



**HKU
Med**



Enhancing Clinical Training with KASES

Pilot implementation in MBBS Problem-based Learning

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Outline

- What is Problem-based learning (PBL) at HKUMed MBBS?
- What is KASES?
- Why do we want to implement KASES in PBL?
- What did we do?
- How did we do?
- Where are we going next?
- KASES in a bigger picture.
- Q&A





HKUMed MBBS PBL

"In 1997 the Faculty launched the acclaimed hybrid PBL curriculum – first of its kind in Asia.."

HKU Medical Faculty News, 2016



HKUMed MBBS PBL

- Clinical Case Scenario
- Group discussions:
 - Student-led
 - Facilitated by tutors
- Bridge the gap:
 - Theory vs clinical practice
 - Exposure to clinical reasoning in pre-clinical years

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Problem-based Learning

What defines effective teaching in a PBL-driven medical curriculum?

Effective teaching in health professions education prioritizes active, contextualized learning that bridges theory and clinical practice. While definitions vary, PBL-focused teaching at HKUMed emphasizes student-centered inquiry, collaborative problem-solving, and reflective practice to cultivate clinical reasoning and lifelong learning (Barrows, 1996; Hmelo-Silver, 2004).

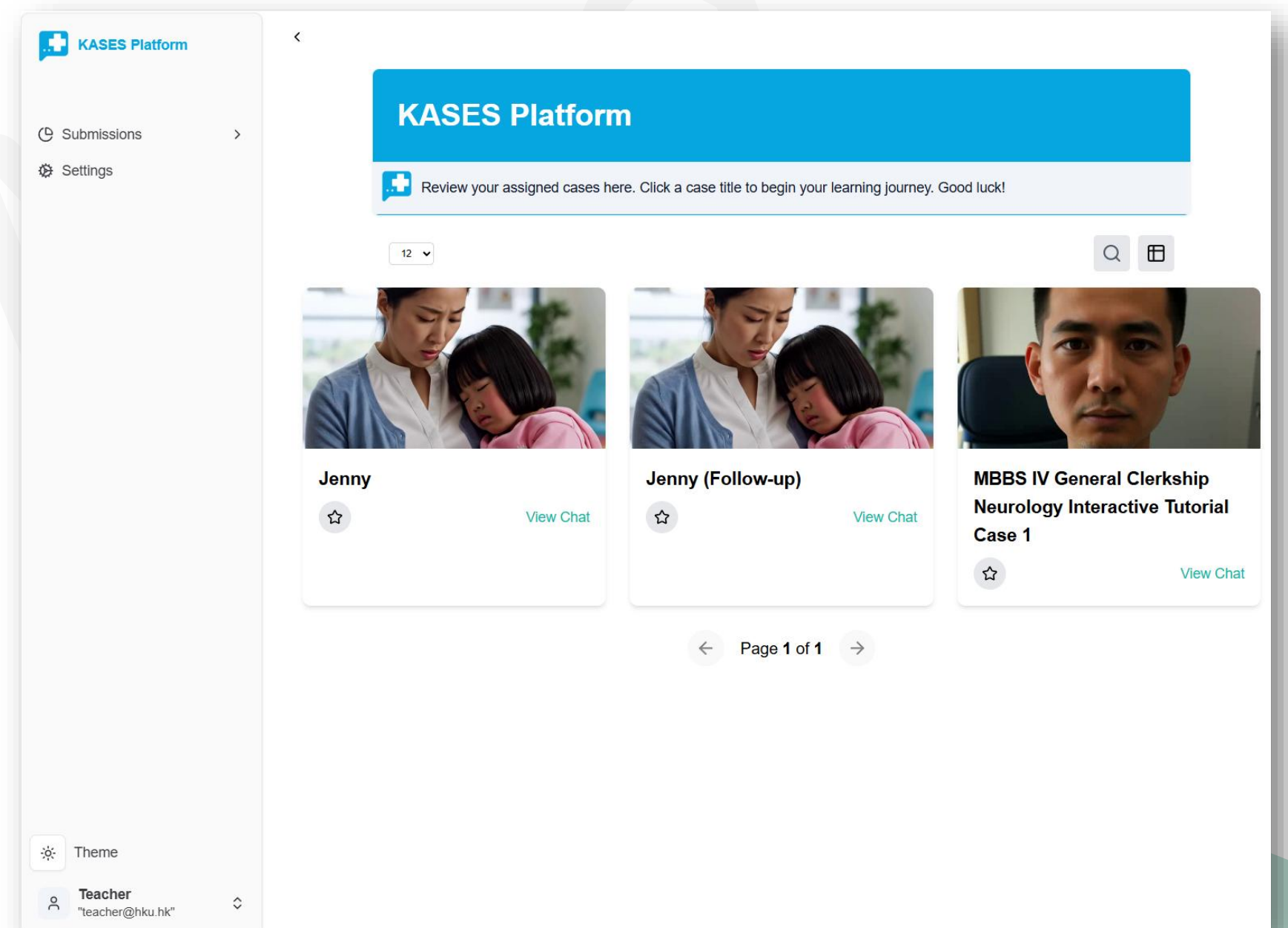
What does effective PBL teaching look like at HKUMed?

At HKUMed, effective PBL educators:

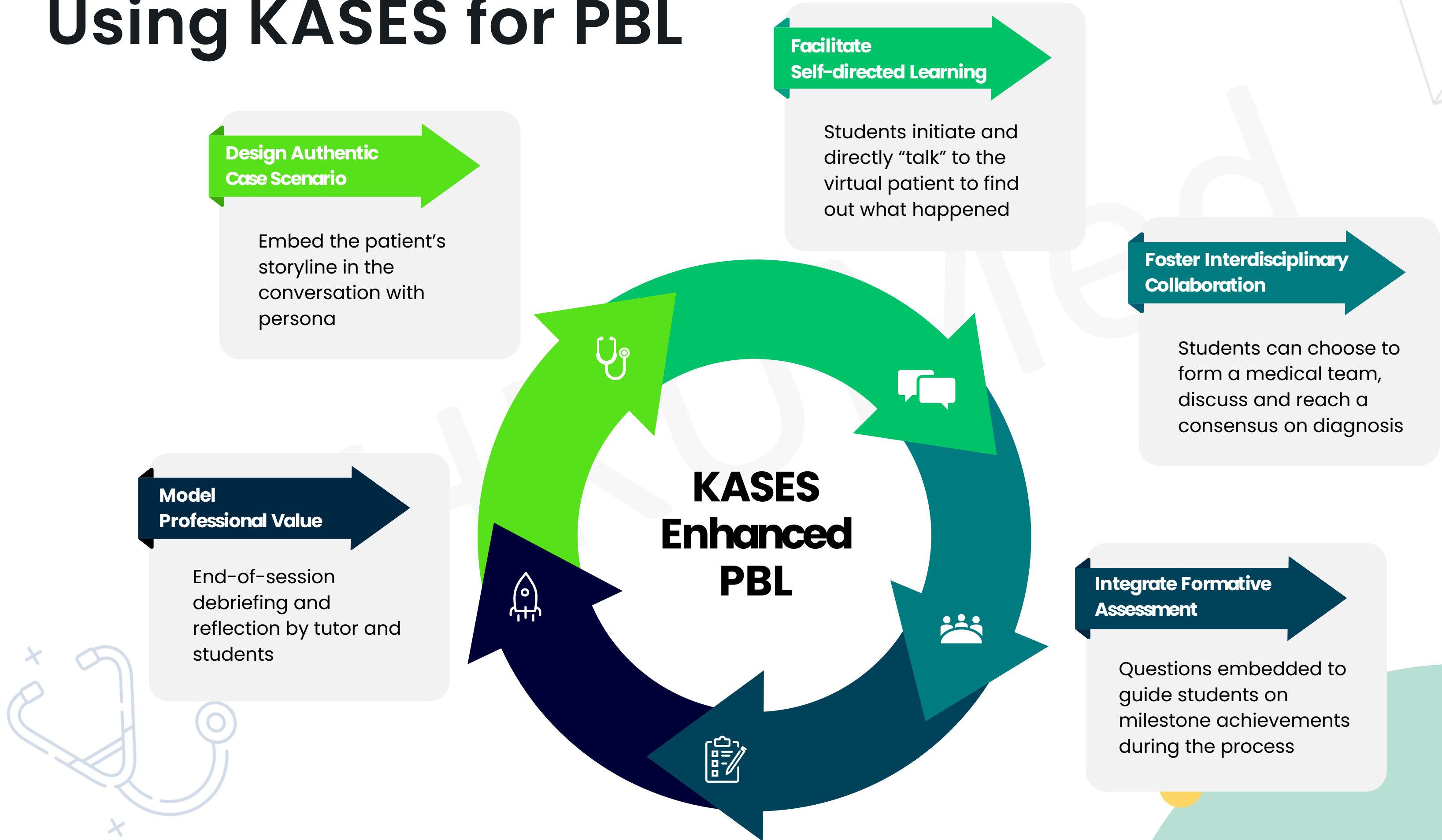
1. **Design authentic clinical scenarios** that mirror real-world complexity (done already).
2. **Facilitate self-directed learning** by guiding students to identify knowledge gaps, critically evaluate evidence, and apply biomedical principles.
3. **Foster interdisciplinary collaboration** through small-group dynamics, emphasizing communication skills and peer feedback.
4. **Integrate formative assessment** to monitor metacognitive growth and adaptive expertise (Loftus & Higgs, 2020).
5. **Model professional values** by connecting ethical reasoning and patient-centered care to case discussions.

Knowledge and Simulation Education System (KASES)

- AI-powered Education System
- Customisable for various clinical scenarios and teaching activities
- For students to practise clinical skills including: history-taking, virtual physical exams, clinical reasoning
- Guided by tutors



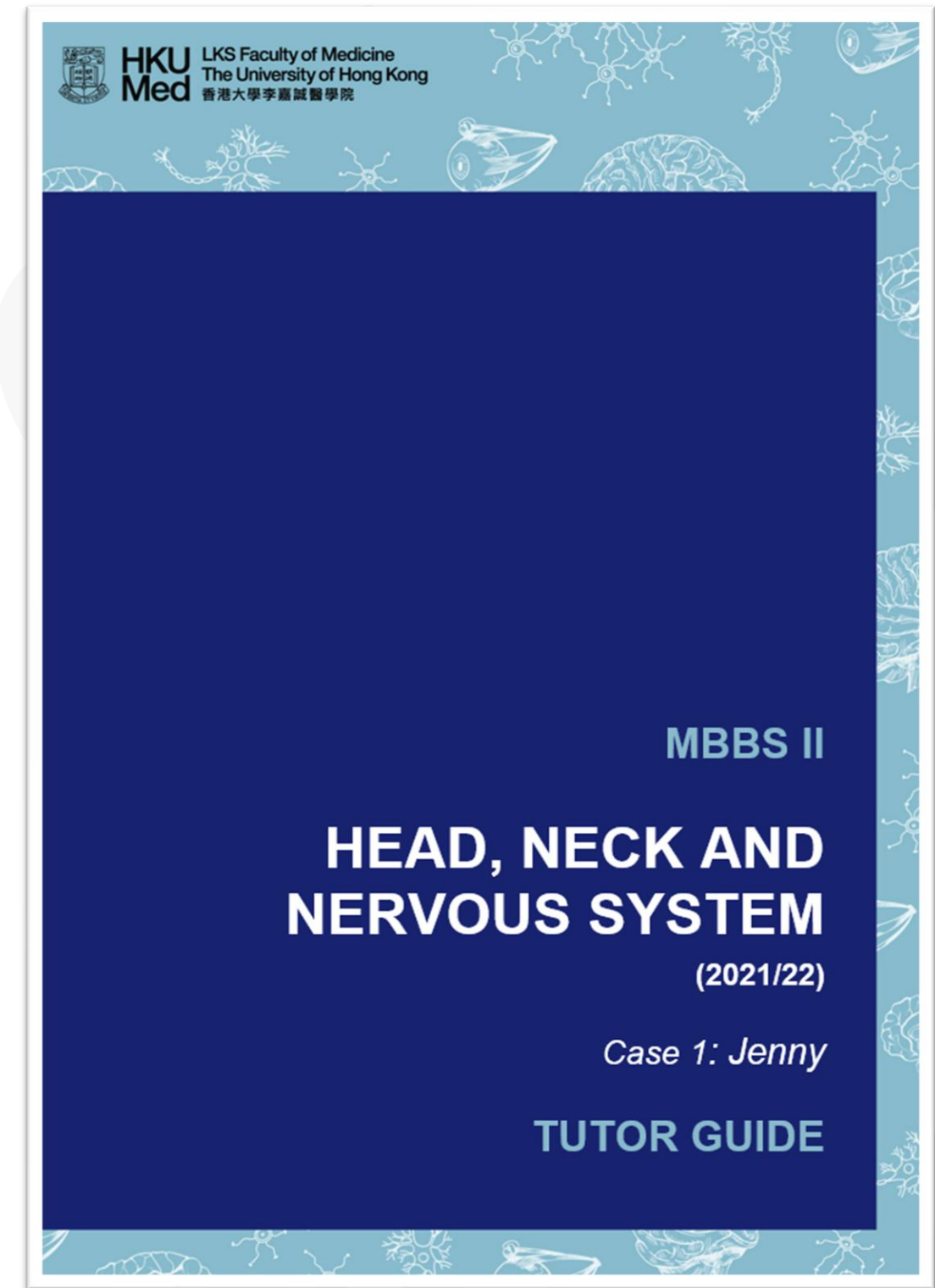
Using KASES for PBL



Pilot Study

A five-year-old girl suffering from acute viral meningoencephalitis presented to hospital. The causative agent was found to be Japanese encephalitis virus. The case illustrates the principles in the diagnosis and management of acute viral meningoencephalitis, and also highlights the prevention and control of outbreaks in the community.

- Retrieved a case from HNNS Block, last issued in 2021/22
- Transformed into a simulated patient on KASES
- 6 Student participants
- 2 Tutors: clinical and non-clinical
- Two sessions



Teacher's Preview

During the preview:

- Briefing
- Demonstration
- Feedback from case writer and tutors

Materials prepared:

- Tutor guide
- Tutor's Checklist

The screenshot shows the 'Navigation on KASES' interface. On the left is a sidebar menu with sections: 'KASES Platform', 'Case Cloning' (containing '1 Patient Card' and '2 Physical Exams'), and 'Case Management' (containing 'Checkpoint 1' and 'Follow Up'). Below the sidebar are 'Allow Viewers' and a search bar. The main content area features a circular profile picture of a woman, the title 'Chat with Jenny's Mother', and a short introductory text. At the bottom is a chat input field with a microphone icon and a 'Send a message...' button. Three numbered callouts provide instructions: 1. Points to the sidebar menu with the text: 'Follow the step-by-step checklist below to click the side bar items for patient card, physical exams, checkpoints and follow ups as the case evolves.' 2. Points to the chat input field with the text: 'Chat with the simulated patient or patient's informant by text / audio input (details below).' 3. Points to the chat area with the text: 'Chat history will appear here. However, students are reminded to take their own notes as the case evolves.'

Chat with KASES

Students

Observer 1

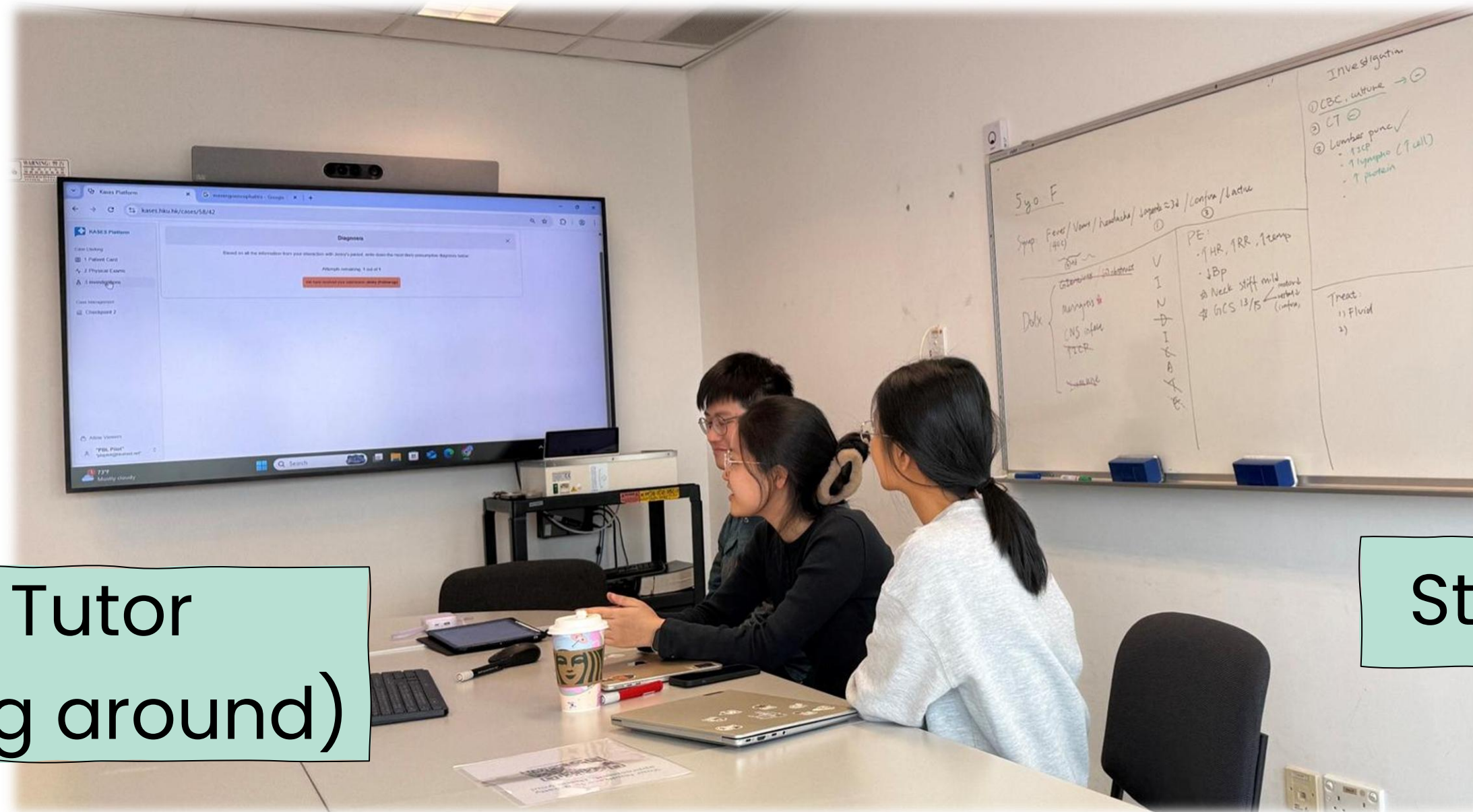


PBL Tutor

Observer 2
(Taking photo)



Chat with KASES



Students' Notes

PBL Tutor
(Walking around)

Students

Observers on the side
(Taking photo)



Insights from Chatlogs

- Line-by-line analysis
- Feedback and evaluation

Line	Input ID	Content	Justification
1	Student	Hello, so Jenny came in with a fever. How long has that lasted for?	History of Present Illness – duration/onset of fever.
2	Sim Patient	She's had a high fever just for one day, doctor. It started yesterday	Patient response – duration and time of onset of fever.
3	Student	Okay, So how high is the fever and any associated symptoms, any vomiting?	History of Present Illness – severity of fever and associated symptoms (especially vomiting).
4	Sim Patient	Her fever went up to 40°C, doctor. Yes, she's been vomiting since yesterday afternoon, and she also complained of a headache.	Patient response – maximal temperature; onset of vomiting; associated headache.
5	Student	Was there any rash associated with the vomiting?	Review of Systems – skin: asking about rash as associated feature of current illness.
6	Sim Patient	No, doctor, there's no rash anywhere on her body.	Patient response – absence of rash.
7	Student	Is there any respiratory symptoms such as shortness of breath,	Review of Systems – respiratory symptoms.
8	Sim Patient	No, doctor, she hasn't had any breathing problems like shortness of	Patient response – absence of respiratory symptoms.
9	Student	Is there any other symptoms like say diarrhea or any muscle pain?	Review of Systems – gastrointestinal (diarrhoea) and musculoskeletal (myalgia).
6	Sim patient	Yes, she's been vomiting and said she had a headache earlier. She's also been eating less the past three days.	Patient response – reports associated vomiting and headache (possible red-flag combination with fever) and reduced oral intake over 3 days, suggesting decreased appetite/energy.
7	Student	How often does she vomit and also like what's the content? Yeah, and it blood Is there any blood or is it like ring or something?	History of Present Illness – character and severity of vomiting: frequency and content (food, bile, blood). Screening for haematemesis or worrying vomitus.

Introduction

History of Present Illness

Review of systems

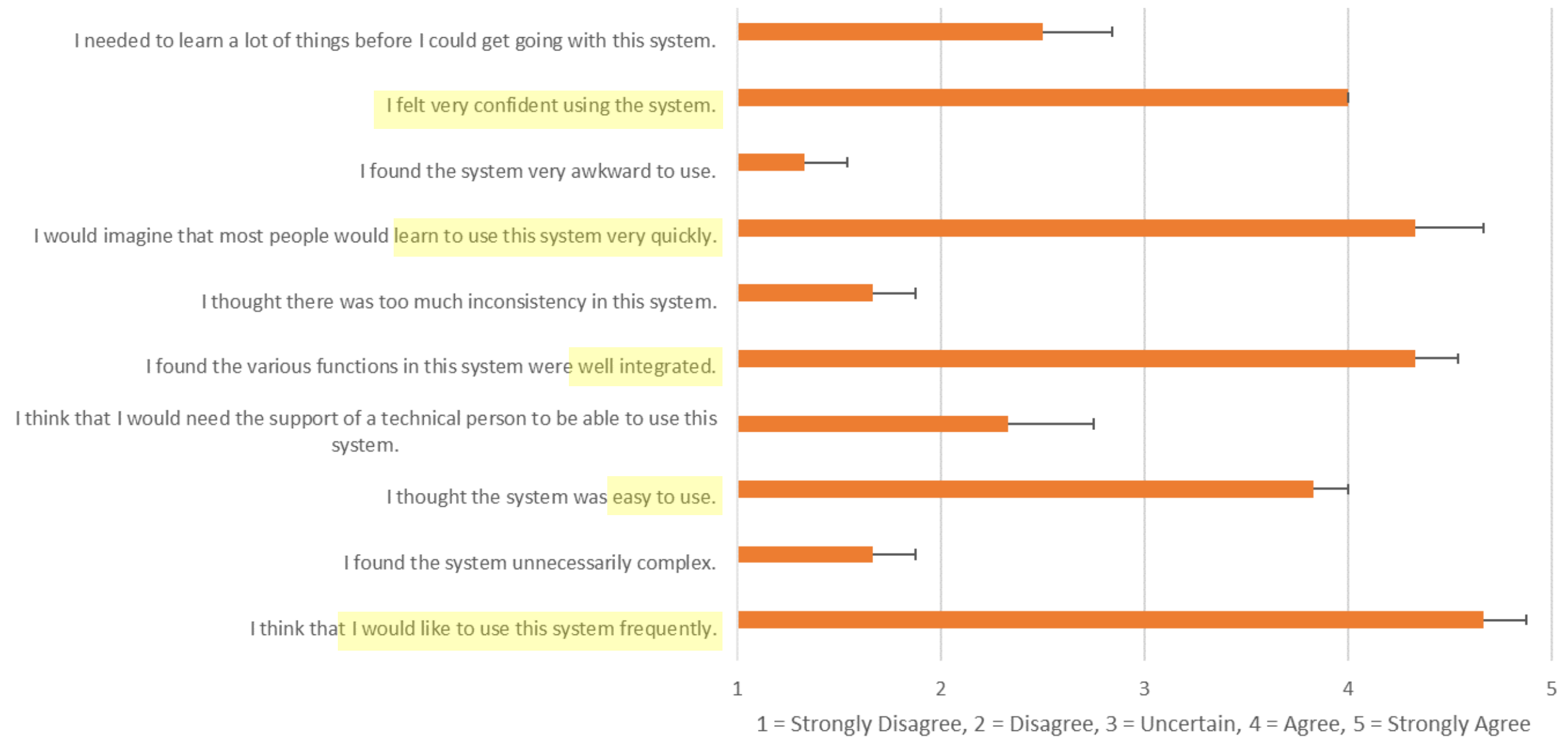
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Perception on System's Usability

*Students felt confident using the system; and would like to use it frequently!
The system is easy to use, with well-integrated functions.*

System Usability Scale



Qualitative Feedback



What do you like about the KASES platform?

- “Real-life interactions”; “interactive and engaging”; “realistic”
- “Easy to use”
- “Simulated results prompt discussions right away”
- “Provoking step-by-step thoughts”



Qualitative Feedback



What can be improved?

- “May need more clinical background to do this”
- “...may need a lecture on how to gather information from patients, for preclinical students”
- “clearer guidance on when to proceed to next step”
- “...guidance on end-points to prevent students’ overthinking”
- “...add some references to certain investigations and tests”



What's Next?

Implementation in Academic Year 2026/27

- Next pilot session in the 1st week of June, 2026!
 - Improvement on guidance and instructions
 - Updated system infrastructure
 - Open invitation for MBBS Year 2 students!
- Teacher training workshop* (in planning)



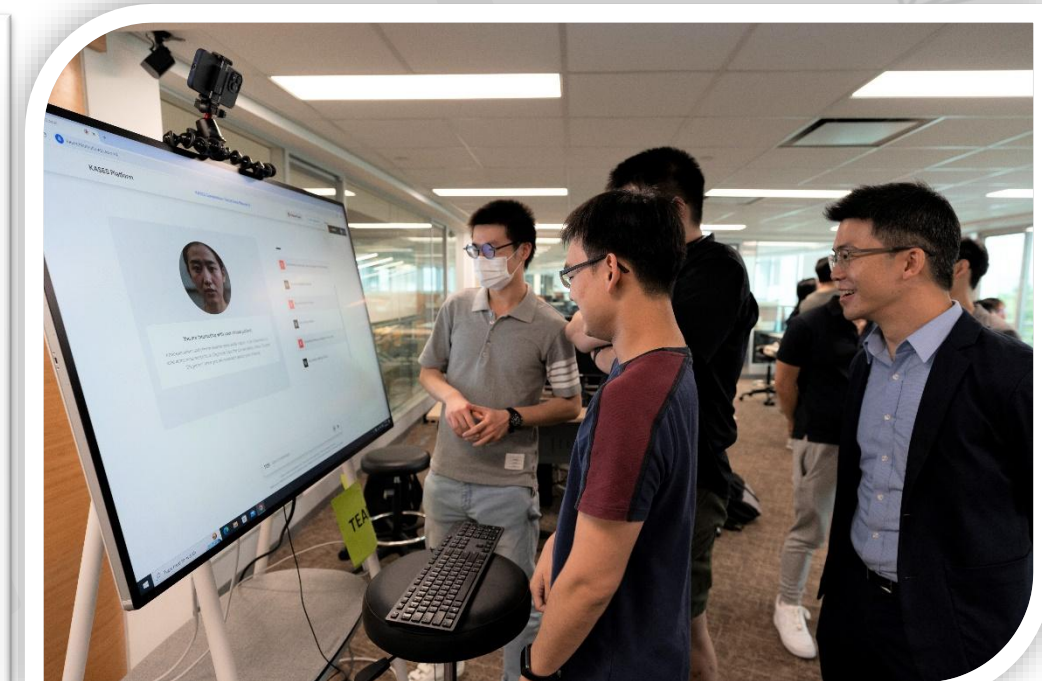
KASES in a Bigger Picture

KASES Competition!!

- 2024
HKUMed MBBS
- 2025
HKUMed MBBS &
China Consortium of Elite
Teaching Hospitals (C10)



The poster for the 2025 KASES Competition features the HKU Med and EdTech and SIMHSE logos at the top. The main title '2025 KASES COMPETITION' is prominently displayed in yellow and white. Below the title, there is a 3D illustration of an elderly woman with a speech bubble that says 'Hi, Doctor!' and a list of symptoms: 'Patient: Well, most awful headache, feeling hot, confused. And my daughter shaking alarm.' and 'Patient: What you would call and confused, alarm.' and 'And my daughter said you and shaking alarm.' A circular inset shows a doctor in a white coat interacting with a patient. The 'WHEN & WHERE' section lists: 'Nov 29, 2025 (Saturday)', '9:00AM - 14:00PM (FREE lunch)', and 'Venue: TechMezz'. The 'HOW' section states: 'Team: 2-3 students per team'. At the bottom, it says 'WIN Cash Prizes' and 'The fastest team with the most accurate diagnoses wins!'.



KASES in a Bigger Picture

Implementation in other programmes at HKUMed

- Cardiology Telemedicine teaching clinic (Dr Jojo Hai)
- Clinical Interactive Tutorial (Prof Gary Lau)
- Family medicine (Dr Amy Ng, Dr Diana Wu and Dr Rachel Kwan)
- Pharmacy (Dr Ann Leung)
- School of Chinese Medicine
- ...and more!





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Thank you!

Welcome your feedback and questions!

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<https://kases.hku.hk/>

Knowledge and Simulation Education System (KASES)