



GenAI training for TVET teachers and trainers

Upskilling educators to use GenAI effectively and ethically in their teaching practice

Promising Practice

Implemented by: Temasek Polytechnic, a public training provider that prepares school leavers and working adults for a future of dynamic change by equipping them with relevant knowledge, skills and an attitude which embraces lifelong learning.

Where: Singapore

Status: Started in September 2024

Summary: The training programme for generative AI for educators is a blended learning course available to academic staff to allow them to experiment with AI tools for pedagogical uses such as content creation; practice and feedback; personalized tutoring; and to discuss and devise strategies to redesign assessments. The course was created to support academic staff at TP to utilize AI and to be able to respond to its new capacities.

Overview

Generative Artificial Intelligence (GenAI) has been transforming the education landscape. It provides numerous opportunities for teachers to improve their pedagogical practice by creating new content differentiated to individual students. At the same time, GenAI is being used by students in their work, which is challenging the validity of traditional assessment procedures. With the proliferation of GenAI tools, traditional take-home written assessments are vulnerable to plagiarism, making it difficult for educators to verify genuine learning and to uphold academic standards. Educators must face this difficulty, redesigning their assessment procedures to preserve integrity and ensure that students are achieving their learning outcomes whilst acknowledging that students are going to continue to use GenAI tools.

The GenAI training programme for educators has been tailored to the academic staff of Temasek Polytechnic (TP) to encourage the effective and ethical use of AI. Comprising three modules, the aims are to upskill academic staff to equip them to adjust their practice to the demands and challenges of new technology. The programme is designed both for staff to integrate AI into their repertoire of teaching tools and methods whilst also providing support for them to navigate the changing way students are learning.

Description

The GenAI training programme helps educators to understand GenAI technology and how it can augment their teaching practice. Teachers learn more about how their students can use GenAI tools.

The training course has a practice-embedded, dialogic approach where teachers have the opportunity and are encouraged to discuss the positive and negative implications of using GenAI. The focus is to engage teachers to consider what are effective and ethical uses of GenAI and what that might look like in supporting their students' learning process. Teaching staff are encouraged to articulate what human skills and connections remain important in an increasingly AI-driven world and how they might convey that to their students.

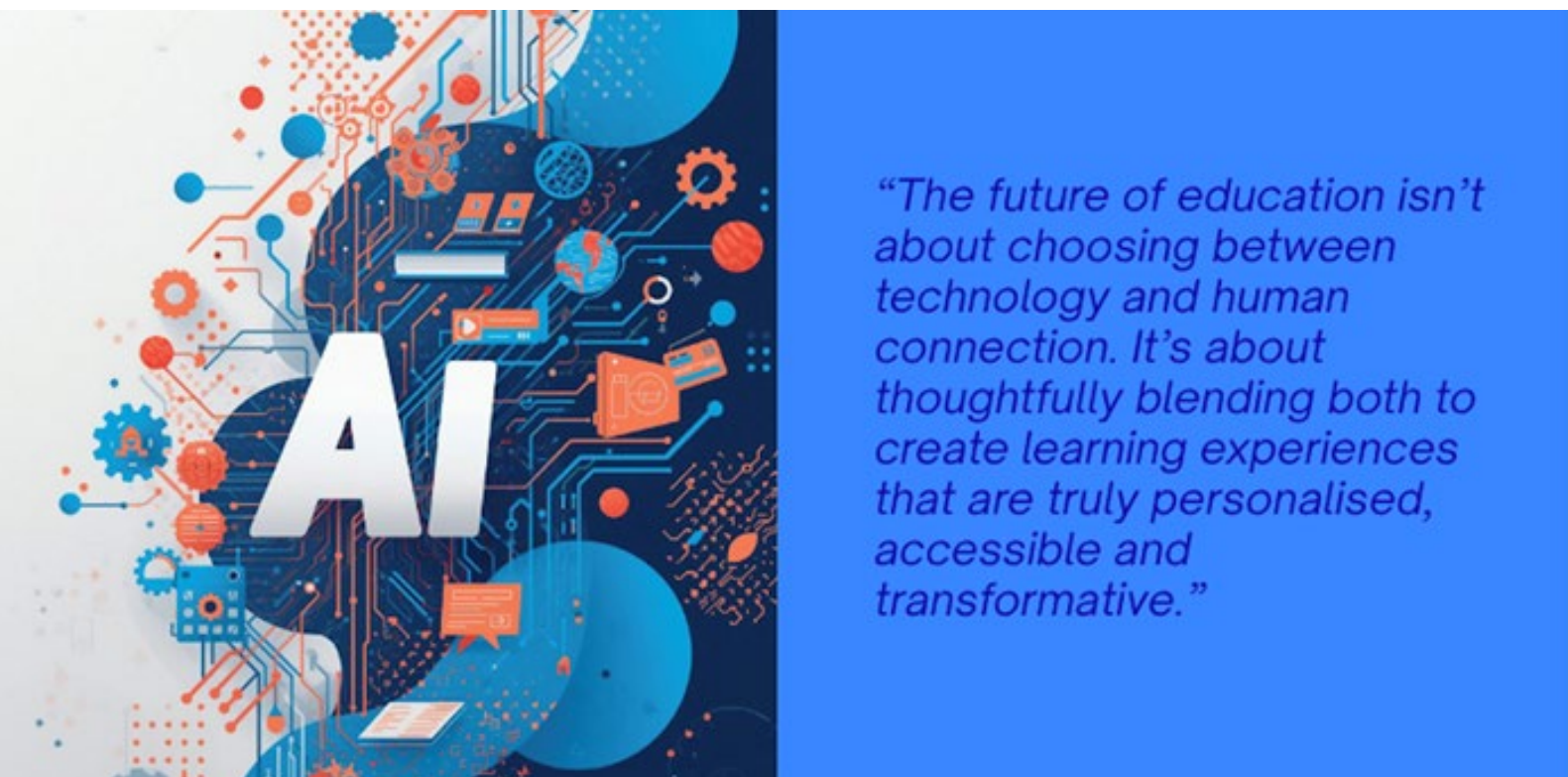
The GenAI training modules

The training comprises three modules:

Module 1 - Introduction to AI in education. This is a self-paced online module. Teachers explore what AI is, why it matters in teaching and learning, and how it is reshaping the educational landscape. Educators gain a baseline literacy in AI and earn a digital badge if they achieve at least 80% in the final quiz. The quiz assesses the understanding of the ethical considerations which must underpin the use of AI for teaching and how to guide students in the responsible use of AI to support classroom learning. The learning outcome of module 1 is for teachers to be able to explain basic principles in using AI in an ethical and effective way.

Module 2 - Using generative AI to augment teaching and learning. This is a workshop for 25-50 teachers to integrate AI tools in their teaching practice. Teachers are introduced to AI technology such as ChatGPT, CoPilot and others. The in-person workshop is 3.5 hours, enabling participants to explore practical strategies for improving curricula and content creation for lesson planning, feedback and improving learner engagement. For example, teachers are coached to use GenAI to gamify a fun and effective lesson for students which will support

Fig 1.2 Extract from a leaflet on the GenAI course



the expected learning outcome. There is an additional 2.5-hour workshop where teachers demonstrate how they can apply what they have learnt to their classroom practice. The demonstration builds the confidence of teachers to use AI.

The **learning outcomes** of module 2 are that teachers have the practical skills to use generative AI programmes for a range of classroom activities and learning assessments such as curriculum design, content creation, formative practice and feedback and courseware development. Teachers should be able to critically evaluate the outputs generated with the use of AI.

Module 3 – Assessment in the age of AI. Also in a workshop format (for up to 30 participants), this module supports teachers to redesign their assessments for the generative AI era, ensuring an alignment with the required learner outcome expectations whilst maintaining assessment integrity. Teachers discuss how to redesign assessment approaches using the capacity of AI whilst mitigating risks of plagiarism amongst students.

The learning outcomes of module 3 aim to empower educators to deter plagiarism by integrating GenAI resilient assessment designs to maintain their validity. Teachers should also be able to leverage GenAI as a pedagogical tool to foster higher order thinking and evaluative judgement of their students.

For modules 2 and 3, the workshops are constituted to include teachers from similar subject disciplines to ensure discussions are relevant for and specific to all participants. Activities include hands-on exercises; guided discussion and peer sharing on creating AI-augmented lesson plans and content; and redesigning assessments. As a group, participants examine an existing assessment task relevant to their discipline and collaboratively work to identify possible vulnerabilities to GenAI misuse and to brainstorm re-design options. They share opinions and critique how they might change their teaching and assessment approaches. At the end of each workshop, teachers are required to explain how they would apply what they have learnt in their practice.

Objectives

How educators should approach the use of GenAI in their pedagogical practice whilst defining appropriate boundaries for GenAI is a complex issue with which all educators need to grapple. The GenAI training programme was created to help teachers to understand the technology and to have the knowledge and skills to use GenAI in an ethical and effective way for teaching, learning and assessments. The objectives of the programme are that teachers know more about the potential benefits of GenAI tools and can apply them to their teaching practice ethically and effectively. They also learn how GenAI can be used to distort assessment processes and how to re-design them.

Outcomes and impact

During 2024-2025, close to 100% of all academic staff (>800 teachers) at TP have been required to do the GenAI course as part of their compulsory professional development. All educators need to be equipped to use GenAI to augment their teaching practice. They must also be able to design valid assessment procedures for students. Support for teachers must be done through courses where they learn collaboratively and in a way which shows they can understand what GenAI can do and apply it in an ethical and effective way.

After participating in the course, teachers report a better understanding of:

- How GenAI works as a technology
- The ethical implications and pitfalls of GenAI
- How to use it in teaching practice to foster critical thinking and problem solving

More broadly, teachers report a mindset transformation. They shift from focusing solely on safeguarding against plagiarism to developing confidence and competence in building students' capacity in using GenAI for deeper learning and critical thinking. The workshops focus on GenAI not just as a threat but as an opportunity to design authentic learning experiences.

Insights and challenges faced

In practice, it is not easy to develop a course in GenAI which is accessible and relevant for all teachers within an education and training environment, for the following reasons:

1. **GenAI tools and technology are changing so quickly.** Even during the training period, new GenAI tools are being developed and existing ones updated to include new functionalities. To accommodate this, the course is constantly reviewed and updated to include the latest technology. Course trainers are also supported to keep their knowledge up to date.
2. **Teaching staff approach GenAI from various disciplines.** It is difficult to support teachers to apply GenAI to their practice without using specific examples from their own disciplines. This was an issue raised at TP during a pilot run of the course. It was decided when rolling out the course to engage groups of teachers from the same discipline. Training materials included use-cases appropriate to different teaching fields to allow contextualization by all participants. Introducing a new technology such as GenAI requires specificity to enable all staff to understand the consequences relevant to their subject area.
3. **Sustaining application after the training had ended.** Throughout the training course, attention was given to all teachers being able to understand clearly the consequences of GenAI and yet to still be able to include it in their practice. Educators were expected to work together to analyse, critique and redesign their own assessments and to understand the threats and opportunities of GenAI. Through peer discussion and

joint problem-solving, participants were able to come up with suggestions and solutions which were applicable. After the course, teachers were required to submit evidence of how they applied what they had learnt to their practice. These submissions showcased redesigned assessment tasks and examples of how educators integrated GenAI into their teaching.

Conclusions and next steps

The GenAI training course for teachers at Temasek Polytechnic is driven by a need to improve teacher knowledge of AI tools to a sufficiently high level that they can apply them and integrate them into their training practice. At the same time, teachers must be clear on how to adjust their traditional assessment processes to maintain their legitimacy and efficiency. The Temasek Polytechnic training programme has been designed to achieve these aims through a careful design of training modules using a dialogic approach. Teachers from the same disciplines engage in the training together thereby encouraging peer discussion with use-case examples specific to the actuality that teachers face in their classrooms.

Teachers from the same disciplines continue to work in a community of practice to share how they are using GenAI and to discuss what is and isn't working. Under its Learning Academy, TP organizes regular lunchtime webinars for teachers, which are recorded and made accessible, to share teaching practice including novel ideas for using GenAI. A video library of ideas is available as is a dedicated monthly newsletter, Tinkering with AI, to inspire teaching staff with ideas and success stories.

Learn more

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Temasek Polytechnic

To learn more about Temasek Polytechnic, see:

<https://www.tp.edu.sg>

To see the video library of GenAI webinars, see:

<https://unevoc.unesco.org/i/990>

An article on 'Harnessing Artificial Intelligence to Drive Educational Transformation at Temasek polytechnic can be viewed here: <https://unevoc.unesco.org/i/991>

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