



# Intelligent Design-Aware Learning Analysis Empowered 21C L&T System

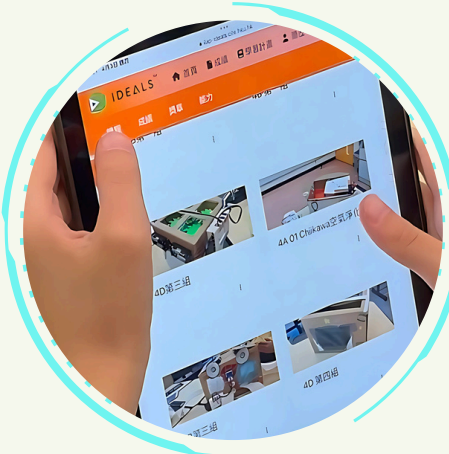


## IDEALS

## Quality Curriculum Design | AI | Big Data Empowering Future Learning



**Learning  
Design**



**e-Learning  
Implementation**



**Learning  
Analytics**



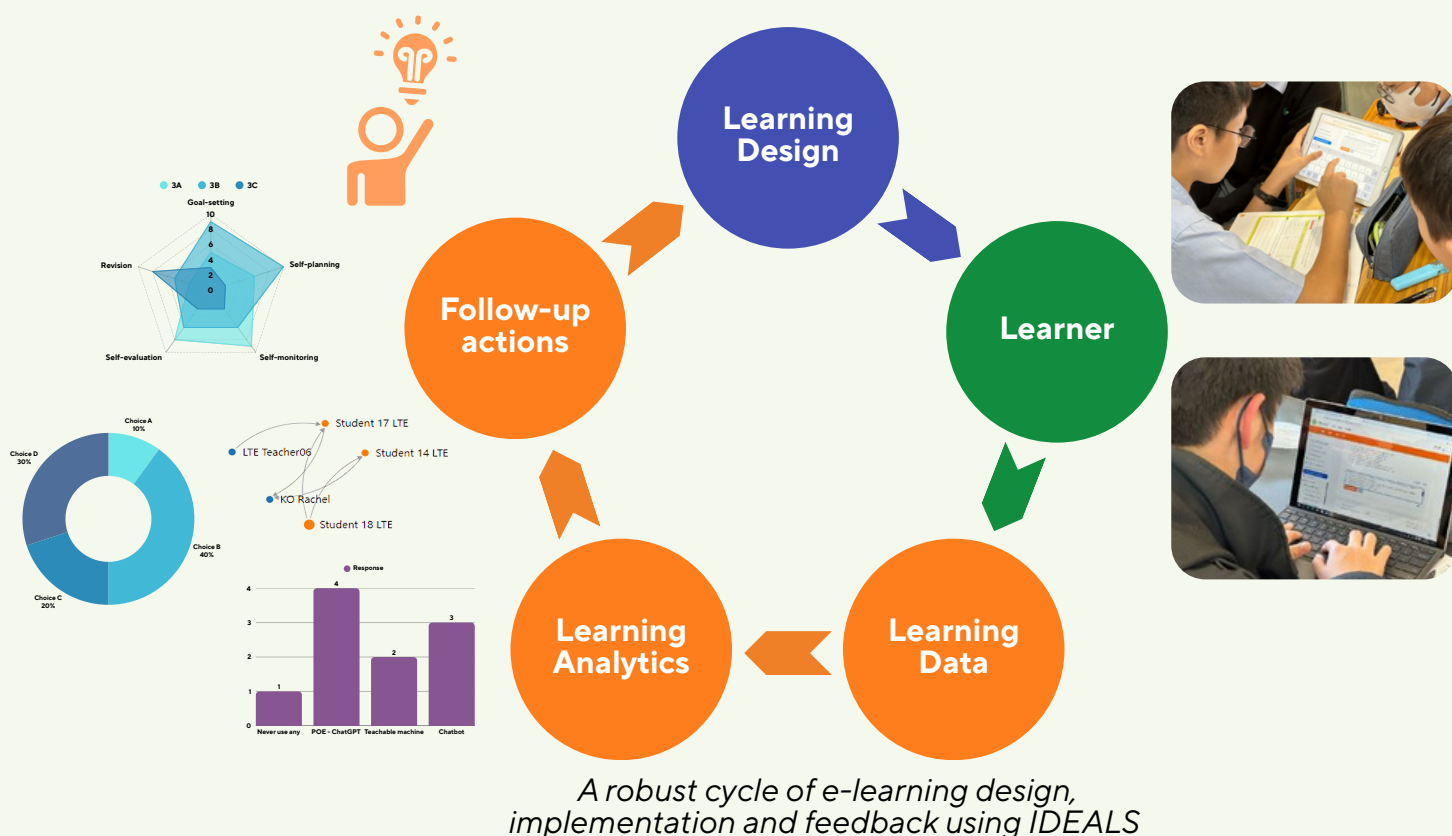
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# Design-Aware Learning Analytics Learning Analytics-Informed Feedback



## Different Types of Learning Analysis Questions

Cognitive Performance

Cognitive Engagement

Metacog. Performance

Metacog. Engagement

Social Engagement

What **iLAP** tools  
can be utilized to  
address key **learning  
analytics** questions?



# Meaningful Design-Aware Learning Analytics for sample iLAP learning tasks



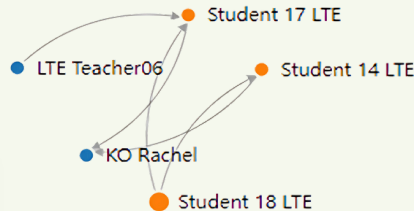
## Forum

How well have students  
**interacted** in a particular task?

What is the focus of  
student discussions?

01

**Forum Graph** shows  
student interactions



**Forum Keywords** indicates  
the focus of discussions



## Checklist

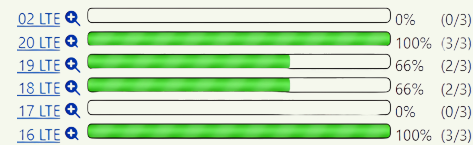
How well have students  
**monitored** their own work?

02

**Progress Bar** supports  
students in self-monitoring



Support Teachers to see  
how students monitor their  
own learning progress



The **Workshop** tool promotes students' discussion,  
and collaborative learning by having them submit  
their work and participate in **peer evaluations**.

Assessment form	
Grid	
Criteria	Levels
<b>Prompt clarity</b> 指令清晰	<p>○ [1] The student's prompts are unclear and ambiguous, making it difficult to understand their intended actions. 學生的指令含糊不清、模糊，難以理解其意圖。</p> <p>○ [2] The student's prompts lack clarity or specificity, leading to some confusion or misinterpretation. 學生的指令缺乏清晰度或具體性，導致對其意圖產生一些混淆或誤解。</p> <p>○ [3] The student's prompts are mostly clear, with minor issues in clarity or specificity that may require additional clarification. 學生的指令大多清晰，但可能在清晰度或具體性方面存在一些小問題，可能需要進一步澄清。</p> <p>○ [4] The student's prompts are exceptionally clear, concise and unambiguous, leaving no room for confusion or misinterpretation. 學生的指令非常清晰簡潔，絕無任何歧義或誤解的余地。</p>
<b>Prompt Effectiveness</b> 指令有效性	<p>○ [1] The student's prompts consistently fail to produce the desired outcomes, indicating a significant lack of effectiveness in their instructions. 學生的指令無法 consistently 產生預期結果，顯示其在指令的有效性方面存在顯著不足。</p> <p>○ [2] The student's prompts have limited effectiveness, frequently failing to produce the desired outcomes or requiring additional iterations to achieve the intended results. 學生的指令有效性有限，經常無法產生預期結果，或需要多次迭代才能達到預期效果。</p> <p>○ [3] The student's prompts mostly achieve the desired outcomes, with occasional minor inconsistencies or deviations from the expected results. 學生的指令大部分能達到預期結果，偶爾會出現一些小的不一致或與預期結果的偏差。</p> <p>○ [4] The student's prompts consistently produce the desired outcomes and successfully accomplish the intended tasks. 學生的指令 consistently 產生預期結果，或成功完成預期任務。</p>
<b>Prompt Revision</b> 指令的修訂	<p>○ [1] The student lacks adaptability in adjusting their prompts, leading to a consistent inability to make progress or accomplish their goals. 學生在調整其指令以適應需求方面缺乏靈活性，導致無法 consistently 取得進展或達成目標。</p> <p>○ [2] The student struggles to adapt their prompts based on the AI's responses, resulting in limited progress or difficulty in achieving their goals. 學生在根據 AI 的回應調整其指令方面遇到困難，導致進展有限或難以達成目標。</p> <p>○ [3] The student shows some adaptability in modifying their prompts based on the AI's responses, although there may be room for improvement in refining their instructions. 學生在根據 AI 的回應調整其指令方面表現出一定的靈活性，但在完善其指令方面仍有改進空間。</p> <p>○ [4] The student demonstrates a high level of adaptability in refining and adjusting their prompts based on the AI's responses, effectively achieving their goals. 學生在根據 AI 的回應調整其指令方面表現出高程度的靈活性，有效地達成其目標。</p>
<b>Prompt writing and language</b> 指令寫作和語言	<p>○ [1] The student's writing style and language are poor, lacking accuracy in the choice of vocabulary. 學生的寫作風格和語言選擇存在不足，詞彙使用缺乏準確性。</p> <p>○ [2] The student's writing style and language show some weaknesses, with occasional inaccuracies in the choice of vocabulary. 學生的寫作風格和語言表現出一些弱點，在詞彙選擇上偶爾存在不準確之處。</p> <p>○ [3] The student's writing style and language are generally good, with few inaccuracies in the choice of vocabulary. 學生的寫作風格和語言整體良好，在詞彙選擇上只有少數不準確之處。</p> <p>○ [4] The student's writing style and language are excellent, demonstrating high level of accuracy in the choice of vocabulary. 學生的寫作風格和語言表現出色，在詞彙選擇上展現出高程度的準確性。</p>

**Grades for submissions** indicate the **quality of work** in relation to students' learning outcomes

**Grades for assessments** reflect the **review quality** of students' on reviewing peer works

Grade for submission

9.71 / 15.00

Grade for assessment

13.82 / 15.00

## Workshop

To what extent do student  
achieve the learning outcomes?

Are students able to critically  
assess each other's work  
based on the rubric?



03

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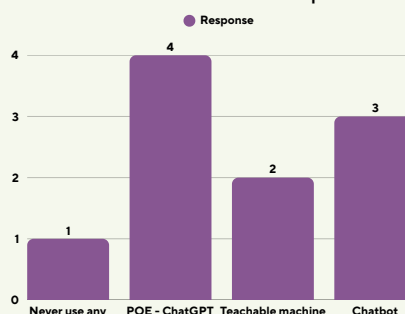


## Choice

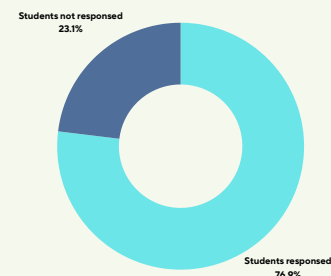
What is the distribution of students' choices among the different options?

How well have students engage in the activity?

**Resulting Graph** visualizes the distribution of responses



**Figure** shows the participation rate in the choice activity

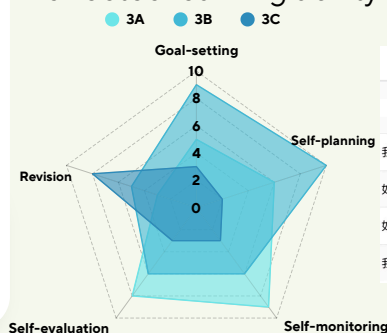


## Questionnaire

How effective is students' self-directed learning ability?

How do students perceive their performance?

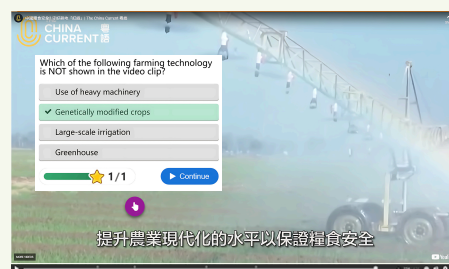
**Students' self-evaluation results** visualize their self-directed learning ability



**Questionnaire results** indicate students' self-perceived performance

Average rank (and average values)				 
甚少	有時	經常	幾乎總是	
我能按照說明完成任務。				4.7 (3.7)
如果我需要幫助，我會找人幫忙完成任務。				4.4 (3.4)
如果有需要，我會向他人解釋問題，尋求建議從而完成任務。				4.5 (3.5)
我透過自己尋找所需資訊來完成任務。				4.7 (3.7)

The **H5P** tool enables students to watch short videos and answer questions simultaneously.



**Attempts report** provides detailed insights into students' **performance and engagement** on the quiz, including their scores, the time taken, and the number of attempts made.

### Highest score attempt

	Date	Score	Max score	Duration	Completion	Success	Report
1	10/03/25, 16:35	4	5	6 minutes 24 seconds	<input checked="" type="checkbox"/>	<input type="radio"/>	<a href="#">View repo</a>

### All user attempts

#	Date	Score	Max score	Duration	Completion	Success	Report
1	10/03/25, 16:35	4	5	6 minutes 24 seconds	<input checked="" type="checkbox"/>	<input type="radio"/>	<a href="#">View repo</a>



## H5P- InteractiveVideo

To what extent do students understand key concepts from the video?

Do students make several attempts for the Quiz in the video?



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# Design-Aware Learning Analytics provided at different granularities within a course

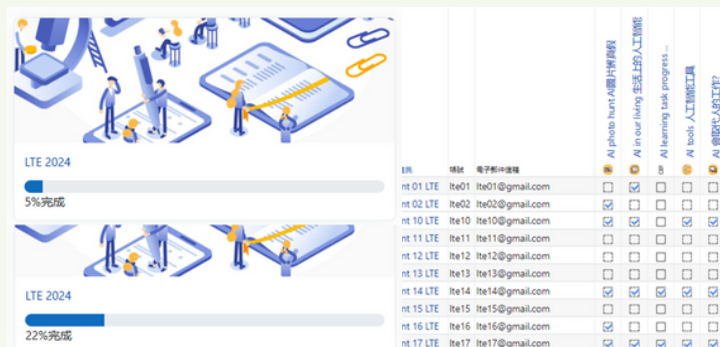
## Course Level



How well are students' engagement in the course at the class and individual levels?

## Activity Completion

Set activity Completion Conditions to track student engagement at different stages of the course



## Curriculum Component (CC) Level



To what extent have students achieved the intended Learning Outcomes at a **CC level**?

Whether and how does student engagement change **across CCs**?

**Grader Report** indicates whether students have achieved the intended learning outcomes

	Can China become a developed country? while Russia?	Can China become a developed country? while Russia?	Set a Question about Higher Education Policies of China	Questioning Learning Goal	三、總結
nt01/24	-	-	10.00	11.00	21.00
nt02/24	-	-	-	-	-
nt03/24	-	-	9.00	9.00	9.00
nt04/24	-	-	-	-	-
nt05/24	-	-	-	-	-
nt06/24	-	10.00	10.00	8.00	28.00
nt07/24	-	11.00	-	-	11.00
nt08/24	-	14.00	-	-	14.00
nt09/24	-	10.00	10.00	9.00	32.00
nt10/24	-	-	10.00	-	10.00
nt11/24	-	-	-	-	-
總計	-	10.00	10.00	9.00	11.00

**Activity Report** provides insights into student engagement **across CCs**

AI photo hunt AI圖片辨真假	82 views by 13 users
CC1	
AI in our living 生活上的人工智能	53 views by 9 users
AI learning task progress AI學習任務完成度	93 views by 10 users
CC2	
AI tools 人工智能工具	60 views by 10 users
AI 會取代人的工作?	37 views by 7 users
CC3	

## Task Level



How well have students performed in a **particular task**?

## Badges Report

Setting badge criteria based on specific task completion helps track student performance

Name	Badge status	Criteria	Recipients
Features of Film Review	Available (criteria locked)	• Complete: "Forum - Features of Film Review"	29
Pre-Writing a Film Review	Available (criteria locked)	• Complete ANY of: "Wiki - Group 1", "Wiki - Group 2", "Wiki - Group 3", "Wiki - Group 4", "Wiki - Group 5", "Wiki - Group 6", "Wiki - Group 7", "Wiki - Group 8", "Wiki - Group 9"	28
Writing a Film Review	Available (criteria locked)	• Complete: "Forum - Production and Presentation: Film Review"	17



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# Intelligent Design-Aware Learning Analysis Empowered 21C L&T System



## Innovation

Implementing and receiving feedback on e-learning design through the IDEALS system for a robust teaching and learning process.



## Mission

Enhance Student Learning  
Foster Teacher Professionalism  
Support Professional Learning Communities



For further information, please visit

<https://ideals.cite.hku.hk>



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