Exploring **Artificial Intelligence** Series: (4)

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

Workshop objectives

After the workshop, participants should be able to:

- articulate their conceptualisation of artificial intelligence (AI)'s pedagogical application in relation to the curriculum goals, including its ethical use and limitations
- apply AI-supported pedagogies to design a unit on reading and writing
- select and modify appropriate AI tools to promote **students**' self-directed learning in reading and writing
- utilise AI tools critically to motivate and cater to learners of diverse needs

Rundown

1. Reading unit: demonstration & discussion

   (short break)
2. Designing your own reading and/or writing app (no coding!)
3. Writing unit: demonstration & discussion
4. Group task: design a reading and/or writing module
   → Presentation

Using AI-supported pedagogy in Reading

You will first experience this module as a student
**we would have time to discuss everything after

Student profile

- You are S2 students in a medium-low ability class
- There is considerable learning diversity in your class in terms of:
  - Learning motivation
  - Language ability
  - Language anxiety
  - Out-of-class support

Chat with 4 young people to learn about their stories and find out

- what happened to each of the young people
  (Tips: 5W1H)
- how the natural disaster made them feel
- how the natural disaster inspired them

Reading skills input

To complete the reading comprehension exercise, we are going to learn these reading skills:

- Understanding words in context
- Understanding paraphrases
- Inference across sentences

Skill Focus: Understanding Words in Context

When you see an unfamiliar word:

1 Read Around It

•Read the full sentence

•Read the sentence before and after

2 Look for Context Clues

•Definitions or examples

•Signal words (but, because, however)

•Descriptive details

Example 1 – Vocabulary in Context

Text:
“The storm left the town in ruins. Many buildings were damaged beyond repair.”

Question:
The word *“ruins”* most likely means:

A. clean streets
B. broken remains
C. new buildings
D. strong houses

Strategy:

- Look at clues: “damaged beyond repair”
- Ask: What happens after something is damaged badly?
- “Broken remains” matches the meaning.

Example 2 – Paraphrasing

Text:
“The river flooded the village, forcing families to leave their homes.”

Question:
The families had to leave because:

A. they wanted a holiday
B. the river dried up
C. the flood made it unsafe
D. they were rebuilding houses

Strategy:

•“Flooded the village” = water covered the area

•“Forcing families to leave” = not safe to stay

•Look for the idea, not the exact words

Flooded ≠ repeated in options
Instead: “made it unsafe” (paraphrased idea)

Skill Focus:
Inference Across Sentences

To tackle inference questions, you need to:

- Combine information from two or more sentences
- Understand cause and effect
- Think: “What can I conclude?”

The answer is NOT copied directly from the text.

Example – Inference Across Sentences

Text:
“Lina trained every morning before school. She often felt tired, but she never missed practice. Last week, she won first place in the city marathon.”

Question:
What can we infer about Lina?

A. She dislikes running.
B. She is careless about school.
C. She is hardworking and determined.
D. She only runs once a week.

Strategy:

Step 1: Gather evidence

- Trained every morning
- Felt tired but continued
- Won first place

Step 2: Connect the ideas
Hard work + persistence → success

Correct inference: **She is hardworking and determined.**

Another Example

Text:
“Tom noticed dark clouds gathering. He quickly brought the washing inside and shut the windows.”

What can we infer?

It is likely going to rain.

(No sentence says “It rained.” You must connect clues.)

Comprehension: goal setting

Question	Challenge Level	Reading skills
Q1, 4, 5, 7, 8, 11	Easy	Direct factual recall
Q2, 6, 10	Hard	Vocabulary and paraphrasing
Q3	Top-tier	Inference across sentences
Q12		Comparison + inference across all texts
Ask AI for a bonus question!		

If you need help, go back to the reading buddy …

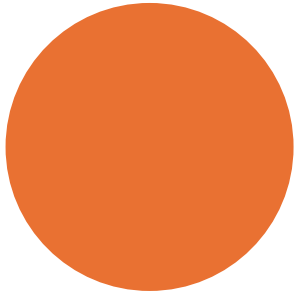
1. Ask your Reading Partner for help
2. Remember: the RP would not give you answers directly

Answer checking +
self-evaluation

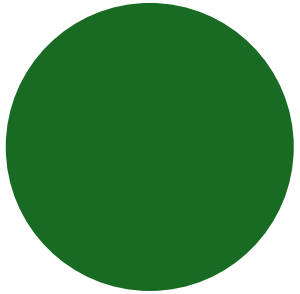
(answer checking omitted for this demonstration)

Raise your hands:
Did you achieve your goal
in this practice?

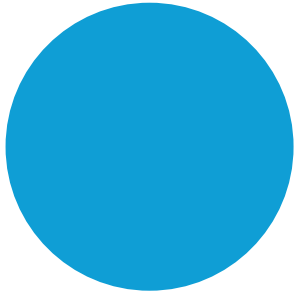
Reflection → learning journal



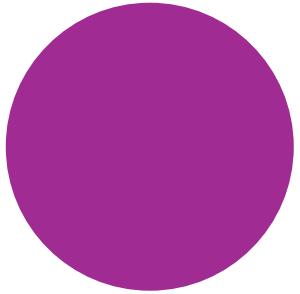
What reading strategies did I use well?



Did **I learn** any new vocabulary/ sentence structure?



What should I learn next? **How can I** achieve that?



→ Focus: learners' autonomy and agency

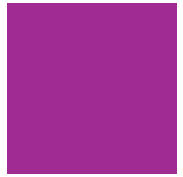
Self-directed practice: watch demonstration first

After finishing the module, we may extend our learning through additional reading of your choice…

Ask the bot for more reading/ viewing materials

Adjust the level of difficulty if needed

Answer some questions to check your understanding



Use a mindmap to facilitate your understanding

Listen to the article

Goal setting: self-directed practice

Set Your Self-Directed Reading Goal

- Which reading skill(s) will I focus on improving?
- What level and type of texts will I read?
- How many reading texts will I complete?
- When will I complete them?

Question	Challenge Level	Reading skills
Q1, 4, 5, 7, 8, 11	Easy	Direct factual recall
Q2, 6, 10	Hard	Vocabulary and paraphrasing
Q3	Top-tier	Inference across sentences
Q12		Comparison + inference across all texts

Selecting level appropriate materials from the Reading Partner
(Note: the reading list behind is compiled by the teacher, with the assistance of a research AI bot)

What if the text remains too challenging for you …

Use AI to simplify that for you!

Adjusting the text

Key ideas

- AI tends to over-simplify a text and retain no specific information
- The prompt tells AI what to retain

- Your role:
  1. Find a text you would like to simplify
  2. Go to AI
  3. Copy the prompt + link
  4. Ask AI to simplify the text for you

Considerations for an Alternative: Text Leveler

- **International design:** Tools may not align well with local curriculum or context.
- **Limited personalization:** Some platforms cannot be easily adapted to specific learner needs.
- **Account requirements:** Teachers may need to create and manage student accounts.
- **Tool overload:** The abundance of AI tools can be overwhelming and difficult to navigate.

Self-directed learning

For some students, it might help to listen to a text whilst reading

Reading module: Overview

1. Pre-reading: activating schema
2. Pre-reading: talking to the characters
3. Presentation: teaching target reading skills: - understanding words in context - understanding paraphrases - inference across sentences
4. SDL: - self evaluation of ability - goal setting
5. During reading: self-monitoring + agency
6. Post-reading: answer-checking + self-evaluation
7. SDL: reflection
8. Self-directed practice: - goal setting - find a suitable text - adapting the text - using a mindmap to facilitate understanding - listening to the text - guided reading on skills development
Potential extension tasks (beyond reading): - Group discussion: natural disaster - Mini-drama: script writing + rehearse with AI + acting

Discussion

Have a chat with your neighbour

What do you think about this reading module?

What might be some difficulties you foresee?

How may the module be modified for students of different abilities?

Some considerations about the reading module

Using AI & Technology in teaching and learning

- Set clear English language communicative learning objectives for each lesson
  - Bad Example:
    Students will practise writing argumentative essay with AI
  - Better Example:
    By the end of unit, students will critically evaluate and select relevant evidence to support a clear topic sentence.
- Introduce AI tools only when it enhances students' learning
  - Bad Example:
    Using Copilot to summarise/ translate the entire reading text
  - Better Example:
    Using Copilot before reading to activate schema, preview key vocabulary in context, and reduce cognitive load to focus on intended reading skills development

Using AI & Technology in teaching and learning

- Not every task needs AI

  Key messages:
  - AI tools should **support** learning — not replace authentic communication.
  - AI is a tool, not a substitute for real communication.

Using AI & Technology in teaching and learning

- Understand the limitations and risks of using AI tools, and plan early in response:
  - Data privacy
  - Accuracy/ biases
  - Overreliance & skill atrophy
  - Differences in the models:
    - Mini/ flash/ lite/ sonnet/ haiku: faster models suitable for chat/ drafting
    - Pro/ opus: advanced models for coding or advanced logical thinking
- Focus on English learning, not technical know-how.

Using AI & Technology in teaching and learning

Instruct the AI tools to:

- Support **learning, not answer-giving**
- Ask **follow-up questions** rather than immediately correcting
- Avoid completing assignments for students
- Keep responses age- and level-appropriate
- Encourage students to explain their thinking

Reading - ATM 1	Reading – ATM 2	Reading – ATM 3	Reading – ATM 4	Reading – ATM 5	Reading – ATM 6	Reading – ATM 7	Reading – ATM 8
Understanding information and ideas in some short simple texts, using some reading strategies as appropriate	**Understanding information, ideas and feelings in a small range of short simple texts, using some reading strategies as**	**Understanding and inferring information, ideas and feelings in a small range of simple texts, using and**	**Understanding and inferring information, ideas and feelings in a range of simple texts, using and integrating a small range of reading trategies as appropriate**	**Understanding and inferring information, ideas, feelings and opinions in a range of texts with some degree of complexity, using and integrating a small range of reading strategies as appropriate**	**Understanding and inferring information, ideas, feelings and opinions in a range of texts with some degree of complexity, using and integrating a range of reading strategies as appropriate**	**Understanding, inferring and interpreting information, ideas, feelings and opinions in a range of texts with some degree of complexity, using and integrating a range of reading strategies as appropriate**	**Understanding, inferring and interpreting information, ideas, feelings and opinions in complex texts, using and integrating a range of reading strategies as appropriate**
Pointers *Learners can, for example,* • recognise some high frequency words (e.g you) • decode words by usin knowledge of letter-s relationships • process simple senter by using knowledge basic conventions of written English (e.g. punctuation) • follow predictable tex recognising the repea use of sentence patter • follow instructions and signs by recognising key	understanding the use of simple cohesive devices	some supporting details explicitly stated in the text	ointers *earners can, for example,* work out the meaning of words and phrases by using semantic and syntactic clues locate details which support the main ideas from different parts of a text follow ideas by recognising simple text structures and understanding the use of cohesive devices infer feelings of characters from pieces of information in narrative texts deduce information and ideas by using semantic and syntactic clues	Pointers *Learners can, for example,* • work out the meaning of some idiomatic expressions (e.g. phrasal verbs and idioms) by using semantic and syntactic clues • follow the development of main ideas and make connections between ideas and information not explicitly stated by using semantic and syntactic clues • organise information and ideas in texts by using knowledge of text structures and some graphic forms (e.g. mind maps, character webs) • distinguish facts from	Pointers *Learners can, for example,* • work out the literal and implied meaning of words and expressions by using semantic and syntactic clues • gather, distil and summarise more extensive information and ideas from texts • compare alternative views and arguments in texts by using graphic forms and making notes (e.g. drawing tables with appropriate headings, using point form, and own shorthand and symbols)	Pointers *Learners can, for example,* • work out the meaning of figurative language (e.g. metaphors) by using semantic and syntactic clues • analyse the development of ideas, views or arguments in texts • interpret ideas and opinions presented in different texts and draw conclusions • analyse texts for themes, intended audience and writers' attitudes by reviewing	Pointers *Learners can, for example,* • justify interpretations of writers' intention by using well-chosen evidence from texts • synthesise ideas and opinions presented in different texts and draw conclusions • analyse texts for themes, intended audience and writers' attitudes by understanding their social and cultural implications • analyse the use of different text types in presenting a message • appreciate the rhetoric of

Catering for learner diversity

- Exercise professional judgement and pedagogical knowledge to select skills to practice with students (e.g. working out the meaning of figurative language using semantic and syntactic clues)
- Refer to EDB's Language Progression Framework

Self-directed learning

- **Goal setting must be anchored in learning objectives**: Reflection is meaningful only when students evaluate their performance *against explicit reading goals*, not just answers.
- **Task understanding is a prerequisite for goal setting**: Students cannot set useful goals unless they understand *what the reading task is designed to assess* (e.g. gist, detail, inference, attitude).
- In AI-rich classrooms, clear learning goals drive self-directed learning and responsible AI use. Teachers must actively cultivate students' reflection and AI literacy.

Self-directed learning

- **Assessment literacy enables SDL**: Making task design and targeted reading skills explicit empowers students to plan, monitor, and reflect more effectively.

- **Self-monitoring should occur throughout the module**: SDL is not a final reflection step, but a continuous process supported by choices in pace, focus, and strategy use.

Self-directed practice with AI use

AI-generated practice creates opportunities for autonomy, but quality cannot be assumed.

Teachers therefore need to cultivate in students AI literacy so that they can evaluate whether generated reading tasks are:

- aligned with learning objectives
- appropriately challenging
- targeting the intended reading skills

Teacher scaffolding is essential, especially at early stages, to prevent superficial or misaligned practice.

Facilitating students' AI Use in SDL

Guided prompts from teachers, gradually withdrawn, to build students' ability to interact critically with AI

Collaborative task evaluation: students work in groups to discuss what makes a *good* reading exercise

Explicit assessment literacy in pre-reading: clarifying skill focus and task design before independent practice

Human oversight: students submit AI-generated exercises, teachers curate, categorise, and reuse strong examples as models

Self-directed learning: role of teachers

- **Designing structured learning pathways**
  (clear stages, purposes, and progression)
- **Making success criteria and processes visible**
  (what good reading and writing look like)
- **Modeling strategies and metacognition**
  (how to plan, monitor, and evaluate learning)
- **Providing flexible scaffolds**
  (tools, prompts, pacing options)
- **Creating space for student decision-making**
  (choice, adjustment, reflection)
- **Monitoring progress and intervening strategically**
  (timely feedback, guidance, and redirection)
- **Developing responsible AI use and critical awareness**
  (recognizing misinformation, avoiding misuse, and preventing overreliance on AI)

For both reading and writing

Can I design my own bot/ app?

Why should I create my own bot or app?

- You have the pedagogical and context knowledge of your students, **not** some AI companies
- You want the bot to do something based on a text, a reader, a textbook etc:
  - Role play
  - Guide students in reading
  - Write stories or argumentative essays following a set of guidelines
- You want the bot to assist students' learning following your teaching philosophy (e.g. not directly giving answers, providing level appropriate paraphrases, using only common words)

Hands-on

Reading

- Option 1: create a chatbot in the persona of Sherlock Holmes, based on a text
- Option 2: create a reading strategy tutor on inferring meaning of vocabulary

Writing

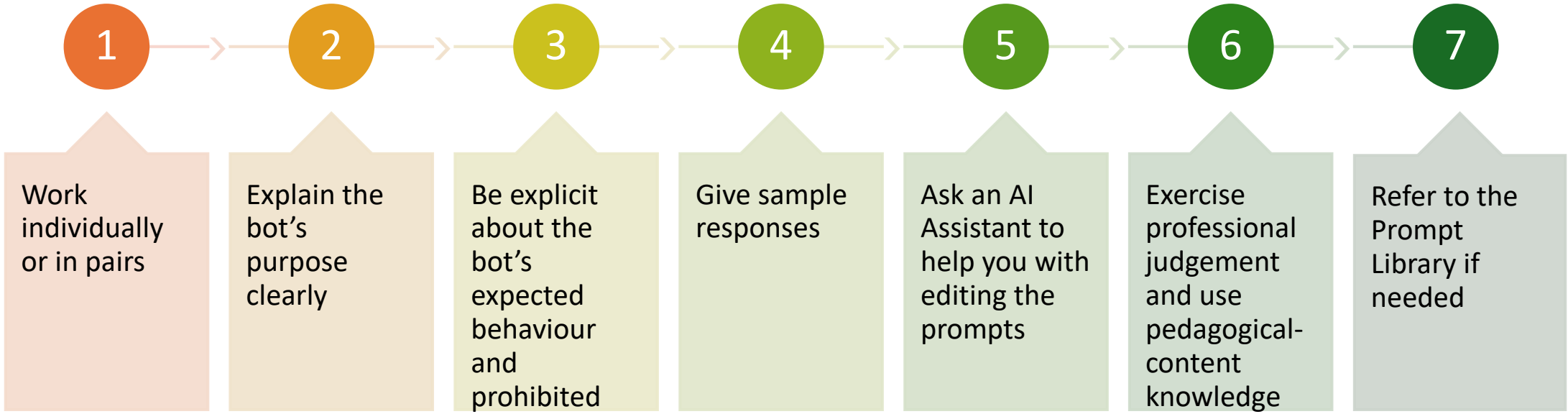
- Option 3: create a debate partner focusing on quality of evidence in supporting an argument
- Option 4: create a sentence expansion coach

- Option 5: anything you could think of

General Guidelines

- Support **learning, not answer-giving**
- Ask **follow-up questions** rather than immediately correcting
- Avoid completing assignments for students
- Keep responses age- and level-appropriate
- Encourage students to explain their thinking

Instruction



Sample prompt (demo only)

- Hi, I am trying to build an educational app for _____(describe your students).
- The purpose of the app is _____.
- There should be ____ pages/ buttons.
  - On the first page there should be_____.
  - Students should click _____ (button name) to _____ (button function).
- Can you please help me fine tune the input and ask me questions if I have missed important parts?

Using AI-supported pedagogy in Writing

Writing module: sample

1. Input: - Read a story about broken trust after parents monitor children's mobile phone without consent - Read a news report (video) about parents discovering a student's drug issue after checking their internet history
2. Motivation: discuss a case of parents monitoring children's internet use
3. Presentation + practice with scaffolding: - different types of evidence - good and bad argumentation
4. SDL: - self evaluation - goal setting
5. Evidence gathering
6. Writing body paragraphs
7. Writing the whole essay (SDL: self monitoring)
8. Post-writing: self evaluation + reflection
9. Self-directed practice: identify misaligned arguments and evidence in daily life

Sammy: Forever 16

- Read/ watch this news report
- The teenager received counterfeit drugs and passed away
- Focus:
  - His parents' feelings
  - His parents' arguments about social media

Discuss and share

- Mandy learned that her mother had been checking her phone daily while she was in the shower or studying.
- Feeling embarrassed and upset, she began keeping her phone with her constantly.
- Her mother grew increasingly concerned, interpreting Mandy’s behavior as a sign that something might be wrong.
- What would you say to Mandy?
- What would you say to her mom?

Writing task

- Argumentative essay:
  Should parents monitor children's internet use?
- Writing focus:
  - Different types of evidence
  - Using appropriate evidence to support a topic sentence

Four Types of Evidence in Argumentative Writing

Strong arguments use **different types of evidence** to persuade the reader.

1. Statistics

- **What it is:** Numbers, percentages, or data that show measurable facts.
- **Why use it?**
  Statistics make your argument more convincing because they are specific and hard to ignore.
- **Example:**
  “According to the CDC, teens who get at least 8 hours of sleep perform better academically than those who don’t.”
- **Sentence Starter:**
- Research shows that…
- ___% of people believe…
- Studies indicate that…

2. Facts & News

- **What it is:** Verified information from reliable sources (experts, research studies, current events).
- **Why use it?**
  Shows your argument is based on real-world evidence and credible sources.
- **Example:**
  “In 2024, several states passed laws limiting cellphone use in classrooms.”
- **Sentence Starter:**
- According to…
- A recent news report states…
- Experts explain that…

3. Personal Anecdote

- **What it is:** A short personal story or real-life experience.
- **Why use it?**
  Connects emotionally with readers and makes your argument relatable.
- **Example:**
  “Last year, when I started turning my phone off during homework, my grades improved dramatically.”
- **Sentence Starter:**
- I remember when…
- In my experience…
- For example, in my own life…

4. Hypothetical Situation

- **What it is:** An imagined scenario that helps readers picture what could happen.
- **Why use it?**
  Helps readers understand consequences or see a situation clearly.
- **Example:**
  “Imagine a classroom where no one is distracted by phones—students would likely participate more and focus better.”
- **Sentence Starter:**
- Imagine if…
- Suppose that…
- If this continues…

Using Appropriate Support for Topic Sentences

- Strong body paragraphs include **evidence that clearly supports the topic sentence**.
  Weak paragraphs include evidence that is unrelated, too vague, or not explained.

GOOD Example

- **Topic Sentence:**
  Strong communication builds healthy parent–child relationships.
- **Supporting Evidence:**
- According to a 2024 neuroscience research paper, children who regularly talk with their parents report higher levels of trust and emotional security.
- For example, when parents set aside time each week to check in with their children, it creates a safe space to share concerns.
- This consistent communication helps prevent misunderstandings and builds mutual respect.

Why This Works:

- The evidence directly relates to *communication*.
- It explains how the evidence supports the topic sentence.
- The paragraph stays focused.

BAD Example

- **Topic Sentence:**
  Strong communication builds healthy parent–child relationships.
- **Supporting Evidence:**
- Many families eat dinner together.
- Some parents work long hours.
- Parenting can be stressful.

Why This Doesn’t Work:

- The evidence is too general.
- It does not clearly connect to *communication*.
- There is no explanation of how the details support the topic sentence.

Before we start planning for our writing, let’s set a goal:

Step 1: Identify Your Growth Area

Ask yourself:

- Which type of evidence am I the most familiar with?
- Do I use only one type of evidence?
- Does my evidence sometimes drift away from my topic sentence?
- Do I forget to explain how my evidence supports my claim?

- Be honest — goals work best when they are specific!

Goal Setting Step 2: Turn It Into a Clear Goal

If You Need to Improve Using Evidence Types:

- “I will include at least **three different types of evidence** in my essay.”
- “In each body paragraph, I will use at least **one statistic or fact**.”
- “I will add a personal anecdote or hypothetical example to strengthen one paragraph.”

If You Need to Improve Matching Support to Topic Sentences:

- “After writing each paragraph, I will check that every piece of evidence clearly connects to the topic sentence.”
- “I will highlight my topic sentence in one color and my supporting evidence in another to make sure they match.”
- “I will add 1–2 sentences explaining how my evidence supports my claim.”

Looking for relevant evidence

- Ask questions, not search with keywords

Answers with citation*

- Partially solve the AI hallucination problem
- *Not all sources on the internet are equally reliable
- Teach students to critically evaluate the source with the CRAAP test

Writing body paragraphs

Write at least 2 body paragraphs to support your arguments

For each paragraph,

- write a clear topic sentence to summarise your arguments
- link the evidence collected and verified to your topic sentence

Focus on the arguments first, then language and accuracy later

Using GenAI to give you feedback

Finish the essay by including the introduction and conclusion

Discussion

Have a chat with your neighbour

What do you think about this writing module?

What might be some difficulties you foresee?

How may the module be modified for students of different abilities?

Group task

Work in groups of 3

Adapt a unit plan on:

Story: A Surprising Open Day (S1)

News Report: A Murder Mystery (S3)

Speech: Stop whales hunting (S5)

Any unit in your textbook

Focus on:

Self-directed learning

Relevant AI tools

1. Reading/ writing can be more than exam-format practice. Be creative.
2. Bring in AI tools that you are familiar with.

Group presentation

Please give constructive feedback with concrete examples of how the ideas promote reading and writing skills plus SDL development

Conclusion

- What are some AI reading and writing strategies we have explored today?
- What are some platforms we have covered today?

Reading module: Overview

1. Pre-reading: activating schema
2. Pre-reading: talking to the characters
3. Presentation: teaching target reading skills: - understanding words in context - understanding paraphrases - inference across sentences
4. SDL: - self evaluation of ability - goal setting
5. During reading: self-monitoring + agency
6. Post-reading: answer-checking + self-evaluation
7. SDL: reflection
8. Self-directed practice: - goal setting - find a suitable text - adapting the text - using a mindmap to facilitate understanding - listening to the text - guided reading on skills development
Potential extension tasks (beyond reading): - Group discussion: natural disaster - Mini-drama: script writing + rehearse with AI + acting

Writing module: sample

1. Input:
   - Read a story about broken trust after parents monitor children's mobile phone without consent
   - Read a news report (video) about parents discovering a student's drug issue after checking their internet history
2. Motivation: discuss a case of parents monitoring children's internet use
3. Presentation + practice with scaffolding:
   - different types of evidence
   - good and bad argumentation
4. SDL:
   - self evaluation
   - goal setting
5. Evidence gathering
6. Writing body paragraphs
7. Writing the whole essay (SDL: self monitoring)
8. Post-writing: self evaluation + reflection
9. Self-directed practice: identify misaligned arguments and evidence in daily life

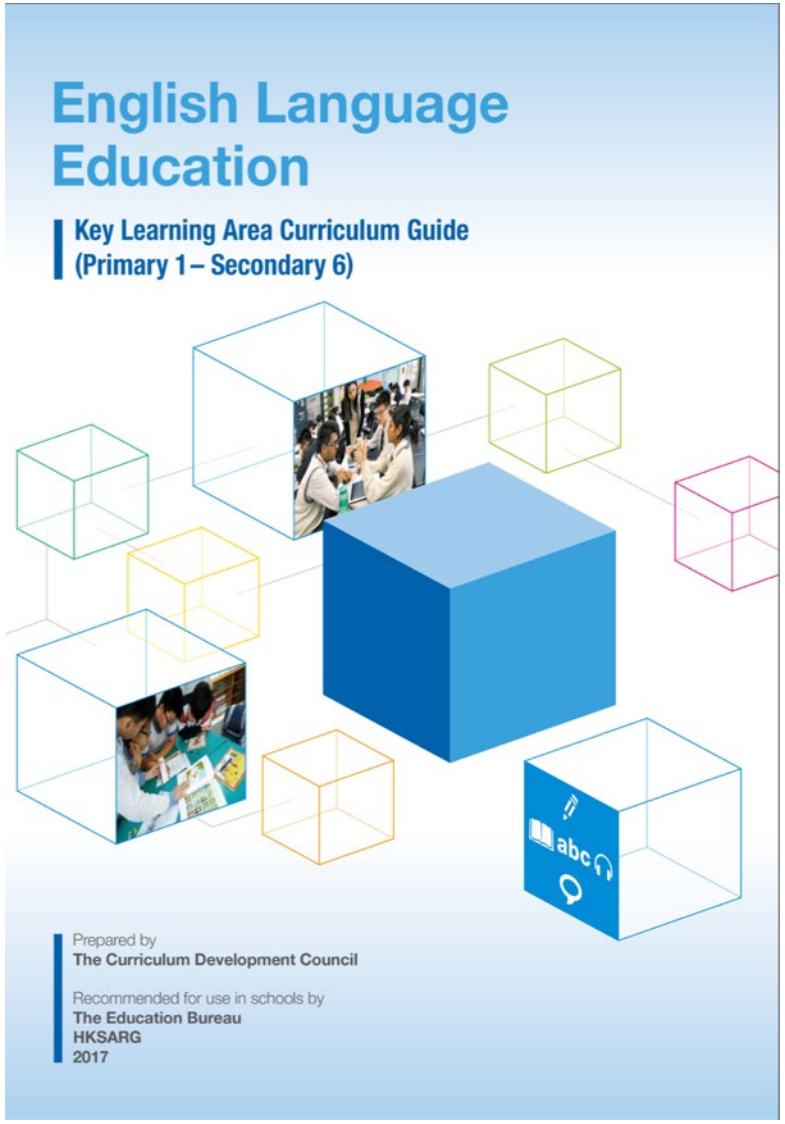
From the Curriculum Guide

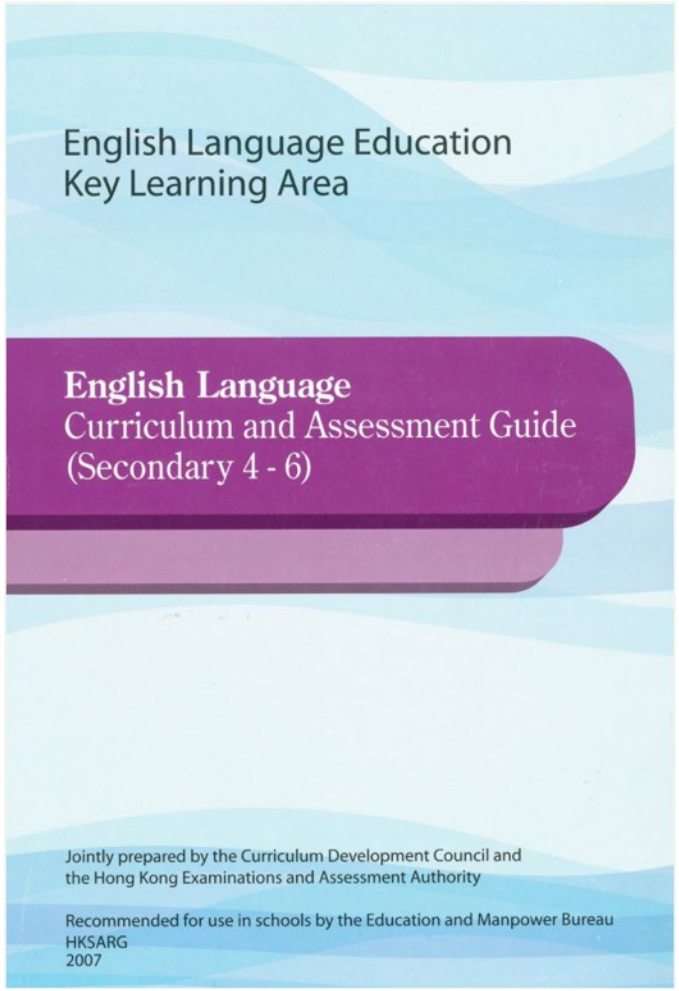
2.3 Promoting e-Learning and Information Literacy

- Schools are encouraged to enhance students' learning experiences through **making effective use of IT to enhance collaboration and interaction** inside and outside the classroom, build learning networks, and **promote self-directed learning**.

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**.





4.2.6 Adopting e-Learning in the English Language Classroom

- The use of interactive learning tools to complement direct face-to-face contact … promotes better understanding of their learning progress. For example, teachers can:
  - provide opportunities for students to take charge of their own learning…;
  - …promote self-directed learning with the “Flipped Classroom” strategy;…

4.2.7 Promoting Self-directed Learning

- …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.