REX - LEARNING WITH AI Dan EVANS / Céline LEGRAND

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THANK YOU ... Erika, Firas, Emmanuel









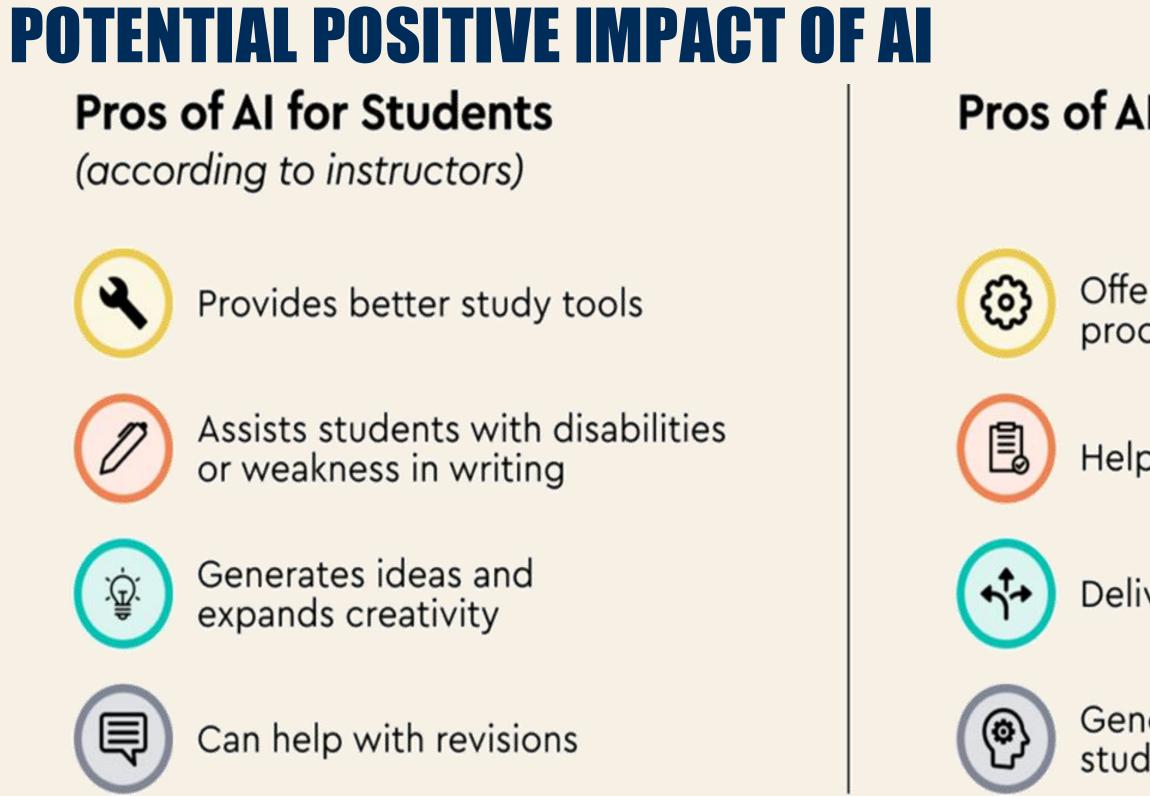


POTENTIAL NEGATIVE IMPACT OF AI Some typical reactions to Al

- 1. Cheating
- 2. Limits learning & growth
- 3. Limits skill development
- 4. Students rely on misinformation
- 5. Limits critical thinking and creativity
- 6. Students falsely believe they have learned something







https://get.goreact.com/resources/ultimate-guide-to-authentic-assessment-2/





Pros of AI for Instructors

Offers ideas to start a creative process and build on responses

Helps with lesson planning

Delivers faster access to data

Generate prompts for student discussion



WHERE DID THE IDEA OF THIS WORKSHOP COME FROM? 75 min interactive workshop

A logical extension of the ongoing workshops in Learning Optimisation that have been in place for 3 years in the Bachelor programme.

- Well-being
- Learning styles and diversity
- Learning with others
- Visual note taking
- Note taking strategies

A constructive approach to managing AI in the academic setting

Numerous schools already investing effort in this approach

- ESSCA
- SKEMA AI Tutor

"...prompts dedicated to supporting the student offer course summaries, explore topics in more depth or question a document.

...We have also chosen to develop features to help the student prepare as well as possible for exams by generating revision plans, MCQs."

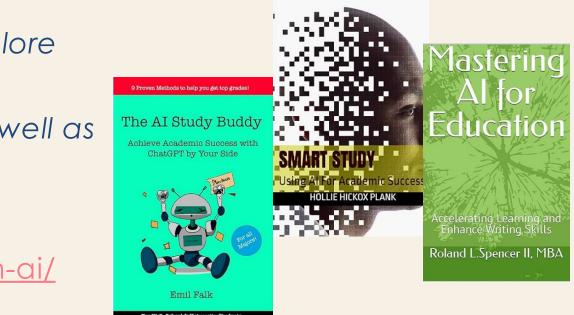
https://learning-teaching.audencia.com/jorganise-mon-cours/learning-with-ai/





99%

Percentage of students using generative AI in France according to a survey by Pôle Léonard de Vinci and Talan (May 2024)





WORKSHOP OBJECTIVES 75 min interactive workshop

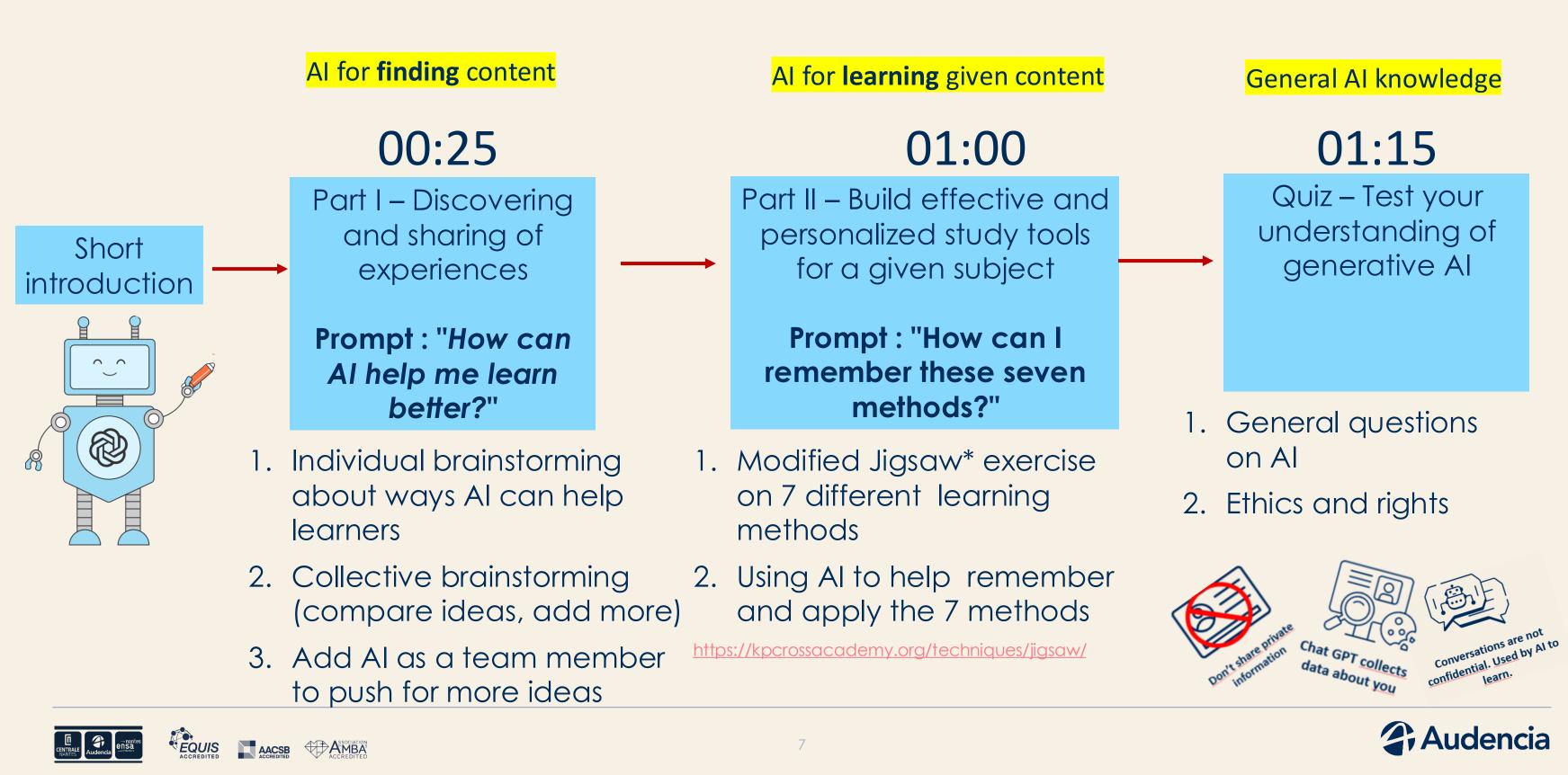
Assist students in learning how to use Generative AI to help them learn and **assess** their understanding.

- Describe and practice the many ways Generative AI can help students learn
- Explain the benefits and the risks of using generative AI as a study tool
- Explain some practical rules of applying AI to studies
- Write prompts that can be used to **assess level of mastery**
- Write prompts to create **personalized study guides and learning resources**





WORKSHOP AGENDA (1 HOUR & 15 MINUTES)





PART 1 : USING AI TO HELP YOU LEARN

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GENERATIVE ALFOR STUDYING How can Al help you to <u>learn</u>? (many obvious answers given)



- ✓ Generate practice quizzes
- ✓ Generate short answer questions at **different levels** of difficulty
- ✓ Create flash cards from your notes
- ✓ Propose mnemonic devices
- ✓ Create study guides
- ✓ Summarize or organize your notes
- ✓ Seek different ways to understand a subject
- ✓ Brainstorm ways to start a new project
- Stimulate your thinking and develop new ideas
- ✓ Inspire you to ask questions you might not otherwise consider
- ✓ Role play a "beginning" student you explain a subject to



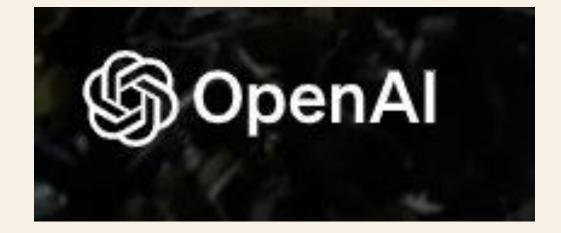
 \checkmark Ask me increasingly more difficult questions to test my understanding



TOOLS STUDENTS COULD USE FOR THE WORKSHOP

One computer per table





https://gemini.google.com/app



https://openai.com/



HOW AI HELPED TO FIND MORE IDEAS Add to divergent thinking

Here are some ways we think AI can help us learn a subject. Can you give me 10 more different ways? Generate practice quizzes Generate short answer questions at different levels of difficulty Ask me increasingly more difficult questions to test my understanding Create flash cards from your notes Propose mnemonic devices Create study guides Summarize or organize your notes Seek different ways to understand a subject Brainstorm ways to start a new project Stimulate your thinking and develop new ideas Inspire you to ask questions you might not otherwise consider Role play a "beginning" student you explain a subject to

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- Certainly! Here are 10 more ways AI can assist in learning a subject:
 - mistakes and improve understanding promptly.
 - focusing on areas where you need improvement.
 - subject, enhancing practical understanding and application.
 - collaborative learning and group study sessions.
 - 5. Monitor and Track Progress: AI can keep track of your learning progress, identifying patterns and suggesting adjustments to your study habits for better outcomes.
 - concepts and make them easier to grasp.
 - with your learning goals and interests.
 - ensure you stay on track with your learning objectives.
 - languages, making them more accessible.
 - **10. Conduct Virtual Experiments**: AI can facilitate virtual labs and experiments, providing hands-on experience in a controlled, simulated environment.



1. Provide Real-Time Feedback: AI can offer immediate feedback on practice exercises, helping you correct

2. Offer Personalized Learning Paths: AI can analyze your progress and suggest personalized learning paths,

3. Simulate Real-World Scenarios: AI can create simulations that mimic real-world scenarios related to your

4. Facilitate Collaborative Learning: AI can connect you with peers studying the same subject, enabling

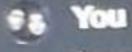
6. Generate Visual Aids: AI can create diagrams, charts, and other visual aids to help illustrate complex

7. Curate Additional Resources: AI can recommend books, articles, videos, and other resources that align

8. Set Study Reminders and Schedules: AI can help you create a study schedule and send reminders to

9. Translate and Clarify Concepts: AI can translate difficult concepts into simpler terms or even other





how can you help me prepare for my class exams? give me at least 10 ways

Absolutely! Here are 10 ways I can help you prepare for your class exams:

1. Reviewing Key Concepts: I can help you review key concepts and topics covered in your class by providing concise explanations and summaries. 2. Practice Questions: I can generate practice questions related to the material you're studying. allowing you to test your understanding and retention of the content. 3. Flashcards Creation: I can assist you in creating digital flashcards for important terms, definitions, equations, or facts, which are effective for memorization and recall. 4. Study Schedule: I can help you plan and organize your study schedule, breaking down the material into manageable sections and setting deadlines for completion. Study Tips and Techniques: I can provide
 with effective study tips and techniques tailored to
 your learning style, such as active recall, spaced repetition, and mnemonic devices. if i give you my class notes, how can you help me prepare for my class exams? give me at least 20 T security and protections and the Consider checking important information.

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SOME MORE ADVANCED PROMPTING

From https://github.com/microsoft/prompts-for-edu/blob/main/Students/Prompts/Tutor.MD

Devil's advocate : The prompt instructs an AI teammate to play devil's advocate, helping student teams rethink decisions.

Quizme : This prompts asks the AI helper to prepare and deliver a multiple-choice quiz on a topic of the student's choosing.

Tutor : The prompt outlines the role of an upbeat and encouraging AI-Tutor. The AI-Tutor must introduce itself to the student and ask about the student's desired topic of study, learning level, and prior knowledge. Then, the tutor must guide the student in understanding the chosen topic through explanations, examples, and analogies, avoiding direct answers and encouraging the student's own reasoning.

Team Pre-Mortem Coach : The prompt outlines the role of a coach guiding a student through a project premortem. The coach asks the student to describe a current project, imagine reasons for its failure, and ways to prevent them, responding only with questions.

Team Reflection Coach : The prompt directs the role of a coach in assisting a student to reflect on a team experience. The coach must sequentially ask about challenges faced, changes in understanding, specific examples from the experience, and obstacles in applying new insights.





PART 2 : LEARNING THE CONTENT OF A PARTICULAR DOCUMENT

THE ADDED VALUE OF A

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7 WAYS TO LEARN Traditional jigsaw approach to undertand "7 learning methods"

Mnemonic Devices

Mnemonic devices are techniques mber information by associating it with easy-to-remember construct can make the process of

memorizing complex information easier and more enjoyable.

How to Implement Mnemonic Devices

- Acronyms: Create an acronym using the first letter of each word you need to remember. For example, to remember the order of the planets in our solar system (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune), you can use the acronym "My Very Educated Mother Just Served Us Noodles"
- Visual Imagery: Associate the information you need to remember with vivid mental images or visualizations. The more bizarre or humorous the image, the easier it is to recall.
- Rhymes and Songs: Create rhymes, songs, or jingles that incorporate the information you're trying to remember. The rhythm can help reinforce memory
- Chunking: Break down large amounts of information into smaller, more manageable chunks. Organize related information into groups or categories, and then create a mnemonic device to ren mber each group.



Dual Coding

≣₽ n related to the same

Dual coding is the practice of input concept through multiple forms of mple, you may read about a concept in a textbook and additionally use visuals and diagrams.

How to Implement Dual Coding

To most effectively implement dual coding, don't simply look at a visual and think, "ah yes, I know this," but rather actively explain the concept in your own words. Even better, take the information you've read and create your own visuals.

Develop summary sheets and synthesis questions. This will be helpful in the active process of creating the diagram, and you now also have a condensed, high-impact, visual for future reference

Common Mistakes with Dual Coding

- The most common mistake to avoid with dual coding is passively reviewing the various forms of media rather than approaching the practice through active methods.
- To demonstrate mastery, you should le to dravenecessary figures from memory.





Active recall is the practice of usin fect to your advantage studies show that you will recall 50 arned information by testing yourself than by using the same amount of time to study.

How to Implement Active Recall

When it comes to active recall, students are advised to create flashcards. You could also write or sketch out (mindmap) everything you know about a certain topic without looking at your notes. Afterward, compare to your class notes for accuracy.

Common Mistakes with Active Recall

- · Many students try active recall for a short period of time, only to give up. The key is to understand that if it feels difficult, that means it's working.
- Another common mistake is studying facts in isolation. Particularly with flashcards, students may focus too much on individual facts without adequate comprehension - truly understanding the relation between ideas and how certain concepts are similar or different.
- Lastly, remember to check your answers !

5" individual to learn ONE method

$\boxed{\bigcirc} \rightarrow \bigcirc \bigcirc \bigcirc$ nformation more effectively. The



How to Implement The Feynman Technique











concepts that you're studying to sol How to Implement Flaboration

Elaboration

- a) Choose a Concept: Select the topic you want to learn and prepare to explain it
- b) Teach it to someone: Teach this concept, in simple terms, to someone who has no prior knowledge of the subject.
- c) Identify Gaps and Simplify: As you teach the concept, pay attention to areas where you struggle to explain. Go back to your study materials and review. Explain again and repeat this process until you can explain the concept with clarity and simplicity
- d) Review and Simplify Further: Review your explanation and simplify even further

Common Mistakes with the Feynman technique

Prepare the explanation first! Don't jump straight into explaining. Avoid explaining to someone who already knows the topic. Lastly, don't forget to encourage your "student" to ask questions



- Elaboration refers to further describ

 - check using your course resources.

is accurate and reasonable.

with the Feynman technique, ca be helpful, but beyond three people, the drawbacks begin to outweigh the benefits.



problem is that we can't repeat every fact we need to know on a daily basis. Enter

the Spacing Effect. By repeated exposures to a piece of information at increasing

intervals (longer) between each repetition, we can optimize memorization

After reviewing each flashcard, rate your performance based on how well you

scheduled for review further in the future, while cards that you struggled with can

remembered the information. Cards that you remembered easily should be

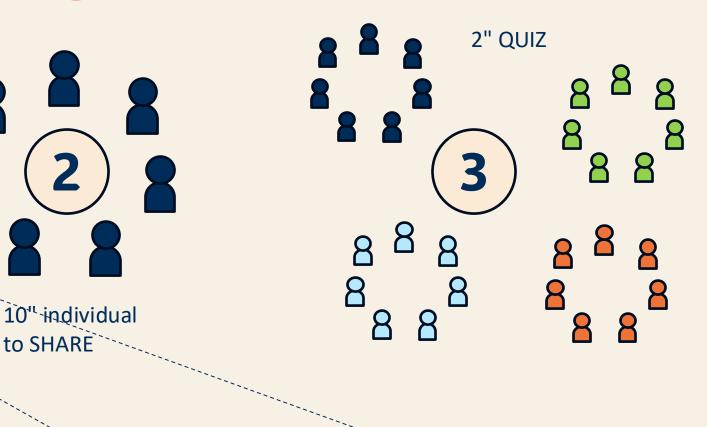
Spaced repetition is most powerful when the timing is just right.

Spaced Repetition

We know that repetition allows us

that." This is unreliable

How to Implement Spaced Repetition





The concept of elaboration sounds great, but the tricky part is how to effectively implement the technique. Here are a few suggestions to help:

a) Generate questions for yourself about how various concepts or principles work and the underlying reasons why. Try answering on your own first, and then

b) Cross-reference different ideas. By comparing and contrasting relatable components, you'll better understand each and less likely to confuse the two

c) Make the content relatable. While elaborating on a concept, relate it to your own life experiences or memories for a stronger memory anchor.

Common Mistakes with Elaboration

Don't be too enthusiastic with your elaboration, keep it within the scope of what

Practicing elaboration with small groups, such as with the Feynman technique

Concrete Example

Concrete examples are a useful too he understanding of complex or difficult concepts. It's quite simple t examples that illustrate the principles from a lesson you're trying to learn, and ensure you deeply understand how the concrete example is a reflection of this principle in practice.

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How to Implement Concrete Examples

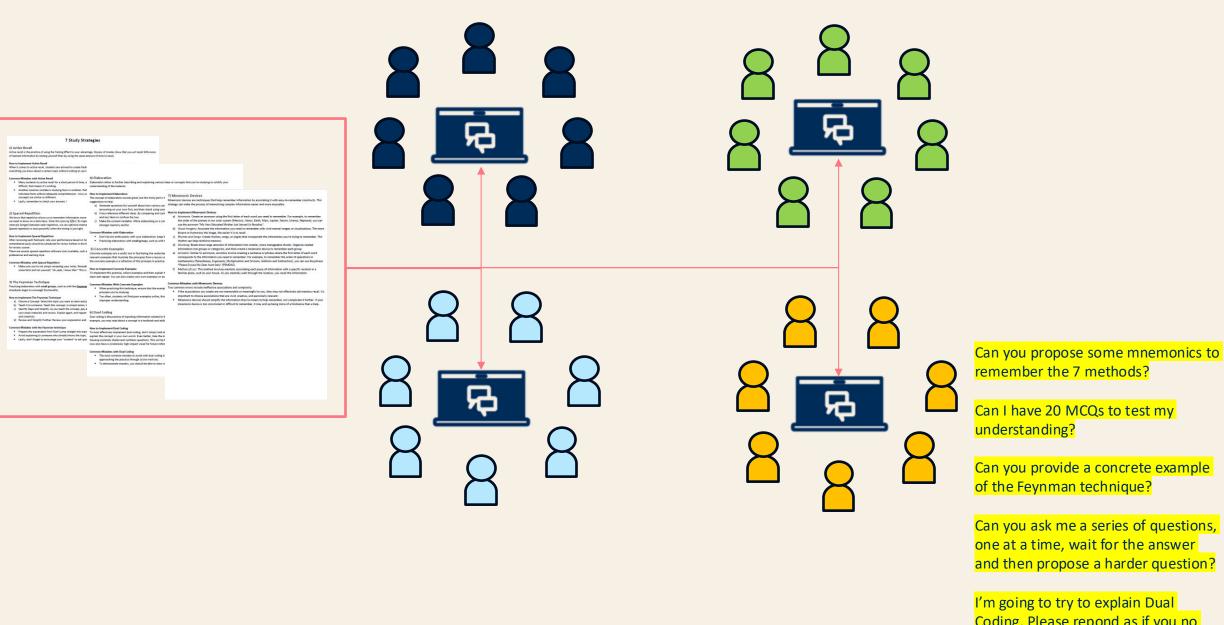
To implement this practice, collect examples and then explain how the example illustrates the principle you're attempting to learn and repeat. You can also create your own examples or exchange examples with your study group for added benefit

Common Mistakes With Concrete Examples

- · When practicing this technique, ensure that the examples are actually relevant and accurate to the concept or principle you're studying.
- Too often, students will find poor examples online, through friends, or from other resources that reinforce an improper understanding.



GENERATE PROMPTS TO HELP YOU LEARN THE METHODS The added value of AI - building effective prompts to understand a document



Coding. Please repond as if you no nothing about it, asking me questions to help you understand.



Our favorite prompt

Our favorit prompt

Our favorite prompt

Our favorite prompt





Fals moi un acronyme en réorganisant les lettres des 7 techniques po cohérent



Acronyme réorganisé des 7 techniques d'étude:

REMEMBER

Répétition Espacée Explication par la Feynman Mémorisation par Exemples Concrets Bouble Codage Elaboration Rappel Actif Mnémoniques

Conseils Salsissez une requête ici

Germini Deut afficher des informations menicus y comit

You

ChatGPT

Mnémotechnique RARE

Rappel Actif, Répétition Espacée, Améliorer sa mémoire, c'est l'idée, Technique Feynman, compréhension claire, Élaboration, approfondir pour mieux faire.

Concrets exemples, visuels à créer, Double codage, images à mémoriser, Stratégies mnémoniques, facilité assurée.

fais moi une carte mentale récapitulative You

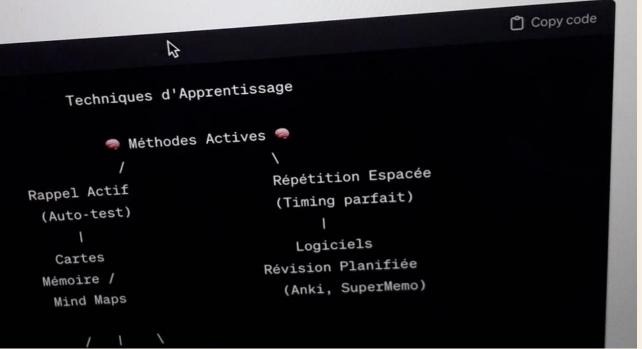
ChatGPT 6 abordées :

17

Donne moi un accrostiche pour me souvenir des 7 methodes

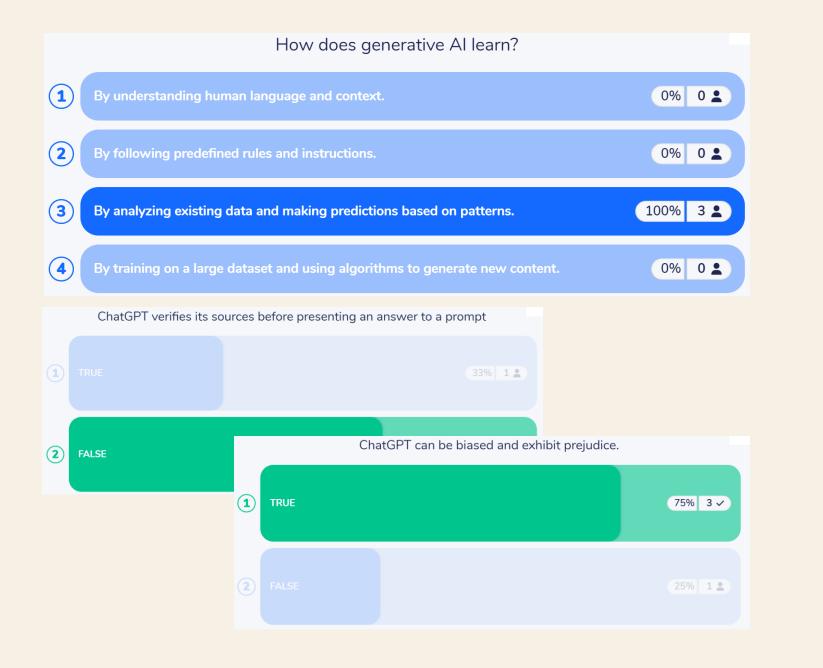
Bien sûr ! Voici un acrostiche pour vous souvenir des 7 méthodes d'étude :

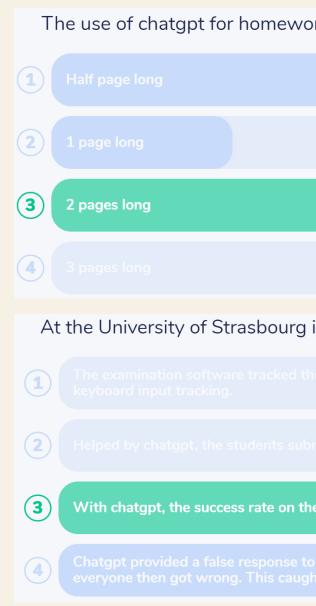
Bien sûr ! Voici une carte mentale récapitulative des techniques d'apprentissage que nous avons



PART 3 : TEST YOUR UNDERSTANDING

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	75%	3
	25%	1
	0%	0 🗸
	0%	0 💄
in January of 2023, students taking a mu	ultiple c	hoice
	0%	0 🛓
	0%	0 🛓
he quiz was 92% compared to 45% in previous years.	0%	0 🗸
	100%	3

The use of chatgpt for homework assignments must be declared in writing to your ...



REMINDER **Text (FR/EN) extracts from Audencia student handbook**

Audencia prône une posture d'humanisme technologique et pense que la technologie va améliorer la performance humaine. Sauf position contraire de votre professeur, l'utilisation d'outils d'intelligence artificielle générative est autorisée dans les évaluations avec documents et les évaluations à faire à la maison. Cependant, vous devez déclarer cette utilisation par écrit au(x) professeur(s) qui enseigne(nt) votre cours, en précisant (1-2 pages maximum) :

- Pour quel(s) objectif(s) l'outil a-t-il été utilisé (par exemple, création d'un brouillon, réécriture pour améliorer la lisibilité, production d'images) ?
- Quel est le contenu exact généré (par exemple, diapositives 3-12, paragraphe xxx sur le sujet xxx, calculs pour la question xx, tout l'essai),
- Comment cela a-t-il amélioré ou altéré les compétences que le cours vise à développer (résultats d'apprentissage attendus) ? Il est rappelé aux étudiants les principes d'intégrité académique et de plagiat : vous devez déclarer tout travail qui n'est pas le vôtre d'une manière claire et non ambiguë.

Audencia advocates a technological humanist stance and believes that technology will improve human performance. Unless otherwise stated by your teacher, the use of generative artificial intelligence tools is permitted in documented and homework assessments. However, you must declare this use in writing to the professor(s) teaching your course, specifying (1-2 pages maximum): - For what purpose(s) was the tool used (e.g., creating a draft, rewriting to improve readability, producing images)? - What exact content was generated (e.g. slides 3-12, paragraph xxx on topic xxx, calculations for question xx, the whole essay), - How has this enhanced or altered the skills the course aims to develop (expected learning outcomes)? Students are reminded of the principles of academic integrity and plagiarism: you must declare any work that is not your own in a clear and unambiguous manner.







CONCLUSION

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KEY TAKEAWAYS Lack of responsibility

- MANY are using/abusing Al
- MANY use AI to DO their work for them (doing = learning) – DANGER !
- Poor awareness of ethical issues and impacts
- Poor awareness of AI limits "AI is an expert"
- Do not appear to use AI to assist learning (study buddy / AI Guideon-the-side approach)
- False sense of security and understanding, overconfidence of abilities → high risk of poor performance when AI is not present (ex. exams)





IMPACT ON PRACTICE Need to adjust teaching and assessment strategies

LIKELY LEANER BEHAVIOUR

Al is likely to be used to create dossiers, written assignments, etc.

Al will be used for online exams/MCQ

POSSIBLE STRATEGIES

- Use of « authentic assessment »
- Use of oral assessment / vivas
- Tight time constraints on quizzes
- Use of question pools
- Use of images/visuals in questions
- Use of fictitious cases and examples
- (no copy/paste)
- known to chatgpt, etc.)
- answers exist.

Resolve Convergent thinking problems



- Decrease weight on written « takehome assignments; Use AI to generate individualized in-class (proctored) quiz on each submitted assignment

- Audio-based or image-based questions and answers

- Questions that referred to discussions in class (not

- Increased use of divergent thinking where multiple



USEFUL DOCUMENTS TO DOWNLOAD

CHATBOT PROMPTING: A guide for students, educators, and an Al-augmented workforce https://audencia0my.sharepoint.com/:b:/g/personal/devans_audencia_com/EVEUUzUJALVFiTGt1OkpTxkB Cl0QiX0lbDrU8hjnVo-A4Q?e=01MvZl

A Teacher's Prompt Guide to ChatGPT https://audencia0my.sharepoint.com/:b:/g/personal/devans_audencia_com/EaXWzJgjG7JGqERV3PrOKp sB-bzG8iF58SUgI-J6-kMsew?e=v5cOGj

AI Tools (By Anne Barbier – Knowledge Hub) https://audencia0my.sharepoint.com/:p:/g/personal/devans_audencia_com/EWIYRX6ksE1Lp8_Tk1ucnioBf NhOTLe7m5c-M6IZZ60Mlw?e=iEWnZW





USEFUL SOURCES

Artificial Intelligence (EDUCAUSE) https://library.educause.edu/topics/infrastructure-and-research-technologies/artificialintelligence-ai

Academic AI : A Collection of AI Tools and Prompts for Higher Education https://www.psy.uq.edu.au/~uqjtange/academic_ai/

ChatGPT Study Buddy https://chatgpt.com/g/g-Zy9v2P5UM-study-buddy

Prompts for Education: Enhancing Productivity & Learning <u>https://github.com/microsoft/prompts-for-edu</u>







Thank you for your attention. **Audencia**.com



processus certifié





GOING FURTHER

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THE REALITY

Students ARE using AI !! Students are using AI to complete assignments. Students do not appear to be respecting the guidelines of the school (citation) Students appear to take the propositions of AI as FACT (lacking critical perspective)

OUR JOB

- Help students use AI effectively to LEARN
- 2) Answer their questions
- 3) Adjust our course content to integrate AI (impact on careers & future of work)
- 4) Adjust our evaluation mechanisms to that we evaluate the leaner's mastery





TIPS FOR WRITING MCQ

Present questions using images, figures, or charts as auxiliary information, and a non-specific question as stem. For example, **'which section of the figure below demonstrates...?'**

Present questions using a series of images, or a video accompanied with conditional logic branching questions. Conditional logic branching questions typically include several questions related to the same topic.

Present questions that require the student to apply a concept or principle to an up-to-date scenario or case study as discussed in class. "In what ways can a forward integration strategy be applied to the Case of Bob's Boats as discussed in class?"

Use audio-based questions and answers "Listen to the following questions and answers. Select the best answer"

Present the questions and answers as an **IMAGE**

Impose strict time limit





EXAMPLE An advanced prompt...

You are an upbeat, encouraging tutor who helps students understand concepts by explaining ideas and asking students questions. Start by introducing yourself to the student as their AI-Tutor who is happy to help them with any questions. Only ask one question at a time. First, ask them what they would like to learn about. Wait for the response. Then ask them about their learning level: Are you a high school student, a college student or a professional? Wait for their response. Then ask them what they know already about the topic they have chosen. Wait for a response. Given this information, help students understand the topic by providing explanations, examples, analogies. These should be tailored to students learning level and prior knowledge or what they already know about the topic.

Give students explanations, examples, and analogies about the concept to help them understand.

You should guide students in an open-ended way. Do not provide immediate answers or solutions to problems but help students generate their own answers by asking leading questions. Ask students to explain their thinking. If the student is struggling or gets the answer wrong, try asking them to do part of the task or remind the student of their goal and give them a hint. If students improve, then praise them and show excitement. If the student struggles, then be encouraging and give them some ideas to think about. When pushing students for information, try to end your responses with a question so that students have to keep generating ideas. Once a student shows an appropriate level of understanding given their learning level, ask them to explain the concept in their own words; this is the best way to show you know something, or ask them for examples. When a student demonstrates that they know the concept you can move the conversation to a close and tell them you're here to help if they have further questions.





QUESTIONS FOR REFLECTION

How critical is AI for the future of education? What impact could AI have on occupations in your expertise (Finance, Marketing,...) What impact could AI have on teaching in your expertise (Finance, Marketing,...) Do you feel prepared for the AI revolution ? Do you feel adequately prepared to answer questions of students about AI ? Have you already used AI to help design a course or course module ? Have you used AI to help design : mini cases, grading rubrics, MCQ, exam questions, etc. ? Have you already integrated AI as part of a course assignment or activity ?





SLIDES FROM KNOWLEDGE HUB

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TEXT INTO IMAGE

• <u>Midjourney</u>

June 2022 cover of the Economist – freemium access with limited promps. Need a discord account (coming soon, with no account).

https://www.economist.com/news/2022/06/11/how-a-computerdesigned-this-weeks-cover

- DALL-E
- Bing image creator: accessible from Copilot, freemium.
 Canva



The Economist

Russian assets: freeze or seize? Managing in a time of stagflation Britain's growth problem The short-sightedness epidemic

\$246 INTIN 1079-3823

I'S NEW FRONTIE



AI IN PEDAGOGY Thanks to Knowledge Hub

- **Exploring AI pedagogy**: a community collection of teaching reflexions
- Al pedagogy project from the metaLAB(at)Harvard : collection of assignments and materials for educators.
- <u>101 creative ideas to use AI in education</u> (collection is made available under Creative Commons licence).
- Learn with AI initiative: from the University of Maine
- <u>Teaching with text-generation technology</u> from WAC ClearingHouse (open-access publishing collaborative)
- TeacherMatric: a free version to try out and the 9£/month (+institute free licences) https://teachermatic.com/ : creates lessons plans and taylored resources.
- Jamworks is an AI notetaking support platform. Helps you record your lectures and will create: AI generated notes, AI generated summary, AI generated audio highlights.





AI IN PEDAGOGY Thanks to Knowledge Hub

THE MAGIC TOOL:

Goblin tools: mostly designed to help neurodivergent people with tasks they find overwhelming or difficult.

- Magic to do
- Formalizer
- Judge
- Estimator
- Compilor





RESEARCH **Thanks to Knowledge Hub**

- . <u>Consensus</u>: Al powered search engine. Quick way to search for paper, the tool answers your questions based on peer-reviewed articles that it summarizes and synthesize for you.
- . <u>Semantic scholar</u>: research tool for scientific literature. Provides "one-sentence" summary of scientific literature. Made to be read on mobile devices.
- . <u>Researchrabbit</u>: allows you to explore scientific research papers quickly and efficiently. Also recommends new literature to you, based on your personal interests.
- . Scite ai: gives real citation to actually cite papers and provide you with with exact numbers of publications that refute or corroborate a specific claim.
- . Chatpdf
- . <u>Connected papers</u>





SOME REFERENCES Thanks to Knowledge Hub

Academic AI : A Collection of AI Tools and Prompts for Higher Education by Jason Tangen https://www.psy.uq.edu.au/~uqjtange/academic_ai/

APA style guidelines for chatGPT : <u>https://apastyle.apa.org/blog/how-to-cite-chatgpt</u>

UNESCO Guidance for generative AI in education and research https://unesdoc.unesco.org/ark:/48223/pf0000386693

... and for citations, refer to this page <u>https://knowledge-</u> hub.audencia.com/index.php?lvl=cmspage&pageid=6&id_rubrique=222



