



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

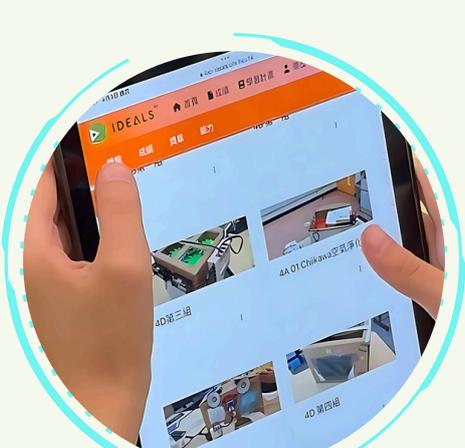


IDEALS

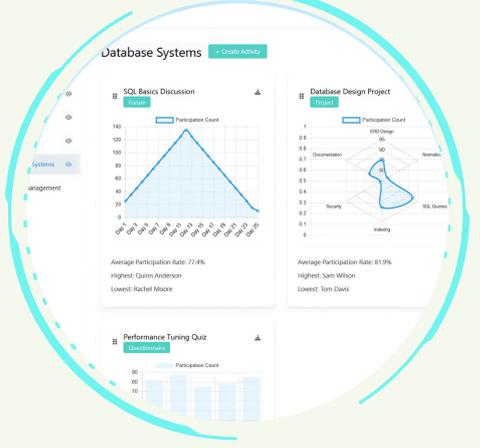
Quality Curriculum Design | AI | Big Data Empowering Future Learning



Learning Design



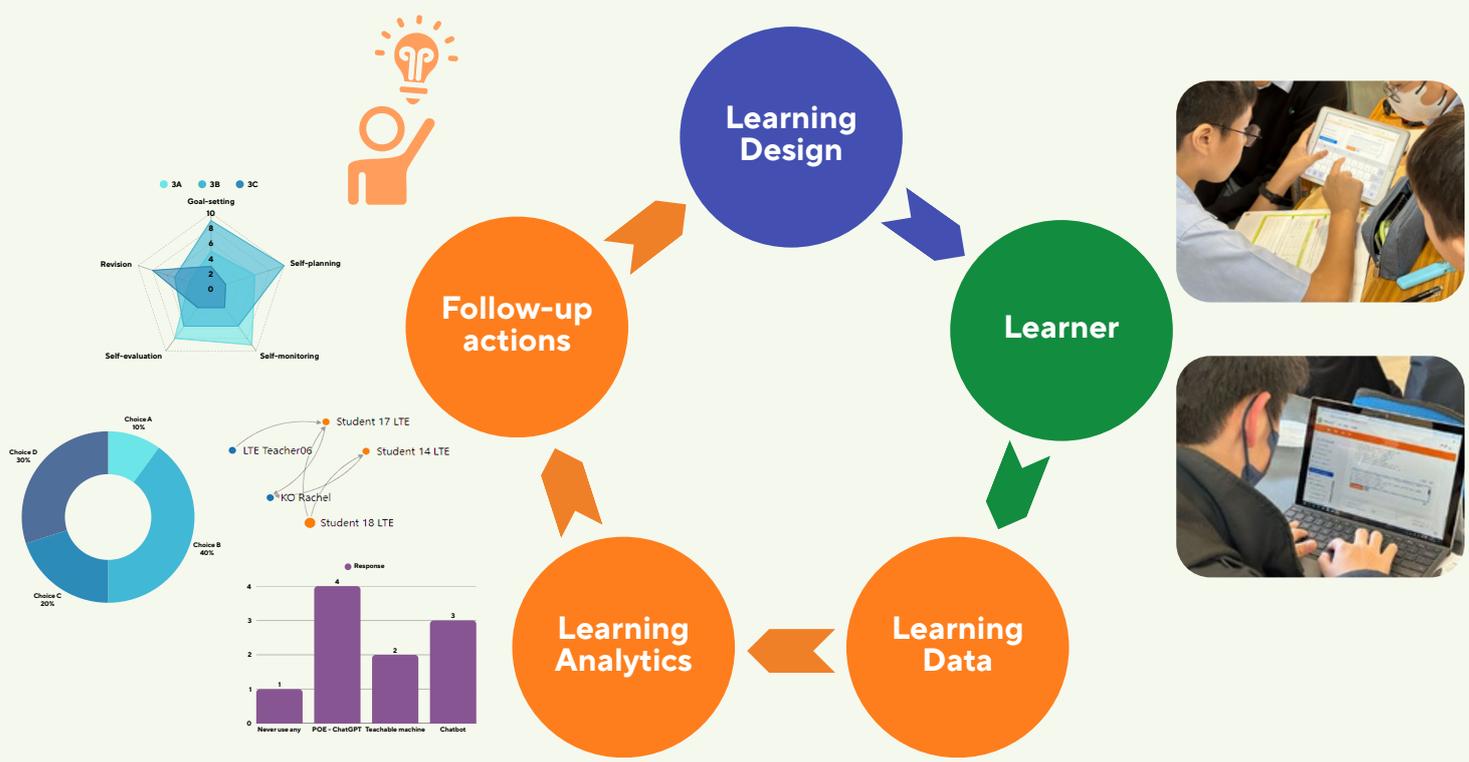
e-Learning Implementation



Learning Analytics



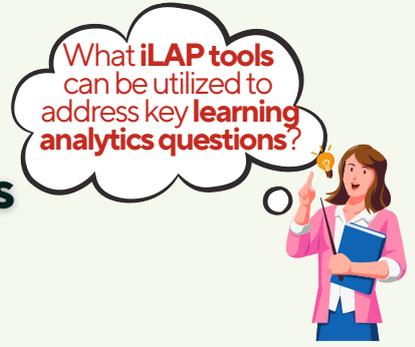
Design-Aware Learning Analytics Learning Analytics-Informed Feedback



A robust cycle of e-learning design, implementation and feedback using IDEALS

Different Types of Learning Analysis Questions

- Cognitive Performance
- Cognitive Engagement
- Metacog. Performance
- Metacog. Engagement
- Social Engagement



Meaningful Design-Aware Learning Analytics for sample iLAP learning tasks

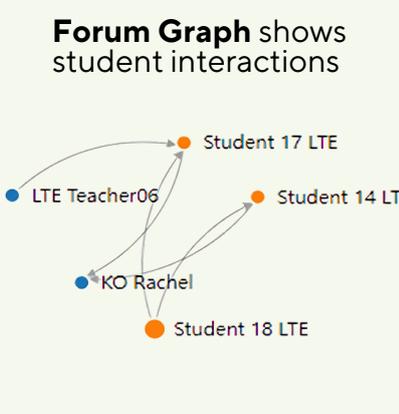


01

Forum

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

What is the focus of student discussions?

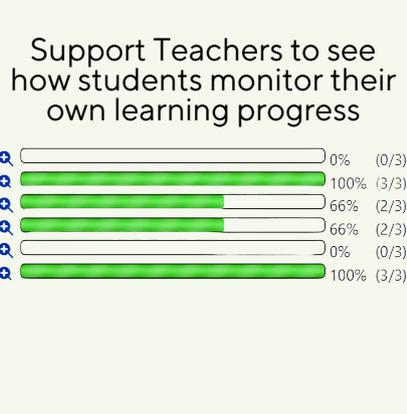
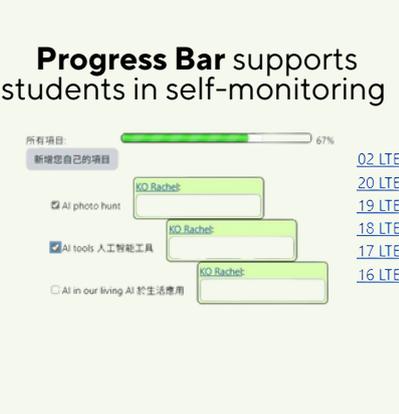




02

Checklist

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





03

Workshop

To what extent do student achieve the learning outcomes?

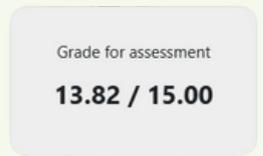
Are students able to critically assess each other's work based on the rubric?

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

Assessment form Grid

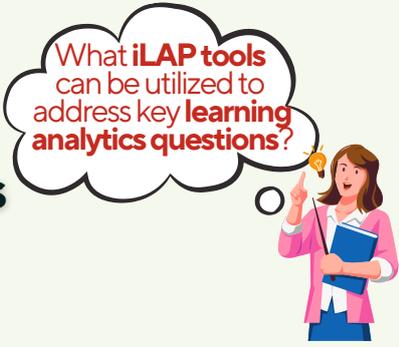
Criteria	Levels
Prompt clarity 指令清晰	<p>01 The student's prompts are unclear and ambiguous, making it difficult to understand their intended actions. 學生的指令不清楚、模糊，難以理解其意圖。</p> <p>02 The student's prompts lack clarity or specificity, leading to some confusion or misinterpretation. 學生的指令缺乏清晰度或具體性，導致對目標的理解出現混淆。</p> <p>03 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需要額外澄清。</p> <p>04 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、無歧義，沒有留下任何混淆或誤解的空間。</p>
Prompt Effectiveness 指令有效性	<p>01 The student's prompts consistently fail to produce the desired outcomes, indicating a significant lack of effectiveness in their instructions. 學生的指令無法持續產生預期結果，顯示在指令的有效性方面存在顯著不足。</p> <p>02 The student's prompts have limited effectiveness, frequently failing to produce the desired outcomes or requiring additional iterations to achieve the intended tasks. 學生的指令效果有限，經常無法產生預期結果，或需要多次迭代才能實現預期任務。</p> <p>03 The student's prompts mostly achieve the desired outcomes, with occasional minor inconsistencies or deviations from the expected results. 學生的指令大部分實現了預期結果，偶爾存在一些小不一致或與預期結果的偏差。</p> <p>04 The student's prompts consistently produce the desired outcomes and successfully accomplish the intended tasks. 學生的指令持續產生預期結果，成功完成預期任務。</p>
Prompt Revision 指令的修訂	<p>01 The student lacks adaptability in adjusting their prompts, leading to a consistent inability to make progress or accomplish their goals. 學生缺乏根據情況調整指令的能力，導致無法取得進展或完成目標。</p> <p>02 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的回應調整指令方面遇到困難，導致進展有限或難以達成目標。</p> <p>03 The student shows some adaptability in modifying their prompts based on the AI's responses, although there may be room for improvement in optimizing their instructions. 學生在根據AI的回應調整指令方面展現了一定的適應性，但在優化指令方面仍有改進空間。</p> <p>04 The student demonstrates a high level of adaptability in refining and adjusting their prompts based on the AI's responses, effectively achieving their goals. 學生展現了高水平的適應性，能根據AI的回應有效調整指令，成功達成目標。</p>
Prompt writing and language 指令寫作和語言	<p>01 The student's writing style and language are poor, leading to inaccuracies in the choice of vocabulary. 學生的寫作風格和語言不佳，導致在詞彙選擇上出現不準確。</p> <p>02 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仍有一些弱點，在詞彙選擇上偶爾會出現不準確。</p> <p>03 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通常良好，在詞彙選擇上只有少數不準確。</p> <p>04 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非常優秀，在詞彙選擇上展現了高水準的準確性。</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



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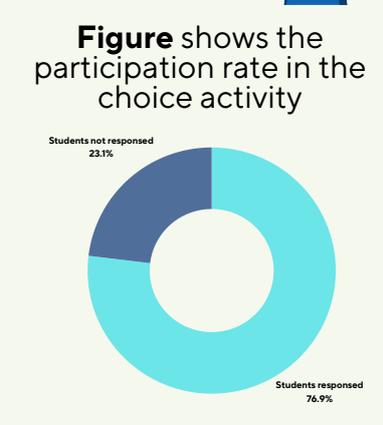
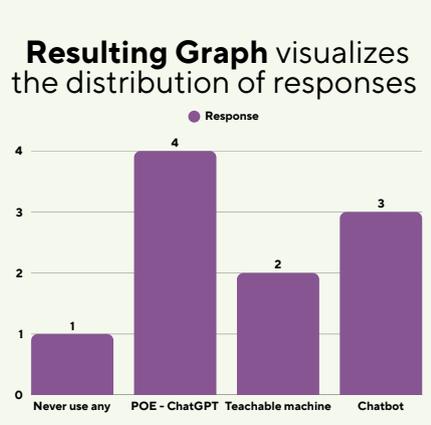


Meaningful Design-Aware Learning Analytics for sample iLAP learning tasks

Choice

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

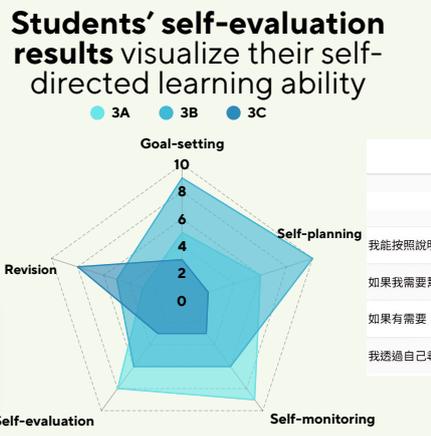
How well have students engage in the activity?



Questionnaire

How effective is students' self-directed learning ability?

How do students perceive their performance?



Questionnaire results indicate students' self-perceived performance

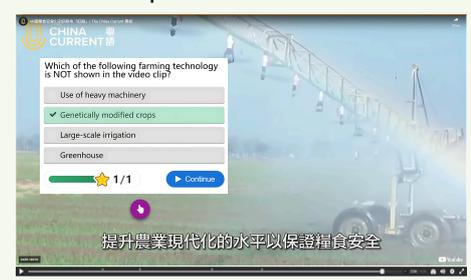
Average rank (and average values)	
	幾乎穩定
我能按照說明完成任務。	4.7 (3.7)
如果我需要幫助，我會找人幫忙完成任務。	4.4 (3.4)
如果有需要，我會向他人解釋問題，尋求建議從而完成任務。	4.5 (3.5)
我透過自己尋找所需資訊來完成任務。	4.7 (3.7)

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

H5P- Interactive Video

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

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



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
10/03/25, 16:35	4	5	6 minutes 24 seconds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	View repo

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="checkbox"/>	View repo

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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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Faculty of Education, The University of Hong Kong



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