

Professional Development Programme

Developing Students' Self-directed Learning Capabilities: Exploring the Use of Artificial Intelligence in the English Classroom

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Event 4: Key Focus

- To expand English teachers' repertoire of pedagogical knowledge to enhance secondary students' **integrated reading and writing** skills development and their **self-directed language learning capabilities** through integrating **the use of artificial intelligence (AI)** in the secondary English classroom

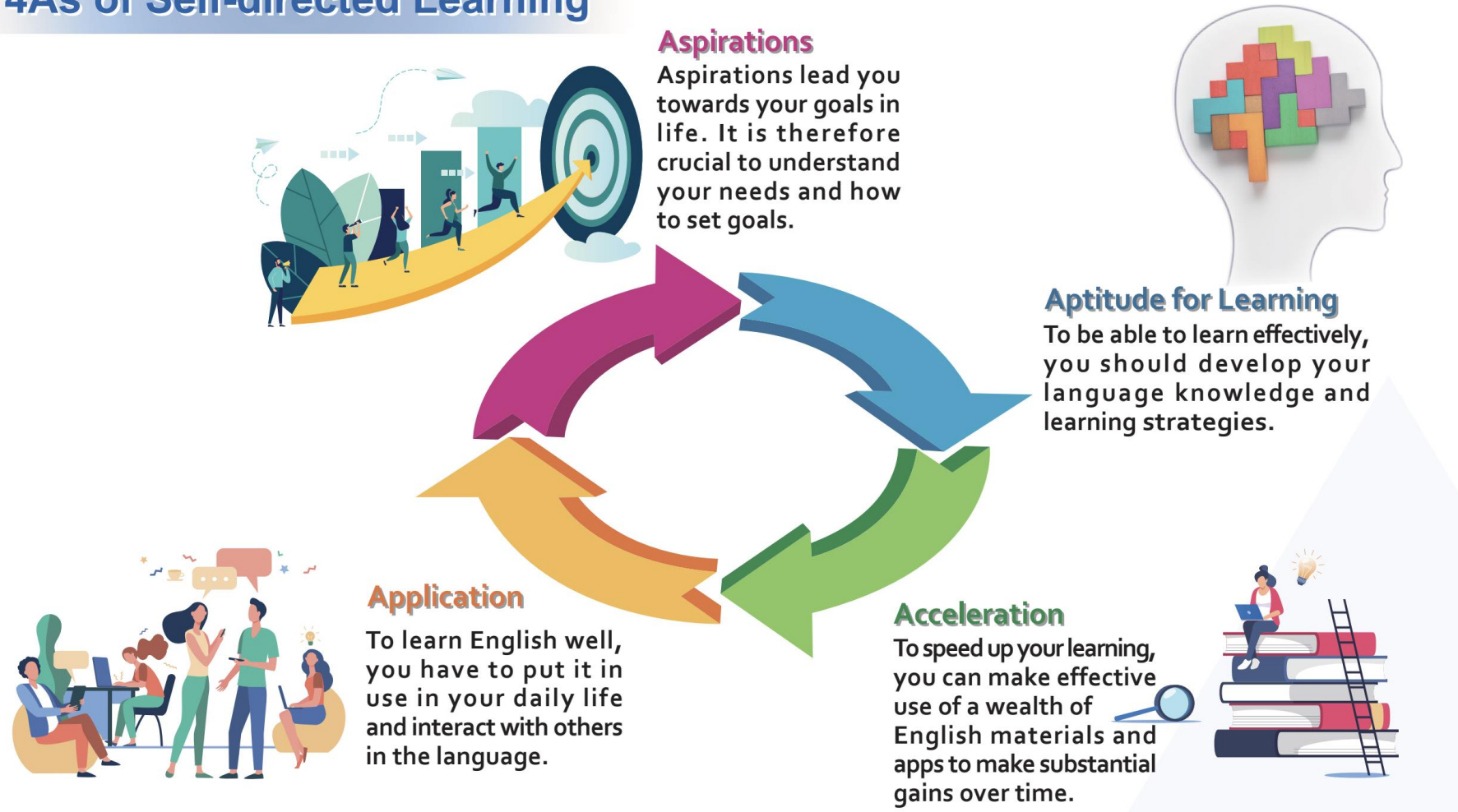
Brainstorming and Sharing

- How do you usually teach reading and writing? How do your students usually practise reading and writing?
- How have you equipped your students for self-directed reading and writing?
- Have you demonstrated to or taught your students how AI can be integrated into self-directed reading and writing practice?

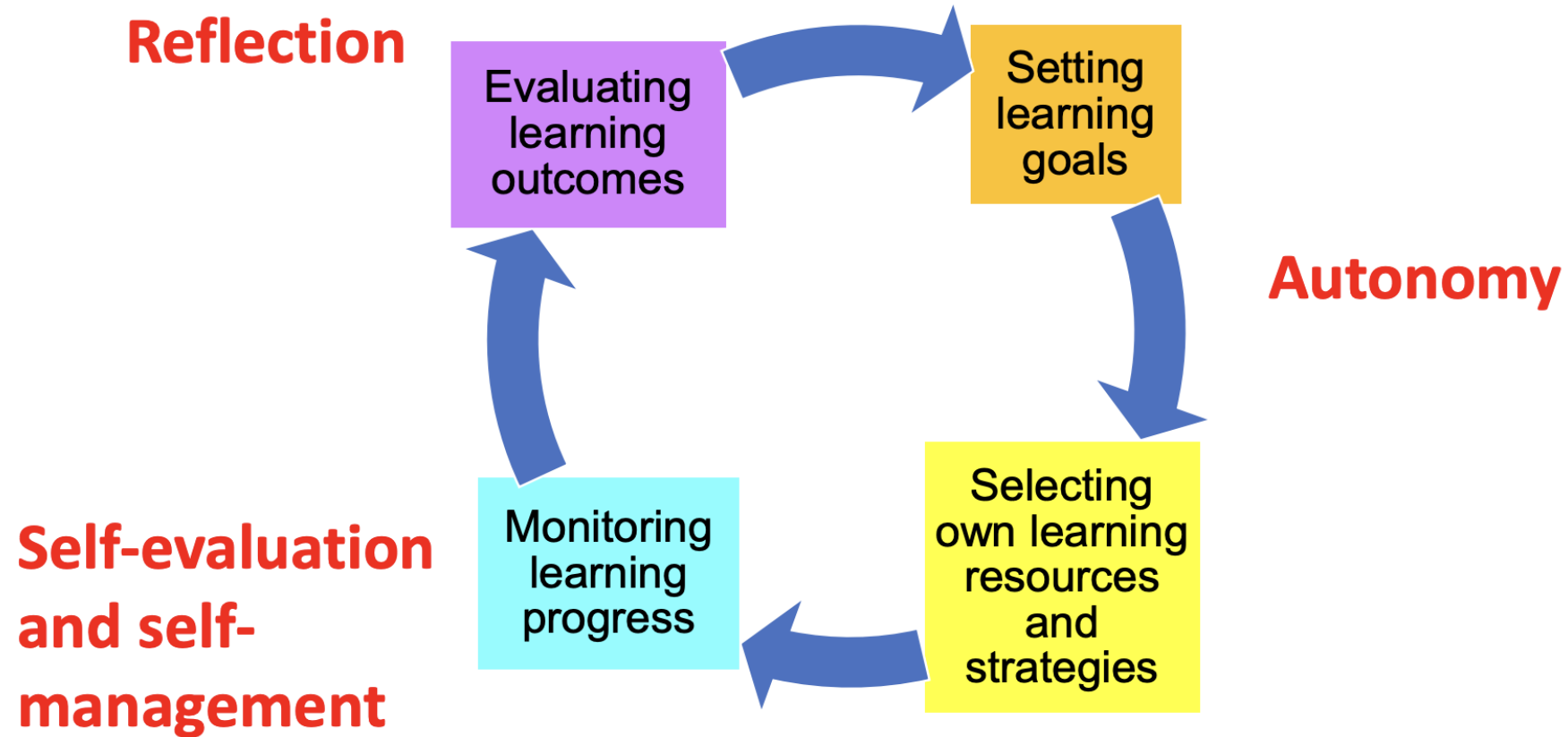
A Quick Recap

4As of Self-directed Learning

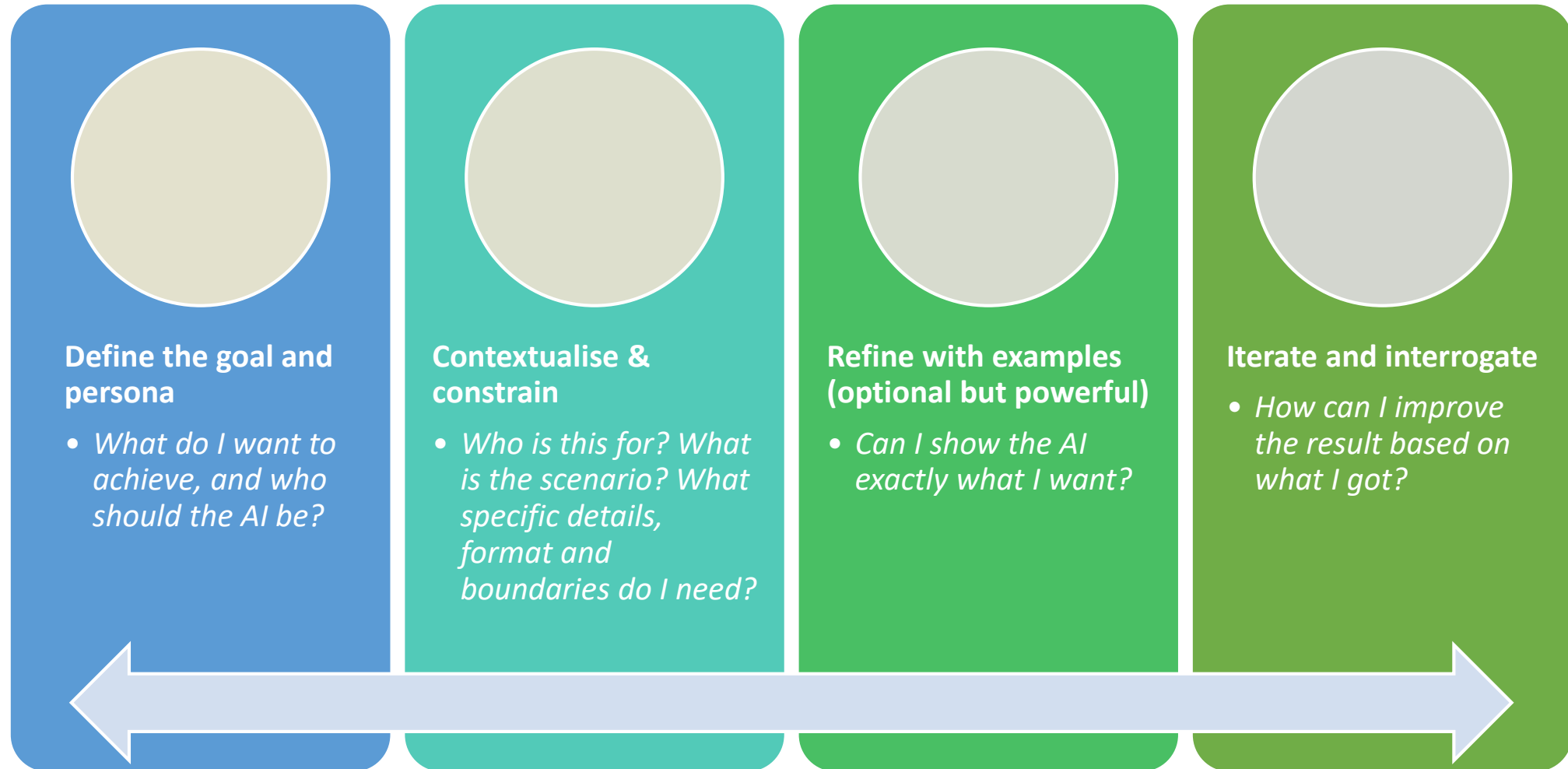
4As of Self-directed Learning



4-stage Model of Self-directed Learning



4-Step Prompt Crafting Framework



Resource Materials

Set 3

Attachment 3: Reading Passage

Home Remedies: What Works and What Doesn't

[1] For generations, families have passed down home remedies for common health problems. But do these old treatments actually work? Dr. Megan Arthur, a Primary Care Sports Medicine physician at Houston Methodist, recently reviewed a list of popular home remedies and gave her verdict on which ones are worth trying and which ones should be avoided. According to Dr. Arthur, some home remedies have real benefits, while others can be ineffective or even harmful.

[2] For a sore throat, many people reach for honey and vinegar. Dr. Arthur explains that honey can indeed soothe a sore throat, but the vinegar is not necessary. A better option is to gargle with warm salt water. By mixing one teaspoon of salt in a glass of warm water, the salt water can help reduce swelling and wash away irritants or bacteria. Drinking warm tea with honey is also helpful. When it comes to a black eye, some people believe putting a raw steak on the eye will help. Dr. Arthur does not recommend this. While cold helps reduce swelling and bruising, raw meat is not clean. Instead, she advises using a clean cold compress or a bag of ice wrapped in a clean towel. Another common remedy involves minor burns. Some people put butter, coconut oil, or other greasy substances on a burn. Dr. Arthur warns against this because these substances can trap heat in the skin and make the burn worse. Instead, she recommends running cool water over the burn for a few minutes, then applying aloe vera or an antibiotic ointment.

[3] For nausea, whether from morning sickness or motion sickness, ginger and lemon can be helpful. Dr. Arthur explains that ginger increases gut motility, which helps food move through the stomach more quickly. Ginger ale can also be soothing. Lemon helps as well; its scent increases saliva production, which can reduce nausea. When dealing with a nosebleed, many people tilt their head back. Dr. Arthur says this is not a good idea because blood can flow down the back of the throat and possibly block the airway. Instead, she advises squeezing the soft part of the nostrils firmly while tilting the head slightly forward.

[4] Constipation is another common problem where a home remedy often works. Prunes or prune juice are high in fiber and contain a natural substance called sorbitol, which helps increase bowel movements and soften stool. Dr. Arthur suggests eating about six prunes twice a day. For hiccups, people try many tricks such as holding their breath, breathing into a paper bag, getting scared, or eating sugar. Dr. Arthur explains that all these methods work by interrupting the normal breathing cycle. There is no single best way, but these tricks may help some people. For warts, some people use duct tape, believing it irritates the skin and slowly destroys the wart. Dr. Arthur notes that there is not much scientific evidence for duct tape, but a better option is salicylic acid, which has been proven effective. She says trying both together might be an option.

[5] Some remedies, however, do not hold up. For seasonal allergies, some people eat local raw honey, thinking it will build up resistance to pollen. Dr. Arthur states there is no clear scientific evidence that local honey helps with allergies. While honey can soothe a sore throat,

Reading



Writing



Attachment 1: Writing Task

Writing: Post-reading Task

Your friend Alex believes that home remedies can cure almost anything. Alex recently said, "I don't need to see a doctor. My grandmother's home remedies are all I need." Write a letter to Alex. In your letter:

- Explain that some home remedies are helpful, but others are not.
- Give at least two examples from the article of remedies that work and why.
- Give at least one example of a remedy that is harmful or ineffective, and explain why.
- Remind Alex that home remedies are not a substitute for professional medical care.

Input

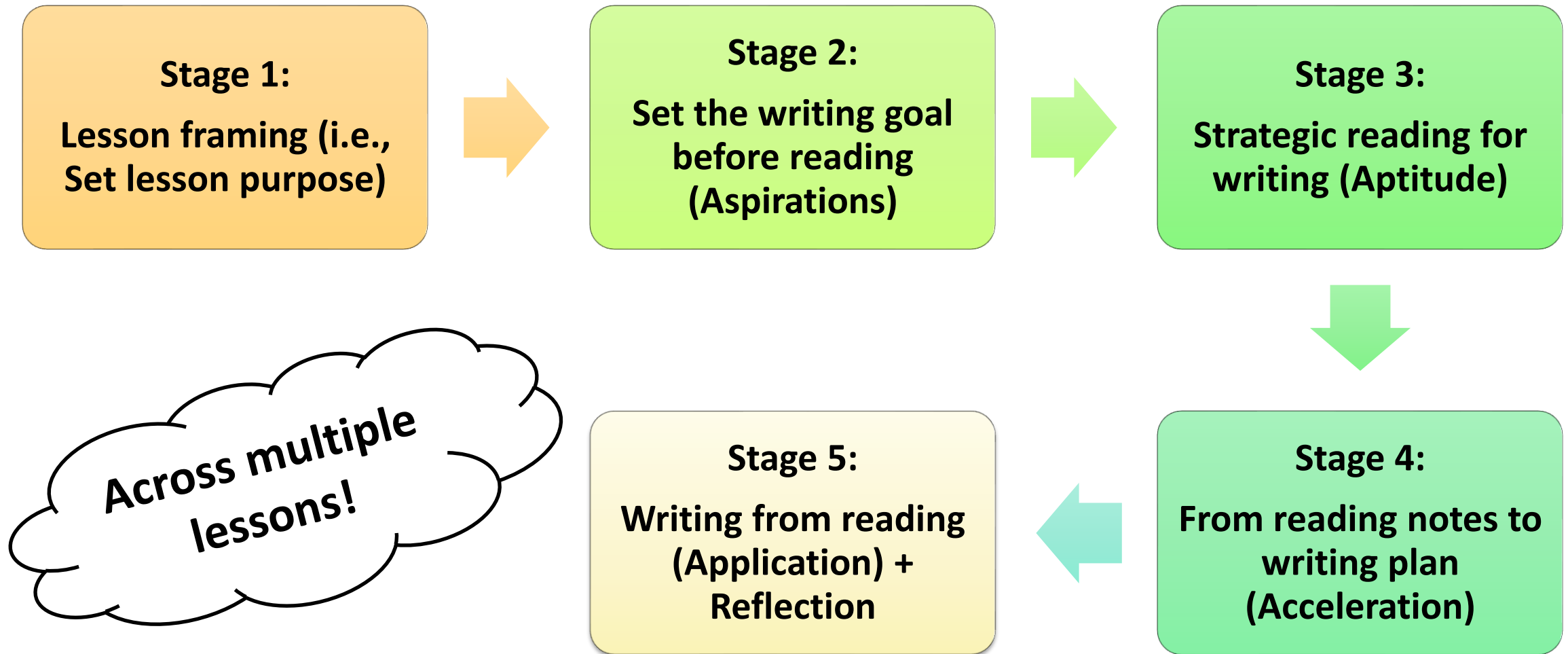


Output

Learning Objectives

- By the end of the lesson, students will be able to:
 - a) extract relevant information from a reading passage
 - b) organise reading information into a structured writing plan
 - c) use GenAI (e.g., DeepSeek) responsibly to support thinking

Lesson Overview



Discussion

1. How would you adapt this set of Resource Materials (e.g., lesson objectives, level of scaffolding) to better suit the needs and level of your learners?
2. If you could swap one activity used in this lesson, what would you change it to and why? What would the new activity allow learners to do that the current one does not?
3. Can this lesson be executed without using AI? What are the benefits and drawbacks of using AI?
4. The prompts in the worksheets are very specific (e.g., “Do not rewrite the letter for me”). How would you handle a student who tries to bypass these instructions to get the AI to write the whole essay?
5. Attachment 4 asks students to check the AI output against the passage. Why is this fact-checking step a vital part of self-directed learning in the age of AI?
6. If the AI is acting as a reading coach and writing editor, how does your role as the teacher change during the lesson? What should you be doing while students are prompting the AI?
7. Attachment 7 asks students what they would do differently next time. How can we as teachers use their answers to plan the next SDL lesson?

SDL Stage	In Integrated R&W	Role of GenAI
Aspirations	Setting reading and writing goals	AI helps clarify goals and success criteria
Aptitude	Developing reading strategies and writing skills	AI supports strategy learning
Acceleration	Using tools efficiently to support development of reading and writing skills	AI supports idea refinement
Application	Producing original writing	AI provides feedback and encourages self-evaluation

Other AI Possibilities for SDL in Integrated Reading and Writing

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

- **Pre-reading activities**
 - Creating a purpose for reading
 - The teacher helps set a clear purpose by asking students to consider a question or

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problem before they read. Students can then judge which parts of the text to ignore, what to skim over and what to attend to in detail.

- Building background knowledge
 - The teacher gives students some information on what they are going to read to build their background knowledge.
 - Students share what they know about the topic. They then compare the points raised with those found in the text.
- Activating students' schemas

To develop and activate students' schemas, the teacher guides students to:

 - predict the content of a text from information such as the title, headings, sub-headings, pictures, table of contents, preface and appendix; and
 - use semantic maps to categorise ideas and concepts and visually illustrate the relationship between ideas and concepts.
- **While-reading activities**
 - Tackling unfamiliar lexical items and structures
 - Students use structural information, such as the position of a lexical item, the morphology of a word (e.g. affixation) and the various devices used to create textual cohesion (e.g. reference, connectives) to decode the meaning of unfamiliar words and structures.

- Pre-writing**

In the pre-writing stage, students are mainly involved in generating and planning ideas.

- Idea generation helps students get started. Students may do the following to develop the skill of idea generation:
 - brainstorm in small groups;
 - practise free writing by writing as quickly as possible;
 - make use of questions to stimulate thinking and develop ideas;
 - interview one another to collect information and ideas; and
 - read or listen to texts on the topic and use the ideas obtained to think of new ideas.
- Planning involves consideration of the purpose, audience and overall structure of a piece of writing. To develop the skills in identifying writing purposes and audience, students may:
 - examine sample texts to consider the writer's purposes and the intended audience;
 - examine how a single event or issue has been reported from a variety of angles;
 - consider an event or a situation from the various points of view presented in the text;
 - rewrite an argumentative text from the perspective of the opposing viewpoint; and
 - assess whether a thesis needs refining, and write a brief and flexible outline which can be reshaped as they discover new ideas.

- Drafting**

When writing the first draft, students should focus on content and meaning and leave matters like grammar, punctuation and spelling until later. Teachers should prepare students for this stage of writing by developing their skills in the following areas:

- Beginning and ending
 - Students examine and discuss the characteristics of the beginnings and endings of different text types in terms of the level of interest they generate, the form they take, their relationships to other parts of the text and their relationships to each other. They then apply this knowledge to evaluate the opening and ending of their own drafts.
 - Students compare examples of effective and less effective beginnings and endings of texts and discuss what makes some beginnings and endings more effective than others.

Content

Language

Organisation

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 appropriate	Understanding and inferring information, ideas and feelings in a small range of simple texts, using and integrating a small range of reading strategies as appropriate	Understanding and inferring information, ideas and feelings in a range of simple texts, 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 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 <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>	Pointers <i>Learners can, for example,</i>
- recognise some high frequency words (e.g. the, you) - decode words by using knowledge of letter-sound relationships - process simple sentences by using knowledge of basic conventions of written English (e.g. basic punctuation) - follow predictable texts by recognising the repeated use of sentence patterns - follow instructions and signs by recognising key words with visual support - master basic book concepts (e.g. titles and names of authors) - locate specific information by recognising simple formats (e.g. birthday or invitation cards)	- work out the meaning of words by using knowledge of letter-sound relationships - recognise common contracted forms by connecting them to their full forms - process simple sentences by identifying meaningful chunks - locate specific information by identifying key words - follow ideas by understanding the use of simple cohesive devices (e.g. simple connectives, pronouns) - identify characters, setting and sequence of events in stories - make predictions about the content from the titles, illustrations or contents page	- work out the meaning of words and phrases by using knowledge of word formation (e.g. prefix, suffix) and some semantic clues (e.g. synonyms) - process some compound and complex sentences - locate specific information by recognising simple text structures (e.g. list of ingredients followed by cooking procedures in recipes) - identify main ideas and some supporting details explicitly stated in the text - make predictions about the likely development of the text by identifying key words - infer information, ideas and feelings by using clues in close proximity - identify simple stylistic features (e.g. personification)	- 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	- 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 opinions by using semantic and syntactic clues - identify the stylistic features in texts (e.g. flashback in narrative texts)	- 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) - deduce themes based on information and ideas from texts - identify writers' attitudes clearly signalled in texts	- 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 - understand the use of stylistic features in texts (e.g. the use of rhetorical questions and hyperboles in speeches for emphatic purposes)	- 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 texts by understanding the use of stylistic features in texts and the effects achieved

NB

The reading strategies included in some of the pointers provide examples on how these strategies can help learners construct meaning and interpret texts. They are by no means exhaustive or prescriptive.

They serve as reference for teachers in planning and developing tasks for the learning-teaching-assessment cycle.

**The Learning Progression Framework for
ENGLISH LANGUAGE (WRITING SKILLS)**

Writing – ATM 1	Writing – ATM 2	Writing – ATM 3	Writing – ATM 4	Writing – ATM 5	Writing – ATM 6	Writing – ATM 7	Writing – ATM 8
Learning Outcomes							
Content							
Completing blanks in short texts to convey simple information centred around objects, people and actions	Writing short texts to convey simple but limited information, ideas and personal experiences on familiar topics	Writing short texts to convey simple information, ideas and personal experiences on familiar topics	Writing short texts to convey simple information, ideas, personal experiences and opinions on familiar topics with some elaboration	Writing texts to convey simple information, ideas, personal experiences and opinions on familiar topics with some elaboration	Writing texts to convey information, ideas, personal experiences and opinions on familiar topics with elaboration	Writing texts to convey information, ideas, personal experiences and opinions on familiar and less familiar topics with elaboration	Writing texts to convey information, ideas, personal experiences and opinions on familiar and less familiar topics with substantial elaboration
Organisation							
Putting words under appropriate headings/ topics	Putting ideas about a topic in sentences	Linking ideas quite coherently in a short text, or showing an awareness of overall organisation of ideas	Linking ideas quite coherently in a short text, and showing an awareness of overall organisation of ideas	Linking ideas quite coherently in some parts of a text, and showing some overall organisation of ideas	Linking ideas quite coherently throughout the text, and showing appropriate overall organisation of ideas	Linking ideas coherently throughout the text, and showing appropriate overall organisation of ideas	Linking ideas coherently throughout the text, and showing effective overall organisation of ideas
Language and style							
Using some simple words quite appropriately, and showing an awareness of some simple formats	Using some simple language forms and functions, and simple formats quite appropriately	Using simple language forms and functions, and simple formats quite appropriately and accurately	Using a small range of quite appropriate and accurate language forms and functions, and showing an awareness of tone, style, register and features of some text types	Using a range of quite appropriate and accurate language forms and functions, and quite appropriate tone, style, register and features of some text types	Using a range of generally appropriate and accurate language forms and functions, and generally appropriate tone, style, register and features of some text types	Using a wide range of generally appropriate and accurate language forms and functions, and generally appropriate tone, style, register and features of a range of text types	Using a wide range of appropriate and accurate language forms and functions, and appropriate tone, style, register and features of a range of text types
Underlying Principles							
- Language development strategies, generic skills, and positive values and attitudes are essential to English Language learning and form an integral part of the learning-teaching-assessment cycle. - The meaningfulness and appropriateness of the written texts to the context, purpose and audience are implicit in and apply across all the learning outcomes. - The development of writing strategies does not readily lend itself to descriptions of the learning outcomes in terms of eight attainment milestones, for example, - writing legibly (preferably being able to use both print and cursive scripts), - generating ideas by brainstorming or seeking and selecting information and ideas from different sources, - using knowledge of letter-sound relationships to spell words, - asking questions to clarify and seek information for correction, - editing drafts by correcting errors in language (e.g. spelling, punctuation and grammar items) with or without using references, - revising drafts by adding, deleting, substituting or linking ideas, and - reflecting on own writing based on feedback from teachers or peers. Teachers are expected to help learners develop these strategies with increasing sophistication. - Teacher support is essential to helping learners express and organise their ideas during the learning and teaching process. As learners progress, the amount of support provided is gradually reduced to promote learner independence.							

ATM = Attainment Milestone

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Applications for Self-directed Language Learning?

eBooks

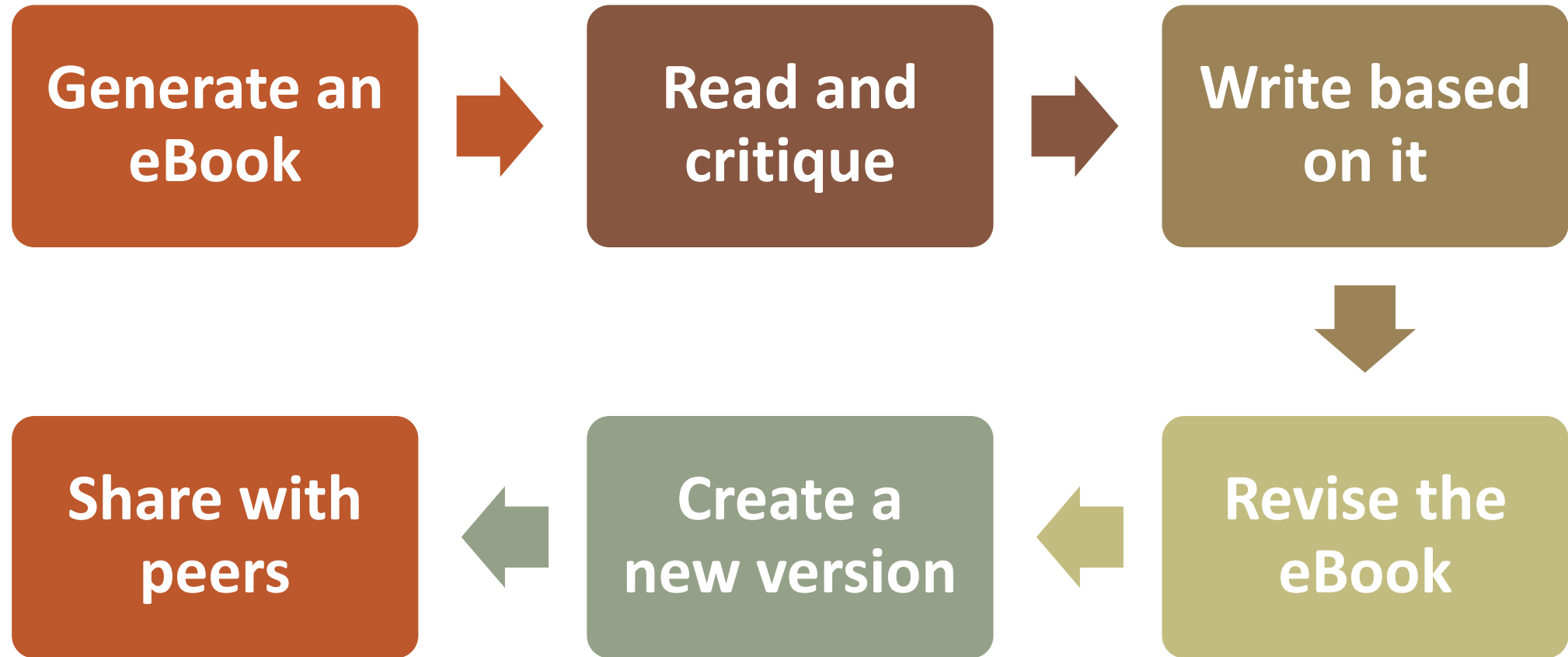
Flashcards

Infographics

Mind maps

Slide decks

eBooks



Flashcards

**Generate
flashcards**



**Improve 3
flashcards**



**Categorise into:
Works / Harmful
/ Not proven**



**Use them to
build outline**



Write letter



**Reflect: Which
flashcards
helped most?**

“Infographic Critique” Task

- Students generate an infographic from the “Home Remedies” text
- The teacher intentionally gives them a “flawed” infographic (or asks the AI to make one that is very simple)
- Students must write a short paragraph explaining three things the infographic missed from the reading passage
- This forces students to go back to the reading (Reading) to justify their written critique (Writing)

“Mind map Expansion” Challenge

- Give students a collapsed mind map with only the main branches (e.g., Sore Throat, Burns, Nausea)
- Students need to expand the nodes by finding the scientific reasons in the text
- Students then write one sentence for each expanded node
- This requires students to interrogate the reading (Reading) to build the content for their writing (Writing).

“Slide Deck Critique & Rewrite” Task

- Students generate a slide deck from the “Home Remedies” text
- The teacher asks students to find three things missing from the slides that are important for convincing Alex
- Students add the missing information to the slides, and then write one paragraph based on the improved slide
- This task requires students to return to the reading (Reading), justify their editorial decisions (Critical thinking) and produce improved writing (Writing)

Reflection and Action Plan

1. How comfortable do you feel about introducing your students to AI-assisted self-directed language learning now?
2. What concerns or challenges might you anticipate when introducing your students to the activities and strategies discussed today?
3. If you were to implement one of the AI activities, what would “success” look like for your students?
4. Who else in your department might be interested in piloting the materials and activities discussed today?
5. What is one thing from today’s session that you would definitely use, and one thing you would need to modify for your context?

Summary

- 4As of self-directed learning
- Different reading and writing skills (LPF + Curriculum Guide)
- Different applications of AI for SDL reading and writing practice
- Ultimate prompt writing
- Custom chatbot + Vibe coding

Thank you 😊