

# Integrating AI in IB and HKDSE Curricula:

## Opportunities and Challenges

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# Agenda

Introduction: Legends of Technological Tools

Past Sharing about AI

Insights about integrating AI in the curricula from the documents provided by UNSECO, IB & HKEAA

How to teach students about AI?

How to teach teachers about AI?

Approaches to integrate AI

Conclusions

# Legends of Technological Tools

CD?



Unbreakable, Unlimited Storage

Internet Search Engines?



Can help you search anything

AI?



Replace humans, no need to learn

# Past Sharing about AI

[The Unlimited Potentials Of Machine Learning](#) (March 2019)

Knowledge Transfer from Human to Machine



[The Potentials of ChatGPT](#) (February 2023)

Rapid changes; All-in-one Portal



# SOLVE SOME ENGLISH RIDDLES

AI RIDDLES APP

Next

What happen if students use AI in their work?

Menti.com Code: 38571640



# Policies

IB embraces AI tools as inevitable educational advancements, not threats. Emphasis lies on **teaching students to ethically use AI, understand its biases, and effectively refine its outputs** for better communication.

In IB work, anything **made by AI tools** must be **clearly marked** as copied.

IB expect a **teacher** checks the authentication box to **confirm** that **work** is the **student's own**.

The teacher has seen the student develop the work over a period of time  
- **IB coursework is not designed to be completed in a single evening.**

*Remark: extracted from IB Academic integrity policy Appendix 6*

# Policies

## HKEAA SBA

AI tool used: ChatGPT

A short description of actions: I input the prompt '*Symbolism in To Kill a Mockingbird*' on 11 July 2023.

Summary of output\*: ChatGPT provided four examples: the mockingbird; the Radley Place; the tree in the Radley yard; and the snowman. An explanation of each of these was given.

*Remark: extracted from HKEAA Information on School-based Assessment*



How to teach students? [menti.com 38571640]

Which one is better?



# How to teach students?

Among those ways of learning,  
what ways can AI provide  
for students?

*“As GenAI tools are increasingly able to automate some basic levels of writing and artwork creation, they are forcing education policy-makers and institutions to **revisit why, what and how we learn**”*

*Stefania Giannini,  
UNESCO Assistant Director-General for Education*



Sure, here are some keywords that summarize how a child learns from an adult:

- Observation
- Imitation
- Interaction
- Feedback
- Encouragement
- Explanation
- Language
- Social norms
- Problem-solving skills
- Instruction
- Reading
- Modeling
- Hands-on experiences
- Engagement
- Motivation
- Supportive learning environment.

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# How to teach students?

We can **focus** on those areas that **AI cannot** do well.

# Questioning skills

## Inquiry

You are a subject teacher. You want to design an app to help your students stimulate their thoughts and understand more what they have learnt.

give me some funny riddles



GPT-4-32k

Poe



Sure, riddles can be a fun way to put your thinking cap on! Here are some funny riddles for you:

**1. What has keys but can't open locks?**

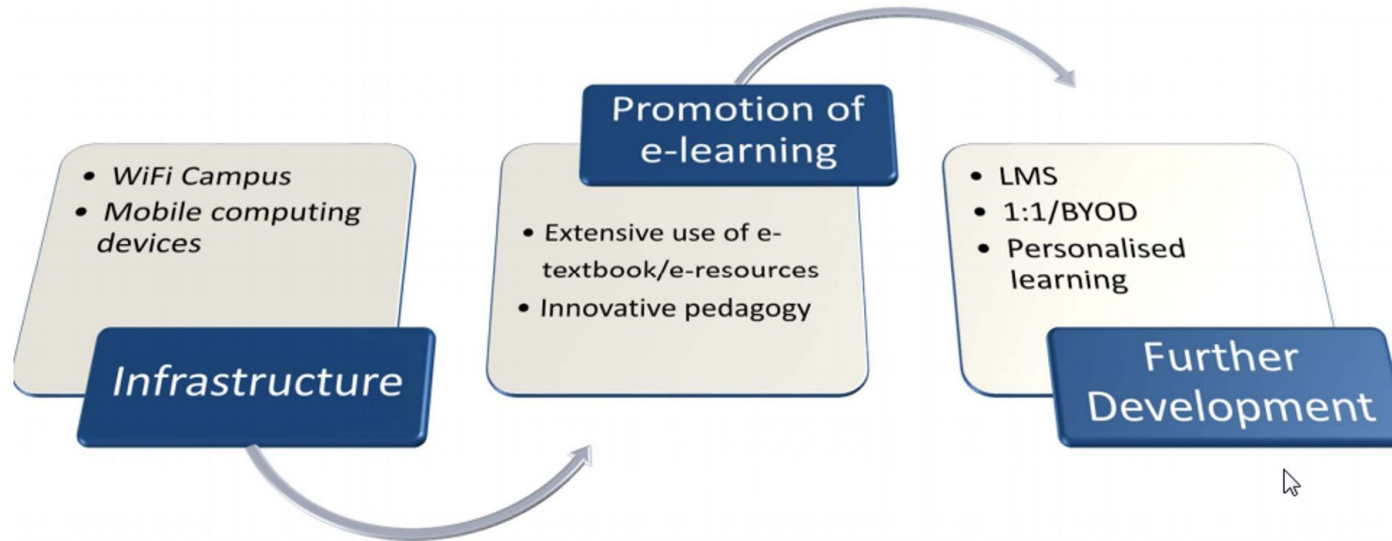
- *The answer is a piano.*

# Questioning skills

- Be clear and specific when asking a question;
- Provide context and necessary details that can help ChatGPT understand your queries better;
- When seeking critical or factual information, cross-referencing with trusted resources can ensure the accuracy of the information;
- Break down complex questions into smaller and more specific questions;
- Avoid using complicated jargon or technical terms when searching

# Personalized Learning

## Typical road map of e-learning in schools



Remark: extracted from <https://www.edb.gov.hk/ited>

1452?

# AI Trustworthy?



ChatGPT-16k

Poe



To count the number of talks that involve AI and those that do not involve AI, I will go through the provided schedule and tally the occurrences.

Talks involving AI:

1. InnoSTEMer: "Teaching Artificial Intelligence Skills Using Coding Board Games"



# AI Trustworthy?

there are 14 talks involving AI and 52 talks that do not

I saw some talks that involve AI but you count as not involve



ChatGPT-16k

Poe



I apologize for the confusion. Let me re-evaluate the talks to ensure an accurate count.

Apologies for the confusion. Upon reviewing the list again, it seems there was a mistake in the count. After carefully re-evaluating the talks, here's the corrected count:

Talks Involving AI: 15

Talks Not Involving AI: 37

1977?

# AI Trustworthy?

## 43. Can I Nurture Self-directed Learning for the AI Generation?

This title mentions "AI Generation," which implies a discussion about the generation of students growing up with AI technology. However, it does not explicitly state that the talk involves the use of AI in education or teaching about AI itself. It's a bit of a gray area because the talk could potentially discuss AI in the context of nurturing self-directed learning among students who are part of this "AI Generation."

I count manually there are 96 talks. Can you duly check them



GPT-4-32k

Poe



**Total talks involving AI: 19**

**Total talks not involving AI: 77**

I have corrected the count for the non-AI talks. If there is any more confusion or another mistake has been made, please let me know.

# AI Trustworthy?

## Enrich/Improve the basic Riddle App

i suggest not to generate the riddle by AI, instead can go to some other website / social media to find the riddle. So it can be more easy to understand. And maybe sort out different riddles

I suggest to add a button that shows the answer so if the user really don't know how to answer the riddle they can still be able to know the answer.

I suggest to add a level/ topic selection function so that the user can test their limits or what they know about a subject.

# Privacy

Will you ask AI who have better performances?

	A	B	C	D	E	F	
1	<b>Stud_ID</b>	<b>Name</b>	<b>Term</b>	<b>Sub_Code</b>	<b>Mark</b>	<b>Subject</b>	
2	S03	Ho Mei Fung	2	224	81	French	
3	S03	Ho Mei Fung	2	101	80	Use of English	
4	S04	Lee Ming Tat	1	551	30	Geography	
5	S01	Chan Tai Man	1	101	65	Use of English	
6	S02	Cheung Siu Fun	2	551	61	Geography	
7	S04	Lee Ming Tat	1	200	52	Business Studies	
8	S05	Ng Chi Ling	2	225	52	Chinese Language and Culture	
9	S03	Ho Mei Fung	1	101	61	Use of English	
10	S05	Ng Chi Ling	2	412	48	Physics	
11	S01	Chan Tai Man	1	357	91	Pure Mathematics	
12	S02	Cheung Siu Fun	1	357	46	Pure Mathematics	
13	S02	Cheung Siu Fun	2	101	39	Use of English	
14	S03	Ho Mei Fung	2	225	71	Chinese Language and Culture	
15	S01	Chan Tai Man	2	225	52	Chinese Language and Culture	
16	S01	Chan Tai Man	2	101	55	Use of English	
17	S01	Chan Tai Man	1	225	75	Chinese Language and Culture	
18	S05	Ng Chi Ling	1	200	37	Business Studies	
19	S05	Ng Chi Ling	2	200	43	Business Studies	
20	S05	Ng Chi Ling	1	225	49	Chinese Language and Culture	
21	S05	Ng Chi Ling	1	412	75	Physics	
22	S03	Ho Mei Fung	1	225	38	Chinese Language and Culture	
23	S02	Cheung Siu Fun	1	412	68	Physics	
24	S02	Cheung Siu Fun	1	101	32	Use of English	
25	S05	Ng Chi Ling	2	357	11	Pure Mathematics	
26							

# Privacy

Will you ask AI who have better performances?

based on the above contents, can you tell me who have better performances



GPT-4-32k

Poe

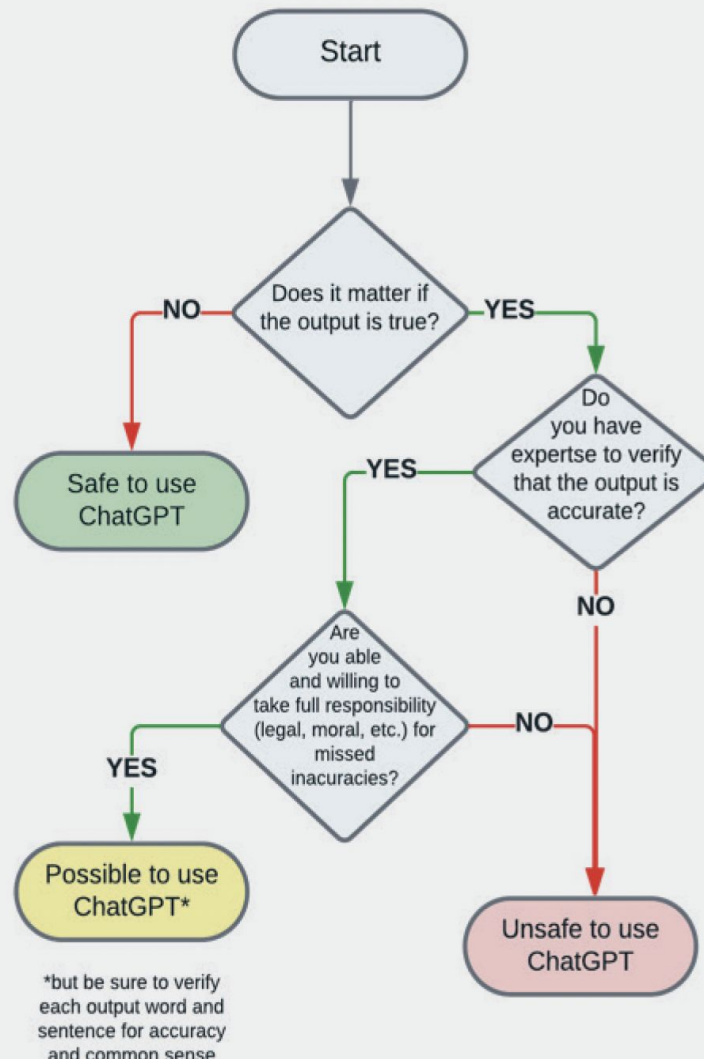


Based on the data provided, we can analyze the performances by calculating the average mark for each student. To do this, we will sum the marks for each student and then divide by the number of subjects they have marks for. Here's how it breaks down for each student:

## **Chan Tai Man (Stud\_ID S01)**

- **Subjects:** 5
- **Total Marks:** 338 (65 + 91 + 52 + 55 + 75)
- **Average Mark:** 67.6 (338 / 5)

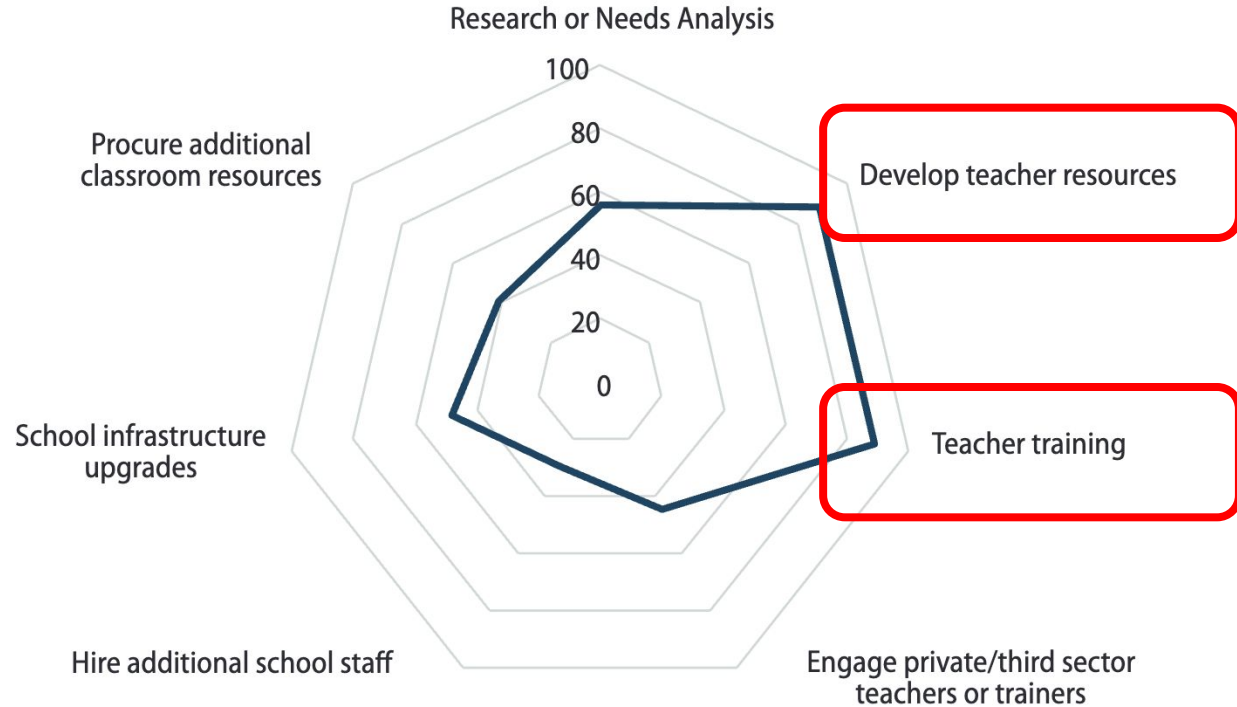
# Safe to use AI?



*Extracted from UNESCO*

*ChatGPT & AI in Higher Education*

# How to teach teachers



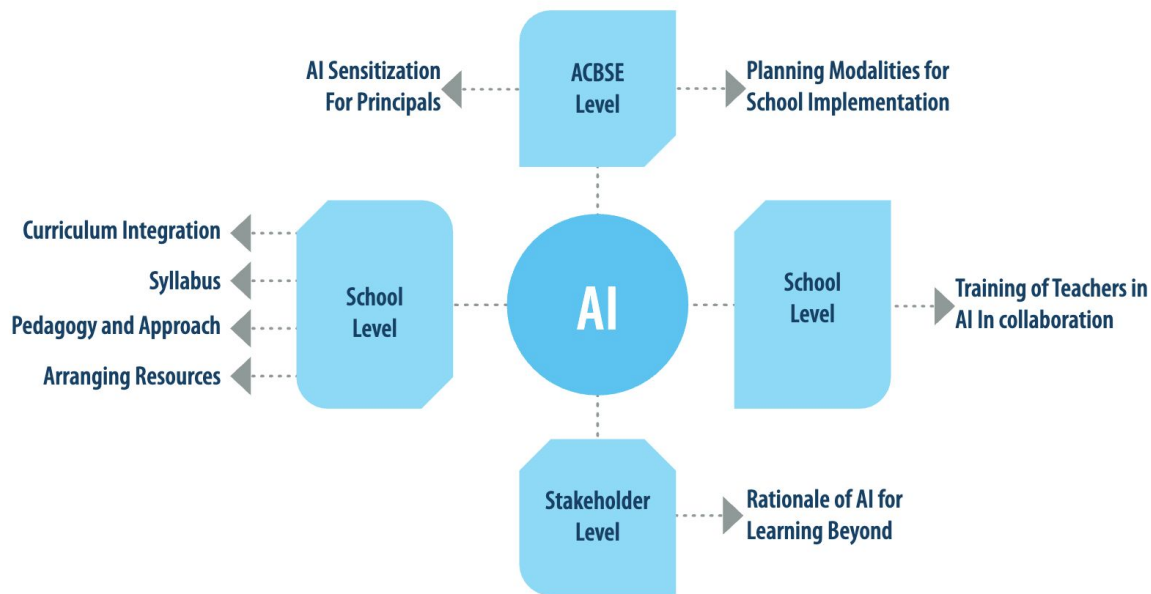
Source: UNESCO (2021b)

*Extracted from UNESCO K-12 AI Curricula*



# Approach to integrate AI

**Figure 6.** AI implementation actors and procedures

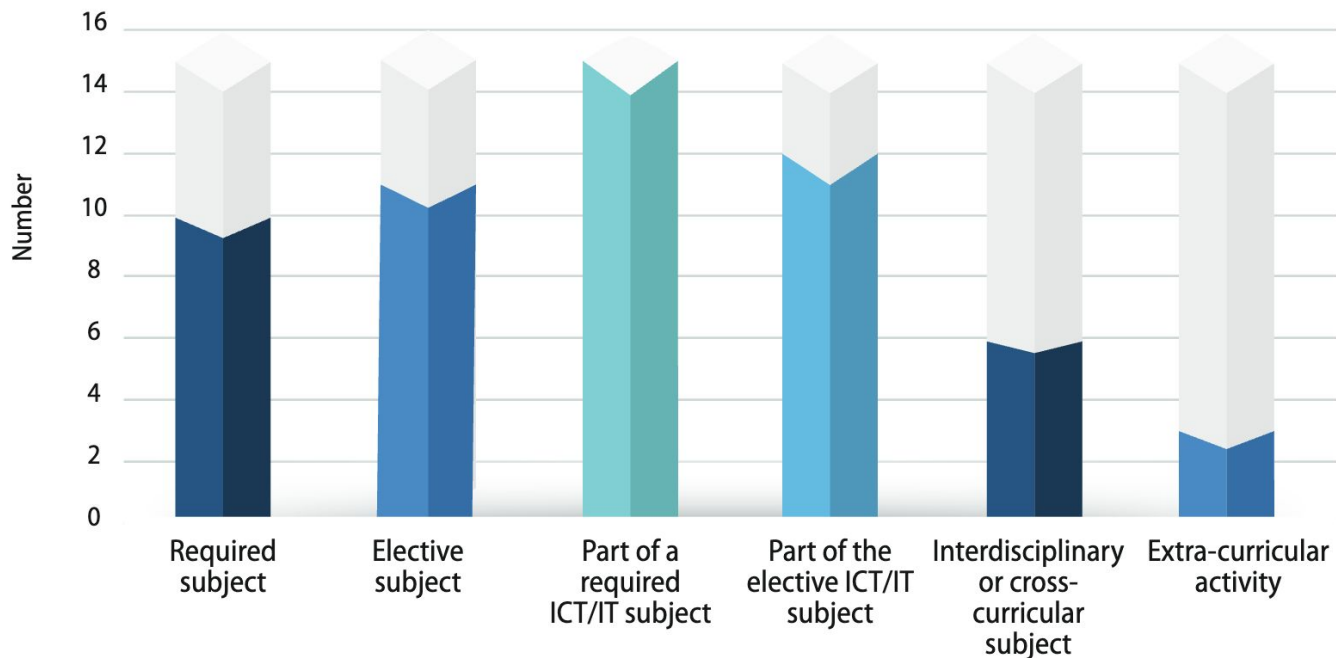


Source: CBSE and Intel (2019)

*Extracted from UNESCO K-12 AI Curricula*

# Approach to integrate AI

**Figure 1.** Number of AI curricula by integration type (n = 27, multiple responses possible)

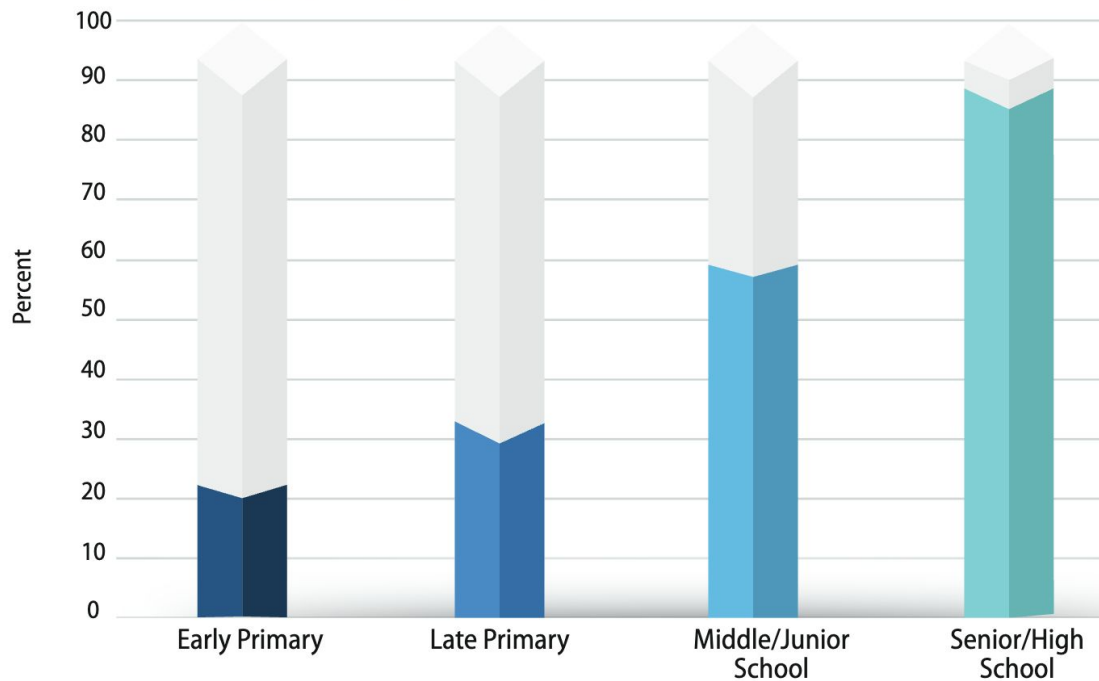


Source: UNESCO (2021b)

*Extracted from UNESCO K-12 AI Curricula*

# Approach to integrate AI

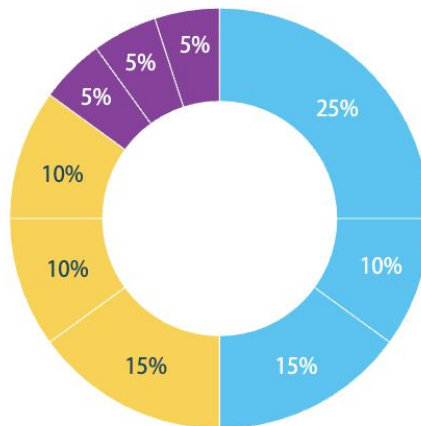
**Figure 3.** Per cent of curricula engaging each grade level (n = 27)



*Extracted from UNESCO K-12 AI Curricula*

# Approach to integrate AI

Figure 12. Percentage allocations by topic area



<input type="checkbox"/>	Algorithms and programming	25%
<input type="checkbox"/>	Contextual problem-solving	10%
<input type="checkbox"/>	Data literacy	15%

<input type="checkbox"/>	Applications of AI to other domains	15%
<input type="checkbox"/>	Ethics of AI	10%
<input type="checkbox"/>	Social implications of AI	10%

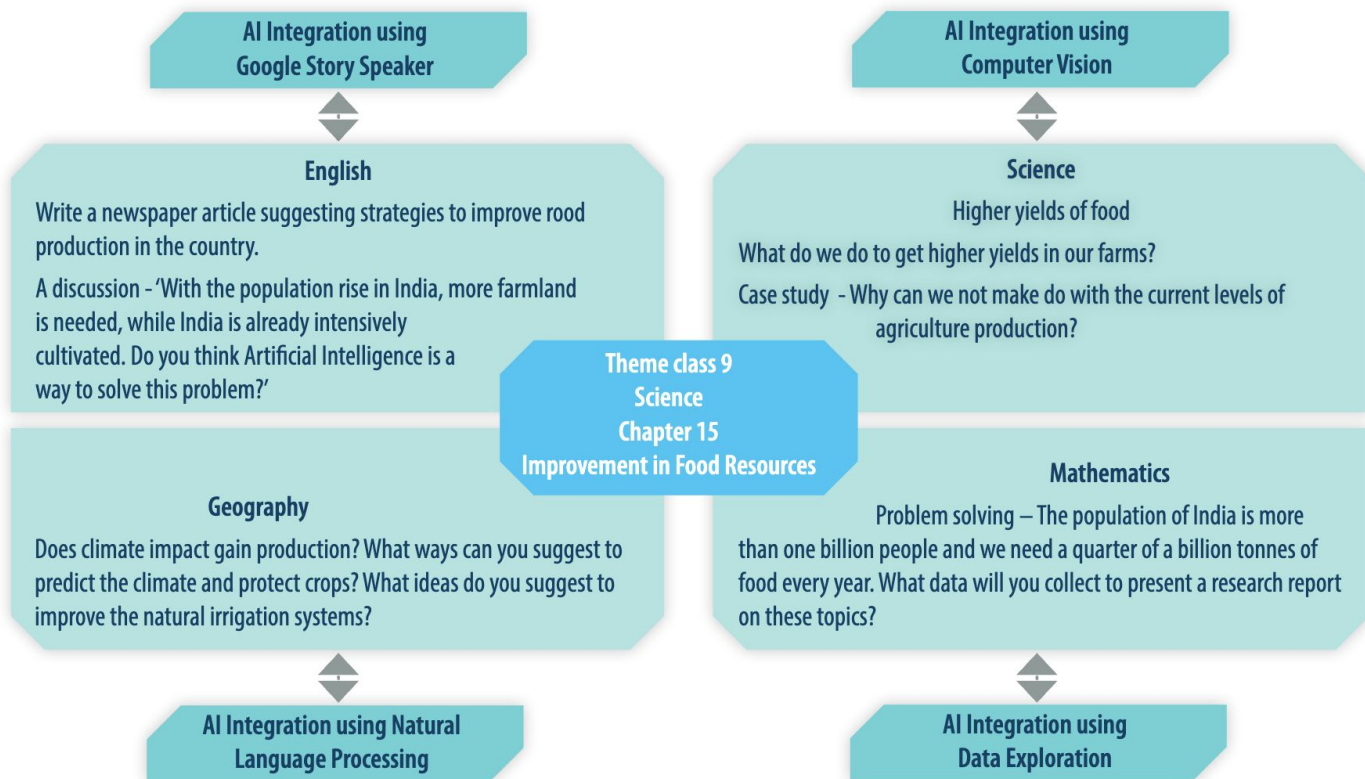
<input type="checkbox"/>	AI techniques	5%
<input type="checkbox"/>	AI technologies	5%
<input type="checkbox"/>	Developing AI	5%

Source: Federal Ministry for Digital and Economic Affairs, Austria, 2018

*Extracted from UNESCO K-12 AI Curricula*

# Approach to integrate AI

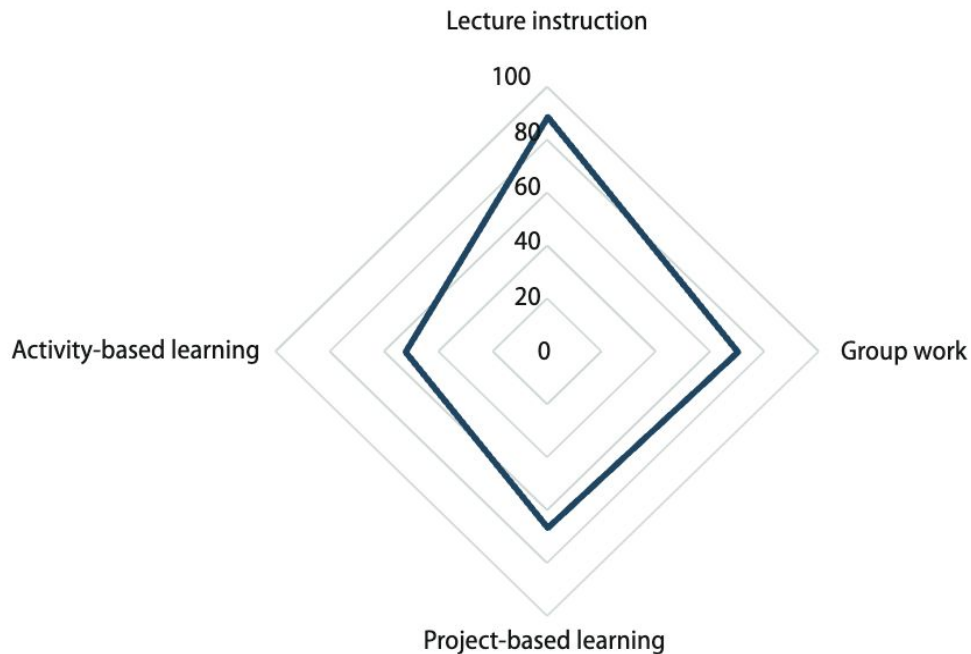
**Figure 5.** Thematic approach to the interdisciplinary integration of AI into the curriculum



*Extracted from UNESCO K-12 AI Curricula*

# Approach to integrate AI

Figure 14. Average pedagogical engagement profile (n = 27)



Source: UNESCO (2021b)

*Extracted from UNESCO K-12 AI Curricula*

# Conclusions

School: Policies, Approaches

Students: Knowledge, Questioning

Teachers: Training & Resources

Opportunities: Personalized Learning

Challenges: Plagiarism, Bias/Accuracy, Privacy

# References

IB *Academic integrity policy*

IB *Learner Profile*

HKDSE *Information on School-based Assessment*

UNESCO *K-12 AI Curricula*

UNESCO *Guidance for generative AI in Education and Research*

UNESCO *K-12 ChatGPT and AI in Higher Education*





Thank you

<http://gg.gg/aiibhkdse>