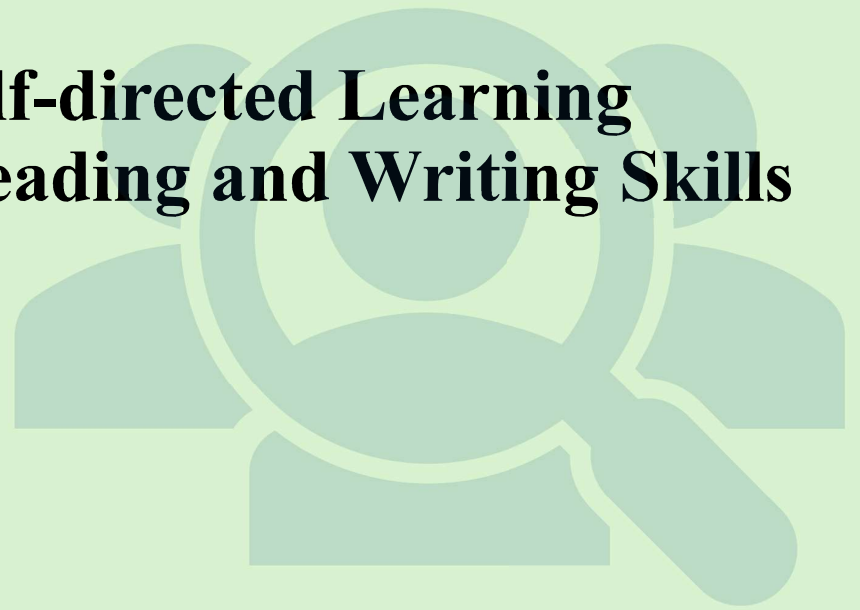


Item (iv) –Exploring Artificial Intelligence Series:

(4) Enhancing Students' Self-directed Learning Capabilities and English Reading and Writing Skills at the Secondary Level

Faculty of Education, HKU

Dr Rona LI



Objectives of workshop

1. To enhance teachers' knowledge and understanding of the basic concepts of Artificial Intelligence (AI) in relevance to English Language learning at the secondary level;
2. To explore the integration of AI tools into the design of learning, teaching and assessment activities to promote self-directed learning and enhance students' reading and writing skills;
3. To provide insights on how to integrate AI into the reading and writing curriculum through holistic planning; and
4. To raise teachers' awareness of and provide solutions to address the limitations of and concerns about the use of AI.

Rundown

1. Introduction (What is AI and pointers from EDB)
2. Effective strategies of using AI to facilitate the development of students' self-directed learning capabilities
3. Leveraging AI to integrate classroom and independent learning and enhance students' English reading and writing skills
4. Limitations of and concerns about the use of AI
5. Conclusion/ Q&A

1. Introduction

What is Artificial Intelligence (AI)?

- Artificial intelligence (AI) is the ability of a digital computer or computer-controlled robot to **perform tasks commonly associated with intelligent beings**.
- Artificial Intelligence (AI) is good at helping people solve routine challenges. A dominant technique in developing effective AI is **Machine Learning (ML)**. ML is used to develop AI by getting computers to do something without being programmed with super-specific rules. ML can help machines recognize patterns and adjust to unique situations, like providing translation services in a variety of languages.

Sources:

- (1) <https://www.britannica.com/technology/artificial-intelligence>
- (2) <https://aied.talic.hku.hk/teaching-and-learning/terminologies/>

What is Artificial Intelligence (AI)?

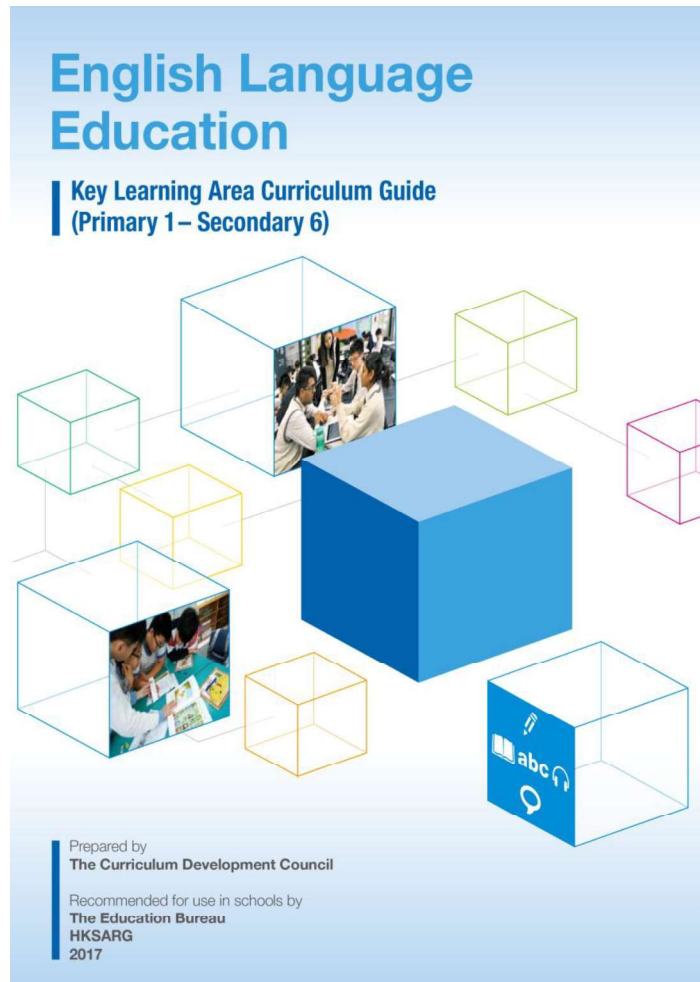
- Artificial intelligence (AI) is one of the systems that makes the computer and machine **respond like human intelligence** (Dodiya and Shah, 2021, cited in Saha, et al. (2025)).
- AI can aid education by automating skilled administrative tasks to allow teachers more time to teach and engage with students in personalized ways, **augmenting rather than replacing human-led teaching** (Milberg, 2024).
- According to Baker, et al. (2019), the development directions of AI in education include tools designed to **support educational management, teaching and pedagogy, as well as teaching and assessment**.

AI in education

According to Pokrivcakova (2019, p.140-143), AI has a potential to make **digital language learning** truly personalised to each learner. Here are some common forms of application of AI in language education:

- a) Generating personalized learning materials
- b) Using machine translation tools
- c) Utilising AI writing assistants
- d) Conversing with chatbots
- e) Applying AI-powered language learning software
- f) Relying on intelligent tutoring systems (ITS)

Pointers from EDB

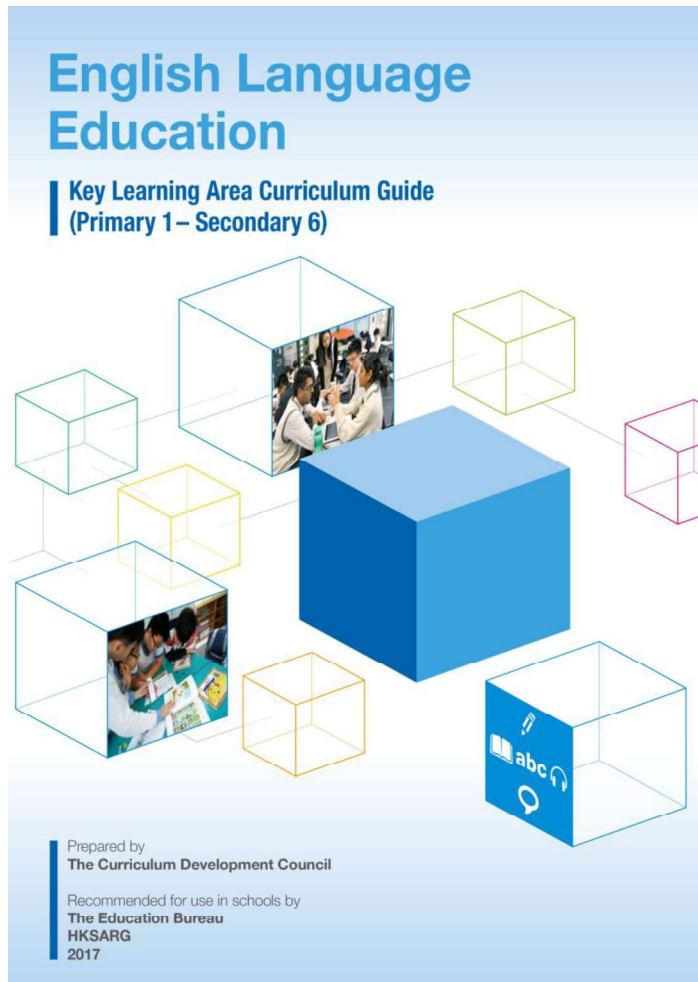


3.2.3 Promoting e-Learning and Information Literacy

To help students manage the vast amount of information in the digital age, teachers can:

- work closely with the teacher-librarian and IT co-ordinator to create a favourable learning environment with easy access to a wide variety of information and reading materials;
- provide students with opportunities to apply IT skills to process and create multimodal texts, and share information and ideas through online platforms;
- facilitate discussion and evaluation of the power, accuracy and reliability of information, and the effectiveness of different sources in conveying information (e.g. websites, documentaries, news articles, advertisements);
- guide students to identify the bias and stereotypes conveyed in different kinds of texts;
- design learning activities and projects that require students to evaluate, extract, organise and synthesise information and ideas from different sources, and create new ideas of their own; and
- promote ethical use of information (e.g. acknowledging sources of information properly, preventing cyberbullying) and respect for intellectual property rights.

Pointers from EDB



4.2.5 Adopting e-Learning in the English Language Education Classroom

e-Learning refers to an open and flexible learning mode involving the use of the electronic media, including the use of digital resources and communication tools to achieve the learning objectives. In the context of the English Language Education KLA, e-learning not only fosters purposeful communication and interaction among students and between students and teachers, but also contributes to effective learning and teaching.

The following examples illustrate how e-learning can be integrated into the English Language Education classroom:

- *Strengthening Interaction and Motivation with the Use of e-Platforms*
- *Making Effective Use of Lesson Time with the “Flipped Classroom” Strategy*

Pointers from EDB

English Language Education

Key Learning Area

English Language

Curriculum and Assessment Guide

(Secondary 4 - 6)

Jointly prepared by the Curriculum Development Council and
the Hong Kong Examinations and Assessment Authority

Published for use in schools by the Education Bureau
HKSARG

2021

Effective from Secondary 4 in the 2021/22 school year

4.2.6 Adopting e-Learning in the English Language Classroom

The use of interactive learning tools to complement direct face-to-face contact not only provides students with powerful mechanisms for communication and collaboration with the teacher and each other, but also promotes better understanding of their learning progress. For example, teachers can:

- present the lesson in a motivating and engaging way by making use of **multimedia presentation tools**;
- provide opportunities for **students to take charge of their own learning** through selective use of online resources;
- encourage students to become active users of English when they **apply their IT skills to seek, share and use information and resources for learning** as well as to interact with teachers, other students and people around the world;
- engage students in interactive and collaborative work through **online discussions and sharing of ideas**;
- enhance students' learning motivation and strengthen class interaction both within and beyond the classroom with the **use of a range of e-resources, e-learning tools and e-platforms**;
- make effective use of learning time, cater for students' diverse needs and promote **self-directed learning** with the “Flipped Classroom” strategy; and
- use **e-assessment** that facilitates the understanding of students' learning progress, the provision of feedback and the implementation of assessment for learning or assessment as learning.

Pointers from EDB

English Language Education

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4.2.7 Promoting Self-directed Learning

IT is an effective tool to facilitate SDL. The prevalence of [online learning opportunities](#) and easy access to the Internet allow students to assume greater responsibility in their own learning. Equipping senior secondary students with the [necessary IT skills for SDL](#) also helps prepare them for the challenges in the rapidly changing digital world. Therefore, schools should leverage technology to [help students plan for, monitor and evaluate their own learning](#). The success of promoting SDL hinges largely on teachers' instructional practice and guidance in the use of technology-enhanced learning and teaching resources.

Brainstorming task

Share with your groupmates your experience of using AI in teaching

- Have you used AI in your daily teaching?
- Have you used AI to facilitate your lesson planning?
- How does your school support you in using AI to enhance teaching/ learning effectiveness?
- Share any good/ not so good experience of using AI

2. Effective strategies of using AI to facilitate the development of students' self-directed learning capabilities

SDL indicators	Description
Goal setting	Students identify own learning goals & learning activities
Self-planning	Students regulate and plan for the detailed decisions and arrangements associated with own learning, such as planning, creating outline of schedule
Self-monitoring	- Students self-manage their own time - Students monitor own repertoire of learning strategies - Students adjust own learning pathway as they progress
Self-evaluation	- Students are aware of the assessment criteria - Students critically evaluate work according to set criteria
Revision	- Students revise their work based on the feedback received from their teacher or peers at various stages - Students reflect on their own learning and apply what they have learnt to new contexts

SMART Goals

Goals should be:	Guiding questions
 Specific	What will I achieve? What actions will I take?
 Measurable	How can I measure how much I have achieved?
 Achievable	Is the goal doable? What skills and resources do I need?
 Relevant	Is this relevant to my needs and learning styles?
 Time-based	How much time should I spend each day/week working on my goal?

SDL indicator (1) – Goal setting

- Encourage students to identify their learning goals
 - Keep track of one's progress
 - Enhance sense of ownership in learning
 - Promote self-discipline

SDL indicator (1) – Goal setting

Example
A letter of
proposal

SDL indicator (2)(3) – Self-planning/ Self-monitoring

- Students take the initiative to draft their own study plan (e.g. scheduling)
- Cultivate a sense of ownership
- E.g. Self management/ Time management

SDL indicator (2)(3) – Self-planning/ Self-monitoring

A letter of proposal

TIME TO TRY

SDL indicator (4) and (5) Self-evaluation and Revision

- Students to refer to the goals set at an earlier stage
- To promote independent learning by encouraging students to exercise self-evaluation

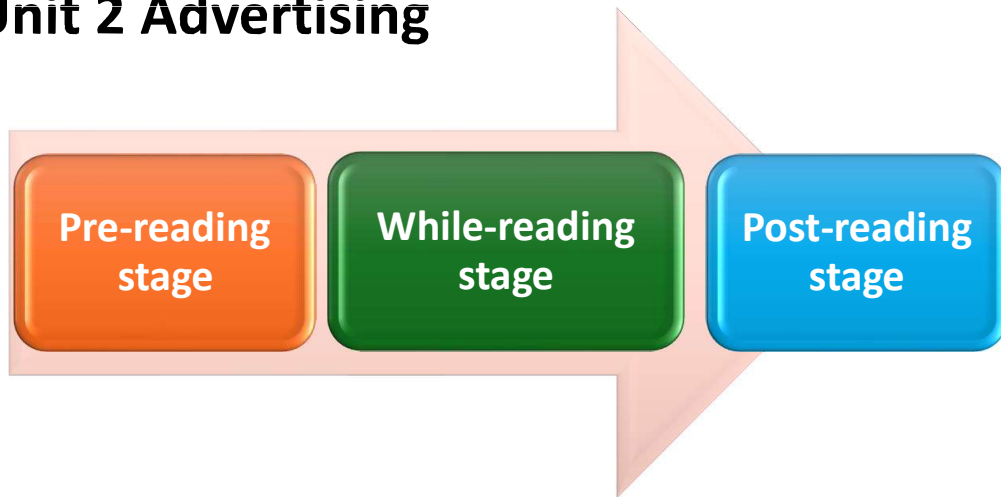
A quick **summary** - Effective strategies of using AI to facilitate the development of **student self-directed learning capabilities**

Self-Directed Learning indicators	Possible tasks to do	AI tools to use
Goal-setting	Set SMART goals	Magic Student (Study Bot)
Self-planning	Draft study plan to enhance self management	Magic Student (Study Habits)
Self-monitoring		
Self-evaluation	Students to refer to the goals set at an earlier stage	
Revision		

3. Leveraging AI to integrate classroom and independent learning and enhance students' English reading and writing skills

Holistic planning of a textbook unit with the infusion of AI-powered tools in **Reading** and writing lessons

Unit 2 Advertising



Longman English Spark! 3A

Unit 2 Advertising

Unit 2 Advertising

This unit is about advertising. Students will listen, read and talk about advertising. They will also complete a task (designing an ad and writing a letter of proposal) using the vocabulary and language items presented in the pre-task support.

Reading texts	Text 1 – How do advertisements persuade us? Text 2 – My favourite Ads
Target reading skills and strategies	Activate schemata before reading/ Make prediction Infer meanings of unfamiliar words Understand the tone and attitude of the writer
Writing tasks	1. Design an ad 2. Write a letter of proposal
Communicative functions	- Giving descriptions - Expressing views - Offering constructive feedback

Pre-reading stage – Activating schemata

Pre-reading stage – Making prediction

A quick summary – Using AI tools at the **Pre-reading stage**

	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
Pre-reading stage	activate their schemata before reading	Twee (Find Discussion Questions)
	make prediction	Magic Student (Role Play)

While-reading stage – Infuse teaching/ assessment of reading skill

(1)Working out meaning of unfamiliar words

- Target reading skill
 - Inferring meaning of unfamiliar words

While-reading stage – Infuse teaching/ assessment of reading skill
(2) Understanding the tone and attitude of the writer

- Target reading skill
 - Understanding the tone and attitude of the writer

A quick summary – Using AI tools at the **While-reading stage**

	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
While-reading stage	develop reading skill (1) Working out meaning of unfamiliar words	Magic Student (Role Play) Magic Student (Character Chatbot)
	develop reading skill (2) Understanding the tone and attitude of the writer	

To summarize – Infusing AI-powered tools into a **READING** unit

	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
Pre-reading stage	activate their schemata before reading	Twee (Find Discussion Questions)
	make prediction	Magic Student (Role Play)
While-reading stage	develop reading skill (1) Working out meaning of unfamiliar words	Magic Student (Role Play) Magic Student (Character Chatbot)
	develop reading skill (2) Understanding the tone and attitude of the writer	

Hands-on activity

- In your material pack, you will find a copy of the textbook unit
- Try out some of the tools just introduced to you to accomplish the following tasks:
 - (1) Use AI-powered tool(s) to design some **pre-reading activities** that can be used in an S4 reading lesson
 - (2) Use AI-powered tool(s) to design some **while-reading activities** that can be used in an S4 reading lesson

Share what you have done with your groupmates.

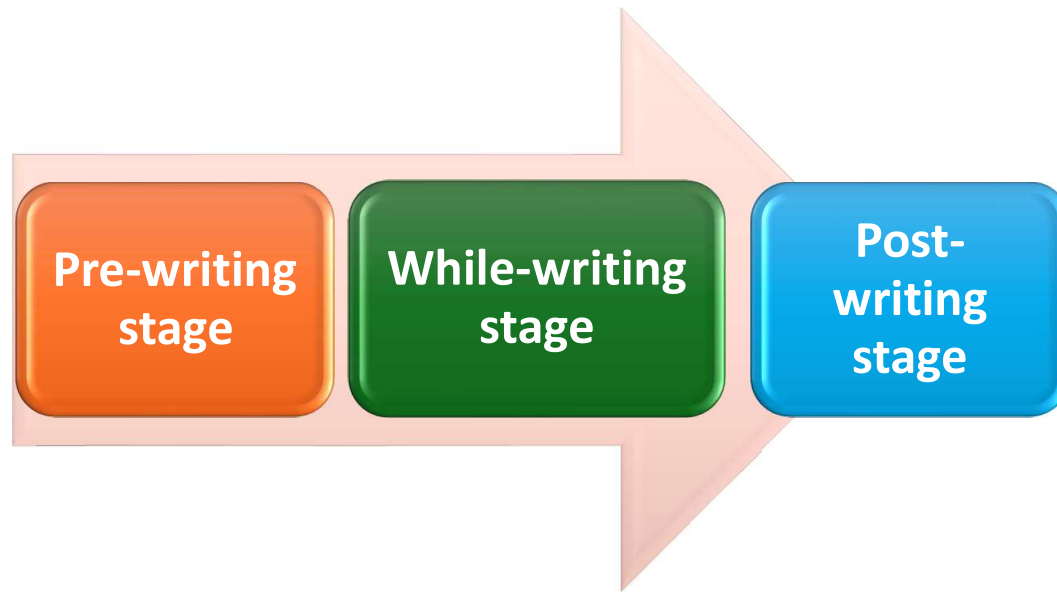
	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
Pre-reading stage	activate their schemata before reading	Twee (Find Discussion Questions)
	make prediction	Magic Student (Role Play)
While-reading stage	develop reading skill (1) Working out meaning of unfamiliar words	Magic Student (Role Play) Magic Student (Character Chatbot)
	develop reading skill (2) Understanding the tone and attitude of the writer	
Post-reading stage	deepen understanding of things learnt at the while-reading stage	
	transfer textual features and vocabulary learnt in a new text	

Post-reading collaborative tasks – some teaching ideas

Question Generation	Word Detective Groups	Text Comparison
Suggested activity In pairs or small groups, students can create questions based on the text. To encourage students to apply the reading skills they've acquired (ie. work out meanings of unfamiliar words; understand the tone and attitude of the writer), these questions should focus on these two skills. These questions can then be used for a class quiz or discussion.	Suggested activity Divide students into small groups and give each group a reading passage with several unfamiliar words. Each group works together to deduce the meanings using context clues, then shares their findings with the class.	Suggested activity Give students two texts with different tones and attitudes on the same topic. In groups, they compare and contrast the texts, discussing how they can differentiate the tone and attitude in the two texts.

Post-reading stage – Transferring textual features and vocabulary learnt in a new text

- From **Reading** to **Writing**



Holistic planning of a textbook unit with the infusion of AI-powered tools in reading and **WRITING** lessons

Writing task

Design an ad and Write a letter of proposal

Pre-writing stage – Brainstorming ideas

- Help students gather different ideas before doing a writing task
- Reduce anxiety of starting on a blank page when approaching a writing task

A quick summary – Using AI tools at the **Pre-writing stage**

	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
Pre-writing stage	brainstorm ideas for an upcoming writing task	Magic School (Debate Partner)

Pre-writing collaborative tasks – some teaching ideas

1. **Picture Prompts:** Show students a series of pictures related to the writing topic and have them discuss what they see. This can help generate ideas and vocabulary.
2. **Word Banks:** Create word banks related to the writing topic and have students work in groups to add to them. This can help expand their vocabulary and provide useful words for their writing.
3. **Carousel Brainstorming:** Set up stations around the classroom with different aspects of the writing topic. Groups rotate through the stations, adding their ideas to each one.

Pre-writing collaborative tasks – some teaching ideas

After students have gathered some ideas after their independent learning experience, ...

Picture prompts	Word Banks	Carousel Brainstorming
Suggested activity Put students in groups and give each group an example of a persuasive advertisement. Based on what they've gathered interacting with Debate Partner, students discuss what they see in the advertisement.	Suggested activity Put students in groups and invite each group to contribute to the word bank. Examples of topic related to this theme (ie. How advertisements persuade us) may include 'use of facts and figures', 'use of visuals', 'experts and celebrities' and 'emotional appeal'.	Suggested activity It's an extension of the 'Word banks' activity. In this task, T facilitates rotation of the banks to encourage inter-group sharing.

Post-writing stage – paraphrasing ideas in written texts

- Use AI-powered tool to paraphrase ideas in written drafts
- Facilitate revision of work
- Useful for students who have a small vocabulary bank

Post-writing stage –proofreading and editing written work

- Use AI-powered tool as a Writing Assistant
- Help proofread and edit written work when polishing the final draft

To summarize – Infusing AI-powered tools into a **WRITING** unit

	Objectives To enable students to...	Use of AI tools to facilitate teaching and learning
Pre-writing stage	brainstorm ideas for an upcoming writing task	Magic School (Debate Partner)
Post-writing stage	paraphrase ideas in written texts	Quillbot (Paraphraser)
	proofread and edit written work	Quillbot (Grammar Checker) Magic Student (Tutor me with AI)

Post-writing collaborative tasks – some teaching ideas

- 1. Writing Circles:** Students sit in a circle and pass their writing around, each adding a sentence or idea.
- 2. Peer Evaluation:** Students exchange their written work and provide constructive feedback to each other.

Hands-on activity (20 minutes)

- In your material pack, you will find a copy of a textbook unit

Try out some of the tools just introduced to you to accomplish the following task:

Use AI-powered tool(s) to design some **pre-writing and/ or while-writing and/ or post-writing activities** that can be used in your S1 writing classrooms.

Share what you have done with your groupmates.

4. Limitations of and concerns about the use of AI

Limitations of and concerns about using AI

- **We have explored some powerful AI tools that can be used in learning and teaching English.**
- **What might be some limitations of adopting AI in English learning activities for students?**
- **What are some concerns about using AI?**
- **10-minute discussion**

Limitations of and concerns about using AI

According to the **“Information Literacy for Hong Kong Students” Learning Framework (Updated Version)**, there are nine literacy areas in developing students’ knowledge, skills and attitudes:

1. Use, provide and communicate information effectively, ethically and responsibly
2. Identify and define a need for information
3. Locate and access relevant information
4. Evaluate information, media content and information sources/providers
5. Extract and organise information, create and present new ideas
6. Apply IT skills to process information and produce user-generated content, and adopt a reflective mindset when sharing information
7. Recognise the roles and functions of information providers in society
8. Recognise the conditions under which reliable information could be obtained
9. Recognise the ethical issues arising from the application of emerging and advanced information technologies

Source: EDB (2004), "Information Literacy for Hong Kong Students" Learning Framework (2024)

<https://www.edb.gov.hk/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/Information-Literacy/il-index.html>

Limitations of and concerns about using AI

- For example, to what extent do we respect intellectual property right and data privacy?
- What are some possible risks on the Internet (e.g., biased views and accuracy of the data)?
- When we use AI tools in the classroom, how do we also help Ss learn to use the tools ethically and responsibly?
- How do we cultivate proper values and attitudes in using AI (e.g., avoid over-reliance of AI, avoid internet addiction)?

Category	Nine Literacy Areas		Details
Effective and Ethical use of information	1	Use, provide and communicate information effectively, ethically and responsibly	● Respect intellectual property rights (IPR), including copyright and Creative Commons. ● Protect privacy rights of oneself and others. ● Beware of possible dangers and risks on the Internet. ● Communicate information properly in relevant contexts. ● Provide information in consideration of diverse perspectives and representations and be aware of how editing shapes meaning in visual media and their messages (e.g. omission of alternative perspectives, filtered or implied viewpoints and emphasis on specific ideas). ● Protect oneself from online threats, such as cyberbullying, and refrain from initiating and participating in such acts. ● Use the Internet in a healthy manner and avoid Internet addiction. ● Practise good social media etiquette. ● Manage digital footprints and understand their impact on one's social image and reputation.
	9	Recognise the ethical issues arising from the application of emerging and advanced information technologies	● Understand some ethical issues arising from the application of emerging and advanced information technologies, such as Internet of Things (IoT), big data and artificial intelligence (AI).

“Information Literacy for Hong Kong Students” Learning Framework (2024, p.5, p.7)

Limitations of and concerns about using AI

- **Some suggestions**
- **(1) Ts consider when and how to use AI tools**
 - **Careful lesson / unit planning, making professional judgement when using materials generated by AI**
 - **If AI tools are introduced to Ss, try to leave some time for addressing ethical issues**
- **(2) Encourage Ss' goal setting and self-planning (elements of self-directed learning)**
 - **Ss reflect on how they are using AI. How does the tool help me? What can it not do?**
- **(3) Encourage Ss' self-reflection**
 - **Guided or facilitated by the T, Ss can consider the affordances and constraints of AI**

5. Conclusion/ Q&A

Concluding remarks

- **AI tools are potentially helpful in enhancing students' English learning, but teachers need to use these tools professionally in their teaching, or in supporting students in their learning.**
- **With careful planning, AI can also facilitate self-directed learning within and beyond the classroom.**
- **Putting AI and self-directed learning together also addresses some ethical considerations in using AI – Ss need to be aware of how best they can use these tools properly.**
- **The world is changing fast. The AI tools shown today are only some examples, which could evolve the next day to cover more (or fewer) functions. There could also be other AI tools that come to existence. However, the values and attitudes of using AI will always be important.**

THANKS FOR THE PATIENCE

ANY QUESTIONS?

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