for English language learners, visual and audio for special education students, and detailed for advanced learners.
Step 4: Share student-created content and discuss how AI is becoming accessible to everyone.

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7. Risks & Challenges

Main Risks of Using AI in the Classroom

- **Possible inaccuracies :** AI may give incorrect or incomplete answers, so teacher guidance is essential.
- **Over-reliance:** Students may rely too much on AI instead of thinking on their own.
- **Unclear sources:** AI does not always show where information comes from; students should verify answers.
- **Language issues:** Translations or summaries may change the meaning; students should double-check.
- **Access inequality:** Not all students have the same access to devices or internet.
- **Privacy:** Students should avoid sharing personal information with AI tools.

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8. Case Study / Example

Classroom Example:
Using AI to Support Inclusive Group Work

In a classroom where students have different levels of readiness, language backgrounds, and learning needs, the teacher introduces a short reading activity supported by an AI tool. The tool helps make the text accessible for everyone by simplifying difficult sentences, reading the text aloud, translating unfamiliar words, or offering visual explanations when needed. Each student chooses the type of support that works best for them.

After reading, students work in small groups to discuss guiding questions. Some use the simplified text, while others rely on visuals to deepen their understanding. Every student is encouraged to share what they learned, which helps those who are usually hesitant take part more confidently.

During the discussion, the class also briefly reflects on how AI can improve accessibility but may sometimes show bias, and why using technology in a fair and democratic way is important.

By the end of the activity, participation feels more balanced, and students express their ideas with greater confidence. This example shows how AI can support inclusion by giving students different ways to access the same content without replacing the teacher's role in guiding the learning process.

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8. Case Study / Example

Georgia State University – Predictive Analytics That Improve Student Success Case:

GSU implemented an AI-based early-warning system that analyzes more than 800 variables such as course selection, grades, and advising records to identify students' academic risks.

Results:

- Graduation rate increased by 22%.
- At-risk students were identified much earlier.
- Academic advising became 4.5 times more efficient.

https://www.google.com/search?q=https://bloombergcities.jhu.edu/news/bogota-how-whatsapp-chatbot-helping-citizens-co-create-their-city

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8. Case Study / Example

Japan – AI-Supported Inclusive Reading for Diverse LearnersCase:

A Japanese school used an AI-supported digital reading system (BookRoll + learning analytics) to monitor students' reading behaviors such as time spent, highlights, notes, and comprehension patterns.
The system helped identify when learners struggled and what type of support they needed.

Results:

- Personalized reading support improved student engagement.
- Learning difficulties were detected earlier through AI-based analytics.
- Teachers provided more accurate and fair guidance by interpreting AI data.

Challenges and opportunities of AI in inclusive education: a case study of data-enhanced active reading in Japan
DOI / Link: https://doi.org/10.1186/s40561-023-00286-2

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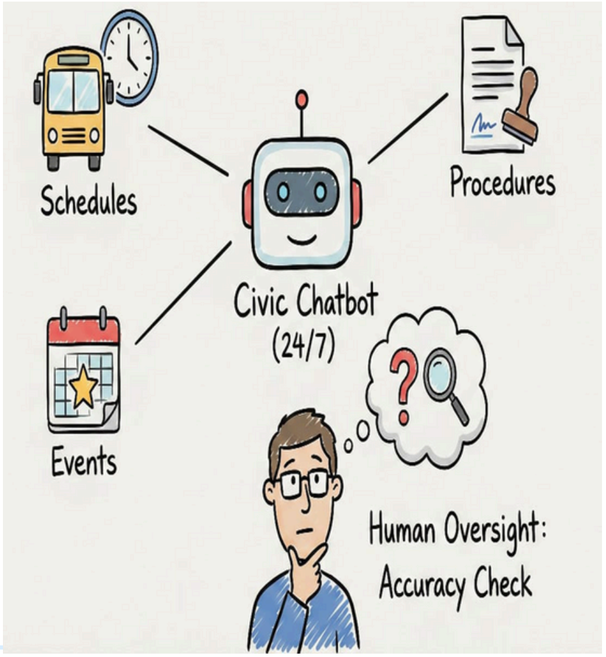

A Practical Example: A Civic Chatbot for Young People.

In this activity, young people design a chatbot that uses natural language processing to provide 24/7 access to public service schedules, administrative procedures, and local events.

This creates a powerful opportunity for accessibility, allowing citizens to easily navigate bureaucracy at any time. It fosters democracy by empowering youth to build tools that make information transparent for their community. However, human oversight is crucial to manage the risk of misinformation, ensuring the AI remains a reliable and accurate guide for the public.

https://www.google.com/search?q=https://bloombergcities.jhu.edu/news/bogota-how-whatsapp-chatbot-helping-citizens-co-create-their-city_

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9. Expected Outputs

- By the end of the module, participants are expected to produce:
- A short but clear lesson plan that includes the use of at least one AI tool, showing how it supports learning in a real classroom setting.
- A written reflection that briefly discusses ethical and responsible use of AI, including privacy, safety and fairness considerations.
- A sample classroom activity designed for students with different learning needs. This could be a reading, vocabulary, or discussion task supported by an AI tool.
- A brief note discussing how AI can both support accessibility and raise concerns about bias or fairness, and how these issues relate to democratic participation in learning environments.
- A practical checklist that teachers can keep at hand to make sure AI is used safely, appropriately, and in a way that benefits all learners.

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10. Wrap-up & Next Steps

Summary

AI tools can become a helpful part of classroom practice when used with guidance. They can support teachers in preparing materials, offer students additional ways to understand the lesson, and help make learning more accessible for different learners. The key is to use these tools thoughtfully and to keep the teacher's role at the center of the process.

Next Steps

- Try including a simple AI-supported activity in one of your upcoming lessons.
- Pay attention to how students respondwho benefits most and what kind of support works best.
- Make small adjustments based on your observations to better meet different learning needs.
- Share your experiences with your colleagues so the school community can learn from each other.

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