Chapter # 16

USE OF AI AGENTS AND AGENTIC AI TO EVALUATE UNIVERSITY CURRICULA

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ABSTRACT
AI agents are specific AI tools, while agentic AI shows many aspects of human thinking, and is touted as replacing functions which human educators now perform. This chapter first discusses the differences between AI agents and agentic AI, and then identifies which aspects of the university curriculum they appear best suited to perform, before discussing a model of AI functions enhancing human thinking processes. These AI augmentations constitute technological evolution, involving ongoing adaptation to emerging technologies, not just in education, but in everyday life, as we now live in cities which are technosystems. However, while methods, media and tools are constantly evolving, there are basic functions which remain constant in the teaching/learning process. The functions performed by AI agents or agentic AI are discussed in terms of how they might facilitate the basic teaching/learning functions in a generic model of course design. Two applications, one based on AI agents, the other, on agentic AI, are then described to show how they operate in evaluating aspects of university curricula. It is emphasized that AI agents and agentic AI should be used to serve the key human social purposes of education, rather than education being reshaped to fit technological innovations.

Keywords: AI agents, agentic AI, curriculum evaluation, modelling, course design.

1. INTRODUCTION

AI agents refer to specific AI tools, many of which are already in common use in University courses. Agentic AI, on the other hand, is a more complex mechanism which shows many aspects of human thinking, and is touted as replacing, autonomously, many functions now performed by human educators. This chapter first looks at the differences between AI agents and agentic AI, and next, identifies which aspects of the university curriculum they appear best suited to perform. It then discusses work in progress on a model of AI functions which identifies which human thinking processes AI enhances and how, as well as the implications for university curricula. A proviso is that current university disciplines are by no means static, and are constantly adapting to various workplace changes and challenges initiated by the Fourth Industrial Revolution (Fomunyam, 2019). These developments, it is suggested, should more properly be termed technological evolution, as they involve ongoing change and adaptation to emerging technologies, not just in education, but in everyday life, as we live in cities which are technosystems, based on layers of interlocking systems (Aunger, 2010).

It is generally accepted that AI is now part of the education system, whatever its pros and cons (Illinois College of Education, 2024), and can contribute extensively to alleviating the administrative teaching load in universities. Accounts have been published of university approaches and guides (African Observatory on Responsible Artificial Intelligence, 2024), but these, understandably, are context-specific and address issues of concern and interest to

the universities publishing them. Even international forums do not appear to be able to formulate an overall approach to AI at universities, apart from emphasising accountability and a human-centred approach, with which we unreservedly concur (Women in Science, 2024).

For our part, it will be suggested that, while methods, media and tools are constantly evolving, there are basic functions which remain constant in the teaching/learning process, whether overseen by a human academic or "Professor Bot" (Bidarian, 2023; Fourie, 2023). The functions performed (or simulated) by AI agents or agentic AI are next discussed to suggest to what extent they facilitate the basic teaching/learning functions in a generic model of course design. Two applications, one based on an AI agent, the other, using agentic AI, are then described to show how they operate in evaluating aspects of university curricula. Concluding on the evolutionary theme, it is emphasized that AI agents and agentic AI should be used to serve the key human social purposes of education, rather than education being reshaped to fit technological innovations.

2. BACKGROUND

This section first looks at the differences between AI agents and agentic AI, next, at a model showing AI augmentation of human design capacities, and finally, a model showing types of thinking augmented by AI tools. It then sums up the implications of these models for university curricula, and suggests how they provide the rationale for the methodology for the two higher degree AI-assisted projects described in this chapter.

2.1. AI Agents and Agentic AI

An AI agent is a digital application which performs simple tasks as specifically directed, while agentic AI can do complex tasks and has the ability to learn over time as it adapts to users' needs (Lisowski, 2024; MacVittie, 2025; Marr, 2025). Most educators are familiar with AI agents in terms of using them for Internet searches, statistical calculations and tools in web-based learning (WBL) platforms, and are aware of their nature and capacities:

> They're designed to help you with something - like answering questions, organizing your calendar, or even managing your email inbox. AI Agents are great at automating simple, repetitive tasks but don't have the autonomy or decision-making abilities that Agentic AI does. Think of them as virtual helpers that do exactly what you tell them to do, without thinking for themselves. (Lisowski, 2024, p. 2)

However, educators are not so familiar with the features of agentic AI:

> At its core, Agentic AI is a type of AI that's all about autonomy. This means that it can make decisions, take actions, and even learn on its own to achieve specific goals. It's kind of like having a virtual assistant that can think, reason, and adapt to changing circumstances without needing constant direction. (Lisowski, 2024, p. 1)

The descriptions above show that, while both AI agents and agentic AI are forms of artificial intelligence, each operates in very different ways. An AI agent just does what you use it to do (search, gather data, calculate, and so on), although we have noticed that developers are 'sneaking in' agentic enhancements in simple tools like web searches and browsing options, we suspect, as a form of surreptitious marketing for forthcoming agentic

AI products. This is because agentic AI is somewhat daunting to potential users when they realise that it operates very much like humans, in "four key stages" (Lisowski, 2024):

- Perception: It gathers data from the world around it.
- Reasoning: It processes this data to understand what's going on.
- Action: It decides what to do based on its understanding.
- Learning: It improves and adapts over time, learning from feedback and experience.

It must be noted that terms such as "perception", "reasoning", "action" and "learning" are *analogue*s, not *replications* of human processes with the same names.

While agentic AI's human-like autonomy may arouse concern, its robotic applications appear to be viewed with enjoyment by people in general, in watching AI-programmed robots competing (not so well, actually) with human runners in long distance races (AFP, 2025) or people shaking hands with socially-aware robotic pooches (https://www.youtube.com/watch?v=SDp_i25xagg). However, agentic AI publishing of a newspaper (AFP, 2024) or an agent masquerading as a student applying for a university degree may not be quite so humorous for journalists in terms of ethical issues and accuracy (Muindi, 2025), or for human students looking for university places (Wu, 2025). What is not so amusing for *all* of us is the prediction that: "Six million South Africans risk job displacement as WEF predicts tech dominance" (Naidoo, 2025). As As Muggah and Giussani (2025) point out: "there are rising concerns that the political, social and economic fallout from mass labour displacement will deepen inequality, strain public safety nets and contribute to social unrest."

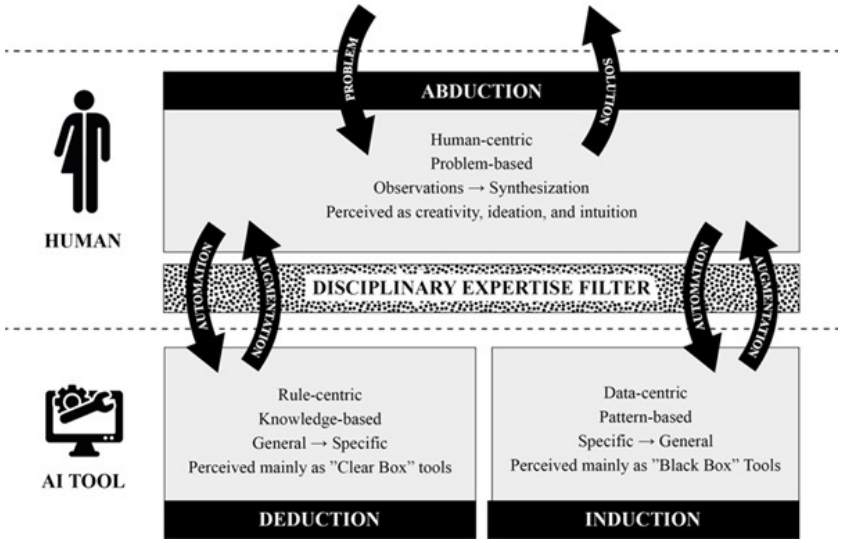
While Lisowski lists some current common uses of AI, the spinoffs of AI use can be seen to have potential impact on *all* human activities. It is like asking the eponymous creative thinking exercise: "How many uses can you think of for a paper clip?" (Ward, 2020); except that AI is more like a "double-edged sword" (Kruger, 2025), with more ominous connotations. Moreover, people are confused about the use of the more complex tools. Academics seem to be most confused of all, with universities focusing on maintaining academic integrity in research and research writing rather than an ethic of care for participants. Potential users do not realise that agentic AI needs to be briefed to work as required. As Fortune (2025, p. 1) points out: "the average person is left poking at ChatGPT like it's a mysterious alien artefact, not quite sure how it works or why the results aren't as impressive as expected."

This is true of Copilot, an example of agentic AI used in one of the projects described. Copilot can do complex tasks and learn over time as adapting to users' needs, and not merely an AI agent, performing simple tasks as specifically directed (Lisowski, 2024; MacVittie, 2025; Marr, 2025). Most educators will be familiar with Copilot as it is integrated into Windows 11 and Microsoft 365 applications. It is also available as a "standalone app" and at https://copilot.microsoft.com/chats/1NddUYXGRxnNbVAaPPqF6. The standard version is free, but more complex versions can be purchased. Explanations of its use can be found at https://learn.microsoft.com/en-us/microsoft-365-copilot/extensibility/ (Graham et al., 2024). However, to further confuse the distinction between AI agent and agentic AI, *Copilot can create AI Agents to carry out tasks required by the user.* Finally, while Copilot is an agentic form of AI, as it can do complex tasks, it cannot perform tasks requiring judgment or experience, which require abductive, or human-centric, processing (Hansen, 2023, p. 3; Larson, 2021, pp. 157-190). This means that, in both of the projects discussed here, human judgement and experience were part of the briefing given to the AI tools involved.

2.2. Model Showing AI Augmentation

The descriptions of AI agents and agentic AI tend to focus on the technical aspects, without giving educators a clear idea as to which aspects of the university curriculum they appear best suited to perform. The model discussed in this section offers more insight into which processes can be relegated to AI tools and which need to be performed by humans. According to the model (Hansen, 2023, p. 3), AI-tools cannot perform tasks requiring judgment or experience, which require abductive or "human-centric" processing (confirmed in some detail by Larson, 2021, pp. 157-190). The model in Figure 1. is an adapted version of Hansen's "proposed model based on deduction, induction, and abduction" (2023, p. 5), which was intended to illustrate how AI tools might enhance the graphic design process. The term Hansen used for such enhancements was "augmentation". However, the model can be seen to be relevant to the creation of any artefact using AI tools, as well as to design processes in general, including, it is proposed, course design.

Figure 1.
Adaptation of Hansen's model based on deduction, induction, and abduction (Pratt, 2025, p. 2).



The adapted model in Figure 1. shows how the elements used in logical and inferential reasoning are shared between human designers and the AI tools they use. The "disciplinary expertise filter" shows that use of AI, as well as the functioning of AI as a tool, is limited to the disciplinary area of the designer. The terms "black box" and "clear box" suggest that some functions are conscious, and others, hidden or intuitive. According to the model, abduction refers to reasoning done by human designers, which requires human judgement and creativity; deduction, to ready-made rules and tools which computers (or digital applications) can apply; and induction, to tools computers can create from mass data. The arrows between the functions signify input from humans to computers and vice versa. Hansen's model suggests that human creativity can be viewed as a form of abductive inference, which AI cannot perform. According to the model, only humans can be truly creative, as all AI can do is provide data to feed the human designer's creativity.

The placement of abduction at the top of the model does not imply that abduction is superior to deduction and induction, but shows that the design process is initiated and driven by humans, and not by machines.

The relevance of the adapted model to higher education is that it suggests how schools in all academic subjects (and not just Design) might adapt their curricula and delivery to include the increasing availability of AI tools. However, it makes it quite clear that AI is "just a tool", and that tasks must be initiated and controlled by humans: "AI works for us, not the other way around" (Hansen, 2023, p. 4).

2.3. Model of Types of Thinking Augmented by AI Tools

The adapted model in Figure 1 can be seen to highlight the division between left-brain and right-brain thinking modes, as shown in Table 1, in which deduction and induction are grouped under left-brain thinking. The column on the right-brain side includes judgement and experience: these are holistic, conceptual entities, as experienced by human educators, and not rule-or logic-based, as performed by AI tools (whether AI agents or agentic AI).

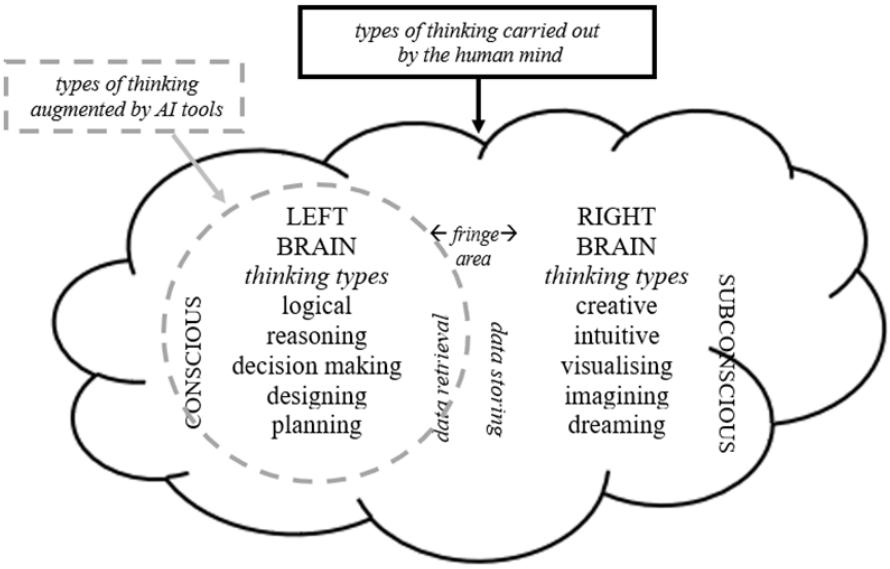
Table 1.
Left- and right-brain thinking modes (Pratt, 2025, p. 3).

	LEFT BRAIN	← *fringe*→ *area*		RIGHT BRAIN	
	thinking types			*thinking types*	
CONSCIOUS	logical	*data retrieval*	*data storing*	creative	SUBCONSCIOUS
	reasoning			intuitive	
	decision making			visualising	
	designing			imagining	
	planning			dreaming	

The division into left- and right-brain thinking modes suggested, in turn, a model of the types of thinking augmented by AI tools in Figure 2 (Pratt, 2025, p. 3), clarifying some of the issues in the adapted model shown in Figure 1. The reason for highlighting these types of thinking is that most educators are familiar with AI tools such as spelling/grammar checkers and auto-assessed multiple-choice tests on web-based learning platforms, but not used to agentic AI which performs, and even initiates, complex multi-layered tasks, and carries them out as if autonomously. The left-brain processing of agentic AI also suggests control over a process, and it is our position that pedagogical control should be vested in the hands of the human educator, and that agentic AI is carefully briefed and monitored so that it does not overstep these boundaries.

In suggesting the types of thinking augmented by AI tools, Figure 2 complements the adapted model shown in Figure 1. The left-brain types of (human) thinking are those which the adapted model suggests can in fact be augmented by use of AI tools. This is because these are conscious, logic-based processes, unlike the subconscious concepts which emerge when we are trying to design something, including an academic course. It is these subconscious intuitions which are fundamental to the process of conceptualising teaching and learning, and therefore essential for effective course design, whether for online, offline or blended courses.

Figure 2.
Types of thinking augmented by AI tools (Pratt, 2025, p. 4).



This concludes the review of theory, existing and in progress, applicable to this chapter, the main points of which are summarised as follows:

- *The differences between AI agents and agentic AI* suggest that, while AI agents are simple tools, agentic AI can carry out many of the processes carried out by humans in much the same way as in human problem-solving. Moreover, agentic AI, like humans, can also delegate specific tasks to AI agents.
- *The model showing AI augmentation* identifies the processes which should be left to humans and those which can be relegated to AI tools, and goes in some way towards clarifying the nature of human/digital collaboration.
- *The model showing types of thinking augmented by AI tools* shows how the predominance of left-brain types of thinking augmented by AI tools suggests it is that which controls pedagogy, which, we believe, should not be relegated to AI without human oversight and monitoring.

The implications for university curricula are that AI tools (including agentic AI) cannot conceptualise, which requires human-centric abductive thinking. Also, as Hansen as Hansen (2023, p. 8) points out: "The ability of humans to blend soft skills such as intuition, empathy, sympathy, and emotional intelligence with their experience and professional expertise is an invaluable factor in the abductive process referred to as 'creativity'". The review thus goes some way towards explaining how the two higher degree AI-assisted projects featuring in this chapter were planned and carried out in, it is hoped, harmonious human/AI collaboration, and ethical responsibility for participants, as shown in the next section. These projects constituted a Copilot-assisted online course design evaluator and an application designed for evaluation of actual online courses.

3. METHODOLOGY

Briefing the AI applications involved in both projects was done by using a systemic model of course design (Reddy & Pratt, 2024, p. 6897), as it identifies the basic functions involved in the teaching/learning process, irrespective of the mechanisms (human or AI) carrying out these functions. After an account of this model and why it was considered suitable for briefing the applications, the design and construction of both applications is described.

3.1. The Systemic Model of Course Design

It was suggested at the outset that, while methods, media and tools are constantly evolving, there are basic functions which remain constant in the teaching/learning process. These functions are explicated in the systemic model of course design (Table 1). The model evolved from doctoral research into the system of functions involved in human communication, which subsequently provided a rubric for evaluating mixed mode or totally online course design (Reddy & Pratt, 2024). The theory supporting this position is the output of research into the nature of communication in written mode, carried out within a critical realist orientation, which posits an external reality arrived at by logical inference (commenced in Pratt, 1987; and ongoing from Pratt, 2007 to present day). In the research, Franck's (2002) systemic modelling process, involving a type of reverse engineering, was used to arrive at the system of functions involved in human communication. The modelling process resulted in formulating a theoretical model comprising the "functional architecture" (Franck, 2002, p. 88) representing felicity conditions for communication. The model identified the contextual, ideational, interactive, social and reflexive functions as being the primary functions needing to be carried out for communication to occur (Pratt, 2011, pp. 60-61). In later projects, these functions were found to have relevance not only for written communication, but also for interactions in education and research (Pratt, 2013, p. 382). The course design principle suggested by the system of communicative functions was later formulated as a rubric for online course evaluation (Reddy & Pratt, 2024, p. 6897).

The proposed online course assessment model in Table 1 was intended for evaluation of online course design as well as assessment of how online courses were experienced by participants. The "essential functions" as explained in column 2., refer to those functions thought to be necessary for learning to take place to achieve the desired outcomes, the specifics of which will differ according to context (Reddy & Pratt, 2024, p. 6897). The questions in column 3. are those which need to be asked overall, relate to learning in general, and are not paradigm-specific. However, they are specific enough to home in on the course context and delivery mode.

Table 2.
The proposed online course assessment model.

Essential functions	*As applied to course design*	*As applied to assessment of online courses*
Contextual	This function relates to the social context in which knowledge is constructed, and requires the course designer to decide how learning is to be contextualised.	Was the way in which the course was contextualised likely to achieve the desired outcomes? *What WERE the course outcomes?*
Ideational	This function relates to the source of the knowledge to be constructed, or the process whereby knowledge actually comes into being (it also raises the question of course content).	Are the ways in which knowledge was constructed likely to achieve the desired outcomes? *What WAS course content and how was it intended to be acquired or learned?*
Interactive	As knowledge is constructed in learning interactions (including interactions with resources), the course designer needs to anticipate how participants will interact in constructing knowledge.	What learning interactions were set in place? *Did they ASSIST with achieving the desired course outcomes, and how/ how not?*
Social	The social parameters, conventions or constraints operating in a given learning situation need to be identified and made explicit to learners, particularly in respect of local assessment criteria.	What were the institutional/ disciplinary conventions /constraints and how were they communicated to students? *Did students FOLLOW these "rules" successfully?*
Reflexive	This relates to how participants will reflect on and assess their performance in constructing knowledge, and includes the issue of formal assessment (if any) and how it will be carried out, as well as course assessment.	What forms of student assessment were used and were they suited to the desired outcomes? *Did student scores REFLECT their expertise as indicated by their course interaction?*
	Course Evaluation Students and instructors should also be asked to give feedback on course evaluation.	Kindly rate the effectiveness of the course in terms of achieving the course outcomes. Your comments could include some suggestions for improving the effectiveness of the course.

Both projects required briefing of the AI tools by their human designers, the authors. Apart from the fact that human-centric abductive thinking, based on human judgment and experience, was needed to conceptualise the projects, there was also the issue of the ethic of care which is a prerequisite for educational practice. This, as Hansen suggested (above), includes emotional and compassionate empathy (Gibbs, 2017; Maxwell, 2017). AI has cognitive empathy only, that is, it can analyse verbal texts and other cues to conclude what people are thinking, including what they are feeling, but it cannot empathise with the subjects or feel sympathy for them (Chaturvedi, 2024, pp. 17-18). It is also not a "team player", although attempts are being made to develop this attribute (Carter-Browne et al., 2021; Williams, Fiore, & Jentsch, 2022). In spite of these shortcomings as to 'affect', current research suggests that agentic AI is actually *better* at textual analysis than humans (Carew, 2025, p. 4), which made analysis of both the model text and course design text descriptions an appropriate task for it to fulfil. After both applications were constructed, they were tested out by the authors for any further corrections refinements, if/as needed. Neither application has as yet been used on DUT online courses, as these would need perfecting for use and ethical clearance, as well as 'buy-in' from the Centre for Excellence in Learning and Teaching (CELT) and academic departments.

3.2. Copilot-Assisted Online Course Design Evaluator

This agentic AI application was briefed by using the Copilot briefing interface to insert specifications as well as inputting the conference paper: *A systemic model for evaluating online course design: a critical realist approach* (Reddy & Pratt, 2024) so that Copilot could use its AI cognitive empathy to analyse what was meant. Copilot's interpretation of the briefing is given in Table 3.

Table 3.
Copilot briefing criteria for creating the Course Design Evaluator agent
(Reddy & Pratt, 2025, p. 400).

Instructions
- Evaluate course design based on the model provided in the paper.
- Assess courses described or provided in documents or web addresses.
- Perform five essential functions: Contextual, Ideational, Interactive, Social, Reflexive.
- Use a Likert-scale questionnaire and open-ended feedback embedded in Moodle.
- Provide detailed feedback and offer suggestions for improvement.
- Analyze feedback to identify trends, strengths, and areas for improvement.
- Ensure feedback is anonymous and voluntary.
- Report findings clearly and concisely.
- Facilitate interactions between learners, instructors, and resources.
- Explicitly communicate institutional/disciplinary conventions and assessment criteria.
- Incorporate reflection and formal assessment mechanisms.

Copilot then created an AI agent to carry out the specifications: its name was "Course Design Evaluator agent". All the authors had to do to evaluate instances of course design was to insert the name of the online course and its web address into the interface provided (see Figure 3.)

Figure 3.
Interface for inserting instructions into the Course Design Evaluator agent
(Reddy & Pratt, 2025, p. 401.

Two online courses available to the public were used for course design evaluation, chosen at random: the MIT course, *Introduction to Computational Thinking and Data Science* and the *AI Fluency Project on GitHub*. Our objective was not to evaluate the course designs in terms of value judgements, but to see whether the agent created by Copilot could perform an analytical evaluation, using cognitive empathy, based on the criteria given in the model of course design. The evaluation was to be carried out in terms of whether the verbal descriptions of the online courses showed evidence of the course carrying out the 'essential functions' necessary for learning to take place, as shown in the systemic model of course design. The model of course design was the way in which human creativity, experience and ethic of care was included in this instance of human/AI collaboration. In other words, the evaluation was not based on cognitive empathy only, but also included the experience,

as well as emotional and compassionate empathy of the authors, when we designed the course evaluation rubric so as to ensure students and educators would benefit from quality instruction. It must be emphasised, when delegating tasks to AI, that it does not have the capacity to care about students: this needs to be factored into the application design by educators.

3.3. Online Course Evaluation Using a Built-In Moodle Module

For this project, a Moodle survey was used, with AI agents added for participant interactions, was used. As is the case with including simple AI agents in standard LMS tools, this application took much more time and designer input than that used for the course design evaluator. A prototype has been constructed and is at the time of writing being tested out by the authors on a working Moodle course, *English for Research Purposes*, which has been run for some time (including on DUT Moodle), but currently has no higher degree student or lecturer participants. The course evaluation feedback module survey, as it would appear to students at the completion of a course, is shown in Figure 4, and an example of the analysis of the results is shown in Figure 5.

Figure 4.
Link to course evaluation feedback (Pratt & Reddy, 2025, p. 236).

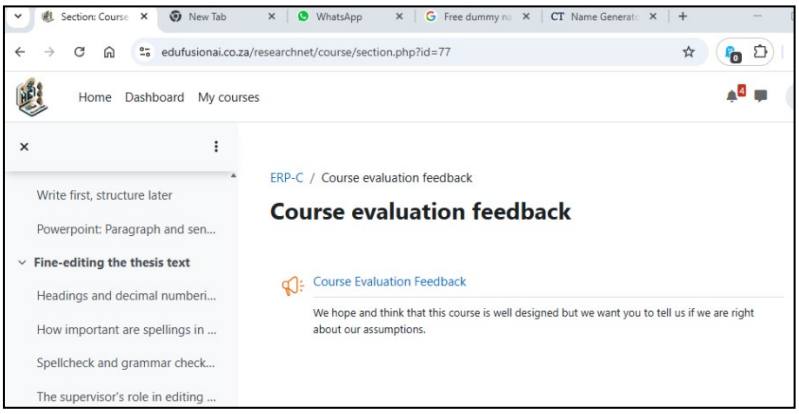
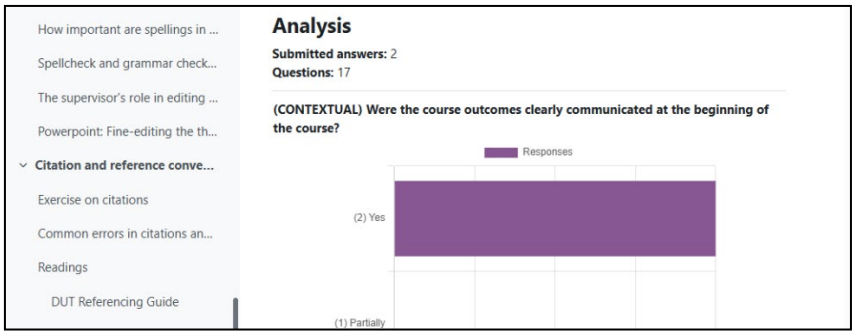


Figure 5.
Analysis results of the contextual section (Pratt & Reddy, 2025, p. 236).



4. RESULTS

The results indicate that using the **s**ystemic model of course design facilitated the briefing of both AI applications to fit their educational purpose, that is, evaluating both course design as well as showing how the course was actually experienced by participants. It also assisted the AI applications to do what they are best fitted to do, that is, speedy mass computations, relieving educators of the drudgery involved in widescale assessment.

4.1. Use of the Systemic Model of Course Design

The model has a venerable history, commencing in 1987 and continuing to present day, and is in fact informed by a generalizable interactive principle, which, however, is the topic for another paper. Because it is framed in clear terms, without jargon, the model can easily be understood by educators, who would have specific mechanisms and surface manifestations in their own discipline-specific higher degree courses. It is anticipated that use of the applications described here will stimulate discussion and suggest any necessary modifications, depending on the nature of the courses involved. It must be emphasized that having the model already formulated materially facilitated briefing of both AI agent and agentic AI in terms of allowing us to focus on the mechanisms involved without having to go back and re-think the theory in the middle of the process.

4.2. Use of Agentic AI and AI agents

The online course evaluator agent configured by the authors and created by Copilot removed the drudgery of poring through course design texts, and was able to identify and deliver a clear exposition of both exemplary features and shortcomings in course design. In particular, the time taken for a fully comprehensive evaluation, including recommendations for improvements, was 30 – 45 seconds, a compelling motivation for using agentic AI for educational purposes. This provides an exemplar of using AI for a function at which it is best, textual analysis, providing a clear picture of the meaning content of documents, displaying "cognitive empathy" (Carew, 2025, p. 4).

The course evaluation survey, with AI agents included, took much longer to set up and test out, and is still very much 'work in progress'. So far, peer feedback related to the following aspects, apart from occasional glitches and checking that the feedback survey was user friendly:

- Orthographic corrections, such as spelling, punctuation and style.
- Operational issues, such as giving the participants the option of seeing all the questions in advance; options to go back and change answers during or after doing the survey; removing answer numbers; better grouping of quantitative (yes/no) and qualitative questions.
- Participant-focused issues, such as using test students' names fitting the university demographics; giving students deadlines (e.g. end dates); reassurances of confidentiality and anonymity; giving students the option to view their own results after analysis.

In spite of shortcomings, we can confirm that Copilot, as agentic AI, assisted in evaluating course design, according to the rubric provided, and that testing out of the Moodle survey tool, with included AI agents, did show its potential for mass ongoing experiential feedback from participants engaged in online learning. Both applications performed what we proposed in our previous paper (Reddy & Pratt, 2024). The overall benefits of using these are mass auto-performance and speedy analysis and retrieval of results. The key issue is that humans are performing the abductive task of applying experience and judgment as to what

teaching and learning involve, while agentic AI and AI agents are assisting with the mechanical aspects of applying the resulting rubrics rapidly and efficiently. It is suggested that the success of these projects lay in thinking through, in advance, which AI attributes could best be combined with human attributes to achieve the desired outcome, and in what manner humans and AI could best collaborate.

However, while we believe that both projects provide exemplars of effective human/digital collaboration, until the applications are used in real life educational settings, it is not possible to evaluate their general effectiveness and usefulness. One future development which has occurred to us is allowing options for academics to customize the applications for specific academic courses. This could in fact be done without changing the general specifications of the course design module, and in fact training sessions could be held for using Copilot. Changing the Moodle survey would, we concede, would be time consuming and staff would probably be unwilling to take this on. Another option, perhaps more daunting for academic staff, would be, with user knowledge and consent, to elicit specific problems with course design (e.g., deficits in design skills) and course delivery (e.g., deficits in teaching skills) and to present these to academic staff, confidentially, in ways which would motivate them to develop more advanced competences in course design and pedagogy. Even more daunting (to Management, we think) would be an option for potential higher degree students to use the course design evaluator for an oversight of the design features of a course before actually registering.

5. CONCLUSION

Every day, as this chapter was being written and is now being read, new predictions and AI inventions populate the press, and it is not our function to double guess what will actually happen in the future, but to share what we believe are some basic fundamentals about teaching and learning, which, we predict, will be at the core of university curricula no matter how much the mechanisms and surface elements may change. What this chapter explored, tentatively, is the nature of AI and how it can best be used to collaborate with human educators and course designers. The following are some of the conclusions arrived at in the course of the authors' engagement in human/digital collaboration.

It is important to understand which educational processes can best be handled by AI tools and are best left to humans. However, there is such a wide range of disciplines in higher degree institutions that one cannot generalize which subjects lend themselves to processing by AI tools or in what manner: this range will also be increasing exponentially with the evolution of AI in society. While academic staff and technicians clearly need to be prepared for effective use of AI tools, it must not be assumed that universities should now include courses on AI tools for students, rather that the various disciplines should adopt ways of familiarizing students with working with AI tools in ways which enhance disciplinary work. As Dr. Hannelie Adendoff asks: "Should we be preparing students for specific tasks AI can do – or should we be focusing on what humans do best such as critical thinking, creativity and ethical judgment?" (Stellenbosch Corporate Communications and Marketing, 2025). A systemic, that is, conceptual, approach should be the focus in developing theory, not systematic, which implies that mass processing has value over intelligent thinking, a case of 'more is less'. The qualities of AI tools, in particular, mass rapid processing of data, should not be allowed to dictate the nature of academic subject content and pedagogy. Finally, control of pedagogical processes cannot be abdicated by educators and relegated to AI agents or agentic AI. As we said at the outset, it is important to ensure that AI tools are used to serve the key human social purposes of education, rather than education being reshaped to fit technological innovations, which is a soul-less protean outcome not to be wished for.

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