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AI in Education

25 April 2024

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REALITIES of NOV 2022: launch of GPT

gave rise to accessible LLMs and related apps

- by 2025, expected 750 mil apps will use LLMs
- affects almost every aspect of work and education
- causes necessary changes in current approaches
- needs insightful planning and open-mindedness
- takes up time and energy for planning & changes
- education and training is essential
- resting on laurels is not recommended





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IMPORTANT PEOPLE INVOLVED IN AI IN EDUCATION

Students

Teachers

Institutional Boards





STUDENTS: learn process before AI

EX 1: Excel for econometrics/business/psychology, etc.

PROBLEM:

- Econ professor: set against AI last year
- homework and testing did not make sense
- students used AI to complete homework w/o understanding

SOLUTION:

gave problems in class to work on in Excel and used AI to check it

Students learned to fix AI errors



STUDENTS: learn process before AI

EX 2. Patient interviews for medical students

PROBLEM

- medical students need practice learning how to talk to patients during interviews and appointments

SOLUTION

two UMCG professors created private chatbot

students use AI to practice different scenarios

in-class tests: based on students' practice with AI avatars



STUDENTS: learn process before AI

EX 3. Academic writing students (1st-yrs, masters, PhD)

SOLUTION:

- pre-test without internet (in classroom or exam hall)
- use pre-test text to teach range, coherence, accuracy, structure and/or writing & research processes
- use non-Gen AI to work on skills & writing process
- mid-term without internet to receive detailed feedback
- use Gen-AI to rewrite; see differences; receive feedback
- rewrite paper; peer review
- post-exam without internet



TEACHERS: be ready for change

- curriculum changes and/or learning objectives?
 - how to ensure non-use of AI and/or responsible use
 - critical thinking skills: ethics, limitations, perspectives, etc.
- adjustments to lesson plans
- change activities for [in-class] process learning/feedback
- change assessments for process learning & critical thinking
- use Gen-AI for students to critique:
 - differences; shortcomings; components per rubrics
- change post-assessment procedures
- initiate changes in technical approaches (chatbots, activities...)



INSTITUTIONS: support change/progress

- Develop clear policies and guidelines
 - teaching, research, student work
 - specific consequences for misuse
- Focus on equity and inclusion:
 - bias-free marketing/advising & equal access to AI tools for all
- Support faculty in curriculum/course design
 - invest in responsible AI tools (with ethical considerations)
 - training for AI-friendly activities; AI-resistant assessments
 - training in critical thinking lesson applications
- Establish AI review committees
 - review practices, ensure responsibilities; assess effectiveness
 - maintain readiness and awareness of new developments



TAKEAWAYS

1. **Students** need to learn processes before using AI to complete work; be responsible and ethical learners; use critical thinking skills to assess AI products against own capabilities
2. **Teachers** need to be ready to change:
 - a. curriculum & learning objectives;
 - b. lesson plans & activities;
 - c. think of the future
3. **Institutions** need to prepare:
 - a. policy
 - b. accessibility
 - c. teacher training





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the two professors' chatbot site:

<https://zorgscenar.io/>



Bob the teacher 

Example bots 

 Bob the teacher

Please let me know how I can give students better and more responsible experiences with AI in their learning.


That's a great learning objective! Let's start by exploring how AI can be integrated into educational settings in a way that enhances the learning experience for students in a responsible manner.

First question: Can you describe two ways AI technology is currently being used to support education?

Two ways I know of is to have students use non-generative AI to help organize their ideas into logical order for presentations or essays. Another way is for teachers to use AI to support their curriculum with innovative ideas for activities.

[LEVEL 3]: Excellent response! You've correctly identified two valuable uses of AI in education. Utilizing non-generative AI to help students structure their ideas can significantly improve their writing and presentation skills by offering suggestions on how to logically order their thoughts. Additionally, AI can indeed support teachers by providing innovative ideas for curriculum activities, making lessons more engaging and tailored to individual learning preferences. This not only enhances the learning experience but can also inspire creativity and critical thinking among students.

Now, building on your understanding, how do you think AI could be used to personalize learning experiences for students, taking into consideration their individual learning styles and needs?

Begin hier het gesprek 

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My tools list for teachers, students, and researchers:

<https://tinyurl.com/2xmvflon>