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AI IN ACADEMIC RESEARCH

Collaboration between Cape Higher Education Consortium and the African Doctoral Academy

Programme report

6 November 2026



Cape Higher Education Consortium (RF)
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Members: University of Cape Town,
Stellenbosch University, University of the Western Cape,
Cape Peninsula University of Technology

Directors: E Ramugondo, N Koopman, NRM Madiba
(Chair), R Balkaran, TE Cloete (CEO)

Welcome and induction • 23 October 2026

AI in Academic Research

Five-day programme | 26–30 October 2026

Day 1 • 26 October
Understanding AI in research: promise, limits and scholarly responsibility

Time	Session	Presenter
09:00–10:15	1. Justification and framing	Prof Eugene Cloete (CHEC)
10:20–11:35	2. What AI can and cannot do	Bill Malik (Private, USA)
11:40–13:00	3. Intellectual ownership, critical thinking and epistemic responsibility	Prof Walter Claassen (SARUA)
14:00–16:00 • Reflective journal 1: My position on AI in research • Participants		

Day 2 • 27 October
AI for topic development, problem formulation and literature engagement

Time	Session	Presenter
09:00–10:15	4. Using AI to explore topic boundaries, identify gaps and develop researchable questions	Prof Gina Wisker (Bath Uni)
10:20–11:35	5. AI and literature work	Prof Petrus Potgieter (Unisa)
11:40–13:00	6. From analysis and synthesis to testing AI-generated literature maps against actual sources	Prof Anné H. Verhoef (NWU)
14:00–16:00 • Reflective journal 2: My research problem, my voice, my judgement • Participants		

Day 3 • 28 October
Using AI to strengthen research design without compromising rigour

Time	Session	Presenter
09:00–10:15	7. AI support across methodological choices towards alignment between problem, questions, methodology and methods	Prof René Pellissier (CHEC)
10:20–11:35	8. AI for instrument and protocol support	Dr Sonja Strydom (SU)
11:40–13:00	9. Research fit, validity, trustworthiness and defensibility	Prof Cobus Oosthuizen (Boston City Campus)
14:00–16:00 • Reflective journal 3: How is my research design intellectually defensible? • Participants		

Day 4 • 29 October
AI in data analysis and interpretation

Time	Session	Presenter
09:00–10:15	10. AI and qualitative analysis	Prof Joe Amadi Echendu (UP)
10:20–11:35	11. AI and quantitative analysis	Prof René Pellissier (CHEC)
11:40–13:00	12. Moving beyond pattern spotting towards interpretation, argument and trustworthiness	Prof Cobus Oosthuizen (Boston City Campus)
14:00–16:00 • Reflective journal 4: Who is interpreting the data? Me or the machine? • Participants		

Day 5 • 30 October
Ethics, authorship, academic writing and personal protocol

Time	Session	Presenter
09:00–10:15	13. Ethics and academic integrity	Dr Retha Visagie (UNISA)
10:20–11:35	14. AI and academic writing	Eleni Flack-Davison (Wits)
11:40–13:00	15. Developing a personal AI-in-research protocol	Dr Retha Visagie (UNISA)
14:00–16:00 • Reflective journal 5: Personal AI in Research Charter • Participants		

Capstone event • 6 November 2026

Summary

AI in Academic Research is a five-day short course designed to strengthen the critical, ethical and practical use of artificial intelligence by postgraduate students and researchers. The published programme schedules online learning from 26 to 30 October 2026 and a hybrid capstone event on 6 November 2026. Its central principle is that AI should support research while the researcher retains intellectual ownership, methodological judgement and responsibility for the work.

The programme design connects AI use with the full research process, from framing a problem and engaging with literature to research design, analysis, interpretation and writing. Facilitated sessions are combined with guided application and reflective journals. A portfolio of evidence and a personal AI-in-research action plan provide the proposed basis for demonstrating learning.

Purpose and scope

The Programme responds to the need for researchers to judge when AI assistance is useful, when its outputs require challenge and verification, and when its use could compromise research quality or academic integrity. Its purpose is to develop selective, defensible AI use grounded in disciplinary knowledge and research competence.

The target audience comprises master's and doctoral students, supervisors and early-stage researchers preparing proposals, literature reviews, research designs, analyses, chapters, articles or dissertations.

NQF Level

The AI in Academic Research programme is pitched at NQF Level 9, reflecting advanced postgraduate learning appropriate for academics, researchers, research supervisors and higher education professionals engaged in scholarly inquiry. It develops participants' capacity to critically evaluate and responsibly apply AI across the research cycle while retaining intellectual ownership, methodological rigour and accountability for research decisions and outcomes.

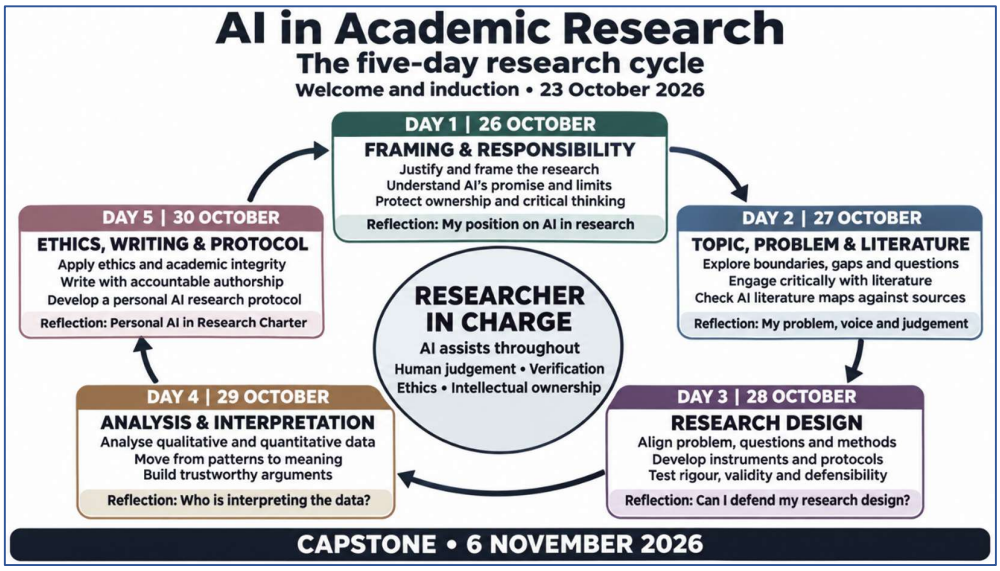
Learning at this level requires participants to:

- critically evaluate AI's capabilities, limitations and implications for knowledge production;
- synthesise literature and diverse theoretical perspectives to formulate defensible research problems and questions;
- evaluate methodological alternatives and justify alignment between research problems, questions, designs and methods;
- apply advanced knowledge to complex research challenges, including instrument development, data analysis and interpretation;
- assess the credibility, validity and trustworthiness of AI-assisted processes and outputs;
- exercise independent judgement in addressing ethics, authorship, intellectual ownership and academic integrity; and
- develop and defend a personal AI-in-research protocol informed by evidence and scholarly reflection.

The programme is designed around NQF Level 9 expectations of advanced specialist knowledge, critical synthesis, independent inquiry and the ability to make and defend scholarly judgements in complex and uncertain research contexts. The reflective journals and capstone provide opportunities for participants to demonstrate these capabilities through their own research practice.

Programme organisation

The course is presented as a collaboration between CHEC and the African Doctoral Academy. The detailed schedule allocates three facilitated sessions each morning, followed by individual reflection and application from 14:00 to 16:00.



The five days form a progression from understanding AI to applying it in research and establishing a personal protocol for responsible use from the theoretical lens of the research cycle.

Day 1: Understanding AI and scholarly responsibility (3 sessions + self-reflection)

The opening day addresses justification and framing with Prof Eugene Cloete; the capabilities and limitations of AI with Bill Malik; and intellectual ownership, critical thinking and epistemic responsibility with Prof Walter Claassen. The reflective task asks participants to articulate their own position on AI in research. This establishes a basis for judging AI outputs throughout the course.

Day 2: Research problems and literature engagement (3 sessions + self-reflection)

Prof Gina Wisker addresses topic boundaries, research gaps and researchable questions. Prof Petrus Potgieter focuses on literature work, while Prof Anné H. Verhoef addresses analysis, synthesis and testing AI-generated literature maps against actual sources. Participants reflect on the relationship between their research problem, scholarly voice and judgement. The emphasis on checking original sources is central to the academic value of this day.

Day 3: Research design and methodological rigour (3 sessions + self-reflection)

Prof René Pellissier addresses alignment between the research problem, questions, methodology and methods. Dr Sonja Strydom focuses on instruments and protocols, and Prof Cobus Oosthuizen addresses research fit, validity, trustworthiness and defensibility. Participants examine whether their own design is intellectually defensible and how AI assistance has affected their choices.

Day 4: Data analysis and interpretation (3 sessions + self-reflection)

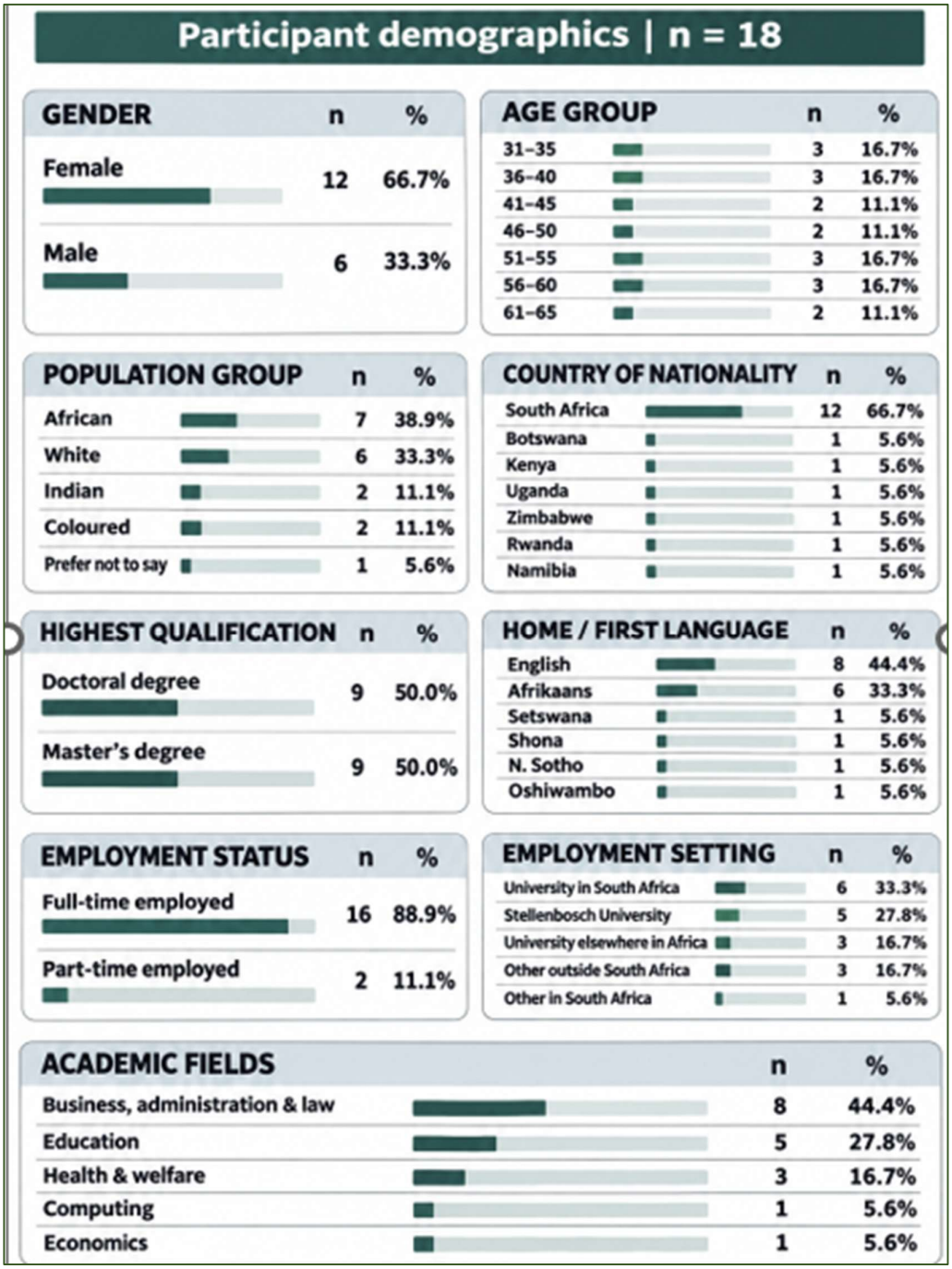
Prof Joe Amadi Echendu addresses qualitative analysis; Prof René Pellissier addresses quantitative analysis; and Prof Cobus Oosthuizen considers the move from pattern recognition to interpretation, argument and trustworthiness. The reflective question asks who is interpreting the data, the researcher or the machine. This directs attention to the researcher's responsibility for analytical decisions and the meaning assigned to results.

Day 5: Ethics writing and personal protocols (3 sessions + self-reflection)

Dr Retha Visagie addresses ethics and academic integrity and leads the development of a personal AI-in-research protocol. Eleni Flack-Davison focuses on academic writing. Participants consolidate their learning in a Personal AI-in-Research Charter, specifying the boundaries and conditions of their future AI use.

Demographics

The programme attracted a mature, highly qualified group of working professionals from several African countries. Their varied academic backgrounds suggest that interest in AI extends across disciplines, particularly business and education. With half already holding doctorates, the profile points to a need for professional development in applying AI to research, even among experienced researchers.



CHEC's co-creation model and learning approach

CHEC's co-creation model positions participants as active partners in the learning process, fostering collaboration between facilitators and participants to jointly design, share, reflect on and apply knowledge through authentic, practice-based learning experiences. The programme adopts an experiential and inquiry-based approach in which participants engage in:

- critical reading of contemporary higher education literature;

- collaborative discussion and peer learning;
- reflective writing;
- application of theory to authentic higher education challenges;
- curriculum and assessment design activities;
- exploration of educational technologies and AI;
- development of an individual Portfolio of Evidence; and
- presentation of a Capstone Project demonstrating applied learning.

Rather than simply transmitting knowledge, the programme encourages participants to interrogate assumptions, investigate their own practice and develop sustainable improvements within their institutional contexts.

Learning and assessment approach

The design combines conceptual input with reflection on participants' own research. This is appropriate to the stated developmental purpose because participants must explain and justify their choices, rather than merely demonstrate familiarity with AI tools. The five journal entries follow a deliberate sequence: personal positioning, research problem and voice, defensible design, responsibility for interpretation, and a personal charter.

The capstone consists of two connected components. The portfolio of evidence is described in the detailed programme as a purposeful account of approximately ten pages, covering context and challenge, understanding the issue, application of learning, evidence of development, a proposed intervention, and critical reflection and next steps. The presentation is scheduled for eight minutes, followed by approximately five minutes of questions and discussion.

The personal action plan should explain what the participant will use AI for, what they will not use it for, what they will verify, how use will be disclosed where necessary, and how intellectual responsibility will be preserved. The suggested six-slide presentation moves from the challenge and its significance to changed understanding, evidence, a proposed response and subsequent action.

The documents describe the assessment as formative and developmental, while the brochure promises a certificate of competency upon successful completion. These positions can be aligned through explicit criteria for sufficient evidence, assessor feedback and revision where needed. The supplied documents do not specify a competency rubric, completion threshold or moderation procedure.

Capstone project

The programme culminates in a Capstone Project entitled "*From Insight to Intervention: Applying Learning in Higher Education Practice*." Participants are required to identify a significant teaching, learning or curriculum challenge within their own context and develop an evidence-informed intervention grounded in the theories and approaches encountered throughout the programme. The capstone comprises both a Portfolio of Evidence and an oral presentation, demonstrating the participant's ability to integrate theory, reflection, inquiry and practical application.

Intended contribution and evaluation criteria

For participants, the intended contribution is a more reasoned approach to AI-assisted research and a clearer account of their own intellectual contribution. For supervisors, the programme offers a potential basis for discussing acceptable assistance, verification and disclosure. For institutions, the personal charters and portfolios could inform research development and integrity support. These are expected benefits of the design, rather than demonstrated outcomes.

Evaluation should assess whether participants can explain the limits of an AI output, verify literature and factual claims against original sources, justify methodological decisions, and distinguish analytical assistance from their own interpretation. Portfolios should also show attention to confidentiality, appropriate tool use, authorship and disclosure. An initial and final reflection could provide evidence of changes in judgement, while a later follow-up could establish whether the action plans were used in research practice.

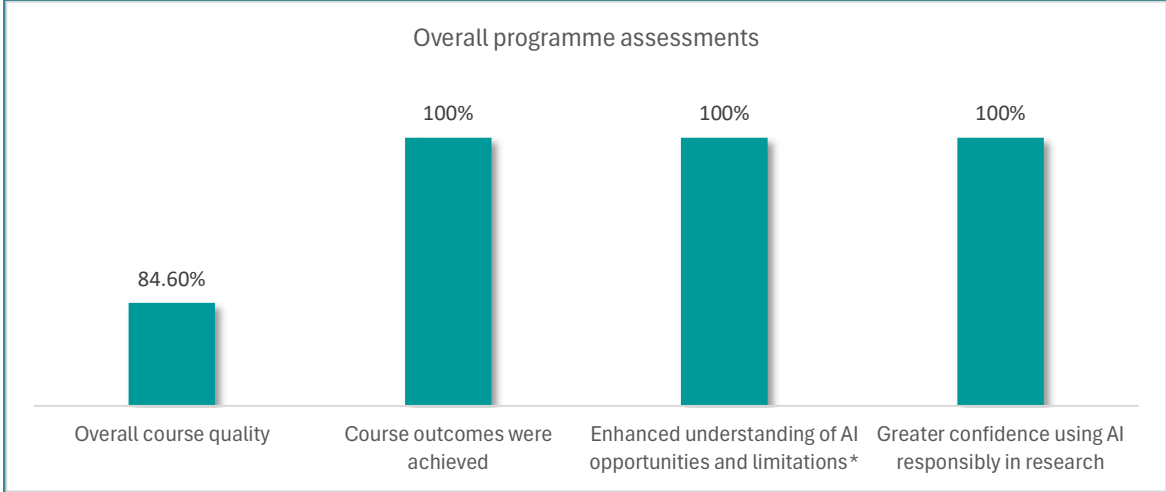
Capstone applications and learning

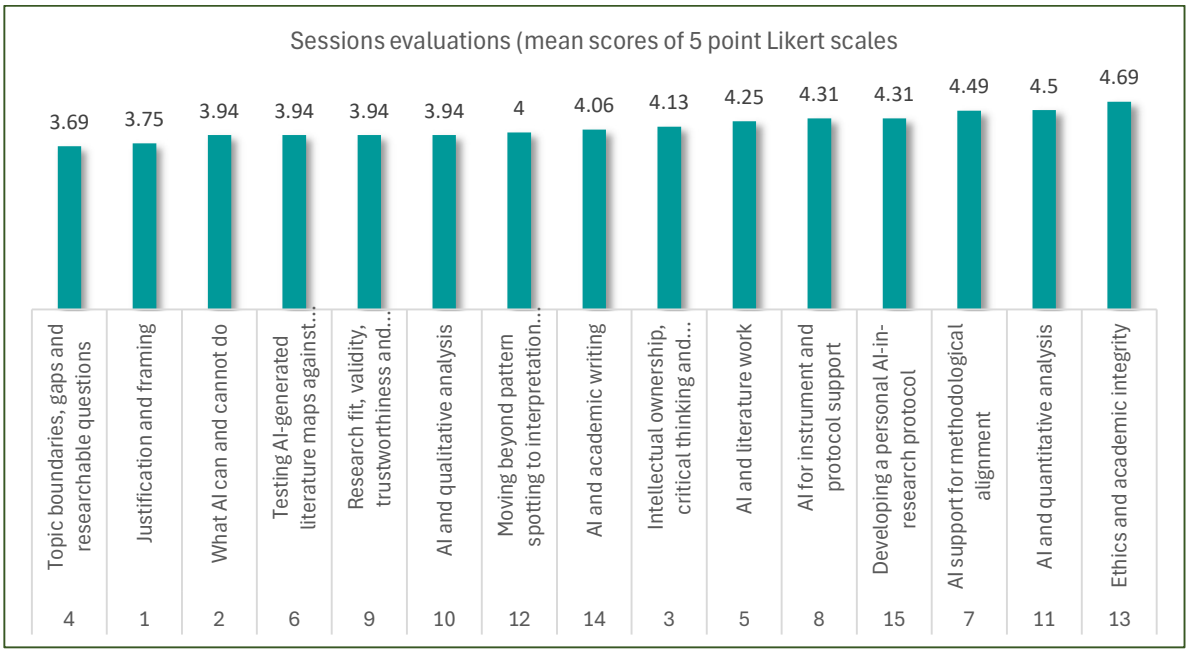
Participant • Capstone focus • Main learning	Participant • Capstone focus • Main learning	Participant • Capstone focus • Main learning
1 Sakarea Kenewang **Focus:** Doctoral proposal: coaching and academic intrapreneurship at BIUST. **Learning:** Corrected citations, acknowledged an existing model and rejected an incorrect calculation. Verification strengthens originality claims.	**6 Michaile Gizelle Anthony Mackriel** **Focus:** Scoping review: children affected by tuberculosis and psychosocial wellbeing. **Learning:** Rejected unnecessary scope changes and retained planned age disaggregation. Independent methodological judgement.	**11 Elizma Wannenburg** **Focus:** Research design and postgraduate supervision. **Learning:** Questioned impractical sampling and unverified analytical advice. Linked decisions to a supervision charter.
2 Andre van der Walt **Focus:** Responsible AI in research and supervision. **Learning:** Personal charter on verification, confidentiality, disclosure and accountability. Framework for future practice.	**7 Kristin van der Merwe** **Focus:** AI assistance in a completed PhD on military learning design. **Learning:** Revised or rejected suggestions. Distinguished original analysis from organisation and presentation support.	**12 Khalida Akbar** **Focus:** Responsible AI in DBA proposal development at Milpark. **Learning:** Refined research and interview questions; recognised limits on causal claims. Institutional activities remain planned.
3 Monica Kuteesa **Focus:** iRefer UG clinical imaging protocol for medical interns. **Learning:** Challenged design assumptions and an unsupported ethics step. Scientific and governance decisions remain with the researcher.	**8 Indren Govender** **Focus:** Revising a rejected ransomware and legislation paper. **Learning:** Mapped reviewer feedback and cross-checked critique. Substantial human verification remained unfinished.	**13 Thérèse Roux** **Focus:** Literature on senior women's leadership in marketing, advertising and media. **Learning:** Found an incorrect journal attribution. Verify gaps independently and consider uneven contextual coverage.
4 Precious Charakupa Machera **Focus:** Design Based Research for accounting lecturers in Botswana. **Learning:** Read original sources after AI explanations. Understanding a method requires a justified methodological choice.	**9 Hanlie Haroldt** **Focus:** Literature mapping for school assessment practices. **Learning:** Citation-map gaps do not establish knowledge gaps. African scholarship requires deliberate searching.	**14 Edson Mpyisi** **Focus:** Digital borrowing, default and blacklisting among young Kenyans. **Learning:** Reported a 43-paper matrix; found a mismatched DOI. Full-text and survey-variable checks remain incomplete.
5 Johan de Jager **Focus:** AI adoption in research, teaching and institutional practice. **Learning:** Selective use with verification and disclosure. Mainly reflective, with limited worked application.	**10 Janico Louw** **Focus:** Preliminary PhD literature search on management control systems. **Learning:** Checked publications manually and set his own priorities. Traffic light approah to AI involvement.	**15 Mpho Sharon Makgedi Makaleng** **Focus:** AI reflection through a reverse logistics research example. **Learning:** Emphasised source checks, confidentiality and researcher responsibility. Detailed verification evidence was limited.

Graduate attributes

The AI in Academic Research programme aimed to develop critically informed, intellectually independent and ethically accountable researchers. Participants had to demonstrate critical AI literacy by evaluating the capabilities, limitations, assumptions and biases of AI tools. They should exercise independent scholarly judgement, retain intellectual ownership of their research and apply methodological rigour when selecting and justifying AI-assisted approaches. They should verify sources and outputs, develop contextually grounded interpretations, and take responsibility for research ethics, confidentiality, authorship and academic integrity. Graduates should also communicate with an authentic scholarly voice, disclose AI assistance transparently and demonstrate reflective, adaptive practice through a defensible personal AI-in-research protocol.

Programme Evaluations





What participants valued most:

1. Retaining responsibility for research decisions

The strongest qualitative theme seems that AI should assist research while the researcher retains intellectual ownership and accountability. Participants described the need to validate outputs, interpret evidence, question suggestions and make independent scholarly decisions. One respondent captured this succinctly:

> "AI should support my research, not replace my critical thinking and academic judgement."

Comments suggest that the programme communicated a coherent position on researcher agency across different parts of the research process.

2. Ethics as an everyday research practice

Ethics and academic integrity emerged repeatedly as important learning gains. Participants connected responsible use to protecting participant data, maintaining their intellectual contribution and deciding when and how AI assistance is appropriate. This is supported by the session ratings: Ethics and Academic Integrity received the highest ratings. However, one respondent found the personal protocol session too philosophical and requested practical examples. The implication is to retain the ethical depth while making its application more concrete.

3. Defensibility and critical evaluation

A particularly detailed response identified *defensibility* as the central learning gain: being able to explain a research decision, understand its reasoning and support it with literature and methodological guidance. The respondent also intended to document prompts, outputs and subsequent decisions. This provides evidence of thoughtful engagement beyond learning how to operate tools. It remains an expressed intention, rather than verified evidence of changed research practice.

4. Confidence, relevance and professional value

Participants described the programme as timely, enlightening and worth the time invested. Several recommended wider participation or stronger marketing. One called it:

> "one of the best value for time workshops I have ever attended."

Confidence was nevertheless nuanced. One respondent raised imposter syndrome, self-doubt and the risk of allowing AI use to undermine trust in one's own expertise. Future offerings could address confidence in both using AI and challenging or rejecting its outputs.

Areas for improvement:

Responses did suggest areas for improvement. For example, sessions on defensibility received criticism about limited interaction, yet another respondent identified defensibility as their most important insight. Content value and delivery experience therefore need to be considered separately.

Participants suggested the following improvements:

Theme	Evidence from comments	Implication for the next offering
More practical application	Requests for live exercises, prompting demonstrations, tool evaluation and examples linked to participants' research	Build a short, applied task into each session
Pacing and breaks	Sessions described as long and intense; requests for more breaks and shorter presentations	Reduce uninterrupted presentation time and protect breaks
Interaction and reflection	Requests for discussion during presentations and reflection immediately after sessions	Distribute reflection across the day
Programme integration	Comments about repetition and the need for clearer structure	Coordinate presenters' coverage and show how sessions connect
Preparation and technical support	Requests for slides in advance and an accessible technical support contact	Provide preparatory materials and a clear support route

Practical learning was the most recurrent improvement theme. This was not unanimous dissatisfaction: one respondent explicitly praised the practical sessions, while others considered the programme well organised and comprehensive. The feedback suggests that practical opportunities were valuable but could be more consistent across sessions.

Topics requested for future offerings

Participants proposed:

1. AI reliability: hallucinations, benchmarking and checking outputs.
2. Applied tool use: AI in ATLAS.ti, prompting techniques and comparisons of tools' usefulness, cost and value.
3. Environmental sustainability: energy and water use, emissions and the wider footprint of AI.
4. Institutional governance and intellectual property: why institutions approve particular tools and how ownership is affected.
5. Psychological dimensions: confidence, imposter syndrome, self-doubt and dependence.
6. Broader applications: connections between research, teaching and learning, and community engagement.

These suggestions support retaining the current research cycle while adding focused practical demonstrations and selected extension topics.

Conclusions and the way forward

The feedback indicates that the AI in Academic Research programme was highly valued, particularly for strengthening ethical awareness, independent judgement and responsible AI use. The main improvement requested was more practical application, supported by shorter presentations, greater interaction and time to consolidate learning.

The feedback offers strong evidence of perceived learning, relevance and increased confidence, particularly in ethics and researcher responsibility. It provides less evidence of sustained changes in research behaviour. Capstone work, portfolios and subsequent examples of research practice would help establish whether participants can consistently verify outputs, justify decisions, protect data and document AI assistance.

For the next offering, the priority is to preserve the programme's emphasis on scholarly judgement and ethics while strengthening practical application and pacing. A useful recurring session structure would be a focused input, a live demonstration, an exercise using participants' own research, and a short reflection on what they accepted, rejected and could defend.

AI in Academic Research provides a coherent programme design for developing responsible AI use across the research process. Its strongest feature is the consistent emphasis on the researcher's judgement, supported by reflection and an applied personal protocol.