Fiction writing workshops to explore staff perceptions of artificial intelligence (AI) in higher education

Neil Dixon[1] · Andrew Cox[2]

Abstract

This study explores perceptions of artificial intelligence (AI) in the higher education workplace through innovative use of fiction writing workshops. Twenty-three participants took part in three workshops, imagining the application of AI assistants and chatbots to their roles. Key themes were identified, including perceived benefits and challenges of AI implementation, interface design implications, and factors influencing task delegation to AI. Participants envisioned AI primarily as a tool to enhance task efficiency rather than fundamentally transform job roles. This research contributes insights into the desires and concerns of educational users regarding AI adoption, highlighting potential barriers such as value alignment.

Keywords Artificial intelligence (AI) · AI task delegation · Fiction writing · Staff roles

1 Introduction

There are more and more forms of artificial intelligence (AI) that respond interactively to humans as AI assistants. Voice-based AI digital assistants, like Google Home, Amazon Alexa, and Apple's Siri, are used in the domestic setting to gain answers to everyday questions. Our socialization with technologies like Siri has been found to have implicit consequences for our beliefs about where and how to ask for support (Yeung et al. 2023). More recently, generative AI tools (e.g. ChatGPT, Google Gemini, Claude) have come to be used to support processes, such as writing text and code. Although these AI assistants are task-based (narrow) AI and only work in certain use cases, they have the potential to help in the workplace too. Over time, performance of task-based AI is likely to improve, and it is expected that AI-based digital assistants will become a key element in the future of work (Maedche et al. 2019). As more work environments include AI assistants, studies are needed to consider the needs of workers collaborating with AI (Khaokaew et al 2022). However, there is the challenge of researching an evolving technology that does not yet exist (Carroll 2000). We need innovative ways of preparing people socially and emotionally for human–AI collaboration and the future changes this will bring to work (Långstedt 2021). Job roles and work environments could be transformed if AI completes routine tasks on our behalf, or if we could interact with an AI tool to assist with more complex tasks. We need to think about educating the work force in such a way to develop their own judgements about the best use of the new tools available (Hinrichsen and Coombs 2013), and to actively participate in workplace changes.

One challenge is that people already have preconceived notions of AI from both media representations and popular culture, such as generalized utopian or dystopian visions of AI's capabilities (Pilling et al. 2021). Narratives from those with a vested interest in technology, such as investors or technology providers, also play an important role in the expectations of the technology (Chubb et al. 2022). These narratives are repeatedly reported and contribute to peoples' perceptions of AI. The result is that many people have not developed realistic interpretations of the actual, functional capabilities of new AI systems that apply to their context (Sandberg et al. 2019). For example, Kirov and Malamin (2022) found that language translators had difficulty in understanding how AI learns from previous experience to improve translation performance. One reason may be partly

✉ Neil Dixon
  neil.dixon@aru.ac.uk

  Andrew Cox
  a.m.cox@sheffield.ac.uk

[1] Anglia Learning and Teaching, Anglia Ruskin University, East Rd, Cambridge CB1 1PT, UK

[2] Information School, University of Sheffield, The Wave, 2 Whitham Road, Sheffield S10 2AH, UK

because of the opacity of AI design. Another reason is that trust becomes an important factor in being receptive to both the use of technology and being confident in the decisions of AI (Lubars and Tan 2019). Trust is the foundation for how a user chooses to interact with technology, determined by beliefs about reliability or certainty of the outcome.

Trust can be defined as where a person is willing to devolve actions to another person or entity even if they will not have the awareness of whether the action is carried out appropriately (Hengstler et al. 2016). In this way, trust is about depending on another, whether this is workplace collaboration, or ceding to authority or expertise. Trust has both emotional and cognitive dimensions (Glikson and Woolley 2020). In the context of relationships with technology, trust can be influenced by human-likeness, which is the attribution of human characteristics or behavior to non-human entities (Kim et al. 2022; Modliński 2022). The more human-like a technology or AI system is perceived to be, the more likely we are to trust it, up to a certain point. Another element of trust in AI is its perceived technical ability to do perform a task correctly (Klein et al., 2024). Perceived technical ability is influenced by a person's mental model of the AI, which relates to their knowledge, prior conceptions and beliefs about it (Steyvers and Kumar, 2024). The more accurate a person's mental model of the AI's capabilities, the more likely they are to use the AI effectively and therefore place appropriate levels of trust in its decisions (Steyvers and Kumar, 2024).

Given the need to engender trust, there is a requirement for ways to explore and develop user understanding of AI, such as AI assistance in situations such as the workplace. This study aims to advance knowledge of people's preferences for AI assistance using the method of fictional narrative writing. Writing fictional narratives is one way in which to surface individuals' thoughts and feelings about the potential impact of emerging technologies. One criticism of previous experimental studies is that they are removed from the real world and involve abstract surveys, low stake decisional games, or image classification exercises. Participants are recruited with no vested interest in outcomes of the decisions made by the AI. Therefore, there is no emotional attachment to the consequences. Moreover, these experiments do not account for situations where the AI is implicit, and the user has no knowledge of the AI (Glikson and Woolley 2020). Writing fiction prompts stronger imaginative engagement and a close analysis of the stories can reveal much about participant assumptions (Wilson and Ross 2023). This study, where participants undertake fictional narrative writing or brainstorming work also aims to prepare them for how AI may impact their role in the future by helping them to imagine scenarios. Scenarios are a useful method that are extrapolated to real-life situations (Klein et al. 2024). Using fiction to imagine our response, we are

enabled to speculate and reflect on our own roles, values, and attitudes in relation to these future issues (McGregor 2012). This can help us, through a process of reflection, think about our own perception of agency or attitudes in relation to technology.

Given the growing interest in applying AI to education (AIEd), these issues are particularly relevant to the educational context. While technologies are widely used in education, the human-centered ethos of learning might be seen as a barrier to adoption of AI tools especially in roles such as teaching or support. Informed by Lubars and Tan's (2019) notion of task delegation, this paper focuses on how university educators would use a future, fictional AI digital assistant in their work. The article starts with a literature review on AI digital assistance, followed by a fuller explanation of our method, then a content analysis of the fictional narratives of University educators.

Our research questions were: RQ1) How do professional and academic staff in HE wish to use AI Assistance in an educational context? RQ2) What was seen as determining whether a task could be given to AI? RQ3) What did professional and academic staff see as the benefits and challenges for AI? RQ4) What were professional and academic staff preferences for the design of AI assistance?

2 Literature review

Personal productivity can be defined as the amount of meaningful work completed, with human accomplishment usually being associated with higher quality of work rather than increased quantity (Sowa et al. 2021). An AI assistant which subtracts meaningful work tasks could make a job less rewarding (Sowa et al. 2021). A new technology introduced in the workplace would change the job role and the change may result in an alteration of the skills needed or may impact cognitive functioning, such as a worker finding it harder to remember how to do a task. A worker may see a task as less important or of lower status if it is done by the technology. Alternatively, the requirements of the role may change completely; for example, more creativity or more social skills may be required (Långstedt 2021). Equally AI could be used to reduce the interest of a job or even be used to micromanage it (GPAI, 2020).

2.1 Chatbots and AI assistants

There are some indications of how AI could assist in work. In the educational context, Wollny et al. (2021) see an AI assistant as functioning in the roles of supporting, assisting, and mentoring. Supporting includes how the AI converses with the user to help them with subject knowledge. Assisting is when the AI retrieves information, such as calendar

information or directional information. Mentoring is where the AI encourages the user to reflect, assess or plan.

This paper deals with workplace AI assistants, which could encompass many forms of AI, such as voice assistants, including Siri, or chatbots. We frame these as AI assistants, technologies that assist in accomplishing work tasks and are akin to a human collaborator. Gkinko and Elbanna (2023) suggest that they tend to be distinguished by offering inter-activity, their ability to learn, their social presence, and the potential for personalization. We see this as a class of AI, to be differentiated from other forms of AIEd such as intel-ligent tutoring systems or AI used in back-end administra-tive processes. We do not define the scope of AI assistants precisely because the point of the project was to facilitate a process in which participants themselves defined them.

Voice assistants have become familiar from consumer offerings, such as Siri and Google home. Some attempts have been made to introduce them in workplaces and in education. Gkinko and Elbanna (2023) indicate that they can earn trust in workplaces, but Hornung and Smolnik (2022) report a wide range of negative emotions towards AI assistants in this context. Studies of their use in learning are limited. Their value in language learning is suggested by the small-scale research that has been done (Dizon 2017, 2020).

A chatbot, also sometimes referred to as a conversational agent, has been defined as "a computer program designed to simulate human conversation and (that) is able to create the illusion of intelligent conversation" using text, voice or both (Dekker et al. 2020: 2). Simple chatbots have been in existence since the 1960s. Text-based chatbots are increas-ingly used in commercial settings, e.g. to guide purchases on ecommerce web sites. A wide range of uses of chatbots in learning have been proposed throughout the student journey (Tsivitanidou and Ioannou 2020; Wellnhammer et al. 2020). Among the simplest would be to answer administrative que-ries at the university, departmental or course level. Another use, which could be combined with answering administra-tive queries, would be to collect data from students, such as about their prior learning, individual learning needs, or disabilities. There is some evidence that in certain contexts, students might be more comfortable sharing confidential details about themselves such as about disability with a chatbot rather than a human (Iniesto et al. 2021). A use of chatbots more directly in learning would be for them to teach topics through dialogue, perhaps adapting to the learners' past progress or preferred way of learning. Chatbots might be employed to support individual learners, but they could also support group work, such as by prompting interac-tion, though encouraging constructive interaction is obvi-ously challenging (Tegos and Demetriadis 2017). Chatbots could have a role in creating engagement more generally, e.g. welcoming students, helping them through the transi-tion to their course, and perhaps prompting metacognitive

processes, such as reflection. A different type of learning role is implied where chatbots act more as a companion or to offer emotional support during the learning process. The degree to which humans can develop strong relationships with chatbots is rather surprising (Skjuve et al. 2021). Some see a role for chatbots in supporting student well-being for this reason (Dekker et al. 2020).

2.2 Chatbot and AI assistant design in the workplace

It is generally accepted that educational workplaces are gov-erned by a unique set of humanistic values, such as emphasis on a commitment to truth and to learning, to sharing knowl-edge and to freedom of thought and expression (McNay 2007). The precise character of these values differs by disci-pline (Becher and Trowler 2001). The strength of these val-ues has been increasingly undercut by managerialism with its emphasis on customer discourses, quality assurance, and performance measurement (Jarvis 2014). Nevertheless, the importance of the humanistic values of education is likely to influence perceptions of the role of AI.

Some research has been done into future preferences for the design of AI assistants, though not in educational con-texts. Sowa et al. (2021) investigated managers' AI assistant preferences. The study found that managers wanted the AI to be submissive and their co-workers to be proactive though there were differences between participants on the preferred interfaces (e.g. mobile phone, voice, computer) and person-ality. Some preferred more automatic responses, some pre-ferred a more human-like assistant that had emotions. In terms of tasks to be delegated, managers wanted low-level and administrative tasks to be delegated. In an ethnographic study, Sandberg et al, (2019) found that people have a set of core work that is central to their job and professional identity, which are the meaningful and the rewarded tasks. This would be a highly relevant consideration in the context of education where people identify strongly with their roles. People have a preference toward automating routine work which is peripheral to their role. However, the accuracy of some of these tasks is still important, so the result needs to be verified by a human. The theme through both these studies is the importance of customization preferences for AI assistance, rather than the AI being imposed on the work-force without consultation.

2.3 AI delegation factors

A framework to decide whether AI could be used for spe-cific tasks in the workplace has been created by Lubars and Tan (2019). This model is called the framework of AI task delegation and incorporates the factors of trust, motivation, difficulty and risk.

- *Motivation* is the strong, enduring willingness to perform a task. Motivation is considered both an emotional and cognitive concept and can be influenced by internal and external factors. For example, motivation to perform a task could come from alignment with individual goals, or the expected value of completing the task.
- *Difficulty* is the physical or mental expenditure required to complete the task, which could include time or effort needed, or perceived complexity. Therefore, the interpretation of difficulty depends on ability (skill level or knowledge) and perceived laboriousness of the task.
- *Risk* is the possibility of harm, loss or consequence if the task is performed incorrectly. Risk can be further characterized by three factors:
- *Accountability* is who will share the blame, or responsibility for the undesired outcomes.
- *Scope of impact* is the degree of negative impact, when there may be a significant risk to the person, or other people.
- *Uncertainty* is where an unstable environment may lead to an more uncertain outcome
- *Trust* is the interpretation of whether the task will be achieved in the given environment, and acts as the interface for the decision-making process between the individual and delegating a task to AI. Trust can be further distinguished in three areas:
- *Interpretability* is the extent that the actions of the AI can be inspected and verified.
- *Machine ability* is the perceived level of reliability of the AI to perform the task with minimal level of intervention.
- *Value alignment* is that the AI acts within the interests of the individual task delegator.

Trust is a key factor in determining whether tasks are delegated to AI in a responsible manner. Motivation, risk, and difficulty are also important factors that influence task delegation decisions. In general, people are more likely to delegate tasks to AI when they trust the AI, have low motivation to perform the task themselves, believe the task is easy for the AI to perform, and perceive the risk of a negative outcome to be low.

These factors approach working with AI from a task-based, human–computer interaction point of view, but do not consider psychological perception or factors in human motivation. Kim et al. (2021) found that people preferred an AI assistant to have a functional use (i.e. be task-based) as opposed to having a social use (acting as a friend or companion). On the other hand, people act with more positive attitudes towards AI assistants with social usability features. If the AI acts in a friendly manner for example, they relate to AI as if it was a human using the same rules of social convention (Kim et al. 2022). This can be explained by anthropomorphism, where human-like characteristics

(autonomy, dependability and intelligence) are ascribed to an AI, increasing attachment (Kim et al. 2022). Attachment, and the forming of a bond and connection would increase the potential motivation to use the AI assistant for a task.

Our attitudes towards AI can be bi-dimensional. This means people may have conflicting thoughts about what constitutes the implication of doing a task with an AI, that are both positive and negative at the same time (Dang and Liu 2021). A common example of these conflicting thoughts is that people may think that AI will take their job, while it could also save them from mundane work.

Human thoughts about technology's impact are informed by the knowledge of AI's capabilities. Kirov and Malamin (2022) for example, found that people could not distinguish between narrow AI and general AI. Narrow AI is the performance of a specific task, whereas general AI is a human-like intelligence that can be applied to multiple situations. Kirov and Malamin's (2022) study found that people could also not see how AI could reflect and improve from experience. In this way, language translators were fully accepting technology which assisted them in their tasks and showed no concern for advancing technology in this area. Feher et al. (2024) also found that AI practitioners in the field of media and communications had some concerns where the outcome for AI was uncertain (e.g. fake news), but overall, their outlook toward AI was positive (e.g. for removing language barriers). Respondents expressed an element of hope in AI technology, and that our societal values would remain stable (Feher et al. 2024). On the other hand, people without specific knowledge of a technology may think AI has a *mind* or mental capabilities. The more intelligent an AI is perceived to be, the more potential there is for a negative attitude (Dang and Liu 2021). Such negative attitudes can influence motivation to use and accept AI technology. Thus, we know much about the kind of factors that might influence AI use in workplaces, but little about such attitudes specifically in an educational context.

2.4 Use of fiction-based research techniques

There is increasing interest in writing fiction as part of research in such fields as sociology (Watson 2022), education (Selwyn et al. 2020), and information systems, including AI development (Cox 2021). In this study, fiction is used to discover perceptions of AI in an educational context, while at the same time serving to educate people around the possibilities of AI in their own work. The study uses methods including writing and brainstorming to explore and expand perceptions. The benefit of fiction is that it can act as a relatable entry point into a subject (Jarvis 2019). Fiction is also a low-cost experimentation method that can be used to allow participants to express imagination before they even know what they want to do (Bleeker 2009). The aim is to generate

understanding rather than create finished products (Lindley 2015). Andrews (2015) defined the reasons for using fiction to think about technology and the future:

- a way to interrogate possibilities about the future—how could the world be different?

- look at the potential trajectories of society.

By asking participants to create fictionalized accounts, there are no preconceived notions of how to solve problems, and the participant needs to come up with a solution rather than finding out facts about the problem and using an approach that may have been used already (Fischer 2019). Encountering possibilities in a fictional context allows the audience to become familiar with ethical, value and societal perspectives on how technologies will be used in everyday life (Lupetti et al. 2018).

3 Materials and methods

Participants were asked to write a fictional scenario, following characteristics of the scenario-based design technique (Carroll 2000). A scenario-based design technique was selected as the most suitable method, due to its frequent application in user-centered product design (Carroll 2000). The scenario-based design method assumes that use cases, functionalities, look-a-likes, and interaction scenarios of the designed product are described by the user in a narrative way, thus providing a good level of understanding of the values the product brings to the user (Convertino et al. 2008). In a workshop setting, participants were prompted to write a narrative, which encompassed the characteristics of a scenario, which are a goal for the user, location and other actors (Rossen and Carroll 2009).

Ethics approval was granted to conduct three workshops (Application numbers: ETH2223-7494, ETH2122-0659 & ETH2223-2481*). Two workshops were focused on chatbots and the other was about a workplace AI assistant.

3.1 Participants

The study sample comprised 23 participants recruited via convenience sampling. There are varying opinions on the minimum sample size required for qualitative research (Braun and Clarke 2022). Due to the richness and diversity of the data collected from each participant, 23 participants were deemed sufficient to achieve the study's objectives and provide meaningful insights into the research questions.

The purpose of the fiction workshops was for participants to step outside their day-to-day role and take on imaginative roles. Anonymity was one way that trust, and rapport could be established, to ease participants into this role. To achieve this aim, the participant demographic data were not collected or associated with participant contributions. The consent form was completed at the start of the workshops, and the authors did not want the participants to feel that they were being studied as a basis for their gender, or job role or institution. A criticism of binary demographic questions that the selection does not always illustrate a participant's self-identified characteristics (Fernandez et al. 2016).

Rapport was established through the way researchers related to participants as part of the research process, thus co-constructing meaning from the workshop activities (Braun and Clarke 2022). For example, the chatbot design activity (workshop 2) included question prompts, collective feedback, and participants could add or modify their designs. Subsequently, the quotes and views given are less likely to be characterized by individual demographic characteristics. Nevertheless, the location of the workshops being based at UK universities must be taken into consideration, and these are addressed in the limitations.

3.2 Data collection

The first workshop was held online on 7 May 2022, lasted 90 minutes, and was conducted by the first author and two colleagues (see acknowledgements). The workshop was advertised via mailing lists, so the seven participants were from different universities in the UK. The workshop included two activities: first, participants had an individual Word document to write their scenario and this document contained all the questions needed to write their responses. The first author and colleagues led the participants through the questions to guide them through the writing process. The scenarios were completed individually. Participants set the location of the scenario and their goal, then were asked to design the AI assistant using a short questionnaire with closed-ended questions. Questions were included about the assistant's visual design, behavior, functionalities, and character. The goal of this questionnaire was to elicit the preferences for characteristics of the AI assistant. Following this, participants were asked to write their scenario narrative by imagining how the AI assistant would change their work. At two intervals in the workshop, participants were split into two groups and were given reflective questions to discuss. The discussions were recorded and online, downloaded and transcribed.

The second workshop was held on 7 July 2022 and led by the both authors. The workshop also lasted 90 min, and was conducted as part of an optional session at Playful Learning 2022 in Leicester, UK. Seven participants attended. The schedule was similar to the first workshop, but the specific application of the AI assistant was focused on educational chatbots, so the materials and questions were different. Participants wrote on A3 paper and were encouraged to both draw and write. The group discussions were not recorded, but participants did note the results of their discussions on an A4 sheet and notes were taken.

The third workshop was advertised to library and student services staff at a large, UK post-92 university and was attended by nine participants. The workshop was held on 10 November 2022 and was conducted in a hybrid format, again using the chatbot theme. Participants recorded their responses to the questions on an online board called Padlet for their fictional chatbot scenario and following discussion activity.

3.3 Data analysis

Fiction is used to explore participants' perceptions of AI, their assumptions, and the value judgements they make about potential uses. The workshop activities were varied and yielded multiple sources of data (e.g. an online bulletin discussion board, verbal discussions, drawing, writing). As such, thematic analysis is an appropriate method because it assumes that in language, people are constructing their understanding of a topic and has few constraints about data format or quantity, and is flexible in the type of analysis (Braun and Clarke 2022). This allowed for capturing both latent assumptions and beliefs about AI, such as about AI task determination (RQ2) or benefits and challenges (RQ3), and descriptive meaning, such as for design preferences (RQ4).

Following the process outlined by Braun and Clarke (2022), (researcher 1) immersed themselves in the data for the familiarization processes, then relevant passages or items in the dataset were labelled as codes using the NVivo qualitative analysis software. Following this, codes were grouped into initial themes, which is where similar codes collectively reveal meaning or patterns in the data (Braun and Clarke 2022). Throughout this process, (researcher 1) documented the meaning of the themes, referring to the research questions to ensure alignment.

Following Braun and Clarke (2021), a thematic analysis approach was used, where a structured coding framework is used. This approach was employed because of the researcher's knowledge of the topic and framework meant the themes could be standardized, plus, the structured nature of some workshop activities made it logical to pre-define some themes in the data. According to Braun and Clarke (2021), codebook thematic analysis can encompass themes which are developed initially, though themes may also be identified later in the process. First, a deductive process (coding structure pre-defined) was used to first identify two initial themes, *task delegation* and *design. Task delegation* had codes that corresponded to Lubar and Tan's task delegation framework, and *design,* included codes corresponding to the look, feel and interaction with the chatbots or AI assistant. Following this, an inductive process identified three other initial themes: *task allocation*, *how we work*, and *relationship*, which corresponded to RQ 1 and 2 respectively.

Further analysis removed duplicate themes, and removed irrelevant codes, creating clarity by making some themes into sub-themes, thus forming a vertical hierarchy. For example, the initial theme *relationship* was merged with another sub-theme and renamed *role*. This process of renaming and coding, and the hierarchy is illustrated by the development of the theme *task allocation. Delegation factors (*renamed from *task delegation)* became a sub-theme of *task allocation. Function or task,* and *role* were also sister sub-themes within *task allocation. Function or task* (as one theme example) was further divided into sub-themes of *student facing* and *staff facing.* Example codes in *staff facing* were *assisting* and *getting data.*

After further refinement and discussion with (researcher 2), the sub-themes of *role* and *function or task* were thought as overlapping, so were merged into one sub-theme called *role or function.* The top-level theme of how *we work* was relabeled to *benefits and challenges,* which included the codes *benefits to work, benefits to learners, challenges to work, and challenges to learners.*

While both the main researchers were white males, the contributing investigators included a female and someone from an ethnic minority. We sought to mitigate any potential impact of our own biases or assumptions by wide reading about AIEd, including about the ethical dimensions of AI. We saw our role as facilitators seeking to unlock participants' perceptions, rather than to influence them in any specific direction. We were not pursuing any specific design agenda.

4 Results

The results are presented below focusing on role or function (RQ1), delegation factors (RQ2) benefits and challenges (RQ3) and design (RQ4).

4.1 Role or function

This section addresses RQ1, which asks how academic and professional services staff imagine using AI assistance in the educational context. It reports on the specific tasks that participants would delegate to AI, and the role that AI could take in their work. The theme was divided into two categories: staff-facing and student-facing. Staff-facing tasks involved AI providing specific assistance to the participants in their own work. Student-facing tasks involved AI interacting with students on behalf of the participants.

4.1.1 Staff-facing

Overall participants imagined a wide range of uses of AI assistance, mostly about delegating relatively routine

tasks. They seemed to reflect realistic expectations about the capabilities of AI. Simple tasks related to work included S*chedule:*

I would ask [the AI assistant] to collate lists from other AI assistants of my colleagues and family to set up a scheduler of events

and *Report:*

Send me a report including the personality analysis results and the recommended pedagogical strategy for this student cohort

These were all tasks that existing AI assistants could do (at the time of the study), but imagined as being applied to the workplace. Furthermore, these are all administration tasks, which Sandberg et al. (2019) describe that staff would prefer to automate. Therefore, there was a high degree of trust placed in the delegation of these simple tasks to AI.

Educational workplace elements were illustrated by how AI could navigate information systems at the university, including the Virtual Learning Environment (VLE), communications systems and library systems on their behalf. Several participants highlighted that AI could *Gather, check or verify*, in areas, such as accessibility, checking broken links, and compliance with templates. This suggests compliance and quality are an important area of work where AI could help:

This often involves checking / validating existing VLE sites and content for quality and / or identifying areas of improvement.
Updating borrowing information on the LMS at certain points in terms of the borrowing rights of students/ staff need to be changed to extend or limit borrowing.

Within university systems, some participants hinted that the AI assistant could *Work independently,* without intervention from the participant. This included setting a task the AI could do autonomously and expecting the AI to perform the functions it set out to do.

I mostly expect the technology to be doing "its thing" within the digital learning environment

Participants also said the AI assistants could help with *Communications*, such as to send messages or emails on their behalf, distribute teaching materials, letting the participants know the details of a teaching session, or sending messages to collaborators. Participants suggested communication enhanced with AI would allow for personalization of the teaching experience, and to save time:

She would then go into my emails, messages, attendance lists, etc. to gather all of the people I have per-sonally interacted with over the previous academic year and summer.

Most participants stated that the *Communications* were one-way.

And to send a prompt to ask students if they'd prefer the information in another format (you were interested in this workshop, would you like more information online (it then sends it to them where we already have it online) OR would you like to come in for a 121",

and.

Distribute the learning resources according to the planned day by day.

Similarly*, Plan or Organize* was also a key area in educational work. Participants imagined engaging in conversation with their AI assistant to help them plan their work, during an ongoing interaction. These organizational tasks were more akin to getting help or support (Sandberg et al. 2019), rather than full delegation. It highlights that participants did not want to fully yield to the AI's suggestions in these situations:

So, I just ask questions. What do I need to do this week? Can you find me some papers? You know what? You know what? What have I got to do? Who should I be meeting?
I would suggest you read these three key papers on sustainability for small enterprises. This would take you about 2 hours

The use of pronouns e.g. he, or her showed the AI assistant was thought of as having a degree of human-likeness (Dang and Liu 2021) and played a specific *Role example*. Participants visualized the AI as a servant, butler or mentor, collaborating on tasks with staff.

Like a friendly butler, positive and helpful when needed, some different settings to make it serious or playful.

Although these roles were subservient rather than an equivalent colleague:

I was someone I feel like I have a bit of a relationship with, although she is, she's sort of my personal assistant.

4.1.2 Student-facing

Responses for student facing tasks again suggested a rather wide range of potential roles for AI. Some of these roles seemed to go beyond efficiency and support of routine processes, the AI assistant had human-like qualities and played human supportive roles. *Buddy* was an AI assistant proposed

as a welcoming virtual assistant to help new students navigate their way around the university:

> *To provide a welcoming buddy to ask any questions when student is feeling shy and bewildered on arrival Welcome and orientation, particular[ly] finding way around. [Useful for] new students and staff, visitors on open days.*

Similarly, *Support* was the nature of the help provided to students by AI, which included being caring, friendly and supportive. Participants said the AI served as a first point of contact was available 24 h a day and would be able to answer introductory questions. Both *Buddy* and *Support* indicate that the AI assistant would be beneficial in these scenarios because students may feel more inclined to interact with AI assistant rather than humans:

> *This could be something that could be used for introductory/basic help (partly because students are sometimes tentative about coming forward plus then releases time to enable staff to focus on more complex / in depth help*

Wellbeing was indicated as a key area of activity for student support where AI could assist:

> *To foster a sense of belonging, bring students together, suggest social activities available*
> *Enhances well-being, so may lessen cost in other areas due to contact issues in isolation being resolved*

This was also demonstrated in *Query or signpost, which* was AI nudging students toward relevant information or collecting information from the student. Participants specified that AI could collect disability information, signposting other relevant services depending on the student query or resources to increase confidence. Participants implied that AI assistants could improve services for the student, and save time in these areas:

> *Collect the information from students so that the SoRA (Statement of Reasonable Adjustments) can be built. This allows us (the university) to better support the student with every aspect of their student life*

In terms of educational uses, *Assignment* was the AI assistant helping students with summative or formative assessment, recognizing personalization and immediacy as advantages of AI:

> *Students upload their essay, and the A.I. does not only give them feedback on the argumentation structure, the grammar/spelling,*

Examples were also given on AI assisting with answering quiz questions and providing feedback on spelling and grammar. Similarly, one participant said that the AI could help

students with planning both an essay structure and finding learning resources to help.

> *Wanted to use an A.I. to give students personalized feedback on their essays or papers or basically any complex learning task that involves them having to answer some kind of open-ended question*

Likewise, *Tutor* was an AI aiding student with subject knowledge or prompting reflection to improve their work. Participants said AI may be giving specific knowledge about a certain model or theory, recommend material, or scaffold material to help the student build on their knowledge. These functions are all quite similar to what is available from existing chatbots (Wollny et al. 2021), or personal tutoring systems, signifying that participants involved had some knowledge of AI functionality and were aware of some of the advantages of AI (e.g. personalization):

> *Students can upload a fragment or text from their textbook or handouts; the A.I. automatically generates open-ended questions.*
> *Discusses the actual contents of the essay (which is the "futuristic" part of this challenge); prompting students to elaborate on certain things, making sure they included all the topics in their answer, guiding them toward an improved essay...*

4.2 Delegation factors

To address RQ2 about what academic and professional services staff thought would determine whether tasks could be delegated to AI, this section reports on how the participants' responses aligned with the task delegation model defined by Lubars and Tan (2019), which include motivation, difficulty, risk, and trust. Participant comments showed they were receptive to delegating tasks to AI, were aware of the technology's limitations, and identified situations where human checks or interventions would be needed. Overall, it seemed that issues around values were the most mentioned concerns around delegating a task to AI although there were also concerns around interpretability, difficulty, and performance.

4.2.1 Motivation

Motivation is preference or willingness for AI performing tasks because they may align with internal goals or result in value for task completion. Participants said that they would delegate administration tasks to AI, so they could focus on more in depth and help student meaningfully, and develop or teach high-quality subject-related content. This suggests participants were more motivated to do the high-level tasks themselves possibly because they were more stimulating or interesting:

Resolved by removing all the messy admin and possibility of no-shows at workshops so that I can focus on the content of the online and f2f workshops/preparations for 121s.

An obvious one but allows staff to concentrate on more complex queries. Cuts down response times for students potentially

Teaching staff can focus on providing new and updated high-quality content, they do not have to worry too much about the learning process of the students, which is guided by the A.I.

4.2.2 Difficulty

Difficulty refers to the amount of time, effort, or mental energy required to complete a task. This sub-theme encompasses comments about whether AI could provide adequate assistance with tasks, especially compared to the skills of a human educator. Participants identified tasks, such as recognizing creativity, unique forms of expression (e.g., writing style), and differences in intercultural communication as being difficult for AI. It was implied that there may be consequences if these kinds of tasks are delegated to AI:

Basically I am a little bit worried about one thing, which is the AI not being able to recognize creativity like when a student is very creative,
A.I. not being able to recognize creativity – punishing creative writing – not being able to interpret correct answers.

One participant said they would explain the limitations of AI to learners in advance and encourage them to recognize the limits of what AI can do. It was also acknowledged that AI would need to be trained to improve its performance on certain tasks. The comments indicate that participants recognized some limitations of AI, and tasks that required individual or subjective judgement should still be carried out by a human:

But I will explain the limitations of the AI in advance to the learners, so that they can be prepared for the potential mistakes with no offence.
We need to balance the limitation of the human capacity to multitask and the limitation of the AI for high context communication that involves intercultural challenges

4.2.3 Risk

Risk refers to the possibility of harm, loss or consequence if the task is performed by AI incorrectly, or results in an unsatisfactory outcome. Risk is split into three codes which are *Accountability, Scope of impact and Uncertainty*.

Accountability refers to who will share responsibility for any undesired outcomes from the AI's actions. Participants described a failsafe, such as:

Always make sure that a real teaching assistant can be contacted if anything goes wrong

This could potentially be due to the reputational risk of AI giving wrong information to people. For administration tasks, there was less need for human intervention:

Automated phrases such as that trigger an action in the AI. AI confirms the task & that it is being run. Then confirms when the task is completed

Additionally, participants suggested AI could serve as a reflective purpose, to make sure the systems are integrated successfully:

So a human expert needs to provide counselling support to me and my AI for regular diagnostic checks if the control level is balanced.

Scope of impact is the degree of negative impact. Several participants stated a potential impact could be that students may not build effective social skills if they chose to interact with AI rather than a human, and that AI is not a substitute for human contact.

Might lose contact and relationships with students… Could prevent shy students building confidence to engage with staff.

One participant said there was a risk students may be offended by and AI is inappropriate responses. Furthermore, a participant highlighted an AI performing a task incorrectly could mean the risk of needing to do extra work to make a correction, which may involve detailed work tracing the activities of the AI. The comments in *Scope of impact* imply that the negative impact would be moderate if the AI assistant was at fault, and there were concerns about the loss of human level skills such as empathy:

But AI has never seen an example of this before in the input or the training data. Then it might consider it a bad essay, and the student might feel very disappointed in the feedback or the grades he or she is getting.
Is if it kind of gets some kind of cultural jokes and things are really sensitive very human kind of thing. And I just wonder if we're relying on the bot to do it, it might kind of break some kind of something that is really offensive to other people because it is doing a raw translation and then also that other thing about are we really learning and listening to understand other voices for the people we are working with

Uncertainty, refers to an unstable environment, where participants mentioned the possibility the Internet or system

crashing could mean that AI would be unavailable and potentially to an uncertain outcome. The comments insinuate that participants are worried about reliance on digital technology:

Issues would be if the computer crashed mid task
I'm just really worried in case the Internet goes down

4.2.4 Trust

Trust is about whether a person believes they can let the AI carry out the task successfully on their behalf. Trust was further categorized into *interpretability*, *performance, and value alignment.*

Interpretability is about ensuring that the actions of AI can be examined and verified. Several comments were made about transparency of the data collected or used, the necessity for compliance with Data Protection regulations and who had access to the AI's interaction data. Participants also mentioned simple tasks, or tasks where the AI used minimal data were easier for them to interpret. Another participant said that complex tasks may require the AI system to have a discoverable audit trail of its decisions. Thus, participants perceived some issues around trusting AI on grounds of interpretability.

The problem comes now though, that the boss is saying, well, if it's done, this and it hasn't caught it, how do we know it's worked for the last couple of years? Can you go away and do a little spot check? You've got a week. Drop everything, get it done. And I go home. My life is chaos. I'm frazzled.
Decisions would be hidden but all would be part of a presubmitted script/task breakdown so discoverable.
We would need to access the data—so we could see where students got stuck and what people were asking—so we could improve the chatbot functionality

Performance is where the AI is trusted to complete the task separately from the human. Participants discussed issues about reliability, cross-compatibility, accuracy, and the possibility of mistakes which could all impede performance. One participant said that tasks could still be carried out manually if required, and that several participants would not wholly rely on AI due to the always-present possibility of mistakes. So again, there were perceived to be issues of performance affecting trust:

Generally, there should be no need for intervention but tasks could still be performed manually if needed. BUT would need to be reliable and good quality or would add to student stress.
AI assistant will act according to my requests but might make mistakes while he/she is still learning.

Value alignment is whether the AI's actions protect the interests or align with the values of the human delegator. Participants highlighted concerns around the privacy and the security of AI data and the ethics around the system's use. They also highlighted solutions such as storing interaction data locally to make it more secure or modifying data where possible to make it anonymous:

The bot will only record interaction history if students agree. No integration with student records or engagement data. Students have the option to be anonymous.

Furthermore, a number of participants mentioned the importance of obtaining consent from students before using their data:

Introduced as part of the module learning contract signed by students with clear information about the data it used…

They also commented that universities could use AI data to monitor students' personal behavior, and that staff who had access to this data could misuse it. Additionally, participants mentioned that AI could be provided by a third-party commercial entity that may have a stake in selling other products, whose values may not align with the University's own. The comments suggest that participants had already experienced similar ethical concerns with other technologies:

Who has access to the data? 3rd party, Google/Microsoft, but what does that data look like? Ethics. Do the staff students use? YES. Explain before they take part. Sign/consent to use.
Need to ensure that Chatbot doesn't have commercial sponsorship or funding leading to specific biases or channeling users to use specific 3rd party products (commercial e-book providers).

4.3 Benefits and challenges

Addressing RQ3, this section deals with how academic and professional services staff viewed the benefits and challenges of AI to their own work, and to students they support. This identified how staff felt about the AI in terms of the impact on the human level rather than issues with the AI itself. Overall, participants highlighted benefits and challenges to their own work, referring to this more than benefits or challenges for learners.

Benefits to staff work showed that one participant thought that AI could bring significant advantages:

It's completely revolutionized my, my learning or my management of my learning. Of course, you know you still have to read the actual papers and do the work

However, most participants described the benefits as mostly in terms of saving staff time, with minimal changes to how they worked. Some of the examples of imagined benefits included being able to spend more time on people-facing tasks, freeing some of the interaction with students up so other staff can help students more quickly, allowing more time for better-quality work or subject-based work, and allowing more personalized guidance by tutors:

A Welcome Buddy could save staff time attending Welcome Events which by their nature take place at busy times at the start of Trimester. Could be more accessible to students with disabilities than coming up to someone staffing a Stall or Table at F2F events. Can ask simple navigation questions as well.
Teaching staff can focus on providing new and updated high-quality content, they do not have to worry too much about the learning process of the students, which is guided by the A.I.

Challenges to staff work were relying on AI technology too much, and of growing dependence. It was also hinted there has been a level of dehumanization using technology:

The challenge is maybe I will rely on my AI assistant July too much. Ohh, because she will help me with this kind of thing. Then I stop learning by myself. I still need to learn people's culture.
Over the last two to three decades, administrative positions have been wiped out often in the name of technology can do this so that whereas someone in a certain position would have had help. That no longer exists. So, we are kind of, I think swallowing our own tails in many ways and not progressing just kind of going into this circular mode.

Reliance was also expressed as reliance on the company with the development of AI tools:

Support (technical) for software. Is anyone else using is? Will MS [Microsoft] withdraw tool or significantly modify.

Several participants highlighted an issue with having less control over the technology being implemented and thus becoming jaded with technological change, and participants also commenting that AI use could potentially be justified to cut staff costs or take away jobs. These are all typical fears around AI and new technology which suggests participants feel a lack of agency:

Danger/fear justified or not of using them to cut staff costs. Might start off with good intentions but when money needs saving may be seen as an alternative to staff.

Unfortunately, for the last couple of years, I've been using this new AI assistant that the university has hoisted upon us.

Benefits for learners cited by participants included that that learners may feel more supported, the learning environment could be more personalized, and that AI would be available at all hours when staff were not available:

Deeper prompts, help them write/compile, "Get you over the hump", Help, support, Writing back up, confidence, And so my learners will feel more comfortable, more inclusive in a diverse environment and also other participants can learn from this.

Another benefit identified was that students may feel more comfortable with technology and the AI would personalize the student experience. These benefits were indicated as bringing more opportunities for students to engage in their learning:

It's a 'faceless' person, so can be easier for a student to answer difficult questions more honestly
More interactive version of FAQs learning from what is being asked and learning to use student's language

4.4 Design

To address RQ4 on design preferences for AI, this section reports on the interaction and appearance, and the differences between staff and students. Overall, participants thought staff-facing AI should be designed with less human-likeness compared to student-facing AI.

The level of *Human-likeness* participants chose for the aesthetics, appearance, and voice of their AI assistant depended on the specific intended audience. Participants who created a student-focused AI (e.g. a chatbot) tended to have a playful or cartoon image, such as one that was more animal-like in nature (see Fig. 1). This is further

Fig. 1 Hello my name is fluff – no agenda, big smile, big eyes and colorful

emphasized by one participant stating that students should be able to choose the avatar and personality of their own chatbot (see Fig. 2). This was probably because student-facing roles imagined had a stronger social or emotional element though one participant drew a student-focused chatbot represented by a male image (Fig. 3):

Participants who as staff were using the AI themselves stated the opposite. *Human-likeness* expressed as was less human than the student-focused Chatbot, and participants preferred an abstract image, or non-human voice:

No image or maybe a robot mascot
No attempts at cutesy animal avatar or human-like, should be an abstract of some kind

Participants also ascribed *Personality* to the student-focused chatbots perhaps because they thought students were more likely to engage certain personality types if the situation was appropriate:

Nagging and annoying
Chatbot personality: Playful
Personality: Caring, listening, and empathic

For staff focus, one participant also said they were more willing to *Interact* with an AI assistant with a voice based on the gender of their choosing, and it seemed that participants were imagining purely functionary AI to support

Fig. 2 My name's face, students upload a custom face

Fig. 3 Hello my name is Archie V

their own work, so did not imagine it needing any human qualities.

I was determined that she have a female voice, that there's no way I'm going to take orders from a male voice.
I put down in mind that it was an inanimate voice.

5 Discussion

This study contributes to the growing literature on AI assistance by providing an exploration of perceptions and feelings of key stakeholders in how AI can be applied in an educational setting. The participants reported their potential design and use of AI assistance in their own fictional scenarios.

Overall, participants were relatively optimistic about using AI. Although challenges and risks were identified, participants imagined a wide range of useful applications of AI assistance. The range of types of roles is consistent with that suggested by Wollny et al. (2021) in terms of supporting, assisting, and mentoring. The roles were typically realistic and represent what is already known about workplace roles, rather than suggesting something new or markedly different from current practice. Imagined roles showed a preference for future uses such as support, or helping rather than replacing skilled work. Indeed, imagined use cases were about delegating relatively low-level activities, such as *scheduling, suggesting* or *verifying* information, and they were therefore not usually seen as transforming the nature of work. Implicitly, participants were imagining AI acting in a service role, rather than an equal or dominant one. Participant comments confirm the preferences for AI playing a function, or task-oriented role at work, rather than a social one. This was consistent with the idea of AI being represented through either customizable, or non-human aesthetics. However, the aesthetics preferred for students was more based on animals or cartoon-like, reflecting that AI might take on more social or emotional roles. Many of the student-oriented roles did seem to relate to emotional support and personalization. These findings have implications for design and the implementation of AI assistance and technology acceptance. The human-likeness of the AI assistance needs to align with user preferences.

An important factor in AI task delegation is trust, which participants in this study thought would be an issue in their own scenario. Also, task difficulty and motivation were less cited as a concern by participants than risk. Some participants suggested ways to account for trust, using proven methods for current systems, such as achieving consent. This indicates that participants' knowledge of AI was sufficient to speculate on whether specific tasks could be performed
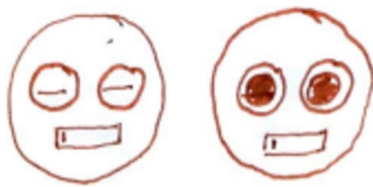
by the AI, or new ways that trust could be developed or achieved.

The main barriers to task delegation to AI were issues of value alignment rather than difficulty (that the AI could not perform the task). Values are like beliefs, but are longer lasting ways of behaving, and can even be shared across cultures (Schwartz 1992). For example, participants reflected a fear of loss of a person's ability to act independently. Similarly, concerns about privacy, security, student safety, and deception could be interpreted as reflecting values in education to protect student and staff interests. Like Långstedt (2021), it is important to consider how technology changes work roles, and therefore the human values offered in these new work environments. People may be more willing to adapt to new work practices and accept new technologies if the work is still aligned with their values.

For the effective implementation of AI in the educational workplace, user acceptance needs to be considered. In the context of rapidly evolving technology and the many public preconceptions about AI, there is a need for greater understanding of user preferences and expectations. This study used fiction-based techniques to investigate the views of a range of educational stakeholders about AI assistance. Views were moderate, and broadly positive, and a wide range of admittedly low-level tasks were identified as suitable for AI.

5.1 Conclusion and further research

This paper has contributed to the understanding how users in an educational context would like to use AI. A wide range of potential uses were identified albeit mostly ones to increase efficiency of staff tasks rather than to radically change roles. It is important for the design and the successful implementation of AI in education that staff preferences are understood better. A scaffolded process of writing scenarios proved an effective means to engage participants with the process of imagining AI.

It must be acknowledged that the study participants and data are highly contextualized to UK universities in the time 2021–22. Therefore, any reader must make their own conclusions about how they can transfer the context of the results from this study to their own situation or other contexts. However, the goal of the study was to explore how participants think AI may change the educational workplace, and the themes identified conform to what has been found in other studies in different contexts (Långstedt 2021; Sandberg et al. 2019; Kirov and Malamin 2022; (GPAI, 2020). Similarly, the study offered a useful way of expressing these changes through application of the AI task delegation framework, which previously has only used with quantitative methods (Lubars and Tan 2019; Cvetkovic and Bittner 2022).

A limitation of this study is that we chose not to collect participant demographic information, such as gender,

ethnicity, or job role. As a result, we are unable to determine whether these factors influenced the responses. For instance, preferences regarding AI design or delegation factors, such as trust, could be impacted if the participant sample lacked diversity. Research by Cave and Dihal (2020) suggests that cultural associations with race and AI may lead to significant differences, highlighting the potential importance of such factors. While exploring these aspects would be highly interesting, we determined it to be beyond the scope of this exploratory study. Future research will address this limitation by collecting relevant demographic information about participants before the workshop. Allowing participants to self-describe demographic categories using free text responses can ensure accuracy. This will allow us to understand how different identities might shape participants perceptions of AI.

Another limitation is that there is no measure of participants' current knowledge of AI before they took part, to see how this knowledge could contribute to results. At the time the data were collected (2021–22), the most commonly available equivalent tools available were voice assistants, such as Apple's Siri, and Amazon's Alexa, and website-based customer service chatbots. In this study, participants only had a theoretical understanding of the more sophisticated chatbot technology, so they may not have been able to fully equate the benefits of the technology with their trust in it. The popularity of the ChatGPT application raised the profile of the term AI and chatbot. Pew (2024) recently undertook a study in the United States and found that 60% people surveyed had heard of ChatGPT. If the workshops were repeated, a potentially increased knowledge about AI capabilities would probably change the views on task difficulty and trust for example. The nature of ChatGPT's functions in writing text may also have shifted opinions on the tasks most suited. But it is being offered from outside the institution, rather than a locally supported AI may have been critical to its reception. Even so, themes and topics represented in our study are human challenges (e.g. benefits and challenges, trust, motivation), and these challenges and concerns about issues such as reliance remain even though AI tools have increased in popularity. In fact, the idea of reliance has sparked a debate in higher education about the use of ChatGPT for assessment. This controversy around AI may have also influenced results, when perhaps our earlier study reflected a more positive, less hype-driven response.

As higher education utilize AI tools, further research could explore the practical challenges faced by institutions. Research has shown that chatbots are generally useful, and an acceptable technology. However, they are not widely prevalent. Up till now, the development time, cost and infrastructure, and system issues become a major barrier to adopting chatbots (Yan et al. 2023). Many studies are small-scale pilot studies with little impact on higher education at

large (Wollny et al., 2021), with the benefits of bespoke development being assurance of privacy and compliance with data protection laws.

Furthermore, research must be done to understand the cultural and societal implications of these technologies, as well as the practical issues. Universities take time to change and integrate new technology. A lack of acceptance of a technology may be related to deeply held values and concerns around platformization, for instance. Platformization is defined as the penetration of infrastructures, economic processes and governmental frameworks of digital platforms in different economic sectors and spheres of life, as well as the reorganization of cultural practices and imaginations around these platforms (Feher, Vicsek, and Deuze, 2024). For example, rather than value being created from the selling of goods and services (such as a university degree), it is about ownership of rights like data (Williamson and Komljenovic 2023). As more people use services like ChatGPT, the better the service gets, and with this data, the models are trained more comprehensively, which makes the service more compelling for the user. In sum, the fundamental value to technology companies is the data generated by the university staff and students interacting with their systems at scale. Deeply held values like privacy are generally perceived in relation to *personal* data, and the fear of this data being exposed. However, if the data collected are our numerous interactions with the systems, obfuscated by data generated by millions of other user interactions, does this generate the same level of concern or value for privacy? The extractive nature of the relation to users may rather become a worry. To understand these concerns, there is a need to collect narratives on the context of day-to-day work and how people relate to these technologies (Sandberg et al. 2019). This will help us understand what people value, how these values are changing over time, and how we can facilitate personal relationships with new technologies.

Declarations

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