AI usage in education and learning process

Module 4 – Part 2

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AI usage in education and learning process

- 3 Parts of Course
  - Part I - Theoretical
  - Part II - Theoretical and Practical
 - Part III - Practical

AI usage in education and learning process

- Course Objectives
  - Identify the role of AI in education
  - Understand and manage risks while using AI tools in education
  - Trial use of AI tools, evaluation of experience, and results
- Course Outcomes
  - Identify the role of AI in education
  - Understand and manage risks while using AI tools in education
  - Trial use of AI tools, evaluation of experience, and results

Part II - Content

- AI Tools for Education

- Conversational AI in Education

- Using AI Tools AI in Education

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AI Tools in

Education

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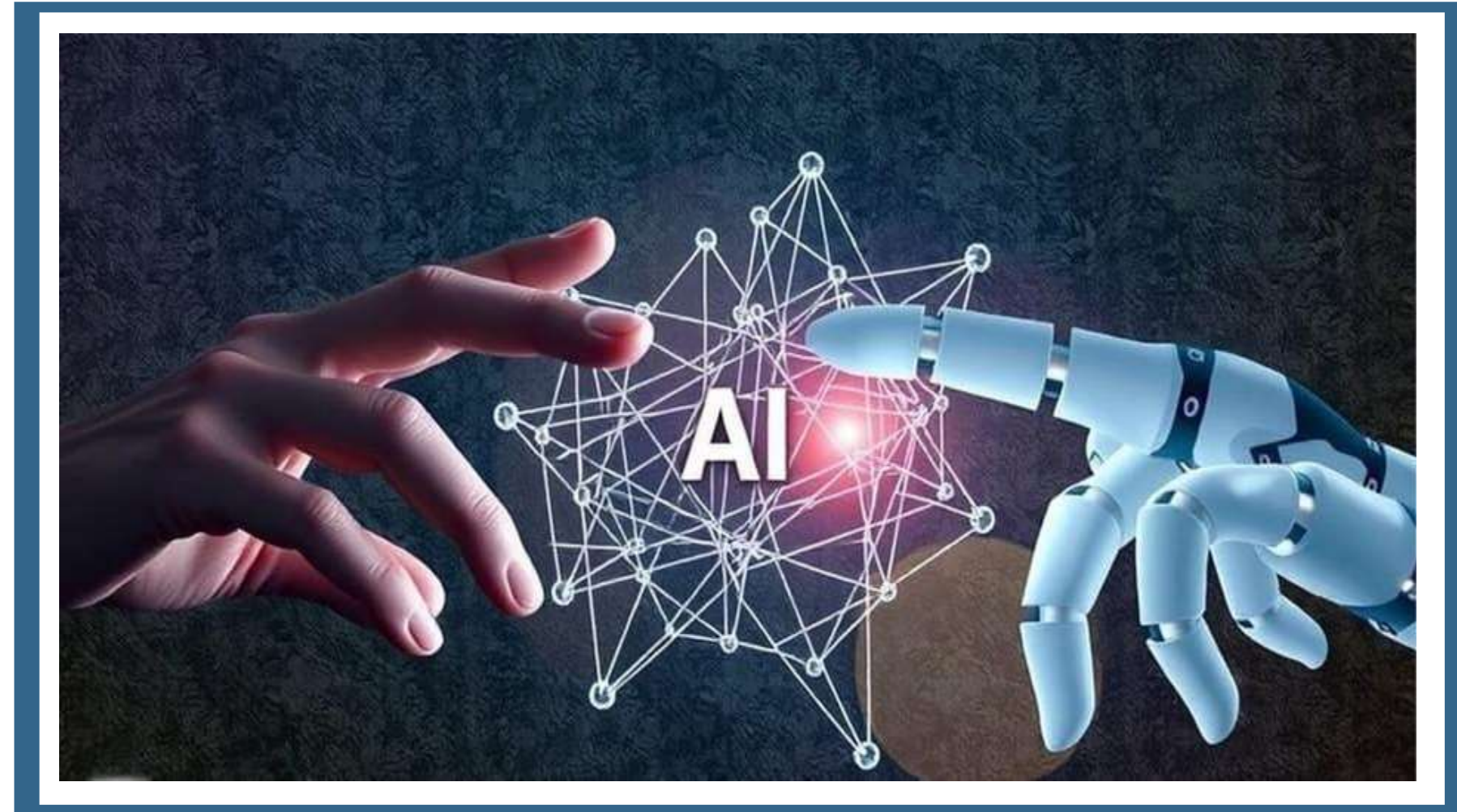
Before we start, let's watch a video

"AI in Education - Two Experiments with Incredible Results"

AI IN EDUCATION
2 EXPERIMENTS

AI Tools in Education

Introduction

AI tools in education leverage machine learning, natural language processing, and automation to enhance various aspects of teaching and learning. From personalized tutoring to efficient grading, these tools streamline processes and empower educators.

AI tools are transforming education by automating repetitive tasks, personalizing learning experiences, and offering new ways to engage students. These tools don't replace educators; they complement their efforts by providing data-driven insights and operational efficiency.

AI Tools in Education

Introduction

- **What Are AI Tools in Education?**

  Technology that uses artificial intelligence to enhance teaching and learning processes

- **Why Use AI in Education?**

  To improve efficiency, enhance personalization, and increase accessibility

- **Goals of AI Tools in Education**

  Supporting educators, enhancing student engagement, and improving learning outcomes.

AI Tools in Education

AI for Personalized Learning

- **Personalized Learning** : Tailoring education to individual needs and preferences each learner's strengths and weaknesses.

- **How AI Supports Personalization** : AI analyzes student performance data to recommend resources and adjust lesson delivery.

- **Examples of Tools** : Adaptive learning platforms like Coursera.

- **Benefits** : Increases engagement, boosts outcomes, and helps address individual weaknesses and learning gaps.

AI analyzes student data, including performance and engagement, to recommend personalized content or adjust the pace of lessons. This ensures that each student learns at a level and speed that suits them best.

AI Tools in Education

AI for Content Creation

- **What is AI Content Creation?** : Tools that assist in generating educational materials, such as quizzes, presentations, or lecture summaries

- **Examples of Tools** : Tools like ChatGPT, Gemini, Copilot, Perplexity, Napkin, Gammas, Canva, NightCafe, Typeform

- **Benefits :** Saves time, ensures quality, and allows for quick customization of materials

AI can assist educators by generating resources like test questions, slide decks, or reading summaries, reducing preparation time and enabling more dynamic content

AI Tools in Education

AI for Inclusivity

- **What is Inclusive Education?** : Ensuring equitable access to learning for all students, including those with disabilities

- **Examples AI Tools for Accessibility** : Text-to-speech, speech-to-text, real-time transcription, and visual aids

- **Examples of Tools** : <u>Microsoft Seeing AI</u>, <u>Otter.ai</u>, Translate, <u>Microsoft Immersive Reader</u>

- **Benefits** : Breaks barriers for students with disabilities or diverse learning needs

AI enhances inclusivity by offering tools that support diverse learning requirements, such as captioning for hearing-impaired students or real-time translation for multilingual learners.

Conversational AI in Education

Conversational AI in Education

Definition of Conversational AI

- **What is Definition of Conversational AI?** : Conversational AI refers to technologies like chatbots and voice assistants that use natural language processing (NLP) and machine learning to simulate human-like conversations

- **Examples** : ChatGPT, Gemini, Copilot, Google Assistant, educational bots like QuizBot

- **Relevance to Education** : Increasing reliance on AI for personalized learning, digital inclusion, and support systems.

Have you ever used a chatbot or voice assistant for professional or educational purposes? What was your experience?

Conversational AI in Education

Advantages of Conversational AI in Education

- **Accessibility** : 24/7 availability for answering queries and providing resources. Supports students in remote and underrepresented areas

- **Personalization** : Tailored responses and learning plans based on individual student needs. Real-time feedback to improve performance

- **Scalability** : Efficient handling of large student groups with consistent responses.

- **Skill Enhancement** : AI as a tutor for language learning, coding, or exam prep through conversational practice.

Conversational AI in Education

Disadvantages of Conversational AI in Education

- **Bias in AI Models** : Potential for biased responses due to training data

- **Dependence on Technology** : Risk of reduced critical thinking or over-reliance on AI tools

- **Privacy Concerns** : Handling of sensitive student data

- **Technical Limitations** : Misinterpretations of nuanced queries; lack of emotional understanding.

Conversational AI in Education

Using Conversational AI in Education

- Administrative Support
- Tutoring and Mentoring
- Collaborative Learning
- Research Support

Conversational AI for Digital Inclusion

- Bridging Language Barriers
- Supporting Students with Disabilities
- Access in Remote Regions
- Closing the Digital Divide

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Using AI Tools AI in Education

NLG AI Chatbots

- ChatGPT
- Copilot
- DeepSeek
- Gemini
- Perplexity
- Tavily

AI Image Generation

- Dal-e
- Designeρ
- NightCafe

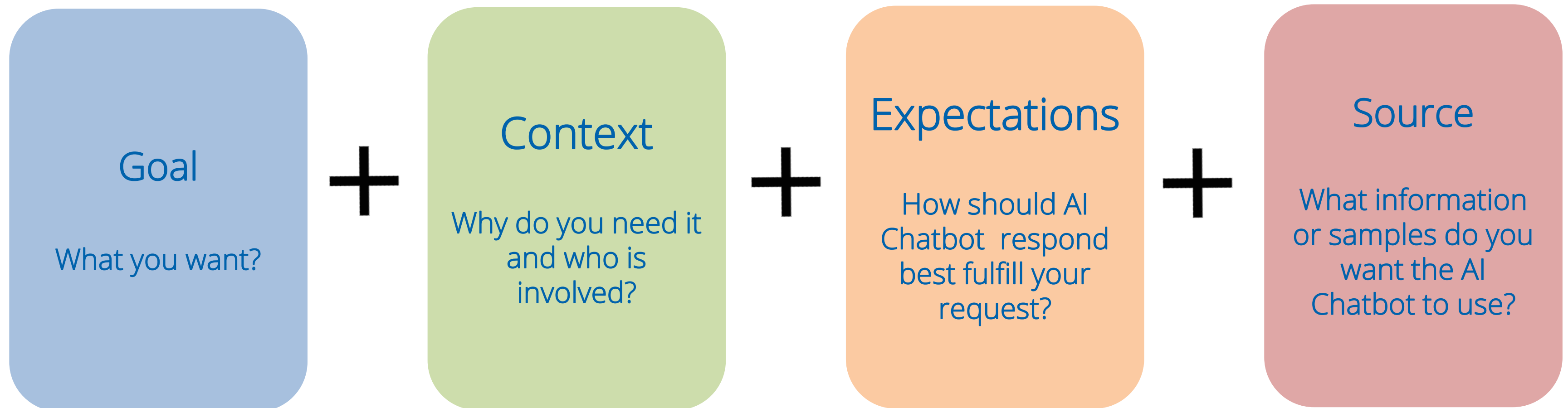## Educational Content

- Canva
- Napkin
- TypeForm

AI Tools for Inclusion

- Immersive Reader
- Seeing AI
- Translate
- Turbo Scribe

Using AI Tools in Education

How to build an effective prompt

Prompts can include 4 parts:

Goal		Context		Expectations		Source
What you want?	**+**	Why do you need it and who is involved?	**+**	How should AI Chatbot respond best fulfill your request?	**+**	What information or samples do you want the AI Chatbot to use?

Using AI Tools in Education

Examples

NLG AI Chatbots

Provide a clear and concise prompt

Good Prompt: *"Create educational materials to teach introductory computer science concepts"*

Better Prompt*: "Create educational materials to teach introductory computer science concepts with an emphasis on the programming module"*

Best Prompt: *"Create educational materials for teaching introductory computer science concepts, emphasizing the programming module for beginners. Include links to the sources you relied on to produce the content"*

Using AI Tools in Education

Examples

AI Image Generation

Prompt 1: *"teaching material for computer science courses, 3d, digital art"*

Prompt 2: *"teaching material for computer science courses with an emphasis on the programming module , 3d, digital art"*

Prompt 3: *"teaching material for computer science courses, emphasizing the programming module for beginners, 3d, digital art"*

Using AI Tools in Educati[on]

Examples

Educational Content

Presentation: *Use Infographics in your lectures*

Tests/Quizzes: *Create easily test or quizzes and share*
them online, check the results immediately

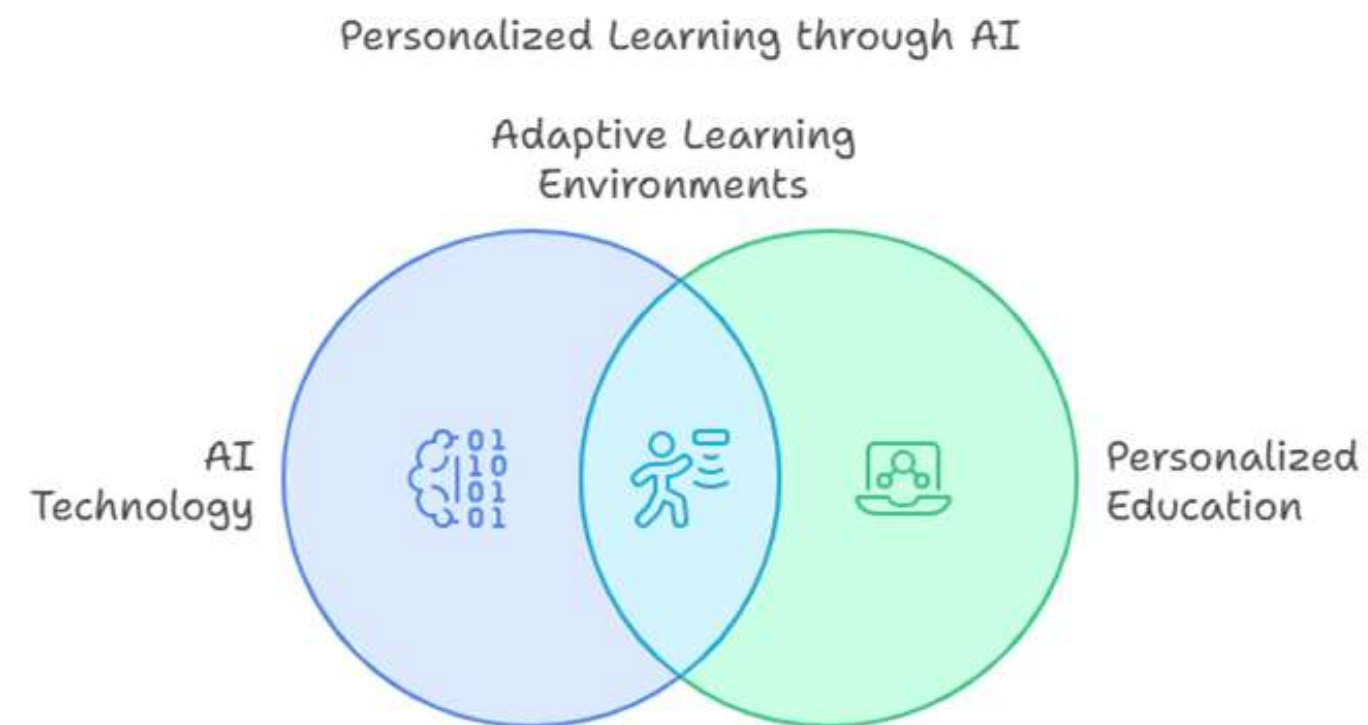Creative tools: *Make creative education materi[al]*

💡 **Good Practices**

The Role of AI in Enhancing Accessibility

Personalized Learning

AI-driven platforms can analyze individual learning styles and preferences, allowing for tailored educational experiences. By adapting content to meet the unique needs of each student, AI can help learners progress at their own pace, thereby fostering a more inclusive environment.

Personalized Learning through AI

Adaptive Learning Environments

AI Technology

Personalized Education

💬 Add a commen[t]

Using AI Tools in Education

Examples

Educational Content

Presentation: *Use Infographics in your lecture*
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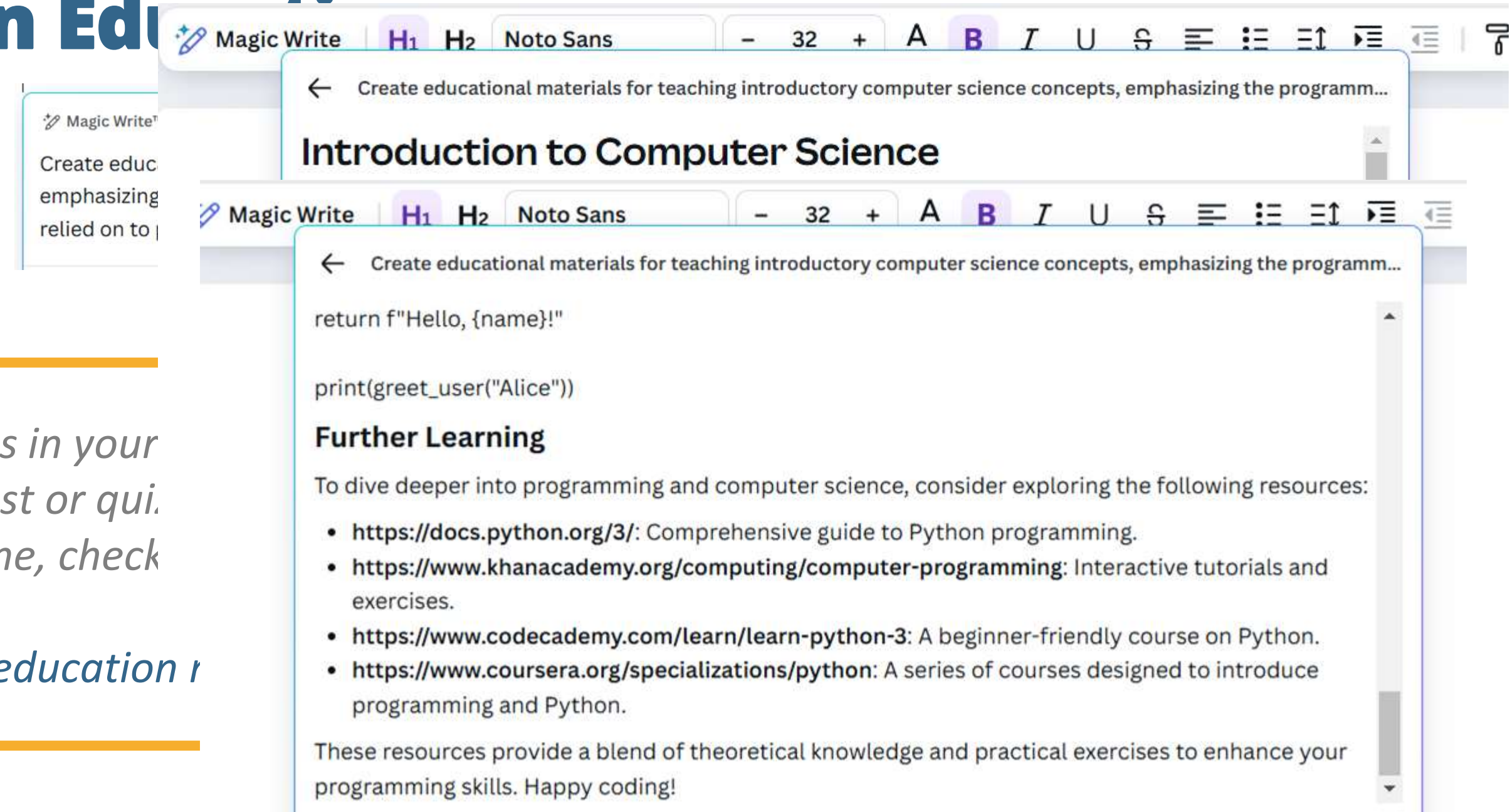
Good Practices

Using AI Tools in Educ...

Examples

Educational Content

Presentation: *Use Infographics in your*

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Creative tools: *Make creative education...*

💡 **Good Practices**

Magic Write H₁ H₂ Noto Sans − 32 + A **B** *I* U S̶

Create educational materials for teaching introductory computer science concepts, emphasizing the programm...

Introduction to Computer Science

Magic Write H₁ H₂ Noto Sans − 32 + A **B** *I* U S̶

Create educational materials for teaching introductory computer science concepts, emphasizing the programm...

```
return f"Hello, {name}!"

print(greet_user("Alice"))
```

Further Learning

To dive deeper into programming and computer science, consider exploring the following resources:

- https://docs.python.org/3/: Comprehensive guide to Python programming.
- https://www.khanacademy.org/computing/computer-programming: Interactive tutorials and exercises.
- https://www.codecademy.com/learn/learn-python-3: A beginner-friendly course on Python.
- https://www.coursera.org/specializations/python: A series of courses designed to introduce programming and Python.

These resources provide a blend of theoretical knowledge and practical exercises to enhance your programming skills. Happy coding!

Using AI Tools in Education

Examples

https://otter.ai/

AI Tools for Inclusion

Seeing AI: *Documents, Surroundings, Barcodes – Voice Recognition and Use to Help the Blind*

Text-to-Speech: Use voice to read text from the screen or display for the blind or speech-impaired

Translation: *Helps people use non-native languages or languages they don't speak well*

Seeing AI
Talking Camera for the Blind

Seeing AI is a free app that narrates the world around you. Designed with and for the blind and low vision community, this ongoing research project harnesses the power of AI to open up the visual world. Seeing AI assists with daily tasks from reading, to describing photos, to identifying products, and more. The app continues to evolve as we hear from the community and AI research advances.

Before leaving, please complete the questionnaire

https://forms.gle/mUgdbv9UC2MjE8rL7

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Do you have any questions?

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Thank you!

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