

Empowering Students for Success in an AI-Powered Society

Presentation by Mr Peter Lam
Principal & CEO, Temasek Polytechnic

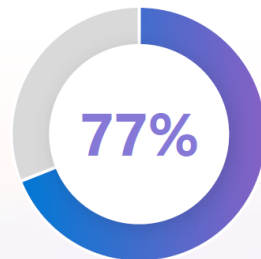


Guiding Principles on the Use of AI in TP

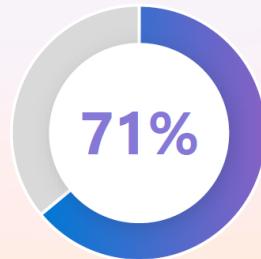
1. Our students will not lose their jobs to AI but will lose their jobs to those who know AI.

The New Hiring Imperative

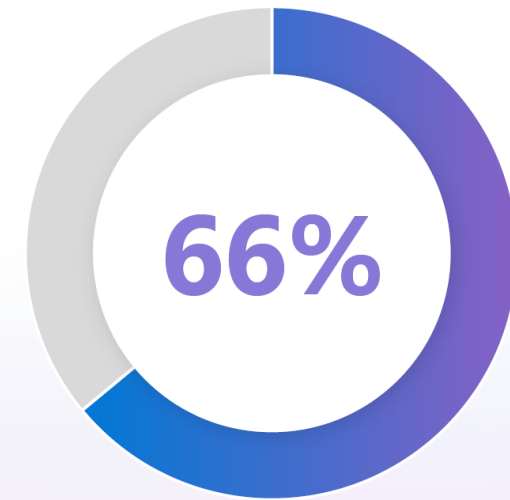
AI aptitude takes center stage



Leaders say early-in-career talent will get greater responsibilities due to AI



Leaders are more likely to hire a less experienced candidate with AI skills than a more experienced one without them



Leaders would not hire someone **without AI skills**

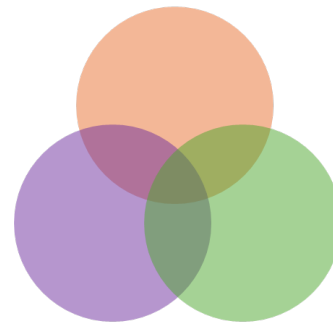
Source: 2024 Work Trend Index Annual Report from Microsoft and LinkedIn



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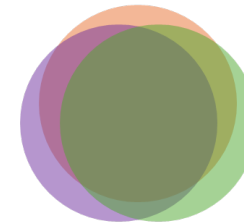
2. The use of AI in the curriculum must be phased and based on the science of learning. AI must serve to amplify students' capabilities and not make them dumber.

TP adopts a 3A approach to guide lecturers to implement AI in the curriculum



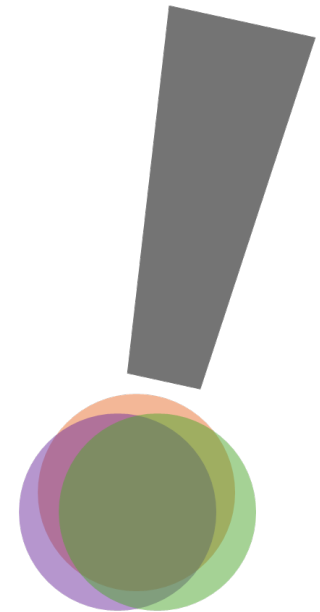
Appreciation

1X



Application

10X



Amplification

10^x

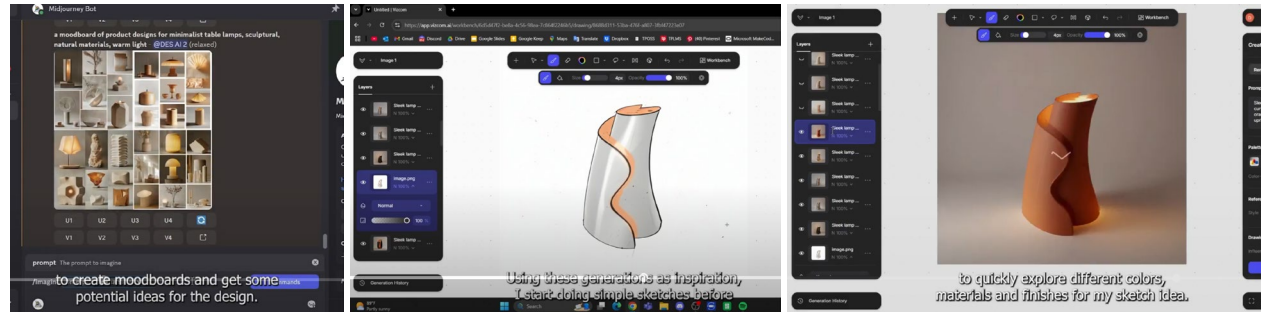
Guiding Principles on the Use of AI in TP

3. Our **students** are digital natives and able to grasp AI quickly. Hence, we place emphasis on training students to use AI ethically, appropriately and effectively.

On the other hand, **staff** will take more time to understand and grasp AI. Hence, the emphasis for staff is to provide training in different types of AI and their applications.

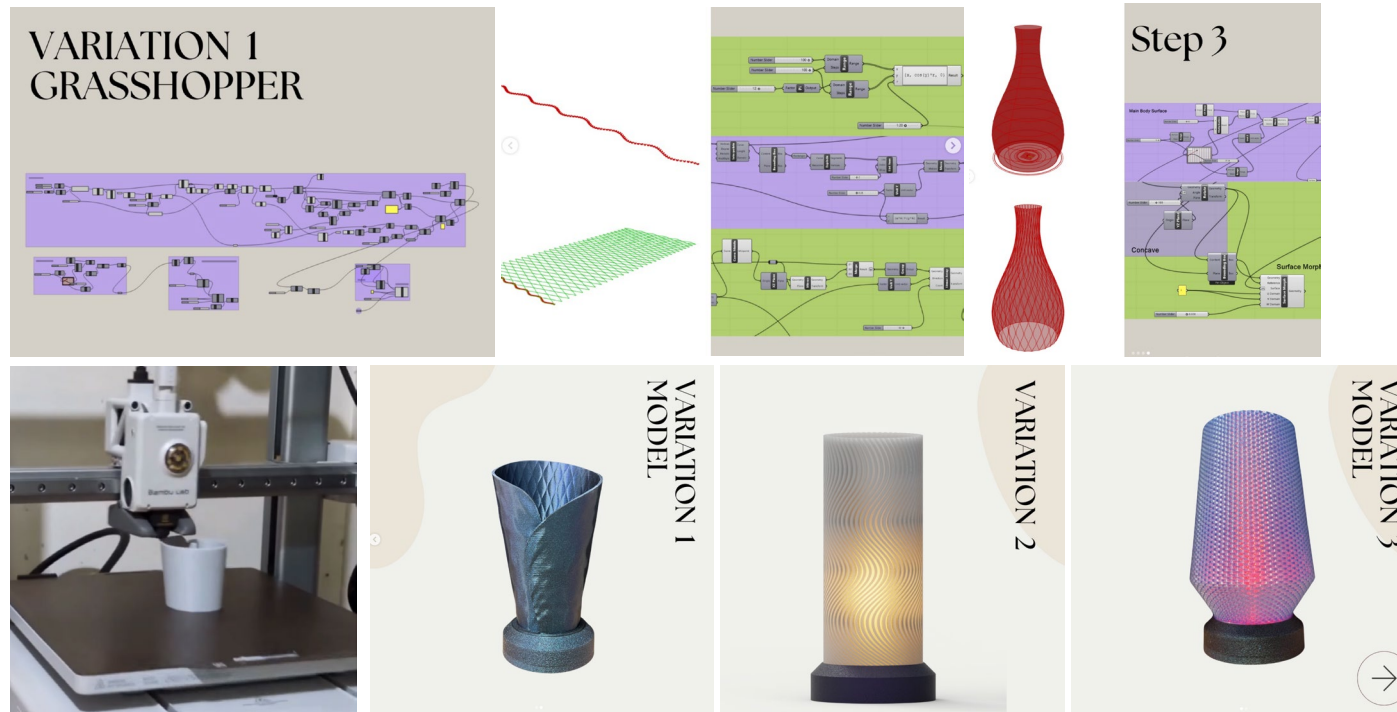


An example of how AI is infused into curriculum



In the module Design Form & Development, Diploma in Product Experience & Design students used Generative AI to experiment with form and light for the inception of an illumination product.

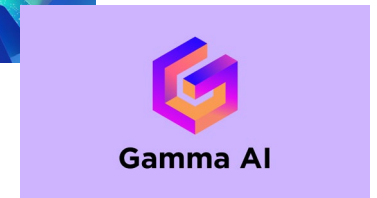
On the left, a student's exploration led to a series of lamp design outputs in various forms.



An example of how AI is infused into the curriculum of the Diploma in Business Practice

A suite of GenAI tools is introduced to the adult learners for enhancing workplace productivity. For example,

- Microsoft Copilot is used for auto-summarising discussions and action points;
- Otter.ai for transcription and summaries;
- Reclaim.ai for smart scheduling and task prioritisation;
- Zoom AI Companion for generating responses, recaps, and action items;
- Gamma AI for ideation and generating PowerPoint outlines to support their presentation planning.



AI Playbooks are made available to staff and students



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The Generative AI Playbook for Staff

Leveraging Technologies, Creating Possibilities



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GenAI Playbook

What is Generative AI

An artificial intelligence model capable in producing contents such as images, text, or music based on prompts given to it.

Capabilities of Generative AI

Examples

- Summarisation of text content
- Generate text in different languages
- Create realistic images and videos
- Analysis of dataset

Limitations of Generative AI

Examples

- May provide **wrong answers** as its text responses is based on probabilities of word occurrences
- May hallucinate resulting in misinformation
- May produce **inappropriate responses** that are **biased** and **harmful**
- May disclose data that infringe copyright or data privacy

What are the Generative AI tools and How to get started

Below are some of the common Generative AI tools available:

Versatile Conversational Chatbots	Image Generators	AI Assistant Builder
 Copilot	 ChatGPT	 Gemini
 Midjourney	 DALL-E	 Copilot Studio

Get Started: You can sign up by creating a new account at the website. The basic service is typically free of charge to use while more advance service will require you to subscribe with payment.

Version 2

The Generative AI Playbook for Student

A Guide to Using Generative AI



Generated by DALL-E: A helpful robot in light blue colour sitting beside a child.



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What is Generative AI – An Overview

At TP, we encourage the effective and ethical use of AI generative tools such as ChatGPT, Copilot or Gemini for teaching, learning and work. This playbook serves as a guide for both full-time and part-time students to leverage Generative AI tools in their learning journey.

What is Generative AI (GenAI)

GenAI is an artificial intelligence model capable in producing contents such as images, text, or music based on prompts given to it.

Leveraging Generative AI For Learning

Helpful in

- Explaining complex topics
- Supporting research and queries
- Providing suggestions to improve writing
- Generating ideas
- Assisting with time management and goal setting

Beware

- Considered as plagiarism* if you copy answers produced in totality!
- Dangers of sharing personal or confidential information
- Unverified data. Do not rely solely on information produced by the AI tool – verify and fact check!

Attention

*Plagiarism is a serious academic offence. Disciplinary action will be taken against students caught for plagiarism. The penalty for plagiarism and abetting plagiarism could include failing the subject, suspension and removal from academic course of study.

When in doubt, do check with your lecturers on the usage of AI tools for any assessment, and seek advice on the appropriate referencing format for the acknowledgment of all original sources of work used in your assignments, projects or other work.



Version 2

7

 **TP** 

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Training Courses for Staff

- Introduction to GenAI Tools (for all staff)
- Responsible Use of AI (for all staff)
- D-R-E-A-M with Gen AI (prompt engineering course for all staff)
- Introduction to AI in Education (for all academic staff)
- GenAI for Office Productivity (for all non-Academic Staff)



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4. Use AI as a force multiplier. AI can be used to enable **personalised learning** and more effective T&L. AI can also be used to enhance work effectiveness and efficiency.



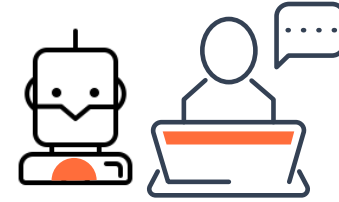


Customised Feedback – e.g. Speaker Coach

Leverage AI to **augment human tutors** in giving **personalised feedback** for improving oral presentation skills



With AI...



Your Rehearsal Report (Preview)

Summary

Good job rehearsing! Keep up the hard work.

2:29
total time spent

4
slides rehearsed

Fillers

To sound more polished and confident, try to avoid using filler words. Pause or take a breath to relax. Some filler words to avoid are:

umm

[Learn More](#)

Pace



Your pace is just right! Keep it up!

Your average pace over time



The student used to practise oral presentations in class and receive feedback from the tutor

The student can now practise and receive feedback from the Speaker Coach. The tutor provides follow-up personalised support informed by the AI feedback

Outcomes

Studies of mean scores of two cohorts has shown **improvement from one to two grades**. The use has now been scaled for all core communication subjects.





Customised Feedback – e.g. Chatbot

Leverage AI to **give personalised feedback** for research/writing-based assignments



With AI...



Here's some feedback on your first discussion paragraph:

- **Main Idea:** You've stated that clear expression of ideas is a key reason for effective communication. That's good, but ensure this ties directly back to why polytechnic students specifically need this skill.
- **Concrete Evidence:** You mention online teacher discussions as evidence. Although it's a relevant observation, could you provide more specific examples or situations where clear communication impacted the outcome?
- **Explanation/Elaboration:** Your personal observation is helpful but try to elaborate on how this directly prepares students for future careers.
- **Link Back:** Your conclusion needs to more clearly link back to the importance for polytechnic students. How does learning this skill at school prepare them practically?

Let me know if you need further clarification or have questions!

The lecturer used to mark drafts and provide individual feedback to students

The chatbot provides personalised feedback on the drafts and scaffolds learning with questions without giving direct answers

Outcomes

At least 77% of students interacted with the chatbot longer than an average in-person consultation. **Each tutor saved 16 hours per semester** in providing feedback; the time saved enabled them to provide more attention and support to lower-achieving students.





Adaptive Learning – e.g. AI Study Companion

AI-powered solution that enables lecturers to **build their bots** for personalised learning and tutoring



With AI...



The lecturer used to answer all questions posted by students

The AI Study Companion is embedded in the Learning Management System to provide 24/7 support to address student questions on the subject content and assessments; self-check assessment of understanding is available through AI-generated quizzes.

Outcomes

The implementation **saved each tutor about 2 hours per week** in answering questions. This has enabled them to focus on facilitating discussions and designing meaningful classroom activities.



Guiding Principles on the Use of AI in TP

5. Leverage partners. We want to learn from other **academic institutions** about their use of AI and the guardrails they put in place to ensure proper use of AI.

We also want to work with **technology partners** to keep pace with AI developments and introduce appropriate AI technologies into the classroom.

Collaboration with AWS

Set up FutureX in Oct 2024 - TP's AI and Digital Technologies Centre with AWS



Thank you

