wbs
WARWICK BUSINESS SCHOOL
THE UNIVERSITY OF WARWICK

For the Change Makers

Dr. Isabel Fischer

Dr. Neha Gupta

Information Systems,
Management and Analytics

AI

in the classroom

October 2023

Agenda

Isabel Fischer

- Contextual overview
- Opportunities and Risks of AI in Education (findings from a task and finish group)
- Pedagogic advice when incorporating innovative content in the classroom
- Some very easy examples

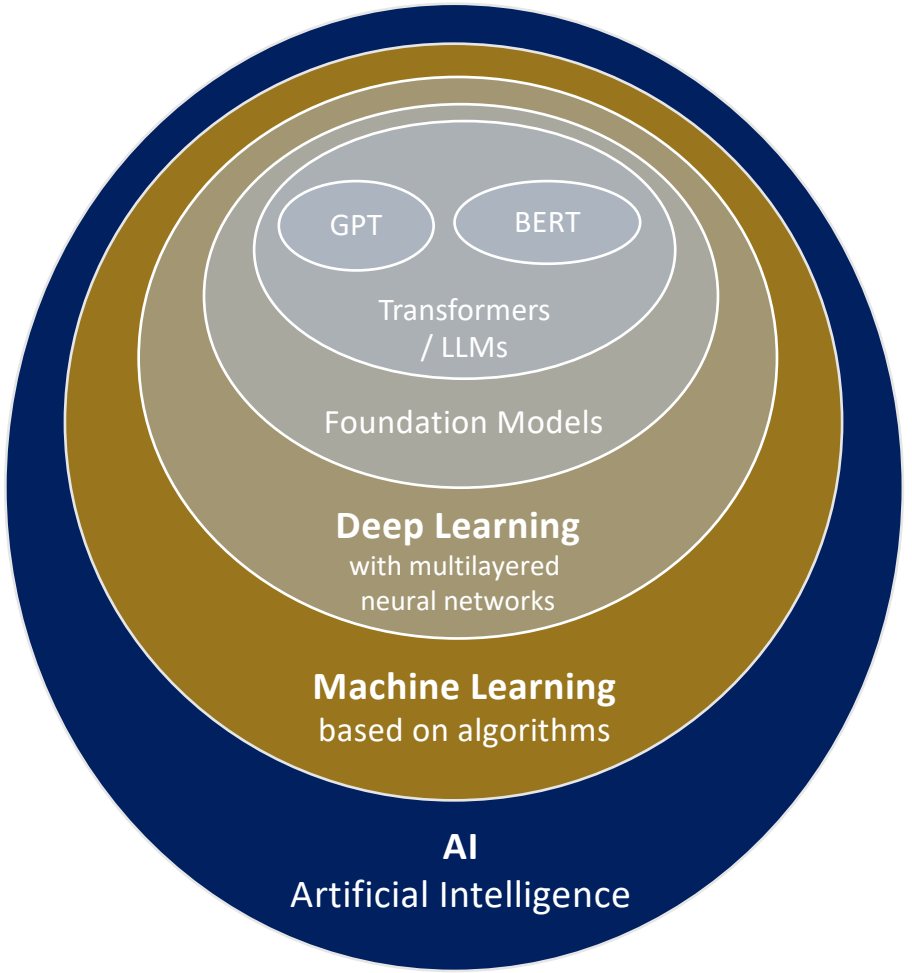
Neha Gupta – AI use in Practice, Four Use Cases

- Prompt Engineering (for text and image generation/analysis)
- Automatic Text Transcript using *Speech Texter*
- Paraphrasing – *QuillBot*
- Create a slide deck – *Gamma*, *ChatGPT* and *Microsoft*

Isabel Fischer

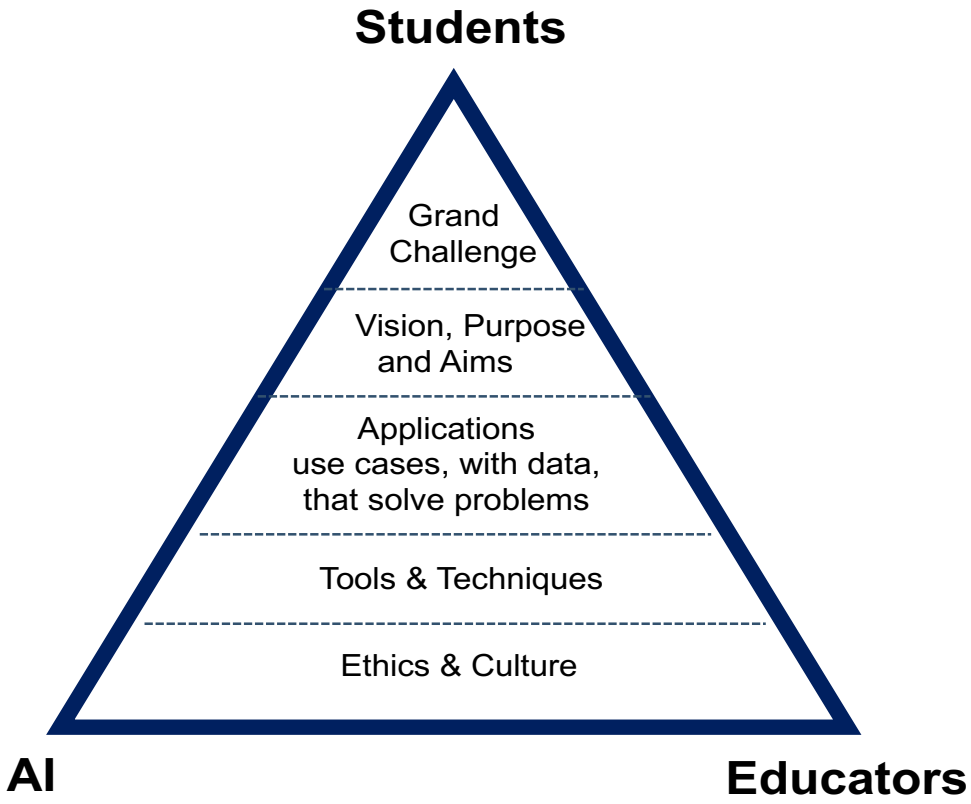
- Opportunities: In-house AI-based formative feedback tool for essays and dissertations
- Students' reaction
- Next steps

There is no single AI, we are using AI as an umbrella term



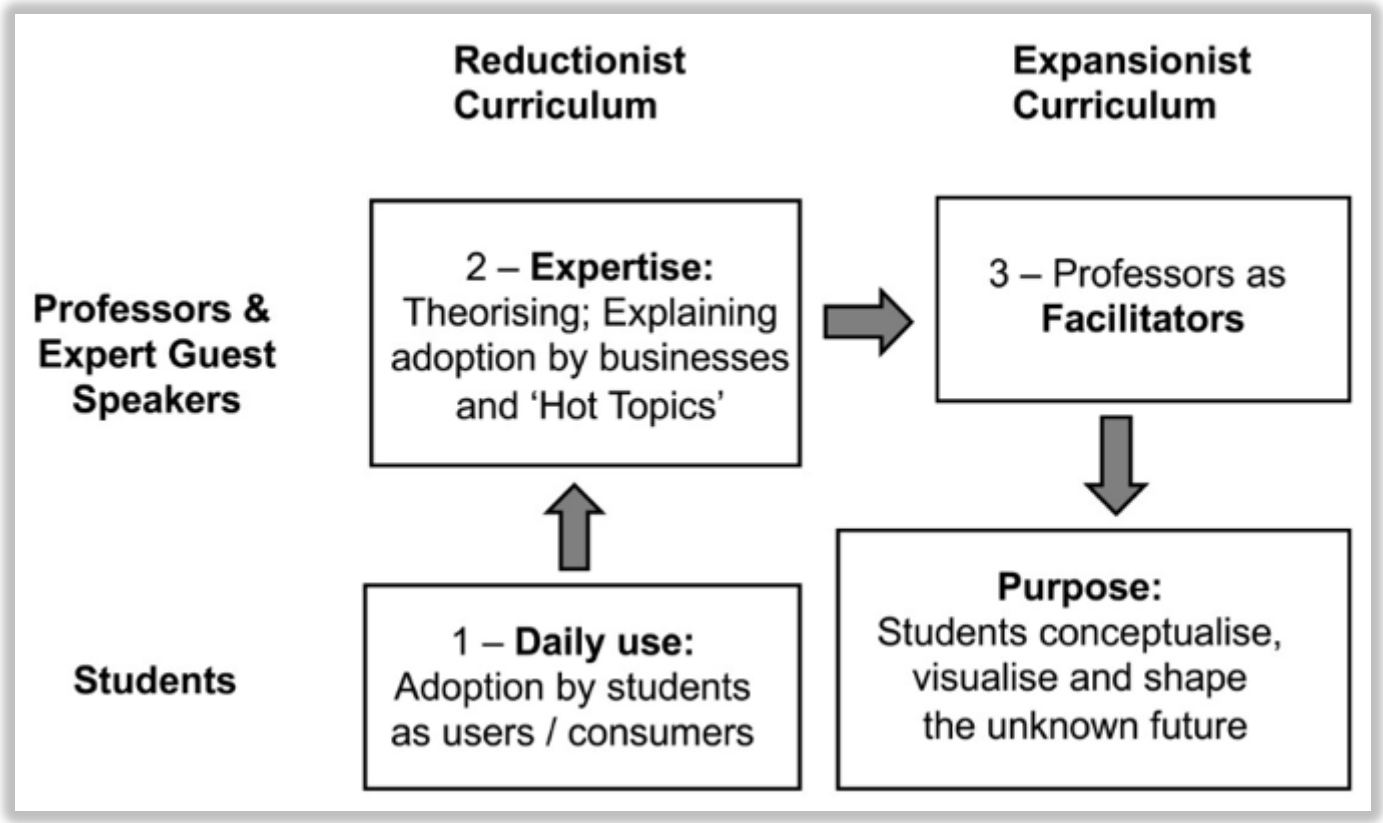
Fischer (2023): https://doi.org/10.1177/20438869231178844

We aim to deploy AI to democratise Education (The Pedagogic Paradigm 4.0)



Pedagogic paradigm 4.0 - how to develop own AI tools: https://www.timeshighereducation.com/campus/pedagogic-paradigm-40-bringing-students-educators-and-ai-together

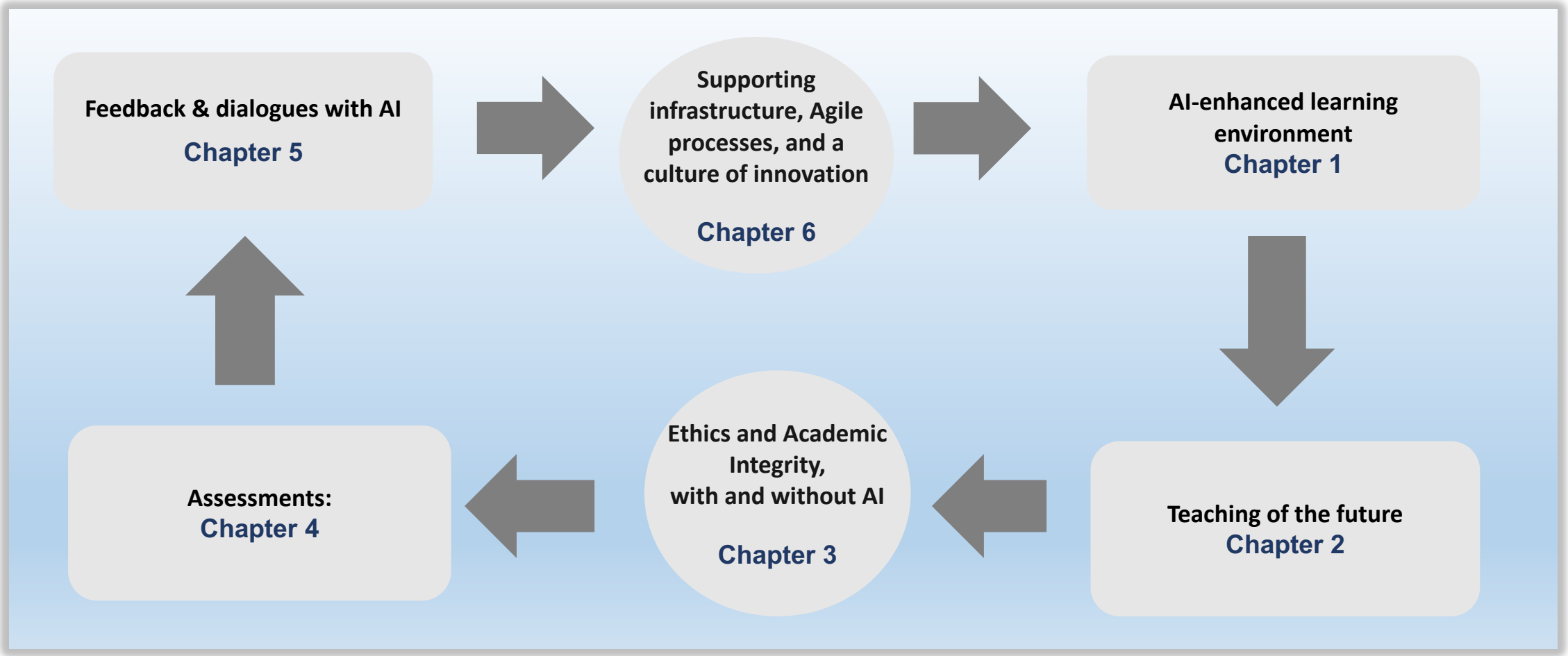
AI needs to be embedded within Processes and Pedagogy



Fischer & Dobbins (2023) – Journal of Management Education
Is it Worth it? How Paradoxical Tensions of Identity Shape the Readiness of Management Educators to Embrace Transformative Technologies in their Teaching
https://journals.sagepub.com/doi/10.1177/10525629231201843

Our resources from on an interdisciplinary student and staff group that reviewed Opportunities and Risks of AI work can be found here:

https://warwick.ac.uk/fac/cross_fac/academy/activities/learningcircles/future-of-learning/



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Images and videos

Two examples below chosen as very easy to use and with ‘free credits’

OpenAI: https://openai.com/dall-e-2 (also link for ChatGPT if you have not already signed up to it)

Haygen: https://app.heygen.com/home

Uploading your picture or using one of theirs,
You can write a text – and if over 30 seconds you can
Get it translated into other languages.

Example: Birthday message I produced with two different
Images and in two different languages:

https://app.heygen.com/share/01c00059b31a41e29e4cdc25acd7292d

https://app.heygen.com/share/428214b6c7c34597922dbc3c28ace2b3

https://app.heygen.com/video-translate/share/eaae8994ab0d43f68bd0c780ee39395b

Text

Four examples below chosen as very easy to use and ‘free’

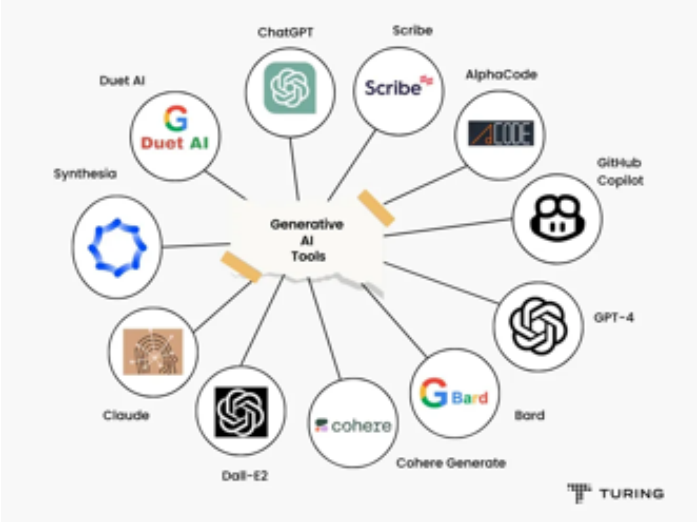
(in exchange of your data)

OpenAI: https://openai.com/dall-e-2 (see previous page, links to **ChatGPT**), and also here: https://chat.openai.com

Bing (using Microsoft Edge): The New Bing (www.bing.com/new) – try **copilot** too (scroll to the bottom of the page)

Bard (google): https://bard.google.com/chat

Claude (Anthropic): https://claude.ai/login?returnTo=%2F



https://www.turing.com/resources/generative-ai-tools

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Neha Gupta – AI use in Practice, Four Use Cases

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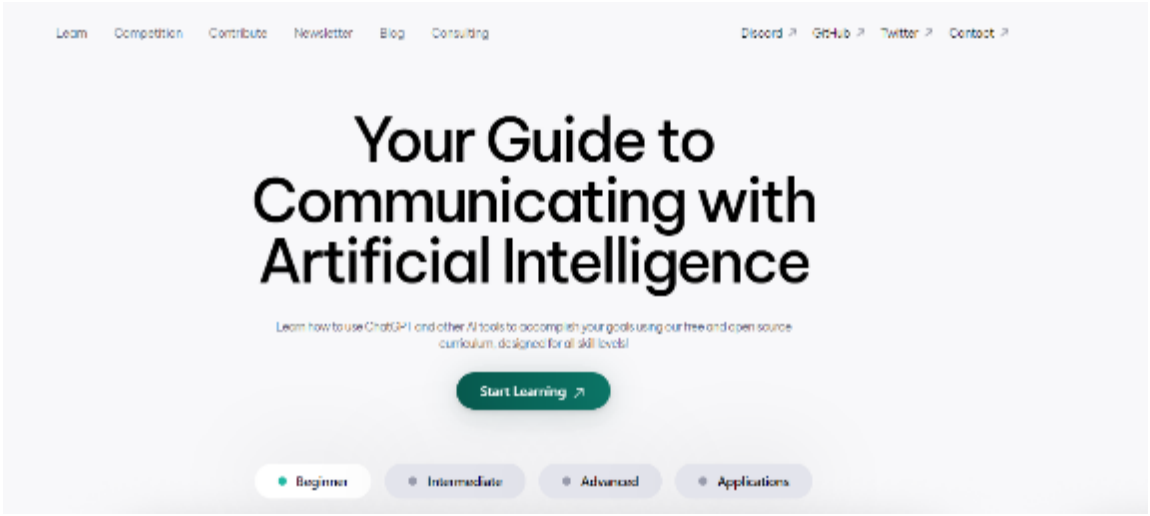
Prompt Engineering



- Best place to start is a free open source page

https://learnprompting.org/

- Show example of
- "*Shot Prompting*" – analysing and training model to read article

- Basic Applications – structuring data, writing email, different writing styles

- Image prompting https://openai.com/dall-e-2

- Lit of prompted Products

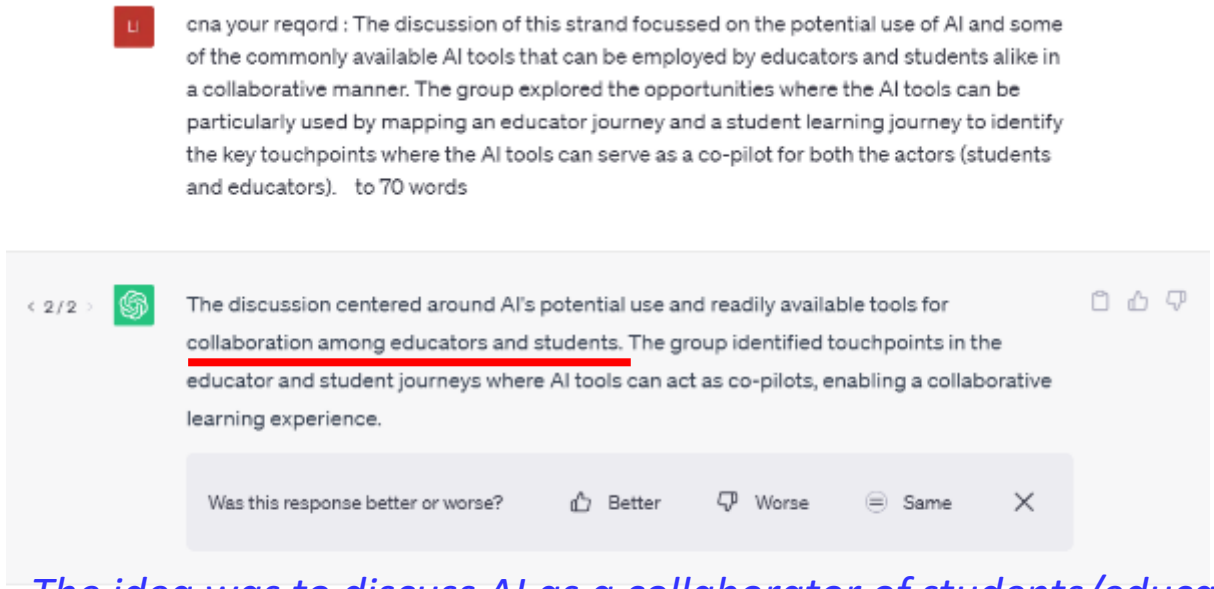
Credit: https://www.slideshare.net/bohemicus/how-to-teach-and-learn-with-chatgpt-bett-2023

Prompt Engineering continued…

ChatGPT example: Sentence summarisation/rephrasing

Who is the *collaborator* here? AI or student and educator. The rephrase are Ambiguous

We show such examples to our students to discuss limitations !



The idea was to discuss AI as a collaborator of students/educators.

Knowing the art of Prompting, other examples..

Example application scenarios and prompts for ChatGPT:

1. **Improve your writing**: *Proof read my writing above. Fix grammar and Spelling mistakes. Make suggestions that will improve my writing clarity.*
2. **Use 80/20 rule to learn a topic**: *I want to learn about [insert topic]. Identify and share the most important 20% of learnings from this topic that will help me understand 80% of it.*
3. **Generate New Ideas**: *I want to [insert task or goal]. Generate [insert desired outcome] for [insert task or goal].*

Automatic power point generation on topic

- **Method 1:** Using a tool https://gamma.app/

(demo)

- **Method 2 :** Using CHATGPT and Microsoft

Step 1-Prompt

LI

give me a VBA code that generate a power point presentation on the topic of lesson plan to teach AI Challenges and Opportunities I need four slides only

Step 2- Copy Code

vba Copy code

```
Sub GenerateAIPresentation()
    Dim PowerPointApp As Object
    Dim presentation As Object
```

Step 3- It even tell you the steps

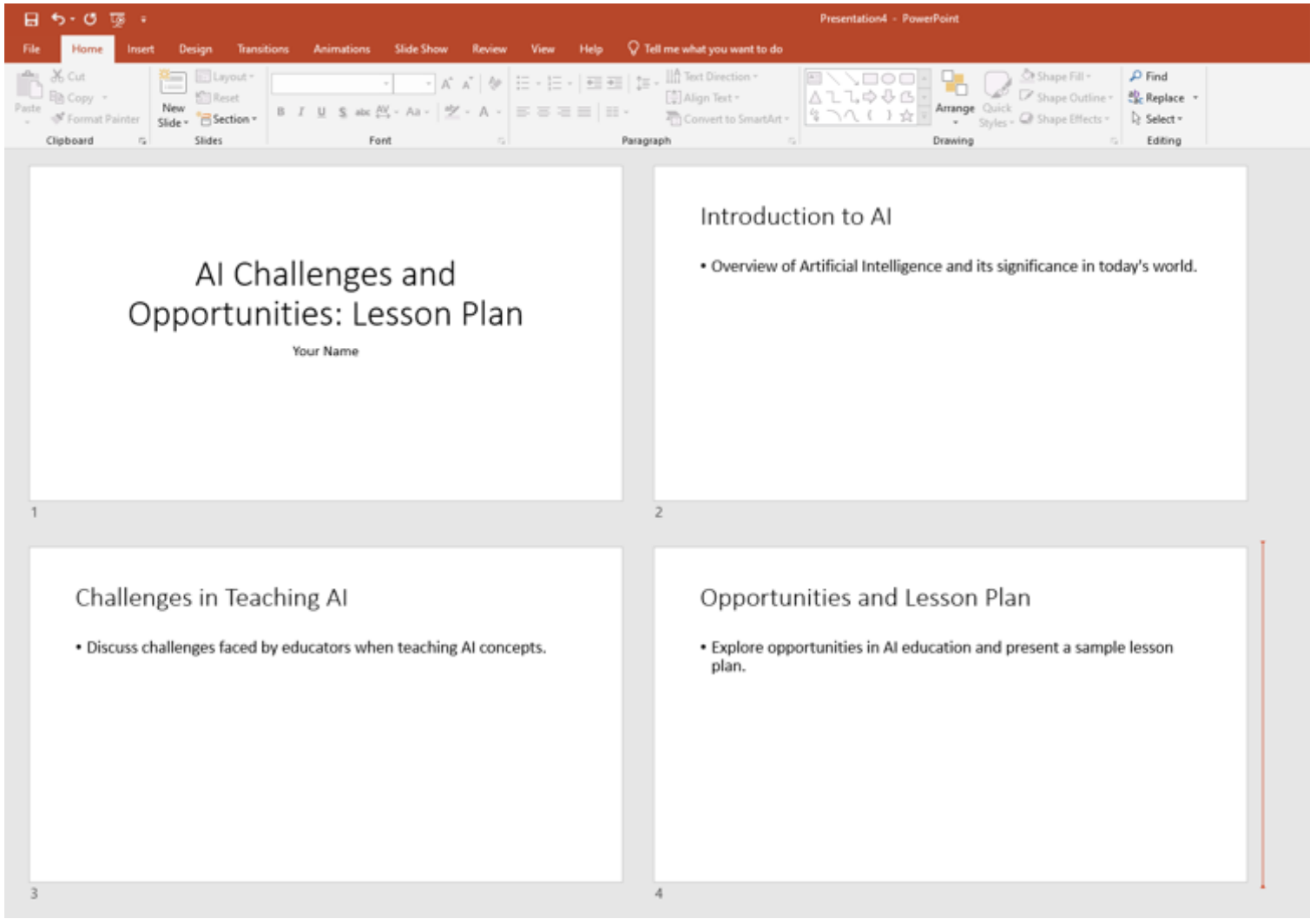
1. Press `ALT + F11` to open the Visual Basic for Applications (VBA) editor in PowerPoint.
2. Click `Insert` from the menu and then `Module` to create a new module.
3. Copy and paste the code into the module.
4. Close the VBA editor.
5. Run the macro by pressing `ALT + F8`, selecting `GenerateAIPresentation`, and clicking `Run`.

Lets try these steps now…

Open PowerPoint application

1. Press `**ALT + F11**` to open the Visual Basic for Applications (VBA) editor in PowerPoint.
2. Click `**Insert**` from the menu and then `**Module**` to create a new module.
3. Copy and paste the code into the module.
4. Close the VBA editor.
5. Run the macro by pressing `**ALT + F8**`, selecting `**GenerateAIPresentation**`, and clicking `**Run**`.

A basic power point generation deck ready…



Automatic Text Transcript Generation using Speech Texter

- Webtool https://www.speechtexter.com/
- Youtube link https://www.youtube.com/watch?v=NQN4mtTagL0
- (demo with a talk from Simon Senek)

- Can be used for creating notes from podcasts , ted talks, video recording of lecture etc.

Paraphrasing - QuillBot

- Webtool https://quillbot.com/
- demo with abstract from article - https://www.nature.com/articles/s41598-017-05091-9

More tools and links

ChatGPT 5 lessons in 5 minutes:
https://www.slideshare.net/DominikLuke/chatgpt-5-lessons-in-5-minutes
How Chat GPT can reduce teacher workload – mainly designed for school children but can have some common themes applicable to HE
https://drive.google.com/file/d/1q9exc7gm3DpRAygeV8hgZ-7sVnyrTq6b/view

Lindy is an AI assistant that can help with all your tasks,from calendar management and email drafting tocontract sending and beyond.
https://www.lindy.ai/

Google Bard: creative and helpful collaborator, here to supercharge your imagination, boost your productivity, and bring your ideas to life.
https://bard.google.com/

AI course creator
https://www.lingio.com/en/global/

Customised mail creator: *Superhuman AI* matches the voice and tone in the emails you've already sent, applying that to everything it creates.
https://superhuman.com/

AI art generator
https://www.adobe.com/sensei/generative-ai/firefly.html
Learning resources about AI
https://www.cloudskillsboost.google/journeys/118

How to Teach and Learn with ChatGPT

https://www.slideshare.net/bohemicus/how-to-teach-and-learn-with-chatgpt-bett-2023
https://edutools.fyi/edutools/Edu-Tools-6d4ae0b3c64743cca7370b18b037e373

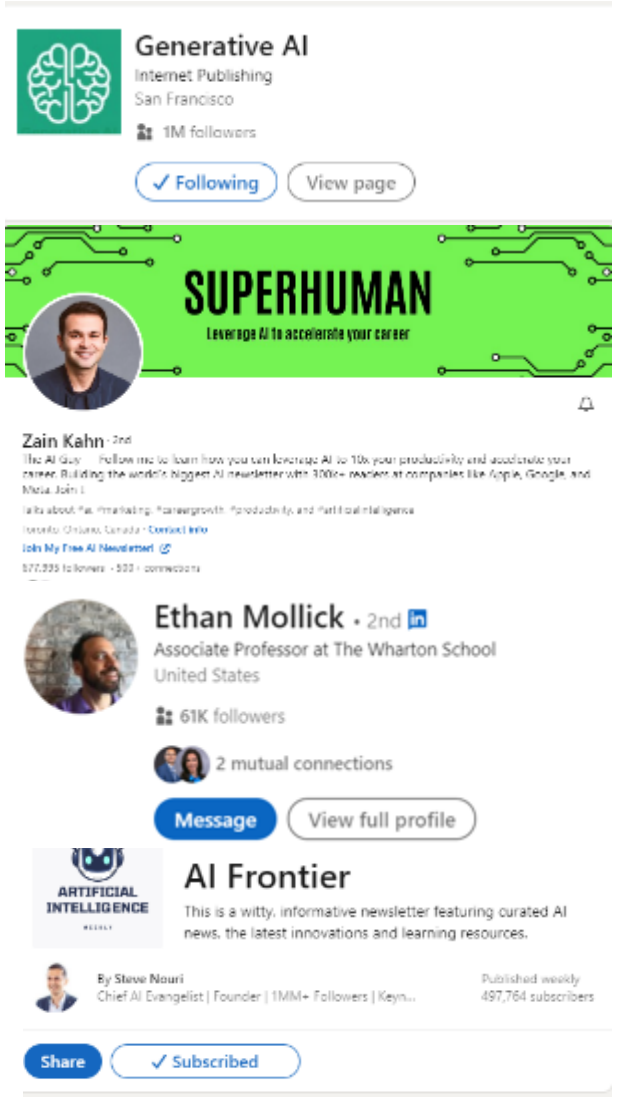
Calendar AI apps

https://leader.net/calendar/
https://claralabs.com/

AI in Classroom - Book

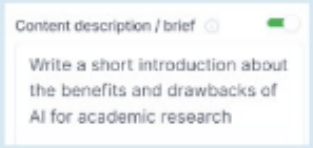
https://www.amazon.co.uk/Classroom-Artificial-Intelligence-Revolution-Hitchhikers-ebook/dp/B0BVGV8GST/ref=sr_1_2?crid=34U6DNFSA43S2&keywords=the+ai+educator&qid=1679682822&sprefix=the+ai+educator%2Caps%2C77&sr=8-2

LinkedIn Pages/Influencers, Followed:



AI for research: : **CHEAT SHEET**

Overview



AI tools are becoming increasingly popular as a way to facilitate academic writing. AI can help **simplify the writing process**, **reduce errors**, **improve accuracy** and **organisation**, and provide access to a multitude of resources such as AI-based **grammar checking** or AI-assisted **editing**. AI tools can also provide **recommendations** on how to make improvements to the content, offering **insights and suggestions** that can improve the quality of the writing. AI tools provide writers with an array of features, such as **literature search tools**, AI-assisted **summarization**, AI-based **topic analysis** and AI-driven **content generation**, which can help save time, reduce errors, and boost quality of the written material.

However, the introduction of AI into academic research has raised some concerns about its potential for generating bias and making decisions that may not always be in line with ethical standards.

Literature search

Google Scholar
scholar.google.com

Semantic Scholar
semanticscholar.org

Elicit
elicit.org

Scite
scite.ai

Understanding papers

Explainpaper.com

Writing assistants

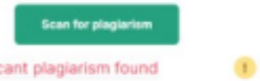
Grammarly
grammarly.com

Check your own or AI generated content on the fly using Grammarly and it's in-app or browser-based plugins. Grammarly is also built into Jasper.ai, including it's plaigiarism detection.

Avoiding plagiarism

grammarly.com/plagiarism-checker

Use Grammarly to check for the originality of your content.



Content creation

Below is a basic feature comparison of four end-to-end AI research tools, further expanded upon below.

		AI21	
Short-form blog/social	✓	✓	✓
Long-form essays	✓	✓	✓
Literature search	✓	✓	✓
Rephrasing	✓	✓	✓
Referencing	✓	✓	✓
Titles & subtitles	✓	✓	✓
Paper summarisation	✓	✓	✓
API	✓	×	×
Cost	Free+$	Free+$	$

End-to-end tools for generating long-form research content

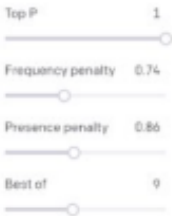
OPENAI
beta.openai.com/playground

OpenAI is a simple to use end-to-end tool able to create academic-style long-form content with referencing, document outlines and an api.

Example command:

"Write an academic literature review on the Future of Work using Harvard references and titles"

Tune the length and quality of the ouput.



AI21 Labs
studio.ai21.com/playground

Similar to OpenAI, but with a higher maximum word output (~2500) but unable to generate references. Similar toolset and ability to customise output.

Example command:

"Create a document outline on the topic of Future of Work"

Customise the language models.

JASPER
jasper.ai

While more expensive, Jasper offers many more in-built features like adjusting tone of voice, in-built plagiarism checker, templates and referencing.

Example command:

"Write an introduction for an academic essay on the Future of Work"

Adapt the tone of voice and keywords.

Version 1.0. 5th December 2022

CC BY SA Graham Alltoft • graham.alltoft@warwick.ac.uk, Yiran Xu • yiran.xu@warwick.ac.uk, Steven Randazzo • steven.randazzo@warwick.ac.uk, Tianzi Bao • tianzi.bao@warwick.ac.uk

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Formative feedback tool – why important?

Warwick and Sussex students told us: **Academic writing perceived as main barrier to academic and employment success**

SDGs 4 and 10.

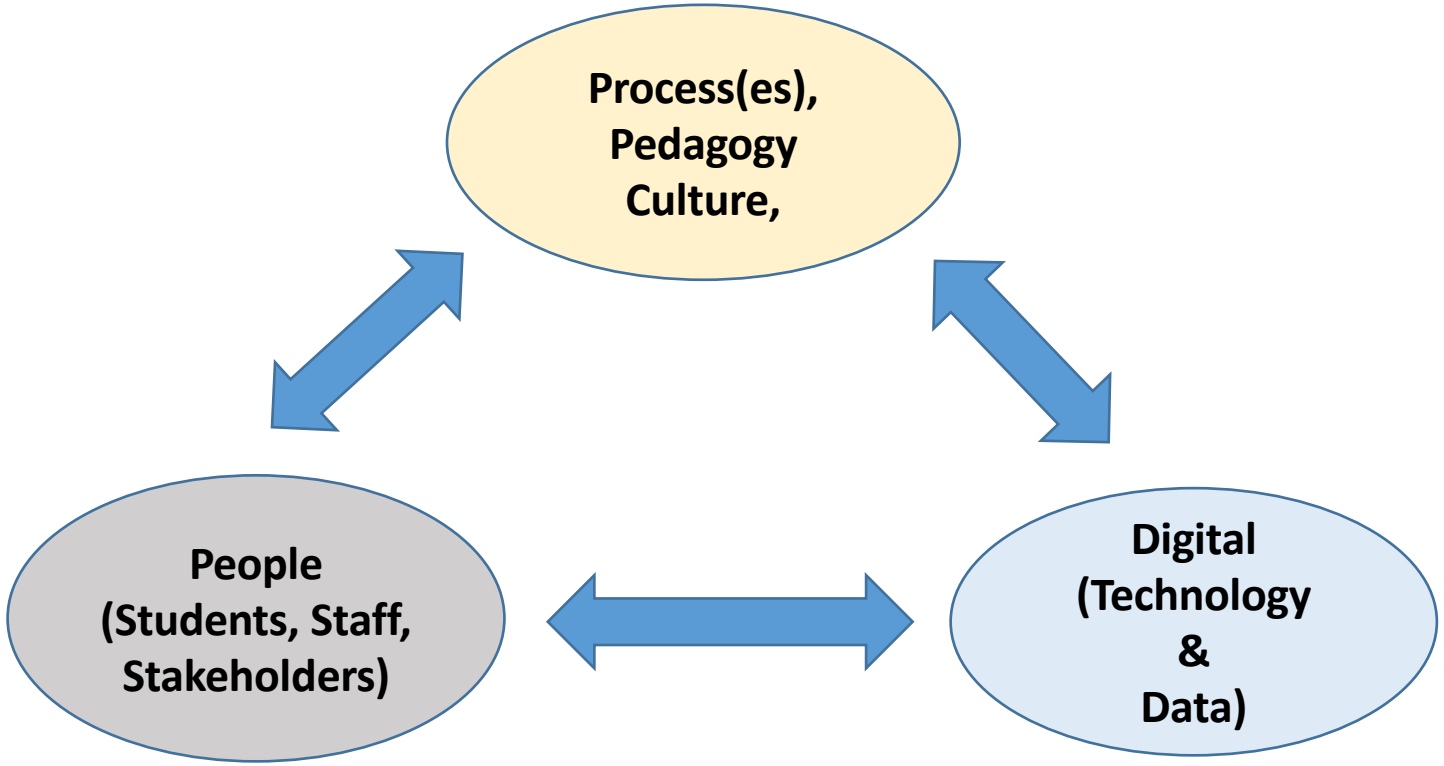
The NSS assessment and feedback question gets ranked low across the sector.

*"**Formative assessment** is considered to be one of the most important mechanisms for improving student learning. **Self and peer-assessment** are particularly effective in formative learning as they require students to engage more fully with the assessment process.".*

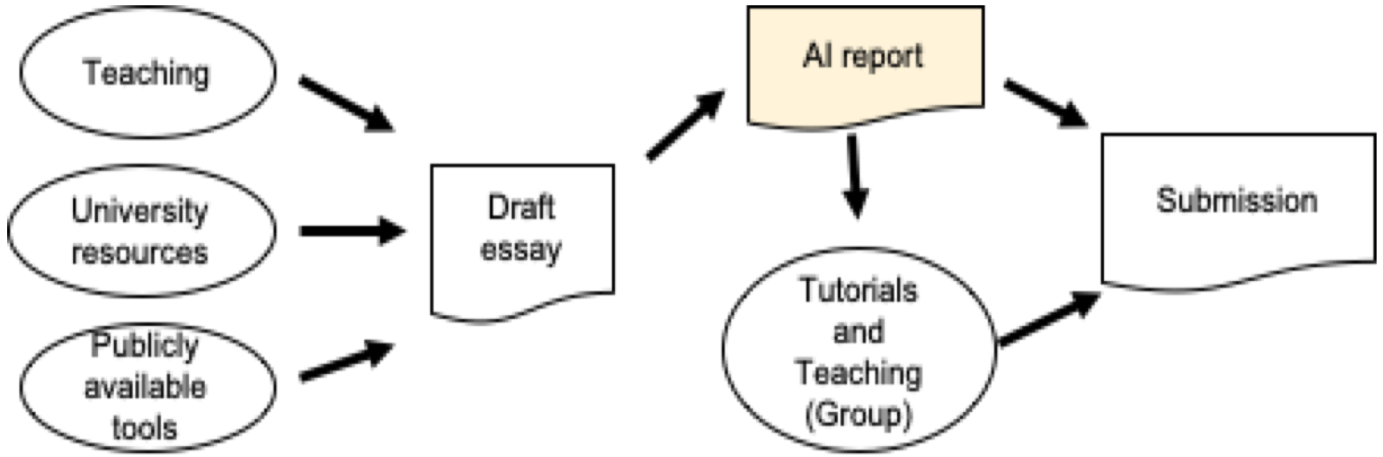
Sharon Gedye: Directorate of Teaching and Learning) (2010) Formative assessment and feedback: a review, Planet, 23:1, 40-45, DOI: 10.11120/plan.2010.00230040

Opportunities and Risks of Digital Transformation, Innovation & AI in education:

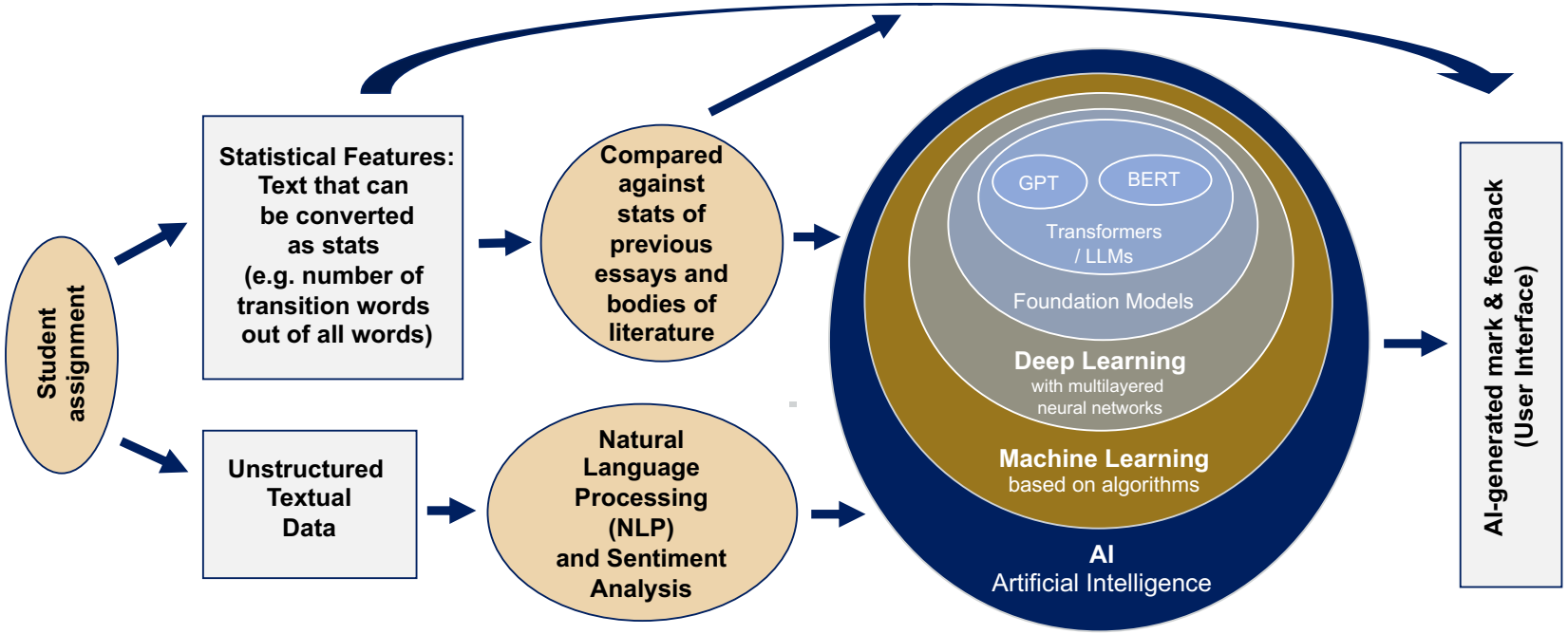
People, Process, Digital (Technology & Data)



Processes: Learner-facing AI for optional formative feedback

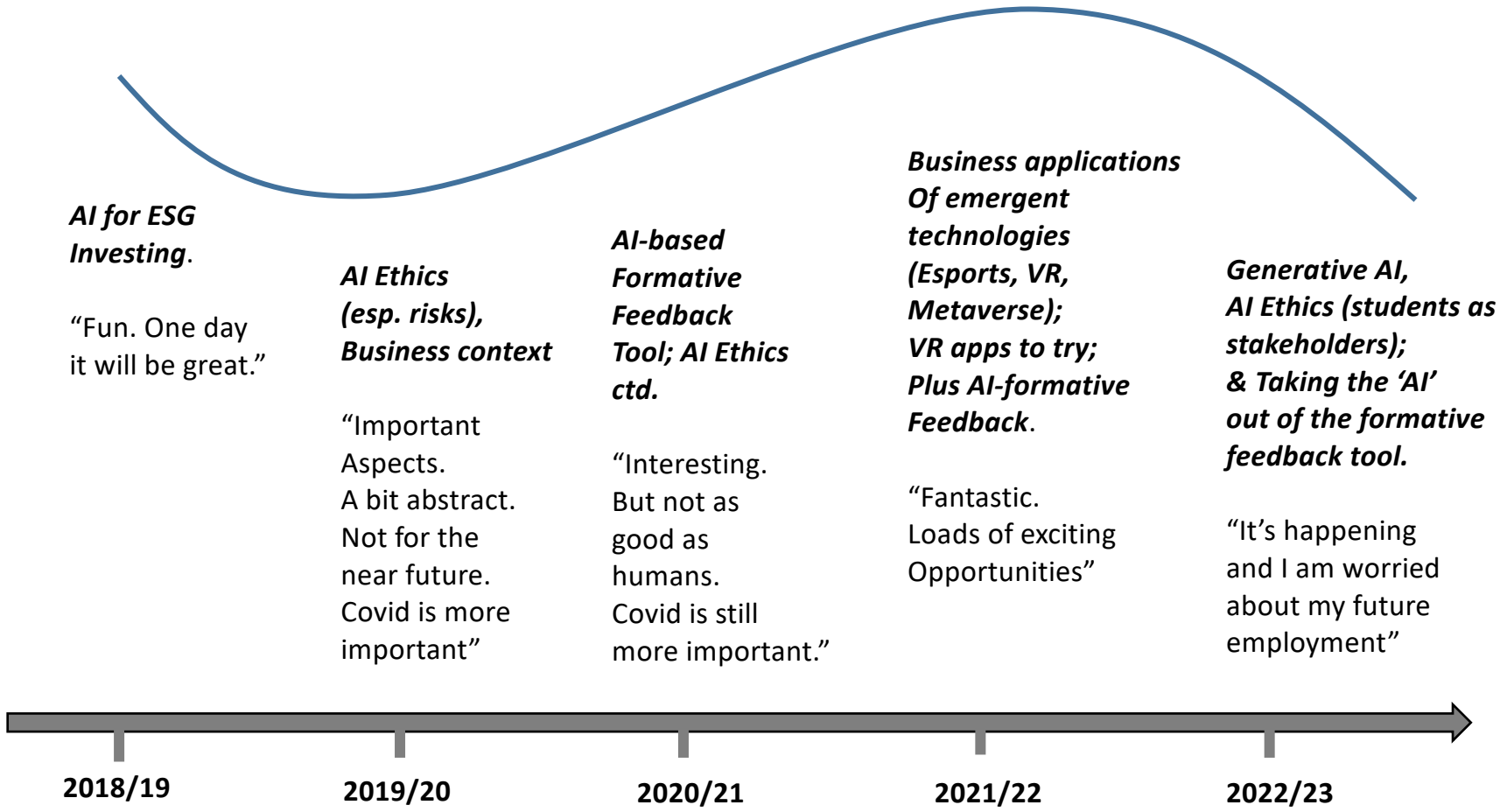


Digital: Technology & Data



Fischer (2023): https://doi.org/10.1177/20438869231178844

People: Evolving student (and staff) reaction



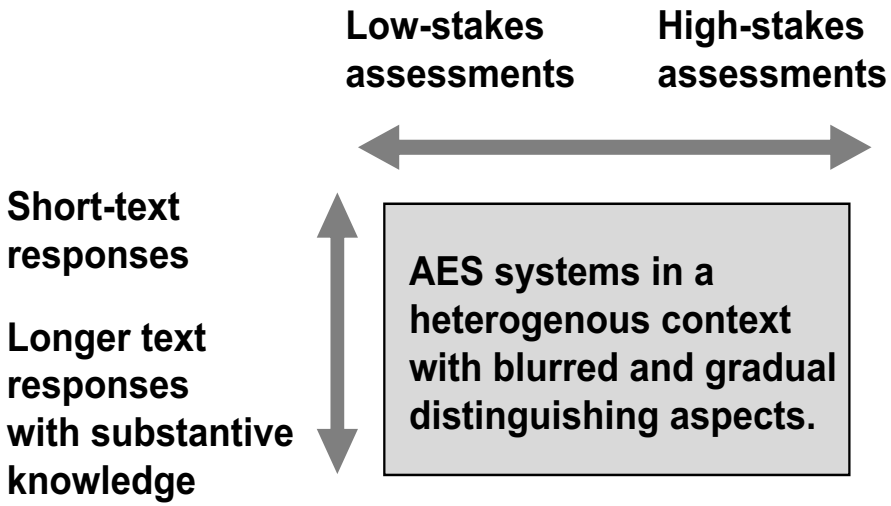
Built and checked for AI Ethics throughout development and deployment, e.g. respecting ‘privacy and data’

EU AI Ethics Framework	EU Explanations	Broad areas (Jobin et al.)	Google
1 Human agency and oversight	Fundamental rights, human agency and human oversight	**Non-malefience**	Accountable to people
2 Technical robustness and safety	Resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility	*(underpinning varioius categories)*	Safe & Scientific excellence
3 Privacy and data governance	Respect for privacy, quality and integrity of data, and access to data	**Privacy**	Privacy design
4 Transparency	Traceability, explainability and communication	**Transparency**	*Transparency not included*
5 Diversity, non-discrimination and fairness	Avoidance of unfair bias, accessibility and universal design, and stakeholder participation	**Justice and Fairness**	Avoid Unfairness / Biases
6 Societal and environmental wellbeing	Sustainability and environmental friendliness, social impact, society and democracy		Socially beneficial
7 Accountability	Auditability, minimisation and reporting of negative impact, trade-offs and redress	**Responsibility**	Accountable to people ctd.

Plus: "Available for uses that accord with these principles"

Fischer (2023): https://doi.org/10.1177/20438869231

Differentiate (and advocate to differentiate) between low-stakes and high-stakes environments



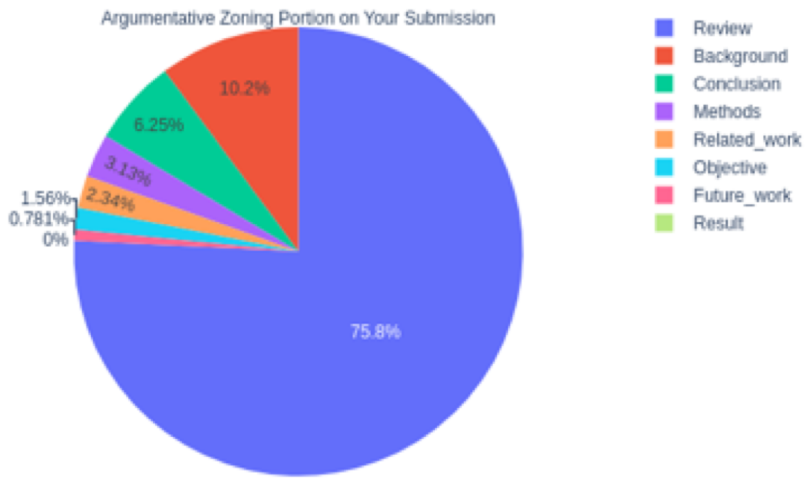
AES = Automated Essay Scoring

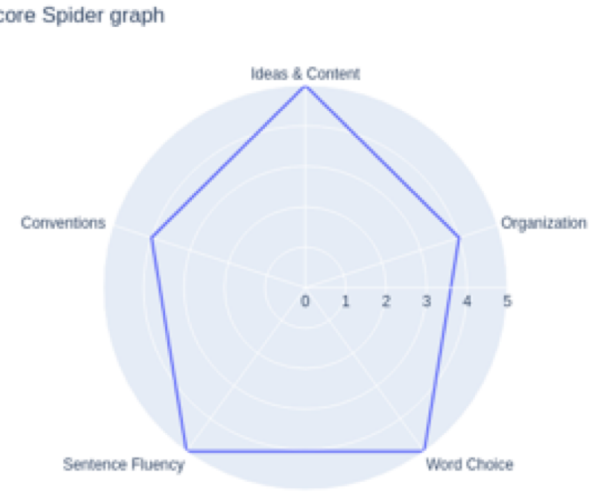
Fischer (2023): https://doi.org/10.1177/20438869231

Technical Features

- Python-coded
- Uses a mixture of rule-based statistical features and deep-learning algorithms and databases (e.g., CUDA, PyTorch, Huggingface framework, and BERT)
- Developed based on open-source communities e.g., GitHub and pre-trained models, with results converted / interpreted so it makes sense to students
- We did **not** use subject-specific labelling / subject-specific supervised learning
- We currently use a Linux system with Nvidia 2080Ti GPU. We also use CPU to handle basic processes in support of our deep learning framework
- User-interfaces – web-based (students have a link to click on)
- Cost constraints do not allow us to guarantee ‘on-demand’: We are currently operating at least ‘every 6 hours, at 10am, 4pm, etc’

Grammar suggestions, readability scores, visualisations (below argumentative zoning and summary of strengths and weaknesses of writing in a spider graph), CABS quality of refs, sentiment analysis: ***'Showing consistent flaws of my writing'*** (student comment)





ISSN	Field	Journal Title	AJG 2021
1846-3363	ETHICS-CSR-MAN	management	1
1526-548X	MKT	marketing science	4*

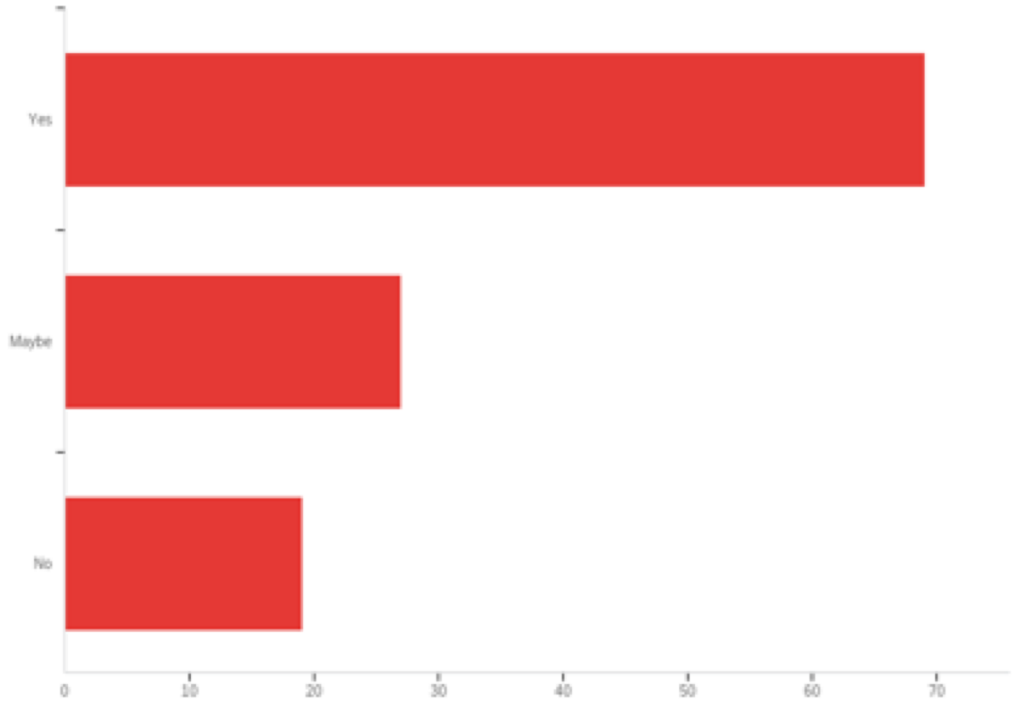
The tool is particularly effective for **dissertations**, longer essays and for draft journal articles. Also working for 500-word formative essays but less insightful.

https://nationalcentreforai.jiscinvolve.org/wp/2022/11/16/interested-in-receiving-formative-feedback-on-your-draft-essays-and-dissertations-on-demand-introducing-warwicks-ai-essay-analyst/

https://blogs.warwick.ac.uk/wjett/entry/introducing_warwicks_ai/

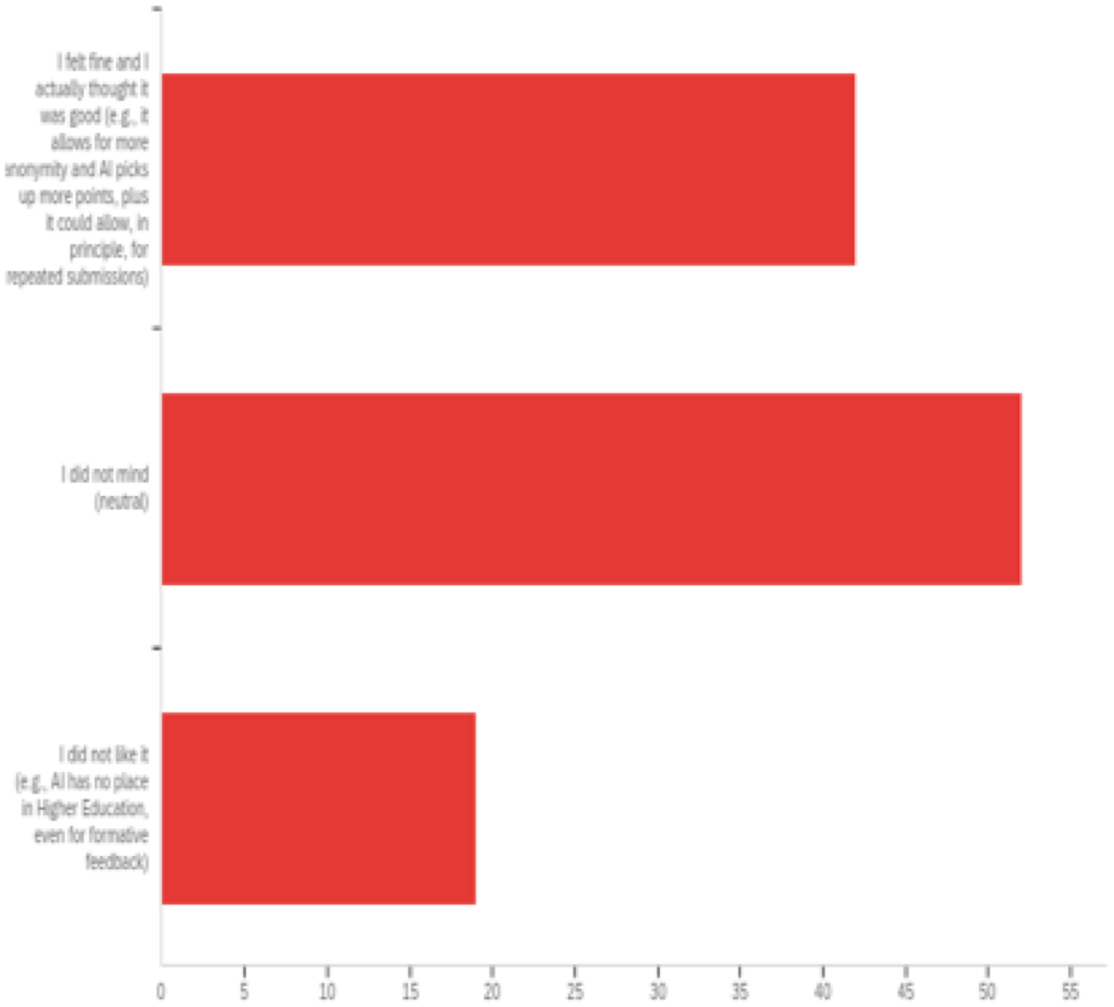
Graph to the left:
Knowledge graph

Tool for democratising education



Bar chart: 115 year 1 students responded favorable after our last formative feedback initiative where we generated feedback for 320 students: **Do you think WBS should offer AI-systems such as this so that students have the option to receive formative AI-generated feedback in the future across all assignments?**

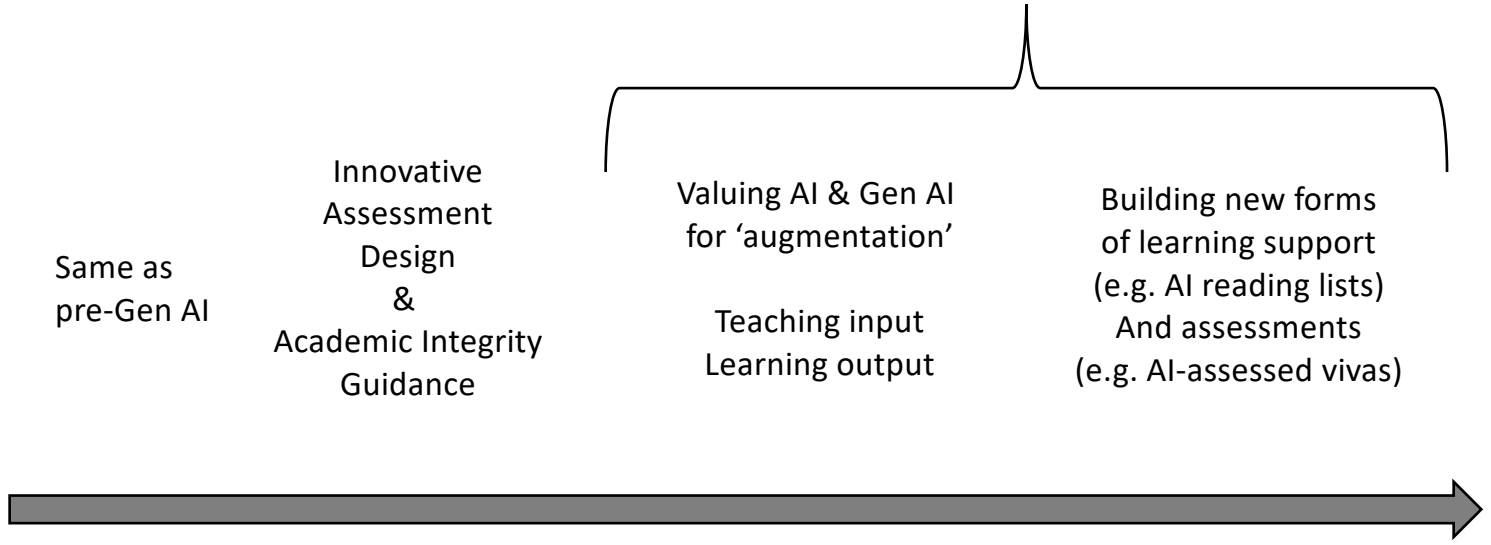
According to a 2022 student trial some students prefer receiving AI-generated formative feedback to human formative feedback



Bar chart: Same 115 year 1 students as previous slide**: How did you feel about your work being assessed by AI and not a human tutor?**

What changes are needed short and mid-term besides an agile IT / sandboxing environment?

1) Technology Enhanced Learning for students and staff
2) Support & shift of pedagogy – Modules building on each other
3) Communities of practice / peer support networks
   especially for subject knowledge (also for academic writing)



Thank you