Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Pharmacy Teaching & Learning: Preparation for an AI World

Prof Deirdre M. D'Arcy, Prof Sheila Ryder
School of Pharmacy and Pharmaceutical Sciences

Context & Objectives

Given the fast pace of change in this area, the skills underpinning responsible GenAI use need to be nurtured for GenAI literacy, and to enable pharmacists to be the "expert-in-the-loop" for AI use by patients, colleagues and themselves.

Objective: Exploration of a 3-pronged approach for embedding AI teaching and learning within the pharmacy curriculum.

1. Including content on the concepts of models, validation and GPT. ACTION 1: Lecture in Year 1, in maths module.
2. Identifying and emphasising aspects of the curriculum that focus on Foundational Intellectual Capabilities (FICs). ACTION 2: Survey of academic staff to identify where FICs are included in the curriculum.
3. Including critical use of GenAI in learning activities ACTION 3: Analysis of feedback from 3 consecutive years of deploying a workshop that incorporates critical reflection of GPT outputs.

HEA An tÚdarás um Ard-Oideachas The Higher Education Authority

Generative AI in Higher Education Teaching & Learning
Principles for Ethical AI Adoption

https://hea.ie/assets/uploads/2025/12/hea-genai-ethical-adoption.pdf

ACTION 2

2.5.2 Preserving foundational intellectual capabilities

Informed by principles and concepts within the HEA's guidance on ethical AI adoption, namely —

- **Foundational Intellectual Capabilities:**
  i) Writing; ii) Mathematical Reasoning;
  iii) Critical Analysis; **iv) Creative Problem Solving**
- *"Curriculum design should ensure that students develop robust abilities before engaging extensively with generative AI."*
- *"Sustained engagement with complexity…remains indispensable to fostering resilience, insight and independent thought."*

ACTION 3

- Workshop in Year 4 in 2 parts:
  - Part 1 focusing on pharmaceutical aspects of generic drug development.
  - Part 2 assessing the accuracy of GPT outputs, from given prompts, on a specific technical regulatory question relating to generic drugs.

Key Outcomes & Impact

Action 1

- The first Year 1 lecture was delivered in 2025.

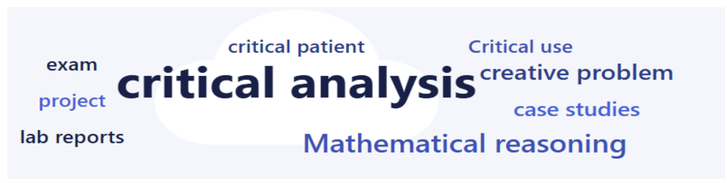
Action 2

- A staff survey (2026) indicated that curriculum elements supporting all FICs are currently present across all years of the curriculum (Table 1).

Action 3

- Three consecutive years (2023-2025) of the Year 4 workshop illustrated increasing familiarity of students with GPT tools. A relevant finding was that students placed sightly more emphasis on the importance of learning the pharmaceutical content than the GPT exercise.

Action 2 Staff survey responses (n = 22)

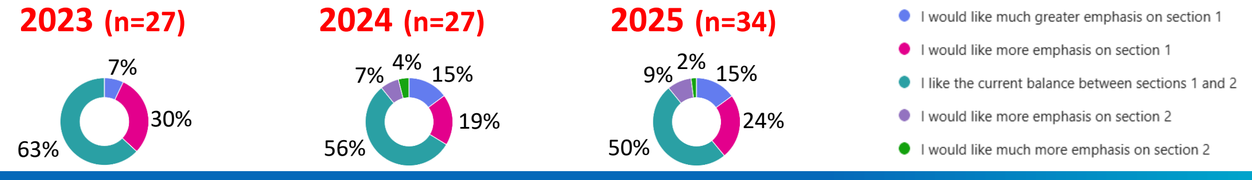


	Year 1	Year 2	Year 3	Year 4	Year 5
Writing	///	/////	///	(Capstone /) //	(Project /) /
Mathematical Reasoning	/////	/////	/////	(Capstone /) //	(Project /) /
Critical Analysis	////	//////	//////	(Capstone /) ////	(Project /) ////
Creative Problem Solving	//	//////	/////	/	(Project /) //

***Table 1**: Preliminary results of curriculum survey indicating multiple elements throughout the programme supporting or potentially supporting FICs*

Action 3 Sample student feedback – Year 4 workshop (~70-80 students)

Would you prefer if the balance of the workshop was more on section 1 (consideration and application of information from specific drug types/scenarios with respect to generic drug development) or more on section 2 (critical and responsible use of an AI tool to generate information, in this case relevant to a specific generic drug development issue)?



Reflections

To date, our student cohorts have not had freely-available GenAI tools throughout their educational journey. This will soon change, as future Year 1 students will have had GenAI throughout their secondary education.

The work presented here (Action 2) illustrates that there is significant scope within the current pharmacy curriculum to develop FICs. **Going forward**, this requires intentional targeting and development of identified exercises across the curriculum– *e.g.* FIC skills applied in an "AI-Free zone" for research report preparation.

Results from Action 3 serve as a valuable reminder that students still require and value learning about core curriculum concepts, and it is important not to be distracted by the shiny new thing! **Going forward**, the expert-in-the-loop needs knowledge of both AI ***and*** the subject matter with which the AI tool is helping.

Scan to learn more

Created for the Centre for Academic Practice's Teaching & Learning Symposium, 2026