The Footsteps on the Sands of AI for Higher Education: Moving Beyond Ad-Hoc

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Abstract

Artificial Intelligence (AI) offers an array of challenges and opportunities for higher education (HE). What once seemed like science fiction has become ubiquitous with AI now used to support the intellectual and creative work of faculty and students. The authors have been experimenting with AI, trialling and testing ways to meaningfully utilise the tools for teaching and learning. The University of Southern Queensland, a successful distance education regional university in Australia, has over 70% of its enrollment learning online. This paper shares a timely contextual perspective on AI support of Academic Efficiency, Learning Design, and Assessment. It discusses moving beyond an ad-hoc approach to a seamless integration of AI.

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1. Introduction

Artificial Intelligence (AI) is taking higher education by storm in both disruptive and positive ways. On one hand the ubiquitous nature of AI is effortlessly supporting intellectual and creative work of faculty and students. On the other hand, it is an ethical menace, imposing bias, with a lack of diversity. Wang et al. (2024) identifies four technological affordances: accessibility, personalization, automation, and interactivity; and five challenges: academic integrity risk, response errors and bias, over-dependence risk, the widening digital divide, and privacy and security and these neatly define areas of research and focus. However, AI is not merely a new set of technologies or associated pedagogies. Through a more complex system supported by technologies it integrates pedagogical, social and cultural dimensions (Xu & Ouyang, 2021).

This discussion paper shares the University of Southern Queensland (UniSQ) perspective on AI and its impact in our context, a regional university in Australia known for success with distant and online learning in the past 30 years. Working with teams within the university has proven insightful in relation to how AI can support Academic Efficiency, Learning Design, and Assessment. We share the shifting focus from 'adhoc' to seamless integration via establishing a framework and activities inclusive of all stakeholders.

2. Literature Review

Artificial Intelligence (AI) has become big business with the AI market worth $140b in 2022 and expected to grow to over $200b by 2025 with the exponential growth of AI tools supporting increased productivity (Ganesan & Mosier, 2024). Business and education do not always work well together and as such the uptake of technologies, like AI, is often out of step with the uptake in the wider community (Kong & Yang, 2024).

AI has been discussed since the 1950s and it is widely accepted that the term was first coined at the Dartmouth Conference in 1956. The fundamental premise at that time was that the computer could replicate the skills that a human had when solving mathematical theorems (Cordeschi, 2007). By the

1960s there was progress made in natural language processing, computer vision, and expert systems. All of this supported the development to what we are now able to access via our home computer systems due to an increase in processing speed and hardware capabilities. One definition of AI is "computing systems that are able to engage in human-like processes such as learning, adapting, synthesizing, self-correction and use of data for complex processing tasks" (Popenici & Kerr, 2017, p.2).

While generative AI (GenAI) has been around since the 1960s it wasn't until ChatGPT was launched into the wider community and the ease with which it could be manipulated that AI became knowingly ubiquitous and people outside of the scientific community started to take note. This was particularly acute in certain industries, including education. Unfortunately, one of the main reasons that education became interested in AI en masse was the revelation that AI could generate answers to assessment tasks without being detected by universities. Generative AI supported these processes as the combination of the large language models (LLM) and the development of an interface that allowed natural language prompts to 'converse' with the AI tools came into being. In November 2022 ChatGPT was released, providing a chat-based interface to the GPT3.5 LLM. By doing so, the world of GenAI was opened to millions of users and the floodgates opened to a mass response to what this will mean to education.

Using AI in education has been referred to as AIEd. Hwang et al. (2020) defines AIEd as the use of AI (Artificial Intelligence) technologies or application programs in educational settings to facilitate teaching, learning, or decision-making. Crompton and Burke (2023) evaluated AIEd research literature to reveal an emphasis on student learning and AI. They stated, "Of the 138 articles, the a priori coding shows that 72% of the studies focused on Students, followed by a focus on Instructors at 17%, and Managers at 11%" (Crompton & Burke, 2023, p. 12). The study revealed that faculty affiliated with schools of education are taking an increasing role in researching the use of AIEd in HE. As this body of knowledge grows, faculty in Schools of Education should share their research regarding the pedagogical affordances of AI so that this knowledge can be applied across disciplines. Investigating how AI is used in HE, Crompton and Burke (2023) found five

key areas: (1) Assessment/Evaluation, (2) Predicting, (3) AI Assistant, (4) Intelligent Tutoring System (ITS), and (5) Managing Student Learning.

The 2020 Horizon Report for Teaching and Learning (Brown et al., 2020) presented Artificial Intelligence as one of the six emerging technologies and practices. At that time, they cited the use of AI as starting to emerge in Learning Management Systems (LMS's), student services and other productivity applications. A small number of projects were starting to use chatbots to support students' learning. However, in the 2023 Horizon Report (Pelletier et al., 2023) AI becomes much more prominent, reflecting the impact of the emergence of Generative AI applications into mainstream consciousness as of November 2022 with the introduction of ChatGPT3.5. The 2023 Horizon Report discusses AI-enabled applications for predictive, personal learning as well as generative AI as two distinctive areas worthy of their own exploration. The 2024 edition of the Horizon Report (Pelletier et al., 2024) continues to flag AI as an important part of the technological landscape of higher education. What is now being focussed on is finding the right uses and being "cautiously optimistic, [while] staying aware of risks and pitfalls" (p. 22). The report does highlight the significance of AI by placing it as an honorary trend that has an impact in all six trends - social, technological, economics, environmental and political.

AI literacy has been flagged as fundamental to the effective and ethical use of AI in education (Ng et al., 2024). A multifaceted approach is required to cover the needs of being AI literate, including comprehending the ethical implications, critically evaluating AI technologies, integrating the tools into teaching and learning, and having an overall understanding and appreciation for what AI can do for us and with us. AI literacy development should be focused on equipping faculty and students with the knowledge and skills to leverage AI ethically and responsibly (Chen & Lin, 2023; Otero et al., 2023). Despite the importance of AI literacy for all citizens Figaredo and Stoyanovich (2023) found that most of the literacy education work to date was being done in K-12.

Southworth et al. (2023) discuss the importance of AI literacy and how the inclusion of it in higher education has been within the discipline areas of

computing and engineering. They rightly claim that AI literacy needs to infiltrate across disciplines so that students can interact with the AI-infused world. They also claim a distinction between AI literacy and AI pedagogy, noting that pedagogy includes the methods and strategies for teaching about AI which may include students having opportunities to learn experientially. While "AI literacy is the ability to understand, use, evaluate, and ethically navigate AI" (p. 5). Southworth et al. (2023) describe a project that they undertook across the whole university to design and embed an AI pedagogy to support AI literacy called AI Across the Curriculum.

There is no doubt that AI is impacting on learning and teaching in higher education and has been doing so prior to the proliferation of AI apps and Generative AI tools. Popenici and Kerr (2017) flagged the need for a response from Higher Ed to fully integrate AI in a meaningful way. Designing and implementing an AI framework for education is one way forward to shift the current practice from ad-hoc to planned and implemented with intention and meaning. Chiu et al. (2023) claim to have designed the first pre-tertiary AI curriculum - AI4Future. The framework was co-created with the teachers and the evaluation revealed that the teachers felt empowered and enabled to implement AI in their classrooms. Another example of developing an AI curriculum for K-12 comes out of Macquarie University in NSW, Australia, one in which a collaboration with IBM resulted in the IBM Artificial Intelligence (AI) Curriculum.

While most higher education institutions are rapidly developing professional development approaches to support and drive capabilities in the use of AI with faculty, there is limited evidence of specific frameworks for AI in higher education. The literature to date appears to demonstrate that the development of frameworks for improving AI literacy is limited to curriculums or courses as distinct from a framework that might include an overarching approach that includes several teaching and learning opportunities relevant for higher education. Kong and Yang (2024) illustrate this point as they discuss progress in the K-12 context citing a "lag in integration is especially evident when compared with its rapid adoption in fields, such as healthcare, business operations, and software engineering" (p. 1588). They do recognise the work being done by organisations such as the United Nations Educational,

Scientific and Cultural Organization (UNESCO) and the Australian government but see these as foundational guides rather than practical applications.

One well-established framework for the integration of technology in education is TPCK (technological, pedagogical, content, knowledge). Interestingly, Mishra et al. (2023), have revisited TPCK in the context of AI generating a discussion focussed on what teachers need to know to effectively integrate these tools in their teaching. They analyse the knowledge domains that are most affected by GenAI and highlight its unique properties, such as being generative and social. Ultimately, they conclude that educators will only understand the technology by understanding its strengths and weaknesses and the broader systemic and cultural contexts in which it operates.

If we take Alan Turing's imitation game (now known as the Turing Test) as one of the ways that we recognise Artificial Intelligence as successful; that the machine can exhibit intelligent behaviour. Then we might apply this test to our interactions with GenAI. If we feel that the interactions are that of a human, then the AI tool has passed the test. However, this alignment between machine and human is one that has raised uncomfortable questions about human worth and the role of machines. Previously left to the domain of philosophy, ethics and philosophical debates have appeared in the mainstream consciousness. However, we are still in the very early stages of adopting ethical guidelines as Hagendorff (2020, p. 100) observes “efforts to create a truly binding legal framework are continuously discouraged” thus resulting in guidelines that are not adhered to. Hagendorff (2020) analysed and compared 22 guidelines in a project supported by Deutsche Forschungsgemeinschaft (DFG, German Research Foundation). The European Union has been a major player in attempting to implement AI ethics with the world's first AI Act coming into place in March 2024. From the 22 guidelines, they identified a range of issues, many of which did not occur in multiple guidelines. The top 6 were 1) privacy protection, 2) fairness, non-discrimination, justice, 3) accountability, 4) transparency, openness, 5) safety, cybersecurity, 6) common good, sustainability, wellbeing. Similarly, Morley et al. (2021) discuss the difficulties faced when

trying to operationalise ethics guidelines and pro-ethical design. In large part due to the abstract nature of the ethical considerations. One way forward they suggest is "AI ethics researchers, in collaboration with journalists and public engagement specialists, should focus on making AI ethics relatable—both to AI practitioners and to the public" (p. 418).

As AI becomes a central focus for higher education worldwide and the hype around AI being the death of learning dies down, faculty are seeking better ways to understand how AI can be utilised in their work lives. In this paper we will discuss ways that we in the Learning and Teaching Futures portfolio are working with faculty to unpack, explore and innovate with AI. We have identified three key areas - 1) Academic Efficiency, 2) Learning Design and 3) Assessment.

3. Academic Efficiency

Academic efficiencies relate to how AI can help reduce the time taken to undertake course design, teaching preparation, teaching, feedback and assessment. What equates to time efficiency is the increase in capacity of what the faculty can achieve. Shorter time frames on mundane tasks allow the faculty to dig deeper into content and/or pedagogy. The imperative is to be moving from discussion about ethics, problems, and possibilities towards clearer planning, piloting, and evaluating of AI tools. We are beginning to see this with faculty using AI to support their processes of research, writing and content development (Barros et al., 2023; Chubb et al., 2021). Barros et al. (2023) illustrate this with examples of ways that AI is becoming integral to academics work in the areas of teaching, research and service. They suggest that AI should enhance, not diminish, human aspects of education, research, and service with a critical, human-centric approach being essential. As such AI has the capacity to do some of the drudgery work, leaving more time for faculty to engage in the work that inspires them and their students.

Access to GenAI is a game changer, requiring very little orientation to produce effective responses. Al-Mughairi and Bhaskar (2024) found timesaving as one of the top four themes motivating teachers to adopt ChatGPT for their educational purpose. One of the main tools that UniSQ has

invested in is Copilot. Chosen by many higher education institutions who are already utilising Microsoft products, Copilot provides a seemingly 'safe' environment, one in which the user logs in via their institution's credentials. Examples of output include question generation, lesson plan templates and rubric generation. Once the user starts to interact with Copilot, they find that they can learn how best to ask questions. This skill translates to how one might be asking questions or giving instructions to colleagues and students.

To take the usefulness of the GenAI to a level beyond simply doing tasks the user needs to develop skills in what is called 'prompt engineering' (or prompt design). The art of designing, writing, and fine-tuning prompts supports enhanced conversations and more efficient output from AI tools. Prompt engineering and design strategies are becoming a crucial competency to augment teaching and learning (Eager & Brunton, 2023). If the faculty learns how to design prompts that can be reused through a process of simple substitution of key parts of the prompt, they further increase efficiency. As with all technology there is an initial learning curve that can feel time-consuming. However, one of the future payoffs is in the time saved.

Asking any AI tool to undertake the drudgery tasks of faculty may be similar to hiring a research assistant. However, do the same ethical approaches apply when asking AI to do a literature search as they might with a person? In creating the final product, such as a manuscript, to what extent should the use of an AI tool be credited? Stokel-Walker (2023, para. 4) suggests that an AI does not "fulfil the criteria for a study author, because they cannot take responsibility for the content and integrity of scientific papers". Currently "Generative AI tools are nonlegal entities and are incapable of accepting responsibility and accountability for the content within the manuscript" (Tang et al., 2024, p. 315) but will laws be made to counter this situation? One in which some entity will be seen somewhere as a legal entity behind the AI tool?

Consider that we have been using spell and grammar check tools for at least twenty years. These use AI to suggest alternatives to what we have written; however, do we credit MS Word or Grammarly when we submit a manuscript? Equally, how many faculty acknowledge the input of a research

assistant or critical friend who may have read their work and made suggestions? The issue has become authorship and the attribution of AI-generated content. Many faculty are wondering this as they are imposing similar rules upon their students to stop them 'cheating'. How much of the work can be done by AI before it is no longer a representation of our own work and why is this important?

At UniSQ one of our researchers has developed a GenAI literacy framework for research - Principles of ETHICAL Generative AI use (Eacersall, 2024).

- E - Examine existing policy/guidelines
- T - Think about the social impacts
- H - Have knowledge of the technology
- I - Indicate use
- C - Critically engage with and revise outputs
- A - Access secure and protected versions
- L - Look at user agreements

Furthermore, the library skills team has produced information about Academic Integrity and the current policy on the use of AI (Hargreaves et al., 2024). The Digital Experience Manager states:

> "Copyright of content generated by AI is complex. It is a rapidly evolving space with many legal uncertainties. Some people argue that there is no copyright since the output was not produced by a human, whereas others acknowledge that generative AI is illegally using copyright material for training itself, which might make anything it produces a breach of copyright. There will be no clear answer until this is resolved via the courts. (Nikki Andersen in Hargreaves et al., 2024)

The focus of AI use under the banner or Academic Integrity has been prominent in Higher Education. However, the important work of learning design and thus AI integration across the student experience is paramount to achieving sustainable success in this area.

4. Learning Design

Studies have shown that AI can enhance learning experiences by providing personalised, including automated feedback, and targeted content delivery (Chu et al., 2022). To integrate AI and achieve these successes good learning design must be undertaken. Learning design requires a complex mix of skills that may come from utilising a team of designers or may reside within the scope of one faculty member or designer. Whatever the strategy, learning design in a digital AI world involves a mix of knowing what to build and knowing how to build it using the tools available and a knowledge of learners' needs and good digital pedagogy/andragogy/heutagogy.

One of the many affordances that AI tools are providing faculty and learning designers is an increase in the ease in which learning objects can be created. Research has shown that learning needs to be active and in a digital context, this is even more important. However, including interactive multimedia in learning environments often requires a high level of skills in building these objects. What has become clear with the widespread development of AI tools is that many of these tools are focused on supporting the user to create with greater ease and speed than they previously were able to do. While this may seem to be a fantastic development for those working in learning design this raises ethical considerations in relation to whether the learning designer may become redundant as the ‘less skilled’ faculty become more able to create objects for their courses.

An example of use at UniSQ is the exploration of the AI tool Nolej.ai. Nolej uses AI to generate engaging, interactive content from existing materials such as textbooks, articles, videos, audio and other online media resources. It does this by scanning the material and creating a range of interactive artefacts including multiple choice quizzes, interactive video, flipcards, summaries and transcripts that can be exported as Scorm or H5P files and uploaded to the LMS. The tool generates H5Ps which previously would take faculty a considerable amount of time to make once they have learnt how to make them or alternatively, the faculty would require an experienced learning designer to make them for them in consultation, another time-consuming activity. What we have found when faculty make H5Ps using Nolej is that the faculty

is actively making judgments and refinements to their own learning design and practice of teaching as they decide what they tell the AI (the prompts) and how they evaluate what is received in return from the AI.

Another example is the use of Synthesia.io. Using Synthesia has facilitated the development of videos that look highly professional and do not require the faculty to be the 'face' of the course or module. The user can choose from a range of avatars and different audio voices to personalise the product. The ease in which videos can be regenerated when the content changes or if the content is not presented well in the first draft means that a considerable amount of time and money is saved. The user can input text-based scripts for the AI avatar to speak to and in the process the user can draft and redraft the product while critically analysing whether the avatar (that is not them) has presented the ideas in a cohesive and engaging manner. At UniSQ Synthesia is used for explanation videos, concepts, 'how-to', and course introductions. Using a text translation tool a script in a different language can transform communication quickly and simply.

Future uses of AI in the learning design of the courses at UniSQ are likely to include tools like Cogniti.ai. This tool has been designed by educators at the University of Sydney and built by educators to empower educators build custom chatbot agents. The design allows the faculty to embed GenAI into the learning management system (LMS) to act as a smart tutor. The intent is that the faculty can set a Cogniti agent to respond to specific course-based content or questions in a manner similar to if the student had contacted the faculty and asked them directly. Thus, removing a considerable amount of workload spent answering and responding to student questions. It is entirely possible for universities to utilise and manipulate the architecture of GenAI (such as ChatGPT) to fuel their own bespoke AI tools and we believe we will see this emerging more in the future. However, we are at a point in time where many universities are unclear of the use cases or lack the funding required to develop these resources.

Learning design is influenced by the relationship between the teacher and the learner and with the inclusion of technology the learner and the technology. Laurillard (2002) suggested a conversational framework between teacher,

learner, technology and content. The inclusion of AI in the learning design starts to change the relationship between these parts. The student can be more autonomous and the resources be personalised. Thus, the power of the students to control their learning journey is heightened and the teacher has a role in which they are mediating an environment for this to flourish. Xu and Ouyang (2022, p. 15) apply this to STEM education and AI, stating that "When AI is applied in STEM education, the role of instructor is expected to shift from a leader to a collaborator or a facilitator under the AI-empowered, learner-as-leader paradigm". It is inevitable that as students use AI more often to access content, practice will continue to shift from 'lecturing' to 'facilitating' learning as a teacher. This shift must include developing efficiencies in workflow around low-order thinking in order to focus on higher-order thinking in the physical and virtual classroom, such as critical thinking and learning how to learn (Barros et al., 2023).

5. Learner-Centric Assessment

AI systems support reduced teacher workload by automating assessment, detecting plagiarism, administration and feedback. Although found to be the most common use of AI in HEd (Crompton & Burke, 2023), assessment and evaluation are both a challenge and an opportunity. Most common is automatic assessment use including activities that support academic efficiency such as grading and scoring. Tan (2023) suggests that automatic essay scoring (AES) is comparable to that of humans. Feedback is another use, both individualised and formative, with AI used especially for formative assessment such as creation/generation of quizzes, multiple choice questions and short answer questions, although the caveat is to always check and confirm accuracy and context given by the AI tool. Automatic feedback is generally reliable and supports teachers in developing an effective and innovative learning environment however Tan (2023) cautions not to let AI dominate student engagement or replace the role of the teacher.

Despite potential advantages, assessment in the emerging scenario of freely available AI tools has engendered 'fear factor' responses within HEd academic integrity and ethics. Acknowledging the reality of integrity issues,

the reality is far more exciting - the opportunity to reimagine what we are assessing and how we are assessing, and essentially why we assess students at all. Apart from the discipline specific accreditation requirements linked to job-ready competency, e.g., nursing, it is possible that much assessment be rethought in terms of the opportunity to leverage AI as a support tool, not as a way to cheat the system. At UniSQ we have observed diverse approaches to AI and assessment to date. Some schools and disciplines that had banned AI for use in any forms of assessment are now starting to realise this approach will not work - as we have known for 40+ years of technology integration in education. Others, but not many, are preferring exam-based assessment (although as an institution we do not offer on-campus exams anymore), sometimes using ProctorU to monitor student online working. While others are starting to integrate some form of AI into assessment, whether it be generating questions for essays, or teaching students how to better prompt engineer using a GenAI tool.

When considering the use of AI for or with assessment one issue may be the lack of understanding about the implications of using AI by both staff and students. Another may be the lack of clear policies and/or student-facing guidelines for each assessment task detailing appropriate use of AI. In the latter, the academic is initially responsible; however, if the institution does not have accessible student guidelines then clarity may not be possible. This leads to the fear that original student work is not presented, which, according to Luo (2024) encourages us to consider "... what it means by originality in a time when knowledge production becomes increasingly distributed, collaborative and mediated by technology" (p. 1).

One solution is to ensure assessments are redesigned to be learner-centric and avoid substitution of material that could easily be created by AI. UniSQ is undergoing a full review of all assessments with the intention of reducing the overall number for a program and reimagining what is expected of students in the evolving AI world. Simplicity is the key here, and one influence is the common-sense approach of Lye and Lim (2024) who propose that assessment using GenAI be rethought and redesigned according to the principle of Against, Avoid, and Adopt (AAA). 'Against' refers to when no GenAI is to be used and applies to assessment design demonstrating individual human

knowledge, e.g., development of clinical skills in nursing for accreditation purposes. 'Avoid' is when AI is less relevant and may not be an advantage where assessment is designed for contextualised and personal responses focusing on the human experience, e.g., live presentations, performances, portfolios (to an extent). 'Adopt' refers to AI integration where assessments are designed to require and encourage appropriate AI use, e.g., students share the process of using GenAI for brainstorming and idea generation such as prompts used and discussions. This fit-for-purpose approach acknowledges the limitations of AI detection tools such as TurnitIn, rationalises design approaches devoid of terms such as 'banning' and focuses on the affordances of AI tools (Wang et al., 2024).

Another solution to approaching assessment is to find appropriate edtech tools that specifically target learning in an AI world. One of these currently piloted at UniSQ is Cadmus.io. Cadmus, a platform integrated into the Learning Management System (LMS), provides real-time academic integrity assurance analytics, which detect students at risk of academic misconduct at both a whole cohort and individual student level. If used correctly this leads to academic intervention prior to submission. Provision is made within the system to provide students with clear guidelines around the use of Cadmus for the assessment before work can start. Cadmus provides barriers to misconduct, scaffolding for educator design and guidance for students as they work through an assessment. Misconduct at varying levels is detected when the tool is not used as advised. For example, if different IP addresses are used during a time-sensitive assessment response. More than trying to avoid lapses in academic integrity, Cadmus provides an integrated platform for students to 'learn how to learn' as a process requiring editing, reorganisation and numerous drafts.

GenAI and Assessment

Another current example at UniSQ involves a research project where assessment is integrated with ChatGPT for first year nursing students. Leading up to this many students used AI language models for assessment and received no marks as a penalty. In a positive effort to rethink assessment approaches Dr Stratton-Maher (2024) is actively including ChatGPT into the

essay assessment. Her design is to start by teaching students about ChatGPT and utilises interactive learning to practise the skills emphasising purposeful and practical as well as responsible and respectful use of the tool. Aligned with TEQSA guiding principles of authentic learning and seamless integration one goal is to create a scenario where AI is part of everyday working life in the future. The process Stratton-Maher is using includes teaching students how to use ChatGPT (using the AI video tool, Synthesia), encouraging utilisation of ChatGPT as a study companion to ask questions of, facilitating ideas for the writing process and to generate ideas to enrich personal writing. Students are warned not to submit GenAI responses as their own work but instead to provide an evaluation of the process and a copy of the Chat as an appendix with their assessment. Initial results from the research when marking assessments include a decrease in academic integrity incidences, and improved writing quality.

6. Moving Beyond Ad-Hoc: A Framework for Seamless AI Integration

It could be said the adhoc mode in which higher education has approached AI for learning and teaching has resulted in temporary or improvised methods to deal with issues and a lack of collaborative planning for embracing possibilities. Similar to the 1990's when the Internet surged into existence for education, business, and domestic use, our observations have shown the rise of AI in higher education engendering typical fear factors and technophobic reactions. According to Eager and Brunton (2023) engagement with AI typically follows the process of initial awareness to curiosity, to experimentation, implementation and evaluation. However, as with any educational technology resistance to new tools, pedagogies and ways to shift practice can occur at any stage of that process.

Another digital transformation phase is in progress right now, and the speed with which AI is growing and impacting learning and teaching suggests we should be marshalling our goals, strategies and ideas into organised, systematic solutions. UniSQ has not been immune to the confusion or delayed

realisation that this is going to change ways of working. Directives from the Tertiary Education Quality and Standards Agency (TEQSA), the regulating body for higher education in Australia, detail what institutions should be offering to the Federal government in terms of individual approaches to AI. Whether this is the right way to approach this is not the point of this paper, what is important is we know from experience that digital transformation does not take place without consultation, communication and collaboration. Working in adhoc silos or being overly negative about a future with AI does not advantage an institution in the growing competitive climate. Moving forward we must understand that every day AI is offered as a new way to support the intellectual and creative work of faculty and students, with 13,000+ AI apps already available to us. Implemented and managed appropriately it is a positive influence literally forcing a new way of working on all stakeholders.

Moving to Seamless Integration

At UniSQ mixed, including reactionary, responses are becoming consolidated into more systematic whole-institution planning that goes beyond the initial adhoc approach. Our view is that the area in most need of digital transformation is teachers and teaching. Adoption of AI is influencing a change across the university such that more flexibility, inclusivity, and affordance of diversity is taking place to accommodate an AI embedded culture of learning and teaching. In order to achieve seamless integration of AI into learning, teaching and research we explored existing frameworks for inspiration. Ivanov (2023) discusses an operations framework for HEd addressing AI through the lens of operations management including all stakeholders and focuses on the application and impact of AI in all areas. Carvalho et al. (2022) stated, "... to cope with dynamisms and complexities of AI developments, we need to adopt humanistic participatory design approaches, whilst drawing on future-oriented methods and frameworks that support complex educational design conversations, and in so doing, we may contribute to empowering educators and learners to co-create the best possible future" (p. 8).

The AI Pedagogy Project

As a strategic response and to provide systematic support to move beyond the adhoc, the Learning and Teaching Futures Portfolio, the central unit supporting and advising on innovation and digital transformation at UniSQ, is implementing the AI Pedagogy Project. This university-wide, multimodal project seeks to leverage AI to reimagine traditional approaches to education, improve student outcomes, and foster innovation in teaching and assessment methods. Currently five key activities exist under the AI Pedagogy Project umbrella: the Artificial Intelligence for Learning and Teaching Collective (AILTC), learning design and assessment, academic development, AI tools, and research into the impact of AI. Each of these activities is described in Table 1 below.

How the AIPP functions is informed by new learning paradigms that have emerged through access to socially based technologies and networked facilitated online communities. The power of the AIPP is through participants connecting, communicating, collaborating and creating or co-constructing new knowledge. Theoretical models informed by the Community of Inquiry (CoI) theoretical framework (Garrison, 2017); Community of Practice (CoP) (Wenger-Trayner, 2015); social constructivism involving social interaction as the theoretical basis of collaboration (Laurillard, 2009); and putting pedagogical emphasis on the role of collaboration (Harasim, 2017) for authentic communication, reflection and discourse (Garrison, 2015).

Table 1: The AI Pedagogy Project

Website - https://create.usq.edu.au/edtech/ailtc/ai-pedagogy-project/

Activity	Description and Participation	Meeting schedule	Goals and outcomes	Resources
AI for L&T Collective (AILTC)	University-wide, academic and professional stakeholders. Works as a CoP for generating	Symposiums feature updates, research and progress with AI in all areas with external	The Collective aims to foster collaboration and potentially catalysing new projects or research endeavours.	AILTC website https://create.usq.edu.au/edtech/ailtc/ Each Symposium is documented via

	positive awareness and excitement around AI for education, professional activity and research.	and internal speakers. 3-4 sessions per year of 1.5 hours length	One goal is to break down silos and encourage visibility and transparency in AI explorations and implementations	an online platform (Smore). November 2023 https://secure.smore.com/n/ufda2-ai-for-l-t-symposium April 2024 https://secure.smore.com/n/wszknj-ai-for-l-t-symposium
Learning Design and Assessment	A focus on the integration of AI into the design and delivery of courses using appropriate tools and pedagogies. Encouragement for cross-discipline and other collaborations in a goal-setting environment.	Monthly chaired meetings of 1 hour. Discussions, sharing updates, table breakouts. Asynchronous discussions continue in the internal AIPP MS Team.	Participants are asked to set individual or group goals and seek support to achieve them. These goals are being tracked and will contribute to typical academic requirements such as promotion.	Goal setting Padlet https://universityofsouthernq.padlet.org/LTF/ai-pedagogy-project-sharing-goals-8khbcqmrjna704vd
Academic Development	A variety of flexible and agile approaches to raising awareness, upskilling, and building capacity for academic and teaching purposes.	Regular optional drop-in sessions. Regular seminars focusing on AI topics.	Mandatory online modules for staff to introduce AI. Additional online resources to support just-in-time learning.	AILT Padlet https://universityofsouthernq.padlet.org/techdemcop/artificial-intelligence-for-learning-and-teaching-fx04bkzzke0vxbk1

AI Tools	Exploration, development, piloting, evaluating and implementation of AI tools. Off the shelf apps and bespoke creations are encouraged.	Integrated into other synchronous sessions above. Cemented through asynchronous use of Teams to share.	One goal is to find suitable AI tools applicable to the UniSQ context. Another is to pilot selected tools more widely for possible whole university adoption.	Tools website https://create.usq.edu.au/edtech/ailtc/ailtc-potential-tools/ Teams channel
Research into the impact of AI	A multi-pronged approach encouraging academics and teachers to take a scholarly approach and integrate AI use (tools, pedagogies etc) into their research. Also to develop case studies around experimental or pilot applications.	Integrated into other synchronous sessions above. Cemented through asynchronous use of Teams to share.	Research is a goal in itself, however personal and group goals should align with learning and assessment approaches as well as case study documentation.	Teams channel

7. Conclusion

Adoption of AI is influencing a change across the university such that more flexibility, inclusivity, and affordance of diversity is taking place to accommodate an AI embedded culture of learning and teaching. In these early days we continue to approach AI as a new subject and something about which we can create new 'learning modules' to upskill staff and students. Coupled with the need for guidelines for use, penalties for misuse, confusion about benefits of use, student and staff uncertainty, lack of policy clarity, and unclear delineation of responsibility within the university, UniSQ has

typically struggled to get a grip on the new AI frontier. There is an apparent lack of systematic, institution-wide approach that is needed to effectively adopt and integrate AI.

While many institutions are experimenting with AI this appears to be in an ad-hoc manner, without a clear framework or strategy for integrating AI across different aspects of online learning. There is a lack of systematic, institution-wide approaches. We have presented some of the ways that we have started to implement AI across the university using a systematic, institution-wide approach. More importantly, we have an evolving framework, the AI Pedagogy Project, to support the ongoing sustainable process of integration to improve Academic Efficiency, Learning Design, and Assessment.

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9. Short biography

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