

A wireframe profile of a human head, composed of numerous interconnected lines forming a mesh, set against a solid olive green background.

**AI<sup>2</sup> in Higher Education + Auxin**

# **AI<sup>2</sup> Webinar 3: AI-enabled Learning**



**Stellenbosch**

UNIVERSITY  
IYUNIVESITHI  
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forward together  
sonke siya phambili  
saam vorentoe

# AI<sup>2</sup> + Auxin: The presenters

**Dr Albert Strever** is a Senior Lecturer in the Department of Viticulture and Oenology in the Faculty of AgriSciences and coordinates the innovation and entrepreneurship activities in the faculty. Although he specialised in and still teaches in Viticulture, his work with INNOVUS and Launchlab as well as in the Winetech innovation committee in promoting new business ideas and development in Agriculture have led to an ambition to specialise in entrepreneurship and innovation/technology integration in higher education. This also led to him registering in 2022 along with the first intake for the Master's degree in Engineering Management (MEM) students at SU.

Albert is engaging on several forums on the use of AI in teaching, learning and assessment currently and also actively integrating these aspects in undergraduate teaching activities in entrepreneurship and other modules. He is also participating in the Teaching Advancement at University (TAU) Fellowship Programme.



**Dalene Joubert** is an advisor at the Centre for Teaching and Learning at Stellenbosch University (SU). She holds a joint Masters Degree from SU and the University of Leiden, a PGCE from Unisa and she is currently busy with her PhD in Translations Studies at SU. Dalene has a passion for learning and teaching, and has been in the space for over a decade – she has taught Afrikaans and Dutch at both Rhodes University and SU, as well as Afrikaans at Paul Roos Gymnasium. She is currently exploring the intersection between AI and teaching, learning and assessment in higher education for the SU context. Dalene is administrating and involved in developing two short courses in AI literacy for higher education - an SU short course as well as a StellenboschX offering.

# AI literacy

## in HE teaching, learning and assessment

*A professional development opportunity  
for SU staff*

SU Short Course: self-paced and flexible  
5 webinars and a presentation session  
Now – September 2023

Registration: [Click here](#) or scan the QR code  
Questions? Dalene Joubert (dvermeulen@sun.ac.za)

[CLICK HERE  
to register](#)



[CLICK HERE for help  
with registration](#)





# In this session, we will

- Discuss critical questions
  - What is the purpose of HE?
  - How can we approach AI-enabled learning?
  - What will our students need?
- Explore the possibilities of AI-enabled learning
- Q & A

# The critical question I

What is the purpose of Higher Education in the light of an AI-enabled future?

- Transformative relationship to knowledge
  - (McKenna *et al* 2023)

“But if the purpose of higher education is to nurture a transformative relationship to a particular body of **knowledge** that enables students to see the world - and their place in it - in new ways, **then** [teaching, learning and] assessment takes on a vastly **different meaning.**”

# The critical question II

How do we  
understand AI-  
enabled learning?

- Within a learning-centered approach:
- Collaborative process of knowledge building
- Learning is a partnership, co-creational
- Students take responsibility for their own learning
- Students are equipped to be in service of a complex society
  - SU T&L policy, SU graduate attributes

# The critical question III

What will our  
students need in  
future(s)?

- We don't know yet, but they should be set up for success
- HI and AI futures?
- And they should be 'robot-proof' (Aoun 2017)
  - *Humanics* as a useful framework?
  - **Literacies:**
    - Digital literacies
    - Technological literacies
    - Human literacies
  - **Cognitive capabilities:**
    - Systems thinking
    - Entrepreneurship
    - Cultural agility
    - Critical thinking

# AI-enabled learning in practice

## Some thoughts on ChatGPT and generative AI as an 'enabler' in learning

- Cautiously embrace and incorporate generative AI
  - NB: critical thinking
  - A learning curve
- Ideation phase
  - A brainstorming partner
- Real-time assistance
  - Instant feedback
  - Scaffolded learning
  - Debating-partner
  - Think-pair-share (with ChatGPT)
  - Finalise a text

Dai, Liu & Lim (2023)  
& DitchThatTextbook





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# Experience with embracing AI in T, L & A

**23 May 2023**

**Albert Strever**

[astr@sun.ac.za](mailto:astr@sun.ac.za)

# My Journey (still in progress)

- ML in research (pre 2012), work on 4IR in Agriculture (2017)
- TAU Teaching fellowship (2022/23)- met a group from TUT with a passion for AI in LTA
- Feb 2023 - incorporation of AI into courses - entrepreneurship, GWS 278, GWS 378.
- April 2023 - RSG - radio interview about AI in agriculture and T&L&A
- May 2023 - postgraduate integration of AI for research writing (Hons, MSc, later PhD's)
- What's next? Lifelong learning. . . underpinned by a PLS
- Regular use in teaching and own studies/RA.
- Started in Feb with about 3 tools, now more than 20 and counting.





- More recent systematic review (for the more scientific-minded reader)

Journals & Books
?
Q


 View PDF
Download full issue



Computers and Education: Artificial Intelligence
Volume 3, 2022, 100097



# A systematic review of artificial intelligence techniques for collaborative learning over the past two decades

[Seng Chee Tan](#)  , [Alwyn Vwen Yen Lee](#) , [Min Lee](#) 

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<https://doi.org/10.1016/j.caeai.2022.100097>
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system by
Computers an
Nethra Viswan
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# Collecting reading/resources (there are SO many. . . )

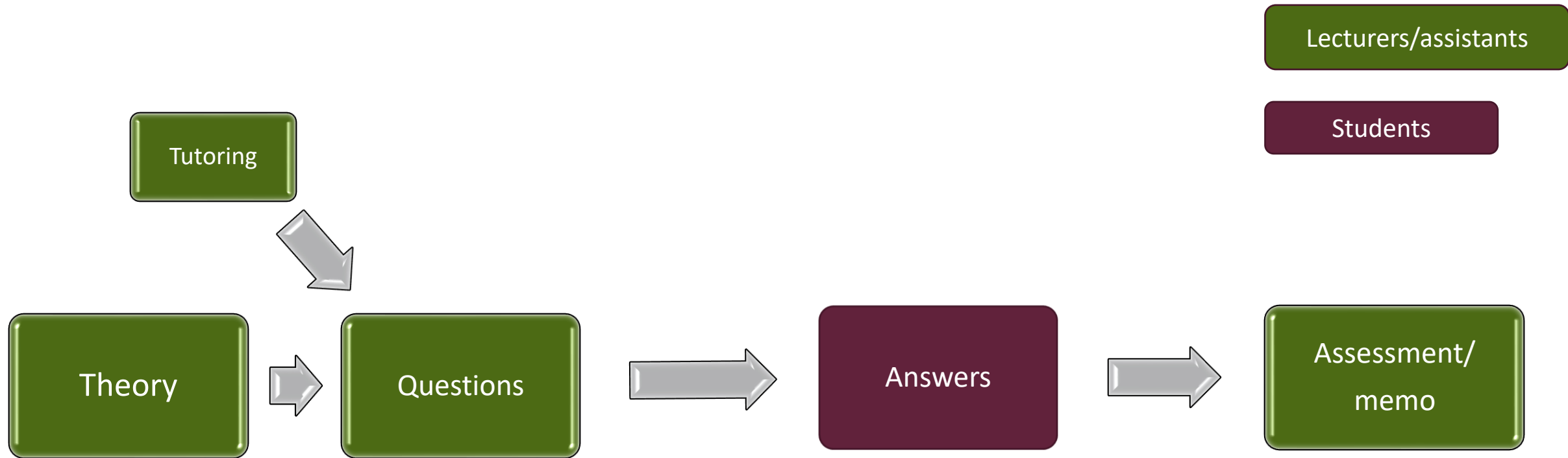


- Resources from SEDA - [www.seda.ac.uk](http://www.seda.ac.uk), scroll down for ChatGPT series and [https://twitter.com/seda\\_uk?lang=en](https://twitter.com/seda_uk?lang=en)
- [Learning LandsCAPE](#) - conference and some other resources
- [Aligning AI systems with human intent](#)
- [Start a business and let AI do all of the work #ai #artificialintellig... | TikTok](#)
- [ChatGPT: our study shows AI can produce academic papers good enough for journals - just as some ban it](#)
- [Major publishers are banning ChatGPT from being listed as an academic author. What's the big deal?](#)
- [Australian universities to return to 'pen and paper' exams after students caught using AI to write essays | Australian universities | The Guardian](#)
- [Lecturers urged to review assessments in UK amid concerns over new AI tool | Artificial intelligence \(AI\) | The Guardian](#)
- [which competencies are relevant for entrepreneurship education in agriculture? | Search | Elicit](#)
- [News - TLA and the new AI kid on the HE block: discussing...](#)

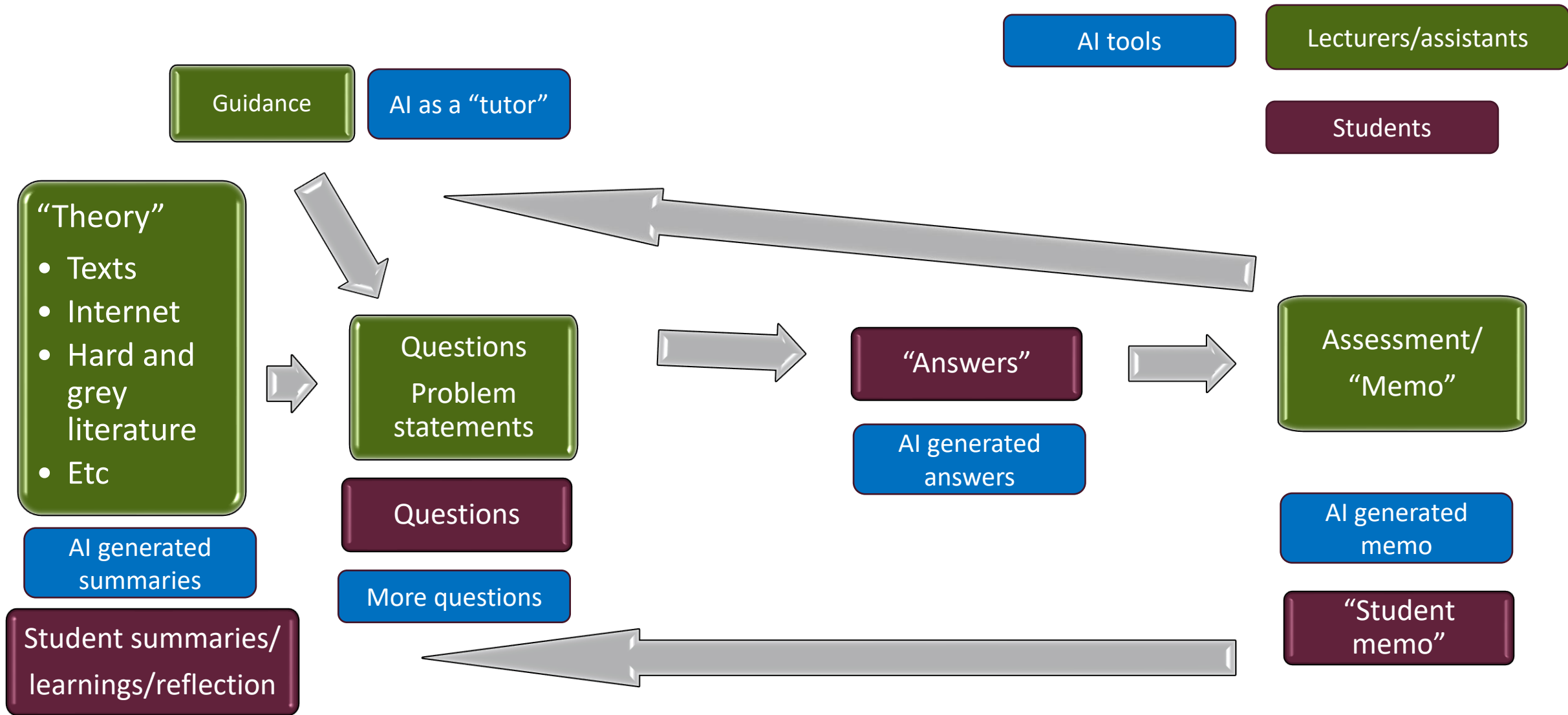


Tool	Category	URL	Description
ChatGPT	Chat	<a href="https://chat.openai.com/chat">https://chat.openai.com/chat</a>	AI chatbot
You.com	Search etc	<a href="https://you.com/">https://you.com/</a>	AI Search engine, image creator etc.
Elicit	Research/writing tools	<a href="https://elicit.org/">https://elicit.org/</a>	The AI research assistant
TLDR this	Research/writing tools	<a href="https://tldrthis.com/">https://tldrthis.com/</a>	Summary tool
Quillbot	Research/writing tools	<a href="https://quillbot.com/">https://quillbot.com/</a>	Paraphrasing tool
You.com writing tool	Research/writing tools	<a href="https://you.com/search?q=how+to+write+well&amp;&amp;tbm=youwrite&amp;cfr=write&amp;">https://you.com/search?q=how+to+write+well&amp;&amp;tbm=youwrite&amp;cfr=write&amp;</a>	Writing tool (more for creative writing)
Tome app	Research/writing tools	<a href="https://beta.tome.app/">https://beta.tome.app/</a>	Storytelling - slide deck generation
Research rabbit app	Research/writing tools	<a href="https://researchrabbitapp.com/">https://researchrabbitapp.com/</a>	Article and author discovery tool for research and review writing
Litmaps	Research/writing tools	<a href="https://app.litmaps.com/">https://app.litmaps.com/</a>	Similar to research rabbit
Connected papers	Research/writing tools	<a href="https://www.connectedpapers.com/">https://www.connectedpapers.com/</a>	Similar to research rabbit and litmaps
Jenni AI	Research/writing tools	<a href="https://jenni.ai/">https://jenni.ai/</a>	"Supercharged scientific writing" 200 AI words per day free, then paid.
Perplexity AI	General but also research	<a href="https://www.perplexity.ai/">https://www.perplexity.ai/</a>	"Answer engine" using LLM
Lex	Research/writing tools	<a href="https://lex.page/">https://lex.page/</a>	Wordprocessor with GPT3 built in
Iris	Research/writing tools	<a href="https://iris.ai">https://iris.ai</a>	AI-powered research assistant that helps you discover relevant scientific papers, extract key insights, and identify knowledge gaps
Distill	ML research	<a href="https://distill.pub/">https://distill.pub/</a>	ML research platform
CoPilot (free trial)	Coding assistant	<a href="https://github.com/features/copilot/">https://github.com/features/copilot/</a>	Replacing Kite - still in dev
Playground	AI API	<a href="https://platform.openai.com/playground">https://platform.openai.com/playground</a>	
AI Writing check	Detecting tools	<a href="https://aiwritingcheck.org/">https://aiwritingcheck.org/</a>	AI writing check
Dall-E	Image creators	<a href="https://openai.com/dall-e-2/">https://openai.com/dall-e-2/</a>	
Whisper	Speech recognition	<a href="https://openai.com/blog/whisper/">https://openai.com/blog/whisper/</a>	
ChatPDF	Custom GPT chatbot for larger pdf's	<a href="https://www.chatpdf.com/">https://www.chatpdf.com/</a>	Custom GPT chatbot for larger pdf's

# Traditional “flow”



# Possible AI “flow”



# Discussion-based teaching and AI



- Discussion-based vs traditional teaching methods
- An “instructional approach that prioritizes learner acquisition of knowledge, skills, and attitudes through discourse rather than passive approaches that focus on lecture, reading, or viewing”.
- In my view very well suited for AI integration

Article:

<http://psychologyandeducation.net/pae/index.php/pae/article/view/1042>

Definition: [What is discussion-based teaching?](#)



# 20 ways to use ChatGPT in the classroom



1 Use it as a more complex source of information than Google.



2 Use it to provide students access to lots of good examples.



3 Use it to remix student work.



4 Ask it for definitions (on a variety of levels).



5 Ask it for feedback for student work.



6 Ask it to do some teacher tasks for you.



7 Add it to the "think pair share" thinking routine.



8 Grade the bot.



9 Debate the bot.



10 Ask the bot for advice.



11 Use it to summarize texts.



12 Use it for insight into big, difficult-to-solve problems.



13 Ask ChatGPT to write your lesson plans.



14 Anticipate the response you'd expect from AI.



15 Take several responses and make a better product.



16 Create personalized learning experiences.



17 Provide tutoring or coaching.



18 Generate prompts and questions to facilitate discussions.



19 Provide information and answer questions.



20 Supplement in-person instruction.



**DITCH THAT  
TEXTBOOK**

Get an overview of ChatGPT in the classroom at [ditchthattextbook.com/ai](https://ditchthattextbook.com/ai).  
Infographic by Matt Miller (@jmattmiller / DitchThatTextbook.com)



# Tutorial example



GRAPEVINE SCIENCES 314 – TUTORIAL ACTIVITY, 14 MARCH 2023

WINGERDWETENSKAPPE 314 – TUTORIAAL AKTIWITEIT, 14 MAART 2023

## **Question 1/ Vraag 1**

Comment on the following statement:

Mistakes that are made during vine establishment and training (development) usually remain a problem throughout the life span of the vineyard and can result in considerable financial losses for producers over time. (8)

Hint: think about what these mistakes could be and what the resulting effect could be, can these mistakes be addressed and if so, what are the problems in doing so.

Poor preparation of planting holes = limited root development leading to reduced vigour (1)

Poor vine structure/form such as skew trunks (1), unbalanced cordons (1) = homogenous shoot growth and homogenous ripening of grapes (1); empty cordon space = direct economical loss due to reduced yield (1)

Nothing can be done to poor planting practices such as poor planting hole preparation (1)

Poor vine form can be addressed (1), BUT it is problematic as it leads to large pruning wounds which can be an entry point for pathogens (1)

Lewer kommentaar oor die volgende stelling:

*Foute wat met vestfetting van stokke en stokvorming (ontwikkeling) gemaak word bly meesal 'n probleem regdeur die leeftyd van die wingerd en kan oor tyd groot finansiële verliese vir produsente beteken. (8)*

*Wenk: dink oor wat hierdie foute kan wees en wat die gevolglike effek kan wees, kan hierdie foute aangespreek word en indien wel, wat is die probleme daarmee.*

## User: (exact copy of question)

- Comment on the following statement:
- Mistakes that are made during vine establishment and training (development) usually remain a problem throughout the life span of the vineyard and can result in considerable financial losses for producers over time. Hint: think about what these mistakes could be and what the resulting effect could be, can these mistakes be addressed and if so, what are the problems in doing so



- The statement accurately highlights the significance of mistakes made during vine establishment and training in a vineyard, as these errors can indeed have long-term consequences and lead to substantial financial losses for producers. Let's examine some potential mistakes and their effects, as well as the challenges involved in addressing them.
1. Improper site selection: Choosing an unsuitable site for vineyard establishment, such as one with poor soil conditions, inadequate drainage, or unsuitable climate, can significantly impact vine health and productivity. These issues may persist throughout the lifespan of the vineyard, resulting in reduced grape quality and yield.
  2. Incorrect vine spacing and trellis system: Planting vines too close together or using an inappropriate trellis system can hinder air circulation, sunlight exposure, and vine canopy management. Overcrowded vines can lead to increased disease susceptibility, difficulty in vineyard management operations, and reduced grape quality.
  3. Poor pruning and training practices: Inadequate or incorrect pruning and training methods can affect vine structure, canopy management, and fruit production. Insufficient pruning can result in overcrowded canopies, decreased airflow, and increased disease incidence. Improper training techniques may lead to unbalanced growth, shading of grape clusters, and difficulty in harvesting.
  4. Inadequate irrigation and nutrient management: Improper irrigation practices, such as under- or over-watering, can impact vine growth, grape quality, and vineyard sustainability. Similarly, inadequate nutrient management can lead to nutrient deficiencies or excesses, affecting vine health and grape composition.



- Addressing these mistakes can be challenging for several reasons:
  1. Cost implications: Correcting mistakes in vine establishment and training often requires substantial financial investments. Modifying trellis systems, replanting vines, or implementing new irrigation infrastructure can incur significant expenses, especially in large vineyards.
  2. Time constraints: Rectifying mistakes typically involves interventions that take time to implement, such as replanting or restructuring the vineyard. During this period, the vineyard may experience reduced productivity and revenue, further impacting the producer's financial situation.
  3. Long-term commitment: Vineyards are long-term investments, and correcting mistakes may require ongoing commitment and management adjustments. It may take several growing seasons for the changes to fully take effect and yield positive results.
  4. Trial and error: Identifying the mistakes and determining the appropriate corrective actions often involve a trial-and-error process. It requires careful observation, data collection, and analysis to assess the effectiveness of implemented changes.
- In conclusion, mistakes made during vine establishment and training can have far-reaching consequences for vineyards, leading to financial losses over time. While these mistakes can be addressed, there are challenges related to cost, time, long-term commitment, and the need for experimentation to find effective solutions. Proactive planning, research, and seeking expert advice can help minimize such mistakes and optimize the success of a vineyard.

## User: (modified to show context change to students)

- Comment on the following statement to answer from a perspective of a 3rd year university student in a viticulture course for 8 marks.
- Mistakes that are made during vine establishment and training (development) usually remain a problem throughout the life span of the vineyard and can result in considerable financial losses for producers over time. Hint: think about what these mistakes could be and what the resulting effect could be, can these mistakes be addressed and if so, what are the problems in doing so





- As a third-year university student in a viticulture course, I would respond to the statement as follows:
- Mistakes made during vine establishment and training indeed have long-lasting implications for vineyards, potentially leading to significant financial losses for producers over time. These mistakes primarily revolve around improper vineyard planning, poor planting techniques, and inadequate training practices.
- One common mistake during vine establishment is choosing unsuitable grape varieties for the specific climate, soil conditions, or market demands of the region. Inappropriate variety selection can result in lower yields, inferior grape quality, or even complete vineyard failure. Additionally, planting vines in suboptimal locations within the vineyard, such as areas with poor drainage or excessive shading, can hinder vine development and negatively impact grape production.
- Another crucial aspect is the improper training and trellising of the vines. Incorrect pruning techniques, such as excessive or insufficient pruning, can influence vine growth, yield, and overall vineyard health. Insufficient canopy management may lead to reduced sunlight exposure for the grapes, negatively affecting ripening, flavour development, and disease susceptibility. On the other hand, excessive canopy growth can impede air circulation, increasing the risk of fungal diseases.
- Addressing these mistakes requires careful planning, ongoing monitoring, and timely intervention. However, there are challenges in rectifying these issues once established. For instance, replacing grape varieties or relocating vines within a vineyard can be costly and time-consuming. It may involve uprooting and replanting, which can lead to temporary loss of production and additional expenses.
- Similarly, rectifying training mistakes requires a proactive approach. Correcting improper pruning and training techniques often involves revitalizing the vineyard through rejuvenation programs or gradual retraining over several seasons. These interventions require careful execution, as incorrect methods may further stress the vines and delay their recovery.
- In conclusion, mistakes made during vine establishment and training can have significant long-term consequences for vineyards, resulting in financial losses for producers. While some of these mistakes can be addressed, the challenges lie in the costs and complexities associated with rectification. Therefore, it is crucial to prioritize proper planning, adequate training, and ongoing monitoring to minimize the occurrence of such mistakes and their subsequent impact on vineyard productivity and profitability.

# Entrepreneurship course

- 2<sup>nd</sup> , 3<sup>rd</sup> , 4<sup>th</sup> year
- Encourage use of AI to generate/interrogate ideas
- Exposure to how entrepreneurs can use AI in business design
- Later - use in lean canvas creation, pitch editing, etc.



**LET'S WORK FURTHER ON  
YOUR IDEAS!!**

GWS 278 23/24 February 2023

Dr AE Strever



**By the way. . .**

- If you want to start a business, ChatGPT can be your friend – watch [this video](#) on TikTok
- So – try this bit of magic:
- Go to <https://chat.openai.com/chat>
- Type the following to start “evaluate the following business idea for the wine industry”
- Copy and paste your idea into the chat, and see what happens. . .
- Evaluate and reflect on the result – we’ll talk about this as it will be your first assignment!

- What we always tell students: “don’t be afraid to ask. . . .”
- Or now . . . ask ChatGPT 😊

**User: What are the most productive ways to use ChatGPT/AI tools in a viticulture and oenology classroom in a University environment?**

**ChatGPT - Integrating ChatGPT and AI tools can enhance the learning experience in a viticulture and oenology classroom at a university. Here are some productive ways to utilize these technologies:**

1. **Q&A Support:** Use ChatGPT to provide instant answers to students' questions related to viticulture and oenology. This can assist with clarifying concepts, understanding terminology, and resolving doubts.
2. **Virtual Wine Tasting:** Develop an AI-powered virtual wine tasting platform where students can input their observations and receive immediate feedback. The AI can analyze their descriptions, evaluate wine characteristics, and provide suggestions for improvement.
3. **Wine Recommendations:** Implement an AI-based recommendation system that considers students' preferences, wine profiles, and food pairings. This can help students explore new wines and expand their knowledge.
4. **Virtual Vineyard Management:** Simulate vineyard management scenarios using AI. Students can learn about vineyard planning, irrigation strategies, disease prediction, and pest control through virtual simulations, enabling them to make informed decisions.
5. **Sensor Integration:** Utilize AI and IoT (Internet of Things) devices to collect real-time data from vineyards, such as soil moisture, temperature, and weather conditions. Analyzing this data with AI algorithms can assist in optimizing vineyard practices.
6. **Predictive Analytics:** Apply machine learning algorithms to historical viticulture and oenology data to predict wine quality, grape yields, and market trends. Students can learn how to leverage data analysis to make data-driven decisions in the industry.
7. **Virtual Experiments:** Create virtual lab environments where students can conduct experiments and simulations related to winemaking processes. AI can provide guidance and analyze the outcomes, allowing students to learn from virtual hands-on experiences.
8. **Language Translation:** Utilize AI language models to assist international students by providing translation services for textbooks, research papers, and other learning materials in different languages.
9. **Research Assistance:** Students can employ ChatGPT to brainstorm ideas, gather relevant research papers, and explore different perspectives on viticulture and oenology topics. It can serve as a valuable tool for supporting research and academic writing.
10. **Industry Insights:** Use AI to analyze industry trends, news, and market reports, providing students with up-to-date information about the viticulture and oenology sectors. This helps students develop a comprehensive understanding of the industry's dynamics.

**Remember, while AI tools can be valuable in the classroom, they should complement traditional teaching methods and be used judiciously to foster engagement, critical thinking, and active learning.**

# Undergraduate literature review/research skills/library training

- Library and scholarly databases as well as grey literature only
  - Library training
  - Keyword searches, use of databases as traditionally done in 2<sup>nd</sup> year
- *AI tools only*
  - *ChatGPT (for enquiry/editing/topics/headings etc)*
  - *Elicit (to explore recent articles and proper references with DOI's)*
  - *ResearchRabbit (to explore NB authors and networks - other related articles)*



# Undergraduate literature review project



- General topic:
- “Are organic and biodynamic winemaking processes significantly better for the environment than conventional growing and winemaking? If so/not, why? Can you share a bit of detail about regenerative agriculture practices, cover crops etc. Are there some interventions that are more effective than others - better/cheaper/more effective than those employed in conventional winemaking? Or is conventional winemaking able to make better savings etc?”
- They had a choice of 5 industry and research-relevant questions (decided as a class)
- Class split in 2 groups, then smaller groups of 3 (for peer-support with tech)
- Group A - AI as part I
- Group B - Literature databases as part I
- Swop

# General questions to answer on the literature review experiences (AI vs databases)

1. How long did the respective approaches take the group to complete (try to keep some record of how long you collectively work on each approach).
2. In your view, which approach yielded the most useful review with respect to a reader in the grape & wine industries? Highlight some shortfalls of each approach in your view.
3. Would a combination of the approaches yield a more effective process or better result in your view? Please discuss and provide reasons for your answer.
4. Reflect on anything in general you as an individual or you as a group learned from these experiences.

# Undergraduate literature review/research skills/library training

**Title of your article/assessment (Part I)**  
(State here if it is AI tool guided or library/database guided)

The Authors: your initials, surnames and student numbers \*

Department of Viticulture and Oenology, Stellenbosch University, Private Bag X1, Matieland 7062, South Africa

Submission: 5 May 2023

Key words: **Add some key words related to your report**

## ABSTRACT

Short (less than 250 words), factual and informative summary of significant data collected and conclusion.

[illegible]

MAIN HEADINGS	(capitals)
Sub-headings	(Bold)
Second-order headings	(Bold and Italics)
Third-order headings	(Italics only)

## INTRODUCTION

This section should provide an overview of the topic, explain its significance and purpose, and introduce the main themes or questions that will be addressed in the review.

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skd aksj sh dkj ashdkj ah skdj h askj dh aksj shdkj ash dkj h aksj h dk aksj shdk ash dk ahskj dh aksj shdkj sdj ash dkj shdk aksj shdk kaj shd

## RESEARCH METHODOLOGY

This section should describe the research methods that were used to select the studies for the review. For example, did you use specific databases, search terms, or inclusion/exclusion criteria? Here you should make it clear that you used only the prescribed methods (i.e. either AI tools or library databases) in the relevant section. Also give detail on how you used the tools and which you used most for generating your resulting review.

In the case of the AI tools also give more detail on what you for instance used ChatGPT for – did you generate some of these sections, the title, the abstract for instance? Did it work, or did you need more iterations and how did you approach it then?

LITERATURE SYNTHESIS (can be split into separate sections)

This section should provide a summary of the studies that were selected for the review. It should describe the main findings

**Title of your article/assessment (Part II)**  
(State here if it is AI tool guided or library/database guided)

The Authors: your initials, surnames and student numbers \*

Department of Viticulture and Oenology, Stellenbosch University, Private Bag X1, Matieland 7062, South Africa

Submission: 19 May 2023

**Key words:** Add some key words related to your report

## ABSTRACT

Short (less than 250 words), factual and informative summary of significant data collected and conclusion.

[illegible]

MAIN HEADINGS	(capitals)
Sub-headings	( <b>Bold</b> )
Second-order headings	( <b>Bold and Italics</b> )
Third-order headings	( <i>Italics only</i> )

## INTRODUCTION

This section should provide an overview of the topic, explain its significance and purpose, and introduce the main themes or questions that will be addressed in the review.

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sk dak sjhdjk ashdkj ahsk djhaskj dhakj shdkj ashdkjhaskj hdk aj shdkj ashdk ahskj dhajk shdk aj sdj ashdk aj shdk aj shdk ajshd

## RESEARCH METHODOLOGY

This section should describe the research methods that were used to select the studies for the review. For example, did you use specific databases, search terms, or inclusion/exclusion criteria? Here you should make it clear that you used only the prescribed methods (i.e., either AI tools or library databases) in the relevant section. Also give detail on how you used the tools and which you used most for generating your resulting review.

[illegible]

LITERATURE SYNTHESIS (can be split into separate sections)

This section should provide a summary of the studies that were selected for the review. It should describe the main findings and themes that emerged from the literature, and discuss any inconsistencies or gaps in the research.

Section n 1

# Some skills enhanced by AI interaction



lifelong learning

prompt engineering

data literacy

collaboration

critical thinking

technical skill

ethical considerations

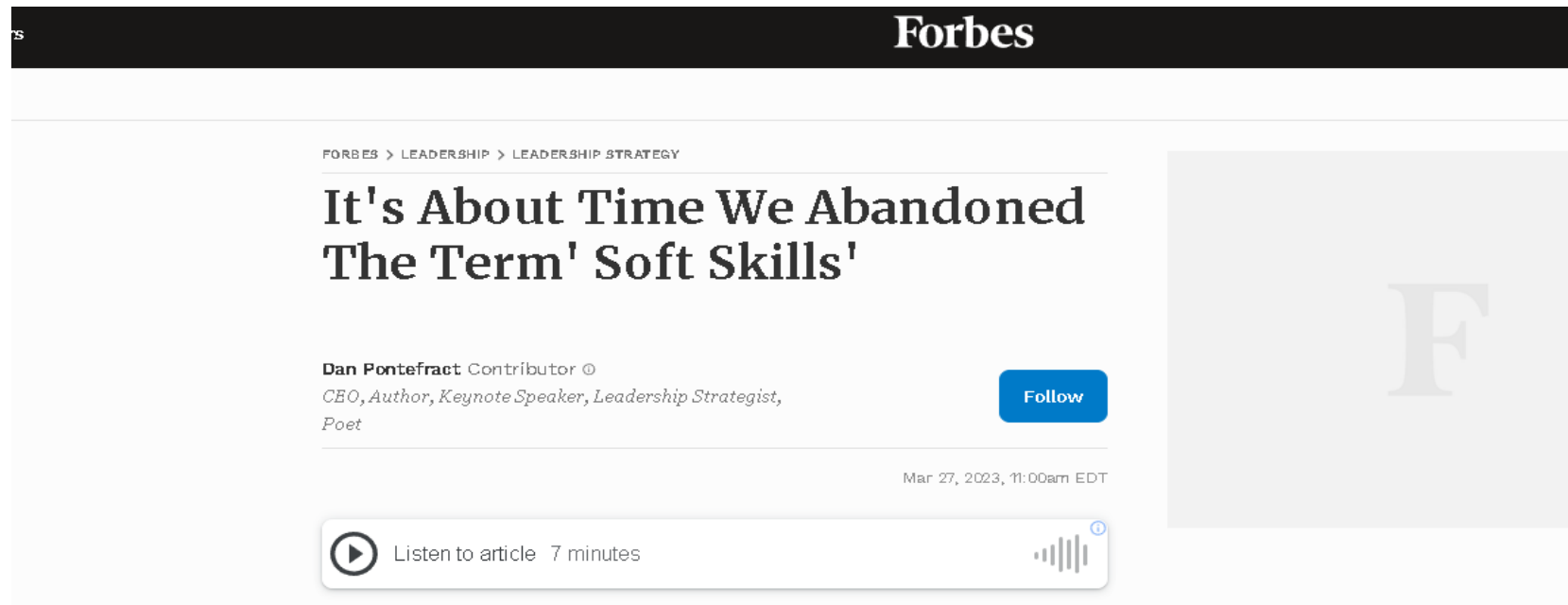
analytical skill

communication

adaptability

# Soft or professional skills?

- Pontefract, 2023 referring to “soft skills”:
- “They form the bedrock of effective leadership, i.e. through communication, problem-solving, critical thinking, emotional intelligence, and teamwork, and deserve the label ‘professional skills’”





# Industrial Engineering Masters

MEM 2022/2023



**Stellenbosch**

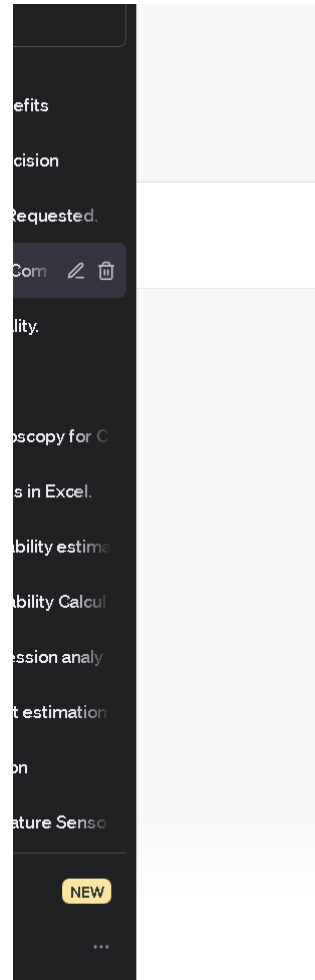
UNIVERSITY  
IYUNIVESITHI  
UNIVERSITEIT

**MASTERS DEGREE IN  
ENGINEERING MANAGEMENT**



# Also a student yet again. . .

- Probability theory homework challenges
- Discovered ChatGPT not the best tutor
- Basic algebra issues, coding mistakes, etc etc.



# Advice from a 3<sup>rd</sup> year undergraduate student



Chat with MEM S14 Managing Change\_Handout.pdf

Greetings and welcome to this helpful PDF file on Managing Change! In this lecture, Dr. Natasha Winkler-Titus discusses the changing nature of work and the context we live in, as well as the importance of emotional intelligence, managerial communication, and responsible leadership in supporting people through change. By the end of this lecture, you will have a better understanding of how to apply effective change leadership and lead change in a turbulent and complex environment.

Example questions:

- How does emotional intelligence play a role in managing change?
- What are some strategies for effective managerial communication during times of change?
- Can you provide examples of responsible leadership in the context of change and innovation?



# Industrial engineering RA

MEM 2022/2023



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**MASTERS DEGREE IN  
ENGINEERING MANAGEMENT**

Topic: “An engineering management view on the future agricultural sciences student and lecturer: entrepreneurship and emerging agritech integration”

# Thoughts

- Community(ies) of practice?
- Similar to entrepreneurship concepts - can be integrated with little disruption I believe
- Teaching, Learning, open assessment, closed exams. . . students to own consequences of “answer generation” without interrogation/scrutiny
- Developing prompt engineering skills in all disciplines. . .
- Students are (and will be) 3 or more steps ahead of all of us. . . embrace that. . .



# Lecturer/tutor roles

- Extract/emphasize key learnings aligned with real-world context/problems
- Application of logic, common sense and critical thinking/analysis/scrutiny
- Guidance on what tools to use where and why/how - some own tinkering required

# References:

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- McKenna, S., Dixon, D., Oppenheimer, D. Blackie, M., Illingworth, S. ChatGPT is the push higher education needs to rethink assessment. *The Conversation*.  
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**AI<sup>2</sup> in Higher Education: Wednesday, 21 June 13:00**

**AI<sup>2</sup> Webinar 4: Summative assessment and AI**



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forward together  
sonke siya phambili  
saam vorentoe



Thank you  
Enkosi  
Dankie