

From Playground to Practice: A Game-Based Capstone Assessment of Pharmacy Practice Readiness



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Are We Practice-Ready?

- Knowledge $\neq$ readiness
- High-stakes decisions
- Traditional assessments fall short
- What if assessment felt real?



From Classroom to Competition



Did It Work and Lessons Learned

- 74% students felt confident in their NAPLEX knowledge
- 68% students felt practice-ready
- 44% students did not recommend continuation

- Lost engagement when eliminated
- Stress felt intense for some students
- Competitive format not comfortable for everyone

Engagement
+
Pressure
↓
Growth
(When designed well)



What We Changed

- No elimination
- Every student played every game
- Everyone stayed engaged
- Downtime eliminated
- 75% stayed engaged
- 77% were motivated to review more
- 54% felt practice ready

From Participation to Full Engagement

Engagement



Motivation



Readiness



Acknowledgement

6

- Tina Beck, PharmD, MSCR, BCPS
- Jeanette Lahoud, PharmD, BCPS
- Faculty facilitators
- PharmD cohort 2025
- PharmD cohort 2026



Aligning Capstone Pharmacy Course Assessment with APC Performance Outcomes

A Step Towards Programmatic Assessment

Pharmacy Education Symposium 2026



Acknowledgement of Country

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.

The Brisbane River pattern from A Guidance Through Time
by Casey Coolwell and Kyra Mancktelow.



Program Context

Bachelor of Pharmacy (Honours)

- 4-year undergraduate degree
- ~220 students/year
- Taught on-campus

Recent program redesign

- New course structures
- New blended learning model
- 2021 (1st year) to 2025 (4th year)



PHRM4102

Developed in 2025

Capstone course for the program

- **Pharmacy Practice and Medicines Management stream**
- **4-unit course (~20 hrs/week)**

Topics

- **Advanced Medication Management**
- **Advanced Pharmacy Practice**
- **Systems Thinking**

Design Principles

- **Ensure students are practice-ready for internship**
- **Focus on authenticity, complexity and accountability**
- **Emphasise competence across multiple practice domains**
- **De-emphasise individual assessment hurdles**
- **Various assessment types**



Programmatic assessment
(Ottawa 2020 Consensus Statement)

APC Performance Outcomes Framework

The performance outcomes to be achieved and demonstrated by pharmacy degree program graduates and applicants for initial general registration – APC Performance Outcomes Framework 2020

Domain 1 Professionalism in practice

Pharmacists are responsible and socially accountable for achieving and maintaining high standards of behaviour in order to earn and uphold the trust of the public and meet the expectations of the profession.

Performance Outcomes Domain
1. Professionalism in practice
2. Communication and collaboration
3. Professional expertise
4. Leadership and management
5. Research, inquiry and education

On successful completion of an approved pharmacy degree program capable of leading to general registration, pharmacy graduates have demonstrated evidence of competency in educational, simulated and/or work-integrated learning environments, in	At the point of general registration as a pharmacist, pharmacists are competent in and committed to
1.1 promoting both the best interests and safety of patients and the public	1.1 promoting and ensuring both the best interests and safety of patients and the public
1.2 promoting and advocating for cultural safety.	1.2 promoting, maintaining and advocating

Assessment Design

Tracking APC Performance Outcome Domains across assessments

1. Associated each criteria of each assessment item with a Domain
2. Used a points-based rubric for all assessments (scaled to weighting)

Grand Round Rubric

Criteria	Excellent
Identification and Explanation of MRPs PEX: 20 points	Identifies all key MRPs and lower priority MRPs and concisely explains each with insightful depth and accuracy 20 points
Rationale for MRPs PEX: 20 points	Provides strong justification for all MRPs, including the priority and potential impact, supported by all clinically relevant evidence from the case and literature 20 points

POs 3.4, 3.7

POs 3.1, 3.2

POs 3.1, 3.8

Evaluation of Options PEX: 20 points	A wide range of options are concisely presented for all MRPs with justification and evaluated against each other 20 points
Final Management Plan L&M: 10 points	An optimal and highly cohesive management plan is presented 10 points

POs 4.7, 4.9, 4.11

Communication, Engagement & Responsiveness C&C: 10 points	Flow of communication is very easy to follow, involves excellent audience engagement, and responds to questions insightfully 10 points
Supporting Slides C&C: 10 points	The PowerPoint slides are excellent and enhance the presentation 10 points
Supporting Evidence RIE: 10 points	Extensively uses and cites appropriate and balanced supporting literature drawn from wide-ranging and evidence-based sources. 10 points

POs 2.1, 2.2

POs 5.4, 5.5

Assessment Design

Tracking APC Performance Outcome Domains across assessments

3. Tallied the points for each Domain over all assessment items

4. Set a course hurdle of achieving $\geq 50\%$ of the available points for all 5 Domains

Assessment Item	Points	PIP	C&C	PEx	L&M	RIE
Pre-course Reflection (Pass/Fail)	100	20			60	20
Post-course Reflection (Pass/Fail)	100	20			60	20
Professional Skills Exam (25%)	250	100	75	75		
Poster Presentation (20%)	200		50		30	120
Grand Round Presentation (10%)	100		20	60	10	10
Oral Viva (25%)	250	25	75	150		
OSCE (20%)	200	25	50	125		
Course Total	1200	190	270	410	160	170
	Proficiency $\geq$	95	135	205	80	85

Student Info

Poster Presentation

Type: Presentation

Learning outcomes assessed: 3, 4, 7

Due date: Poster Friday Week 10 by 5pm, Presentation in Stream 3 Tutorial Week 11

Weight: 20%

Domains (Points): C&C (50), L&M (30), RIE (120). *Awarded as per rubric criteria.*

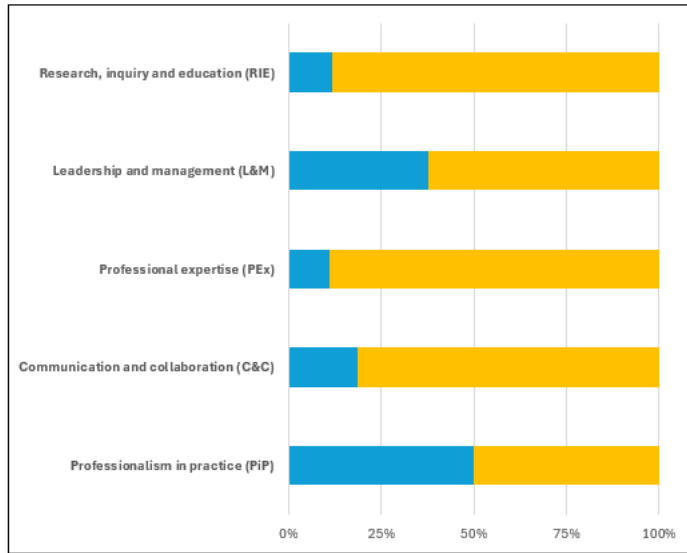
- 5 Which of the following factors may complicate the management of Manuel's cellulitis infection?
Select one or more alternatives (selecting an incorrect option will subtract points but will not reduce the overall question mark to less than 0):

- ☐ Poor glycemic control due to suboptimal response to Diabex
- ☐ Risk of lactic acidosis from metformin during acute illness
- ☐ Reduced immune function associated with chronic antihistamine use
- ☐ NSAID use potentially masking signs of worsening infection
- ☐ Cephalixin-induced hyperglycemia

[This question contributes points towards the Professional Expertise Domain]

	A	B	C	D	E	F	G	H	I	J
1	PHRM4102 Domain Progress	Enter your marks here ↓			This section will update automatically					
2	Calculator									
3	Pre-course Reflection*	Marks	Out of							
4	PIP Marks	20	20							
5	L&M Marks	60	60							
6	RIE Marks	20	20							
7										
8	Professional Skills Exam									
9	PIP Marks	75	100							
10	C&C Marks	50	75							
11	PEX Marks	45	75							
12										
13	Poster Presentation									
14	C&C Marks		50							
15	L&M Marks		30							
16	RIE Marks		120							
17										
18	Grand Round Presentation									
19	C&C Marks		20							
20	PEX Marks		60							
21	L&M Marks		10							
22	RIE Marks		10							
23										
24	Post-course Reflection*									
25	PIP Marks		20							
26	L&M Marks		60							
27	RIE Marks		20							
28										
29	OSCE									
30	PIP Marks		25							
31	C&C Marks		50							
32	PEX Marks		125							
33										
34	Oral Viva									
35	PIP Marks		25							
36	C&C Marks		75							
37	PEX Marks		150							

Domain Progress	Total Marks	Out of	Progress
Professionalism in practice (PIP)	95	190	50.00%
Communication and collaboration (C&C)	50	270	18.52%
Professional expertise (PEX)	45	410	10.98%
Leadership and management (L&M)	60	160	37.50%
Research, inquiry and education (RIE)	20	170	11.76%



* Reflections are PASS/FAIL. All domain points will be fully awarded upon a PASS

Final Tally														
PiP Point	PiP	C&C Point	C&C	PEx Point	PEx	PEx_1	PEx_1%	PEx_2	PEx_2%	L&M Point	L&M	RIE point	RIE	
75	39.474	120	44.444	102	24.878	102	24.87804878	102	24.878	142.5	89.063	132.5	77.941	
91.25	48.026	154.375	57.176	148	36.098	148	36.09756098	148	36.098	153.75	96.094	163.75	96.324	
112.5	59.211	155.5	57.593	160	39.024	160	39.02439024	160	39.024	144	90.000	154.5	90.882	
95	50.000	165	61.111	118.5	28.902	156.0749061	38.06705027	185.5097281	45.246	142.5	89.063	147.5	86.765	
130	68.421	138.5	51.296	193.5	47.195	193.5	47.19512195	193.5	47.195	147.5	92.188	115	67.647	
130	68.421	155.5	57.593	142	34.634	168.5786666	41.11674796	198.0134887	48.296	144.5	90.313	114	67.059	
177.5	93.421	151	55.926	198.5	48.415	198.5	48.41463415	198.5	48.415	146	91.250	142	83.529	
96.25	50.658	145	53.704	136	33.171	173.5749061	42.33534296	202.8098259	49.466	160	100.000	160	94.118	
131.25	69.079	170.5	63.148	209.5	51.098	209.5	51.09756098	209.5	51.098	154	96.250	130	76.471	
122.5	64.474	172.5	63.889	215	52.439	215	52.43902439	215	52.439	155	96.875	160	94.118	
160	84.211	170	62.963	154	37.561	191.5749061	46.72558686	218.9001384	53.390	160	100.000	157.5	92.647	

Student Outcomes

Final tally resulted in 8/173 students receiving a failing grade for the course

- Of these students, 7 achieved an overall passing GPA ($\geq 50\%$) but failed at least 1 Domain
- All students who were failed achieved $< 50\%$ of the Professional Expertise (PEX) Domain marks
- Students could apply for Supplementary Assessment which was focussed on PEX

Comparatively, 24 students could have failed using traditionally hurdled assessment items

Final Tally													
PiP Point	PiP %	C&C Point	C&C %	PEX Point	PEX %	PEX_1	PEX_1%	PEX_2	PEX_2%	L&M Point	L&M %	RIE point	RIE %
75	39.474	120	44.444	102	24.878	102	24.878	102	24.878	142.5	89.063	132.5	77.941
91.25	48.026	154.375	57.176	148	36.098	148	36.098	148	36.098	153.75	96.094	163.75	96.324
112.5	59.211	155.5	57.593	160	39.024	160	39.024	160	39.024	144	90.000	154.5	90.882
95	50.000	165	61.111	118.5	28.902	156.0749061	38.06705027	185.5097281	45.246	142.5	89.063	147.5	86.765
130	68.421	138.5	51.296	193.5	47.195	193.5	47.195	193.5	47.195	147.5	92.188	115	67.647
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160	84.211	170	62.963	154	37.561	191.5749061	46.72558686	218.9001384	53.390	160	100.000	157.5	92.647

Student Outcomes

Assessment Mark as a % (% of PEx marks received)

Student	Prof Skills Exam	Grand Round (Gp)	Viva	OSCE
1	29% (37)	47% (50)	44% (43)	43% (20)
2	39% (30)	65% (50)	36% (27)	56% (54)
3	33% (31)	85% (92)	45% (30)	51% (50)
4	20% (18)	83% (75)	40% (33)	73% (68)
5	38% (26)	77% (75)	32% (20)	87% (83)
6	49% (18)	98% (100)	54% (57)	58% (32)
7	34% (28)	100% (100)	41% (39)	46% (50)

Overall Thoughts

Student perspectives

- Generally understood the reasons for using this approach
- Some view of this as another hurdle to stress about
- Mixed appreciation and stress about the challenging nature of the assessments

My thoughts

- Very useful as a tool to identify and differentiate student performance gaps
- Helps reduce pressure to heavily weight or hurdle assessment items
- Lots of ways to further adjust Domain points and levels
- Quite labour-intensive without systems support

Future changes

- Adopted into semester 1 course for earlier familiarity
- Improved and automated spreadsheets
- Redistribution of some Domain criteria and points for assessment items
 - E.g. PiP → PEx, C&C → L&M
- Improved feedback throughout semester to support targeted study
 - Rubric wording, marking turnaround, individualised feedback for “at risk” students
- Update to alignment with the new Pharmacist Capability Framework

Contact

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Monash University Pharmacy Education Symposium. July, 2026

What Are the Key Ingredients?

A Stakeholder-Driven Curricular Transformation for Pharmaceutical Compounding

Paula Paseiro, PharmD

Amanda Savage, PharmD

Kathryn Morbitzer, PharmD, MS

University of North Carolina at Chapel Hill Eshelman School of Pharmacy



**Eshelman School
of Pharmacy**



Learning Objective

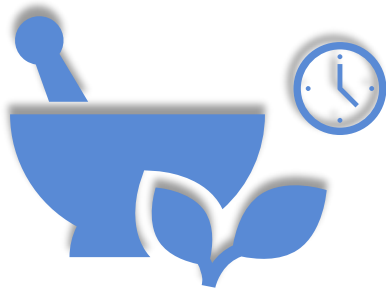
Describe how a stakeholder-driven approach can inform the redesign of a compounding laboratory course to enhance student practice readiness.

SOME KIND OF HOOK



What compounding skills are needed to better support pharmacy students' practice readiness?

Original Course Structure



Weekly structure:

1-hour pre-lab and 2-hour lab simultaneously covering sterile and non-sterile compounding for first-year pharmacy students.

Course Assessments



Clinical
Discussion



Lab
Quiz



Calculations
Activity



Nonsterile
Compounding,
Analysis, and
Packaging



Topic
Discussion



Medication
Counseling



Lab
Worksheets



Sterile
Compounding
Technique
and Analysis

Methodology



What compounding skills are needed to better support pharmacy students' practice readiness?



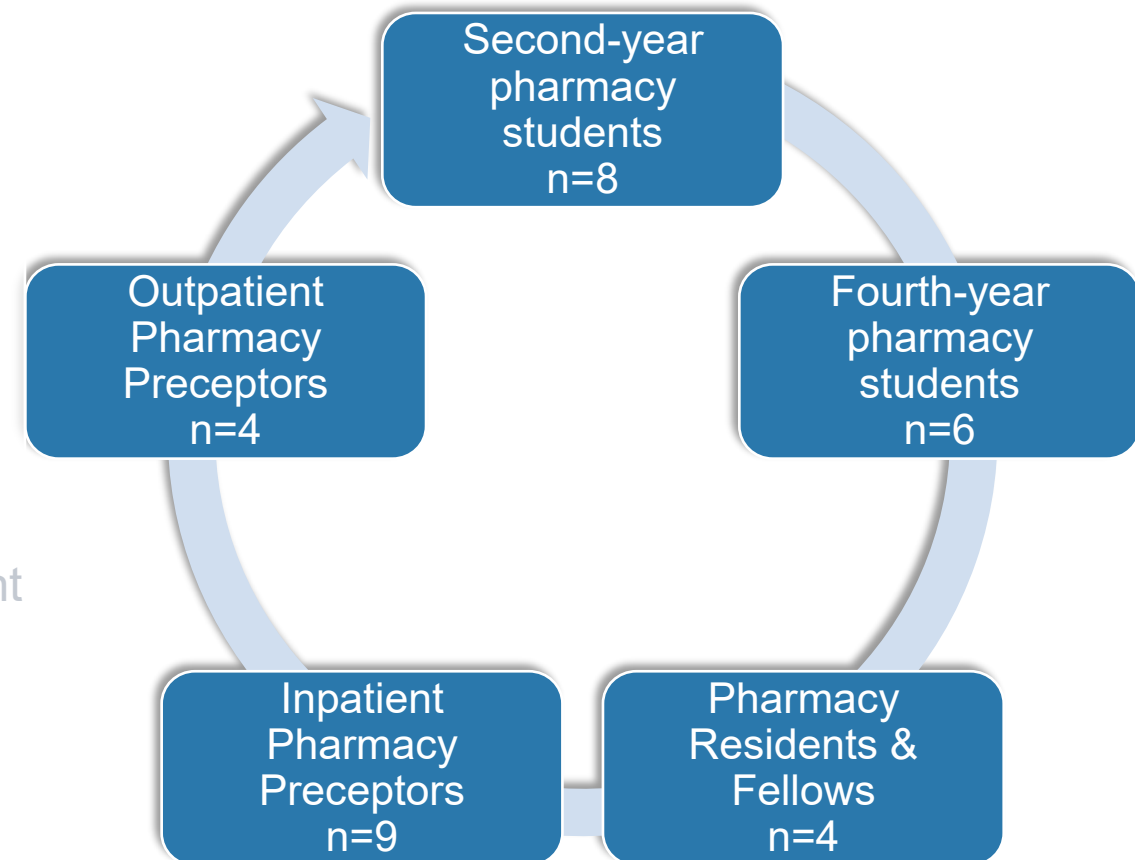
Semi-structured focus groups with key stakeholders



Pharmacy students, recent pharmacy graduates (residents/fellows), and inpatient and outpatient preceptors



Audio-recorded sessions were transcribed verbatim and analyzed using inductive content analysis



Pharmacy Calculations

Regulatory Standards

Common Nonsterile Formulations

Foundational Sterile Techniques

Emphasis on foundational, and licensure-relevant topics:

- Unit conversions
- Concentration conversions
- Pharmacy Alligations
- Capsule Packing Statistics

Potential alignment with other foundational courses:

Pharmacy Calculations

Regulatory Standards

Emphasis on United States Pharmacopeia (USP) Standards:

- USP Chapter 795
(Nonsterile Preparations)
- USP Chapter 797
(Sterile Preparations)
- USP Chapter 800
(Hazardous Drug Handling)

Potential alignment with other foundational courses: Pharmacy Law

Common Nonsterile Formulations

Foundational Sterile Techniques

Common Nonsterile Formulations

Foundational Sterile Techniques

Emphasis on common formulations:

- oral suspensions
- capsules
- topicals
- suppositories

Potential alignment with other
foundational courses: Pharmaceutics

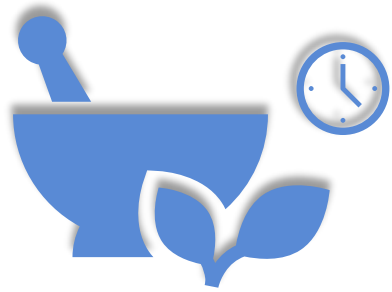
Foundational Sterile Techniques

Emphasis on fundamental techniques:

- Aseptic technique
- Proper garbing
- Effective Personal Protective Equipment use

Potential alignment with other foundational courses: Pharmaceutics

Original Course Structure



Weekly structure:

1-hour pre-lab and 2-hour lab simultaneously covering sterile and non-sterile compounding for first-year pharmacy students.

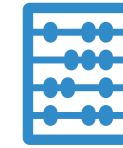
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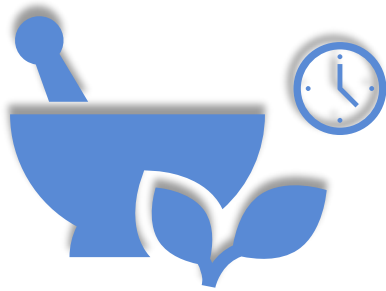


Sterile
Compounding
Technique
and Analysis

Redesigned Course Structure



Course Assessments



Weekly structure:

1-hour pre-lab and 1-hour lab
alternating sterile and non-sterile compounding coverage for first-year pharmacy students.



Lab
Quiz



Calculations
Activity



Nonsterile
Compounding,
Analysis, and
Packaging



Sterile
Compounding
Technique
and Analysis



Key Takeaway

- With the right voices at the table, curricula transforms and becomes well-integrated, modernized, and built for practice-ready graduates.

Reflect on your own course:

If everything non-essential were stripped away, would what remain truly reflect the competencies your graduates need to
- and who should help you decide?



THANK YOU

Connect: Paula Paseiro (paula.paseiro@unc.edu)

Inclusive Conversations in Pharmacy Education

A collaborative simulation model with simulated participants

Van Hooser · Hoeft · Craff-Eder · Woll · Clark



CO-AUTHOR



ROLE-PLAYER



EDUCATOR

From role-players to partners in inclusive care



Standards raised the bar

ACPE 2025 and AACP COEPA now name cultural & structural humility and inclusive, patient-centered communication as core outcomes.



SPs are underused

Simulation with simulated participants (SPs) builds these skills — but SPs are most often cast only as role-players.



Best practice = partnership

Frameworks call for cases grounded in authentic lived experience and designed to respect the people represented.

OUR AIM

Build, deliver & evaluate a session where SPs with lived experience co-author, portray & teach — and measure its effect on students' inclusive communication.



SPs Co-Author

Draft scenarios from lived experience



SPs Role-Play

Portray the cases they helped build



SPs Educate

Lead learner-centered feedback

THE COLLABORATIVE MODEL

One SP, three roles — across four cases



PHASE 1

Co-Author

Shapes the narrative, language & realistic barriers from lived experience.



PHASE 2

Role-Play

Portrays the patient they built, with authentic, nuanced affect.



PHASE 3

Facilitate

Steps out of role to lead patient-perspective feedback.

FOUR CLINICAL SCENARIOS



COVID-19 Vaccine Hesitancy



Gender-Affirming Therapy



Microaggressions in Care



Naloxone Stigma

The same SP carries each case through all three phases — preserving the patient voice from design to debrief.

Safeguards before, during & after every encounter

These cases can surface real pain — so care for the SP is engineered into the whole arc, not left to chance.



BEFORE

- Opt-in only — never over-identifying with a role
- Scope, compensation & confidentiality agreed up front
- Every SP holds the course director's direct number



DURING

- A TA in every Zoom room can take over at any point
- Camera off & step out anytime — no explanation needed
- Share as much (or as little) of their story as they choose



AFTER

- Formal de-roling — “shedding the role like a coat”
- Active monitoring for emotional effects, with follow-up
- Debrief & access to support resources

Anchored in the ASPE & INACSL Standards of Best Practice.

Not the prescription — the person

NOT the prescription

Dose · side-effects · mechanism of action

BUT the person

Affirming identity — intersectionality, pronouns, inclusive language

Validating emotion — active listening to fears & system mistrust

Repairing harm — responding to problematic care by a colleague

Empowering patients — education centered on social & emotional realities

HOW THE DAY RUNS

1

Small groups of 3–4

One SP per group · TA-facilitated · vicarious learning

2

TA-led warm-up

Ground rules & a psychologically safe space

3

~15-min SP encounter

Authentic portrayal of the case

4

~15-min SP-led debrief

Patient-perspective feedback, then TA synthesis

Two-hour lab · three 30-minute case blocks · repeated across rotating breakout rooms.

METHODS

A four-year mixed-methods evaluation



476

students completed the lab

451

completed surveys

106

year-4 pre/post sample

ANALYSIS

Mann–Whitney U tests

Year-4 pre vs. post · 11 self-assessed competencies ($\alpha = 0.05$)

Inductive thematic analysis

Open-ended responses, all four years · two coders, reconciled

Three competency domains

Inclusive communication · sociocultural awareness · advocacy

Required 2nd-year skills lab · public college of pharmacy · IRB: non-human-subjects research.

OUTCOMES

Significant gains — and near-universal value

99%

of students agreed SP interaction significantly enhanced their learning

9/11

self-assessed competencies improved significantly ($p < 0.05$)

Largest gain: responding to a colleague's problematic care (3.66 → 4.34). Two non-significant items started high — a ceiling effect.

WHAT STUDENTS SAID — FIVE THEMES

1 Realism & Authenticity

2 Diversity & Inclusion

3 Empathy & Connection

4 Feedback & Reflection

5 Real-World Preparation

“*Their feedback carried more weight than peer feedback — it reflected a real patient's perspective.*”

Only 1 of 451 open responses was negative.

CONCLUSION

A feasible, ethical model for inclusive conversations



Partnership beats role-play

SPs as co-authors, role-players & educators produced authentic, respectful cases.



Measurable skill gains

Significant improvement in 9 of 11 competencies; near-universal perceived value.



Aligned & protective

Maps to ACPE & AACP outcomes and ASPE standards, with SP safety built in.

Future work: link self-report to observed performance, test durability & study scalability across institutions.

Jared Van Hooser, PharmD · University of Minnesota College of Pharmacy · jvh@d.umn.edu

Questions & discussion welcome

Key references: Van Hooser et al., Am J Pharm Educ 2024 · Lewis et al., ASPE SOBP, Adv Simul 2017 · Clark et al., Simul Healthc 2025.



from
Awareness
to
Action

Integrating **Social Care** into **Pharmacy**
Interprofessional Education
Through Case-Based Learning.



Dr Randa Zoqlam



R.zoqlam@ucl.ac.uk

the tip of the iceberg



healthcare outcomes are often driven as much by **social circumstances** as by **clinical conditions**.

beyond medicine: the factors that shape health



current focus in training



if social factors are driving outcomes, why do we still train students primarily to only **navigate** or **solve clinical problems**?



our goal:

equip future pharmacists to **see beneath the surface**, collaborate across sectors, and act on what truly drives health.



The Gap

Students can **recognise** social determinants, but are less equipped to **translate** this understanding into **action**.

RECOGNITION

What students are often taught to do



Identify social needs and social determinants



Appreciate the roles of other professionals



Understand the value of collaboration

THE GAP

Awareness without action limits impact



Fewer opportunities to develop reasoning for action



Unclear how to act on identified needs



Limited consideration of system-level implications

RESPONSE

What students need more opportunities to do



Make referral decisions and navigate pathways



Work effectively in interprofessional contexts



Consider wider implications for healthcare systems

THE CONSEQUENCES



Unmet social needs persist



Recurrent health problems



Increased pressure on healthcare services



Higher costs for health systems



Persistent health inequalities

OUR APPROACH TO CLOSING THE GAP



GUIDED BY THE CAIPE FRAMEWORK



Case: Addressing Mobility, Isolation, and Benefit Barriers

Mrs. Josephine Murphy, 68-year-old, recently returned home after a hospital stay for a fall that resulted in a broken arm, a UTI, and adjustments to her rheumatoid arthritis medication. She lives with her husband Tom, 70-year-old, who has dementia and occasionally uses a wheelchair. She is unable to drive, faces difficulty bathing, limited social connections in their new neighbourhood, and is seeking information on local support and benefits for her husband.



THE CURRENT CALL

Mrs. Murphy calls the pharmacy to:



Confirm her prescription is in stock



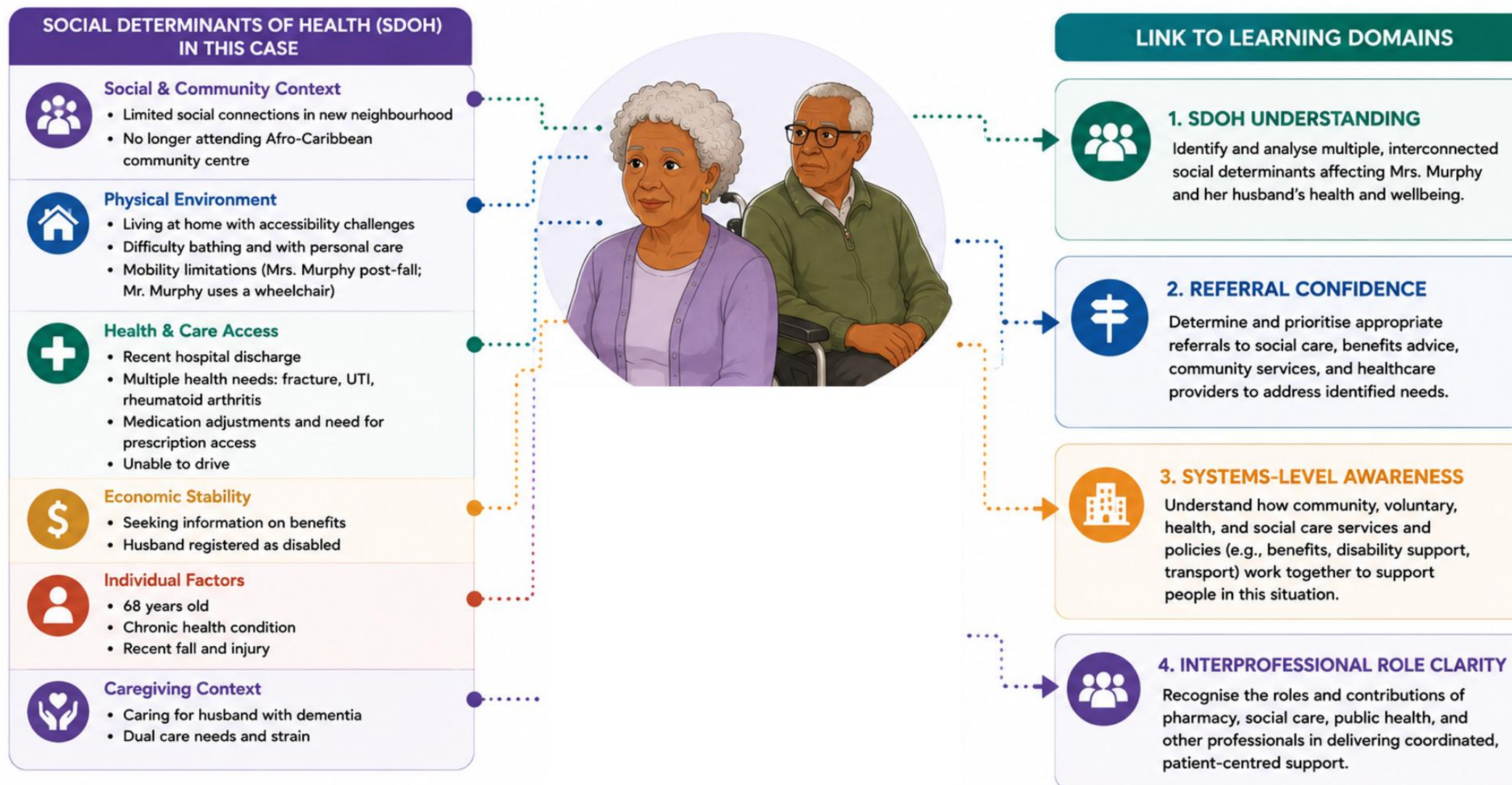
Find information about the local council office



Explore benefits and support services for her husband

Case: Addressing Mobility, Isolation, and Benefit Barriers

Key Social Determinants of Health (SDOH) in Mrs. Josephine Murphy's case
and how they connect to the learning domains



TAKE-HOME MESSAGE

This case highlights how multiple, interconnected SDOHs influence health and daily life. Interprofessional learning helps students move from recognising these factors to taking informed, collaborative action.

Study Design: Case-based IPE Workshop Evaluation

Participants



UCL School of Pharmacy
3rd-year MPharm students



London Metropolitan University
MSc students in Public Health and Health & Social Care Leadership & Management



Complementary perspectives

MSc cohort with diverse backgrounds (epidemiology, biostatistics, health promotion, health economics, policy, social research)

IPE Teaching Model

1 Principles



Social care integration



SDOH



Health equity & public health



Interprofessional collaboration (prescribing & non-prescribing)



2 Method



Shared, case-based scenarios
Designed to require interaction between clinical & prescribing reasoning (MPharm students) and social care & public health reasoning (MSc students)



3 Operationalisation & Evaluation

Learning outcomes mapped to 4 domains



SDOH identification & understanding



Applied social care & referral confidence



Interprofessional role clarity



Healthcare system awareness



Evaluated using pre-post surveys and domain-level change scores

Evaluation Approach



Quantitative

Pre-post Likert-scale survey aligned with 4 domains



Qualitative

Free-text responses on perceptions, applied reasoning, and areas for improvement



Outcome



Comprehensive evaluation of changes in understanding, confidence, and interprofessional learning following the workshop

QUANTITATIVE DATA

Mark on the scale of 1–10,
with 0 being not important and 10 being most important

QUESTION NUMBER	QUESTION	ANALYTICAL DOMAIN
1.1	How important are the following when a patient/client; pharmacist and a social/public health professional work together to improve the outcomes for that patient or client?	 Interprofessional role clarity & collaboration
1.2	How important are the following when a patient/client; pharmacist and a social/public health professional work together to improve the outcomes for that patient or client?	
1.3	How important are the following when a patient/client; pharmacist and a social/public health professional work together to improve the outcomes for that patient or client?	
2.1	At this moment in time, what is your level of confidence in relation to the statements below?	 SDOH identification & understanding
2.2	At this moment in time, what is your level of confidence in relation to the statements below?	
2.3	At this moment in time, what is your level of confidence in relation to the statements below?	 Applied social care & referral confidence
2.4	At this moment in time, what is your level of confidence in relation to the statements below?	
2.5	At this moment in time, what is your level of confidence in relation to the statements below?	 Healthcare Systems-level awareness
2.6	At this moment in time, what is your level of confidence in relation to the statements below?	

QUALITATIVE DATA

3



Any other factors that you think are important to improve outcomes for the patient?

Free-text responses

4



Please share with us three ways the pre-work and today's activities have supported your learning.

Free-text responses

5



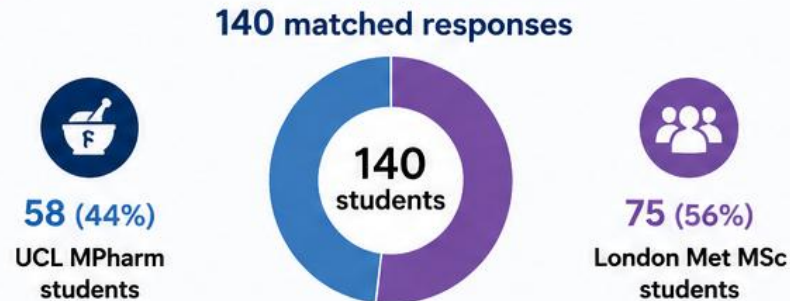
Please share with us any aspects you think could be improved.

Free-text responses

Integrating Social Care into Pharmacy Interprofessional Education: A Case-Based Workshop Model Addressing Social Determinants of Health

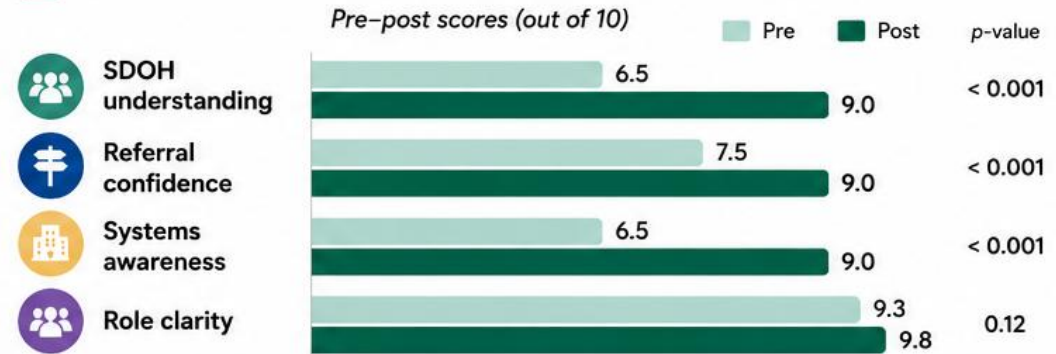
SUMMARY OF FINDINGS

1 Who participated?



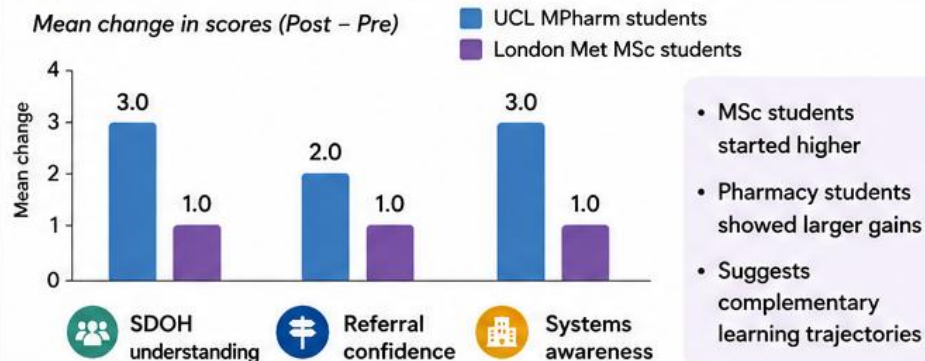
The workshop brought together prescribing and non-prescribing learners from different educational levels.

2 Significant improvements across three learning domains



★ Students moved beyond recognising social determinants towards identifying actions and referral pathways.

3 Different starting points, different learning gains



4 What changed in students' thinking?



Overall
Impact



Recognition
of SDOH



Referral
confidence



Systems-level
awareness

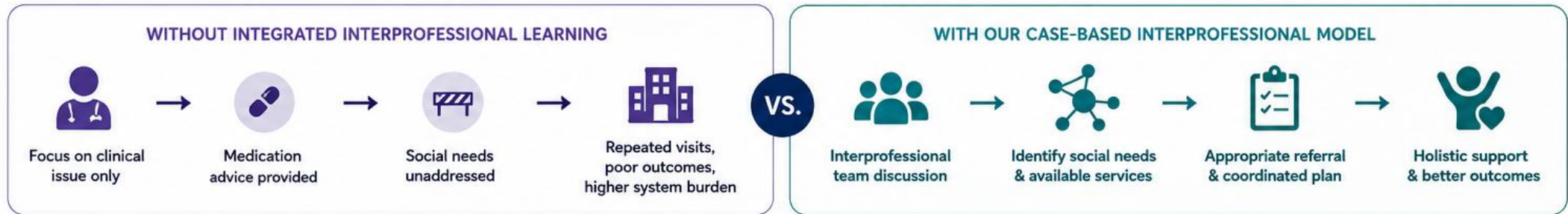


Better
integrated care

A structured, case-based interprofessional learning model supports the transition from awareness to action in addressing the social determinants of health.

From Awareness to Action

Embedding social care in interprofessional education to address the social determinants of health



KEY MESSAGE

Students did not simply learn to recognise social determinants of health. They **learned how to act on them** through referral pathways, social care reasoning, and systems-level thinking.



A structured, case-based interprofessional learning model supports the transition from awareness to action in addressing the social determinants of health.



Prepares future health professionals



Strengthens collaboration



Improves patient-centred care



Builds a more equitable and sustainable health system



Interested in learning more about the cases and design?



Scan the QR code to read
the full paper.



SCAN ME
to read the full paper



doi.org/10.1016/j.ajpe.2026.101985

Acknowledgements



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Prof Mine Orlu, Prof Louise Brown, Ms Terry Tin Wai Ng,
Ms Oksana Pyzik, Dr Alison Backhouse, Prof Graham Whitehead



Students from UCL School of Pharmacy and London Metropolitan University.



AI disclosure: Some conceptual illustrations used in this presentation were generated using AI



MONASH
University

Student Perspectives on Viva Authenticity in Pharmaceutical Science Education

Pharmacy Education Symposium 2026

5th July 2026

Jevgeni Han, **Will Parsons**, Aeson Chang, Yassmin Samak, Tony Hughes,
Thao Vu, Zoe Porter, Jae Pyun



Authentic assessments...?

- Poorly defined and agreed on in education
- Viewed as central to address challenges
- Multiple perspectives

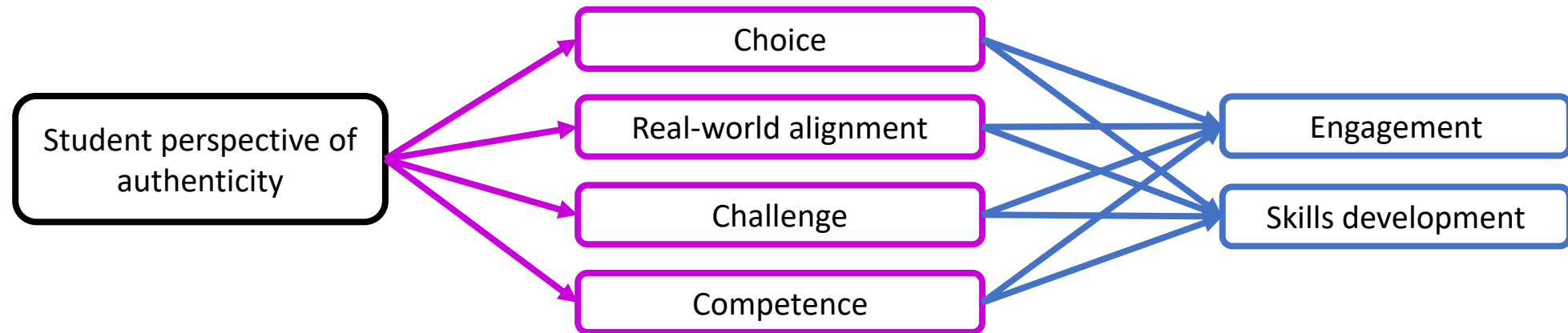


- Viva voces (vivas) are oral assessments
- Assess student understanding in their own words in real time
- Considered gold standard for authenticity
- Vivas $\neq$ authentic without deliberate design

Research questions & Frameworks

To what extent do students perceive viva assessments as personally authentic and how do perceptions differ across authenticity facets?

How are perceptions of viva authenticity related to engagement and skills development outcomes?



Methodology

- Master of Pharmaceutical Science students
- End of first year of the degree
- Completed 3-4 vivas across multiple units

Participants & Timing



- Rationale for selecting drug target
- Discussion on decisions in modern drug development
- Justifying choice of clinical drug candidates
- Defending integration of modelling tools in clinical trials design

Viva Topics



- Survey designed around frameworks and context
- **194 responses** collected (93% response rate)

Data collection



Student authenticity

- Competence (3 items)
- Real-world alignment (3 items)
- Challenge (3 items)
- Choice (3 items)

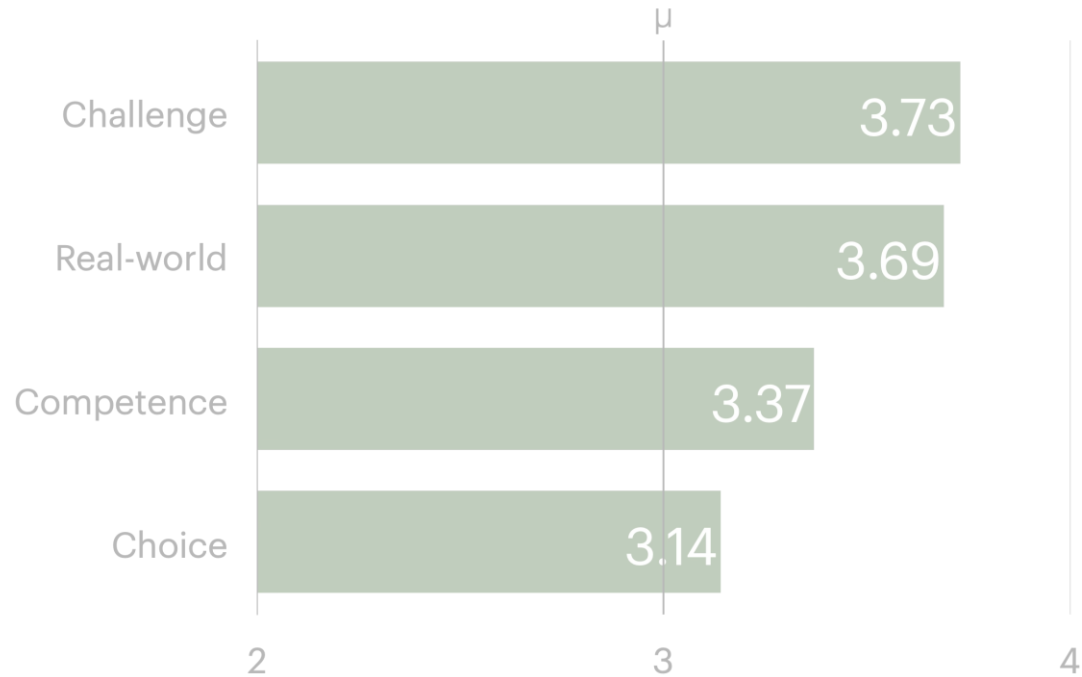
Engagement (9 items)

Skills development (5 items)

Survey Items



Perceived as authentic



Statistically significant over impartial response

Predicted outcomes

58% variance in
ENGAGEMENT
explained by viva authenticity
Adj. $R^2 = .582$, $F(4,189) = 66.69$, $p < .001$

Competence most significant
Earned competence → Engagement

62% variance in
SKILLS DEVELOPMENT
explained by viva authenticity
Adj. $R^2 = .618$, $F(4,189) = 78.11$, $p < .001$

All factors significant
Competence largest predictor
Broad facets of authenticity → Growth

Key outcomes

- Students in this cohort broadly experienced the viva as personally authentic! But *challenge* and *real-world alignment* were far more reliably felt than *agency* (choice) or competence.
- Authenticity, engagement and skills development appear to be entangled in viva context. Designing for one is likely to move the others
- *Viva is a format, not automatically authentic - for it we must design and monitor*

Acknowledgements



Jae Pyun



Aeson Chang

- Jevgeni Han
- Yassmin Samak
- Tony Hughes
- Thao Vu
- Zoe Porter

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and Pharmaceutical Sciences – Education
Innovation Grants (2024)



MONASH
University

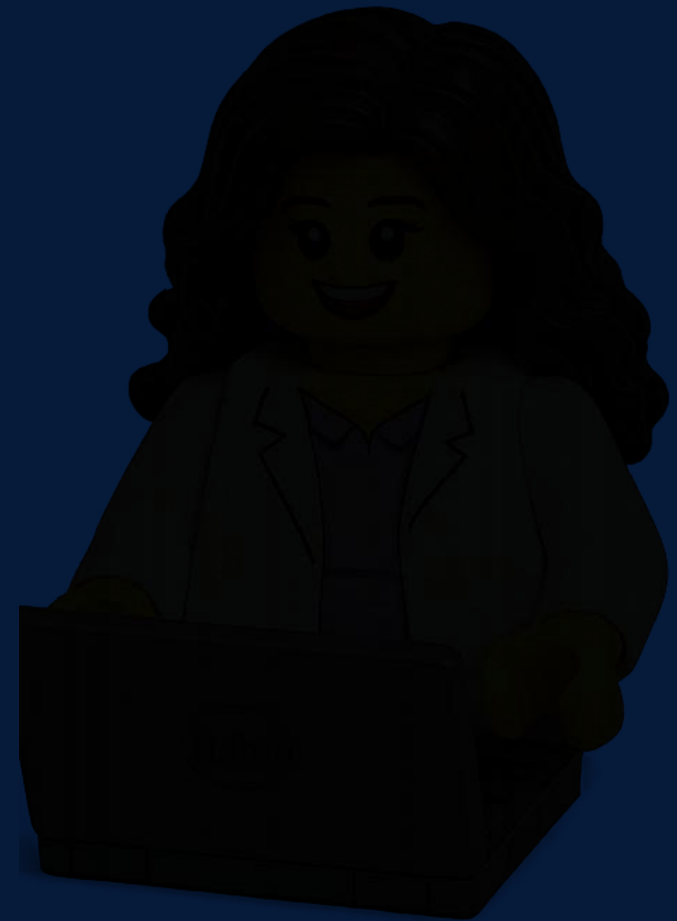
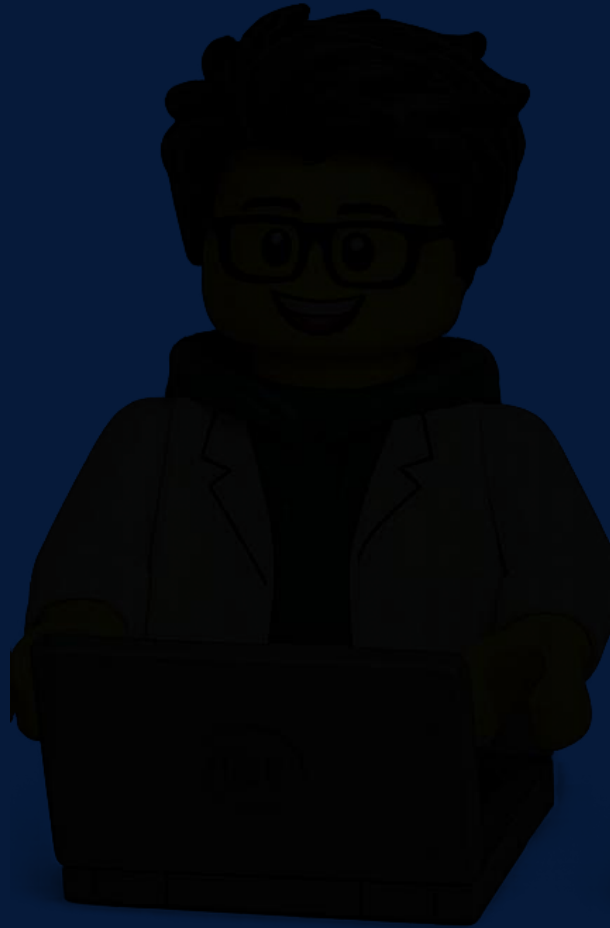
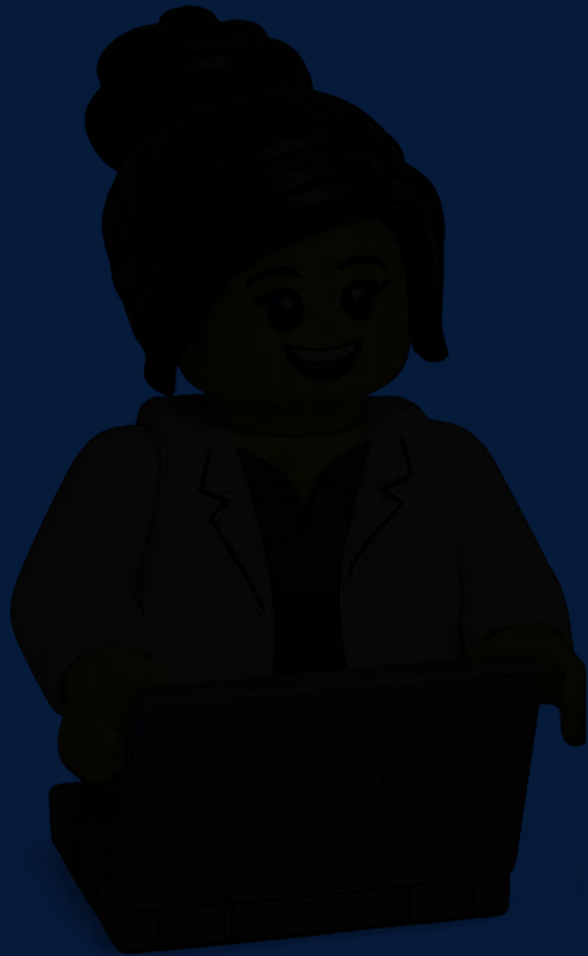
Asking and Appraising: How Pharmacy Students Interact with Generative AI to Answer Clinical Questions?

Presenter:

Thai Duong Pham



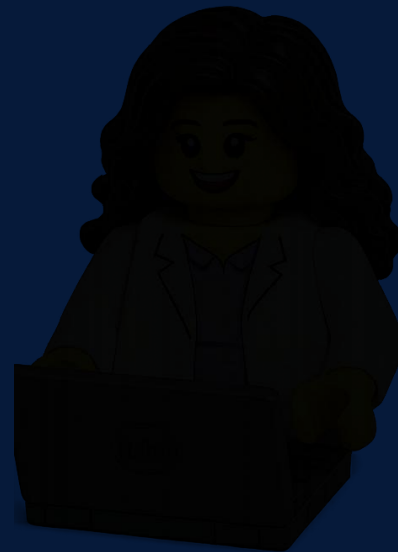
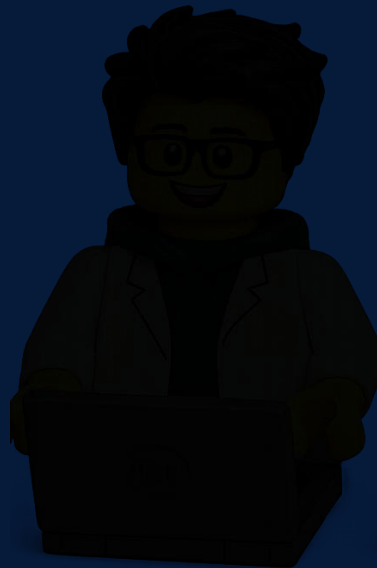
WHAT MAKES A GOOD AI USER?



WHAT MAKES A GOOD AI USER?

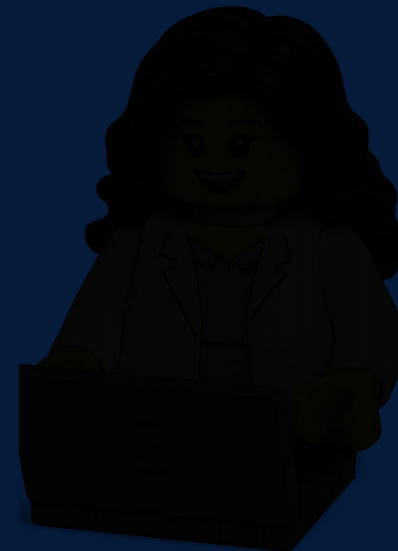
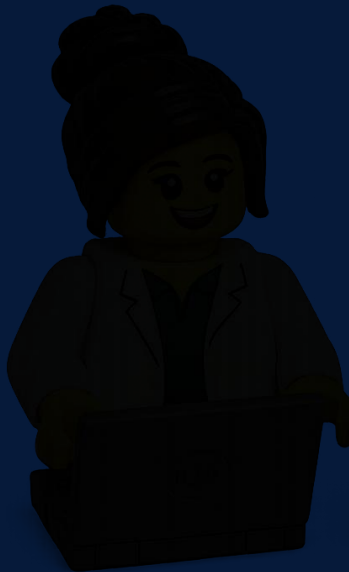


*"I know how to create
a good prompt"*



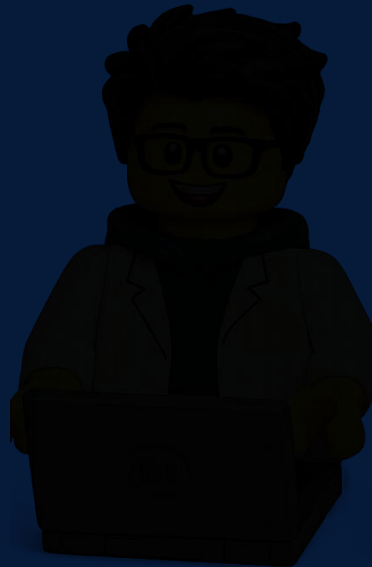
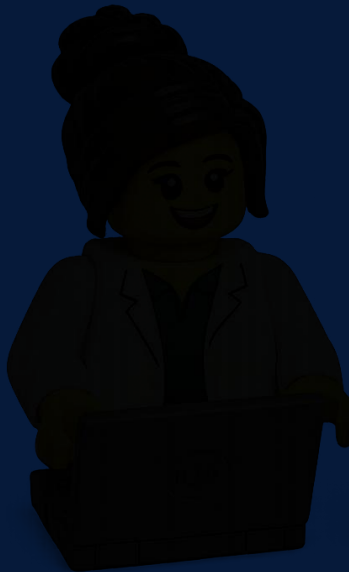
WHAT MAKES A GOOD AI USER?

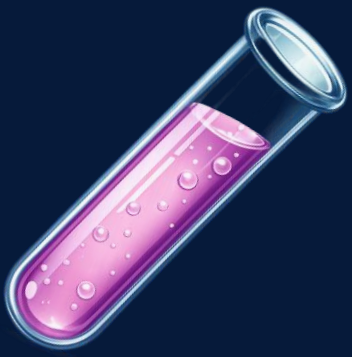
"I don't fully trust AI just because it sounds confident."



WHAT MAKES A GOOD AI USER?

“I know what AI can help me with, and how to turn it into my own response.”





Mixed-methods case study

- 30 third-year Monash pharmacy students
- Australia: 18 students, Malaysia: 12 students
- **Time:** June-August 2025
- **Ethics:** MUHREC 46339
- Observed task to complete the case scenario via Zoom



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Case scenario

A 36-year-old woman is diagnosed with acute pyelonephritis. Her doctor initially prescribes cefalexin, but before she starts the medication, a urine culture shows the bacteria are also sensitive to amoxicillin. The prescription is changed.

Task:

You're the pharmacist. The patient asks: "Why did my antibiotic change?"

Explain in layman term:

What acute pyelonephritis is

Why the antibiotic was changed



STEP 1: FIRST RESPONSE

Students had up to 10 minutes to answer independently in closed-book condition, **without GenAI or resources.**



STEP 2: FINAL RESPONSE

Students then used any **GenAI tool** of their choice to ask further questions and improve their original response.



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Task:

You're the pharmacist. The patient asks: "Why did my antibiotic change?"

Explain in layman term:

*What acute pyelonephritis is
Why the antibiotic was changed*

Marking

FIRST RESPONSE vs GenAI-supported **FINAL RESPONSE**

Scored across two domains:



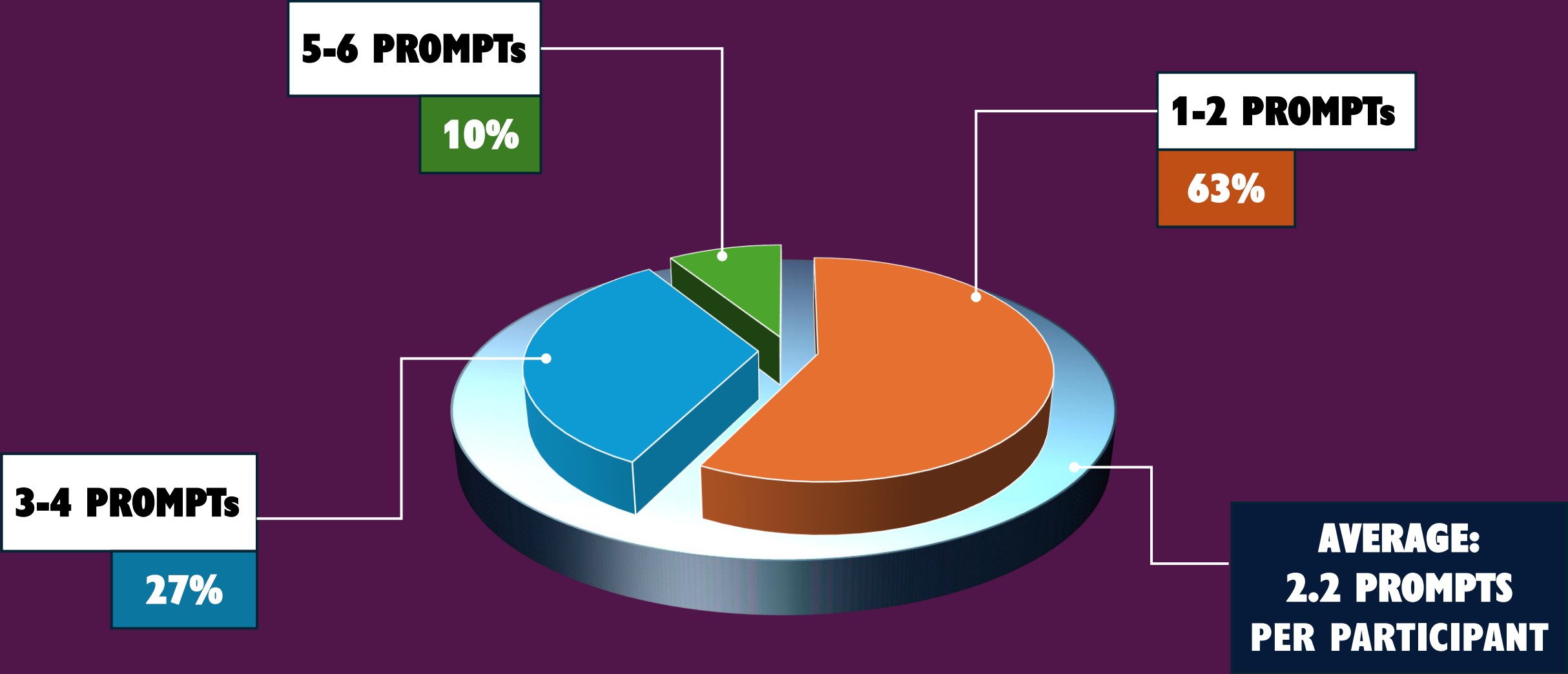
KNOWLEDGE



COMMUNICATION

RESULTS

PROPORTIONS OF STUDENTS IN EACH PROMPT-COUNT GROUP



PROMPT TYPES

What did students ask GenAI to do?



TASK SUBMISSION

Copying the whole case/question into AI

The most common opening question – 16/30 students (53%)



GENERAL INQUIRY

Ask AI to explain, define, or clarify the task
e.g. *“What is acute pyelonephritis?”*

The most common prompt type – 26/73 prompts (36%)



ADAPTIVE REFINEMENT

Ask AI to explain, define, or clarify the task

e.g. *“Can you make the answer more patient friendly?”*

8/11 (73%) of student used this prompt made substantial revision



FEEDBACK SEEKING

Share their own draft and ask for critique

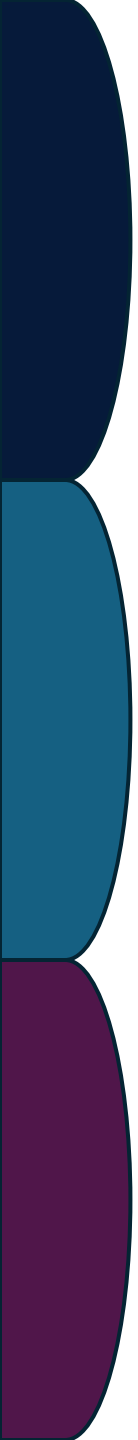
e.g. *“This is my answer . . . , can you give me some feedback?”*



KNOWLEDGE VERIFICATION

Check clinical facts or understanding
e.g. *“Is pyelonephritis UTI?”*







SUBSTANTIAL REVISION (50%)

“AI helped me correct my initial approach.” — P26

“The answer became more logical and complete.” — P20



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PARTIAL REVISION (27%)

“AI helped me cover what I had missed.” — P5

“I used AI to double-check the information.” — P12



SUBSTANTIAL REVISION (50%)

“AI helped me correct my initial approach.” — P26

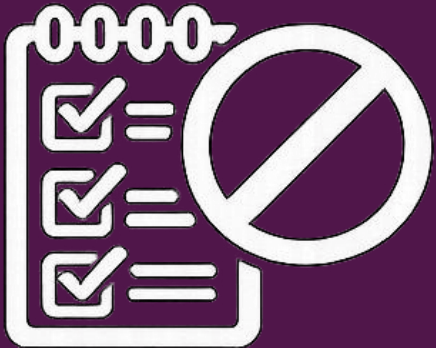
“The answer became more logical and complete.” — P20



PARTIAL REVISION (27%)

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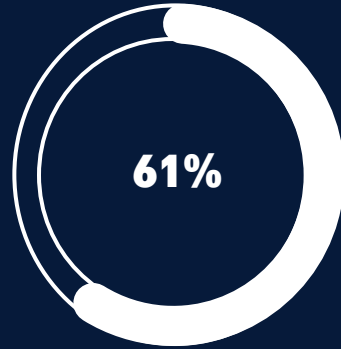


NO REVISION (23%)

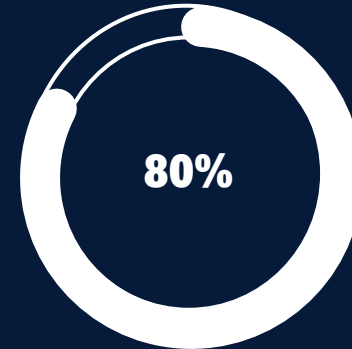
“I’m going to stick with my original answer.” — P1

“I would trust my own response.” — P19

KNOWLEDGE SCORE AVERAGES

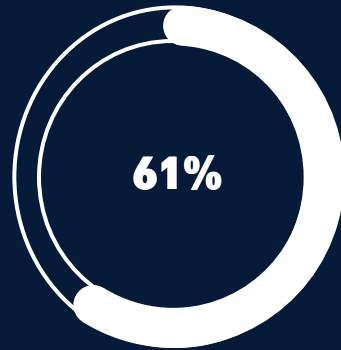


First response – before AI

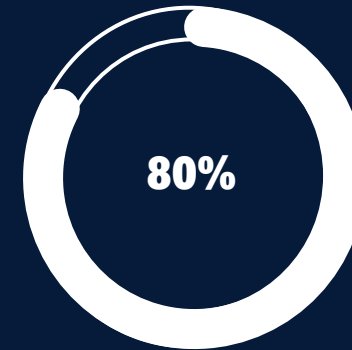


Final response – after AI

KNOWLEDGE SCORE AVERAGES



First response – before AI



Final response – after AI

COMMUNICATION SCORE AVERAGES



First response – before AI



Final response – after AI

FIRST RESPONSE – BEFORE AI

EXTRA TIME  **& GENARATIVE AI** 

-> **BETTER PERFORMANCE ?**

FINAL RESPONSE – AFTER AI

FIRST RESPONSE – BEFORE AI

EXTRA TIME  **& GENARATIVE AI** 

-> **BETTER PERFORMANCE ? ... NOT ALWAYS**

FINAL RESPONSE – AFTER AI



PARTICIPANT 20

(6 PROMPTS)

- More clinical detail, but less accurate
- GenAI introduced an unsupported rationale:
“Cefalexin cannot penetrate the site of infection”

→ KNOWLEDGE SCORE ↓



PARTICIPANT 20 (6 PROMPTS)

- More clinical detail, but less accurate
- GenAI introduced an unsupported rationale:
“Cefalexin cannot penetrate the site of infection”

→ KNOWLEDGE SCORE ↓



PARTICIPANT 28 (1 PROMPT)

- More comprehensive, less patient-friendly
- The response used more technical wording
“pathogen” | *“susceptible”* | *“narrow spectrum”*

→ COMMUNICATION SCORE ↓



... And this is how you write a good prompt for AI.

But how do I know when AI is right or wrong?...



TEACHING
ASSOCIATE

PHARMACY
STUDENT

THE AAA FRAMEWORK

- ASK, APPRAISE, APPLY -



ASK



APPRAISE



APPLY





ASK

- TASK SUBMISSION
- GENERAL INQUIRY
- KNOWLEDGE VERIFICATION
- FEEDBACK SEEKING
- ADAPTIVE REFINEMENT



APPRAISE



APPLY



ASK

- TASK SUBMISSION
- GENERAL INQUIRY
- KNOWLEDGE VERIFICATION
- FEEDBACK SEEKING
- ADAPTIVE REFINEMENT



APPRAISE

- ACCURACY
- RELIABILITY
- CONTEXT
- CLARITY
- APPROPRIATENESS



APPLY



ASK

- TASK SUBMISSION
- GENERAL INQUIRY
- KNOWLEDGE VERIFICATION
- FEEDBACK SEEKING
- ADAPTIVE REFINEMENT



APPRAISE

- ACCURACY
- RELIABILITY
- CONTEXT
- CLARITY
- APPROPRIATENESS



APPLY

- REVIEW
- REVISE
- REASSESS
- RESPOND
- REFUSE

I acknowledge the use of **ChatGPT** (OpenAI, <https://chat.openai.com/>) to **generate and refine visual materials** for this presentation. On **14 June 2026**, I used ChatGPT to create AI-generated images for the title slide and a classroom illustration, as well as several icon-style emojis used to represent key concepts in the presentation. The generated outputs were reviewed, selected, and modified further for presentation purposes, including changes to layout, colour, wording, and visual placement. The AI-generated materials were used only as visual aids and did not generate or alter the study data, analysis, findings, or interpretation.

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