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Debate: Public sector accounting education and artificial intelligence

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Since early 2020, college education has been forced to face significant challenges and to experiment with new ways of teaching. The Covid 19 pandemic literally moved education away from the classrooms to computer screens and increased the IT skills of both professors and students at all levels. Students have become savvy in using internet-available material to prepare their essays and assignments and, in order to avoid plagiarism detection, use applications for rephrasing and paraphrasing (for example QuillBot—<https://quillbot.com>) to fool the anti-plagiarism software used in the majority of universities (for example Turnitin—<https://www.turnitin.com/>).

Experimenting with ChatGPT

While the tools and the attitudes of both the academic community and students had been in equilibrium, the release of Artificial Intelligence (AI) applications such as ChatGPT (<https://chat.openai.com/chat>) has created a massive shock to university teaching. ChatGPT can provide comprehensive and convincing answers to complex questions and write essays in just a few seconds. This is a revolution that cannot be fully understood unless academics start to work with the tool and test its potential.

Experimenting with ChatGPT through queries (Lund & Wang, 2023) suggests that it can provide comprehensive and persuasive answers on such public sector accounting and financial management syllabus topics as:

- Questions about the provision of descriptions or basic summaries (for example ‘What are the basic characteristics of the IPSAS 17 standard?’).
- Questions about the provision of descriptions that include some discretion (for example ‘What are the basic parameters that you need to review in order to assess the financial sustainability of a public sector entity?’).
- Questions that relate to assessments (for example ‘Make an assessment of the financial condition and the financial performance of Greece in 2021’).
- Questions that relate to a point of view (for example ‘Is accounting related only to financial data or does it also cover nonfinancial information?’).
- Questions that relate to proposals and suggestions (for example ‘How could the SDGs become a useful part of public sector financial management systems?’).

Facing the challenges of AI

Fear and awe might be the first reaction to how AI might affect public sector accounting education. Not because

answers to these questions could not be set up by using internet-based information but due to the speed and the completeness of a report developed without the involvement of the user and delivered with confidence. Fear of lost jobs for academics, fear of students preparing essays that are entirely the product of AI, fear that AI might provide more comprehensive answers than experienced professors, and awe about the capabilities that seem well beyond imagination. However, the first reaction is not always the right one.

AI is here to stay and there is no going back. In the near future, virtual reality may also be part of the education process. The real question is:

How can academics prepare for the imminent changes, and adapt teaching material to the new university era, to prepare accounting students to exploit the full potential offered by AI?

Understanding the boundaries of AI is also important. AI is not a panacea. It does not create new knowledge; it synthesizes existing information and sometimes in a way that needs extra cautiousness. ChatGPT provides answers to what has been asked. Badly-formed questions will most likely end up with inadequate or incorrect answers. The system does not have the intelligence of a human to understand what is asked between the lines nor to know the purpose of the question. It responds to the exact questions asked (Rudolph et al., 2023). It is also prone to giving a different answer to the same question if asked again.

Warnings about taking ChatGPT for granted

It has to be made clear that ChatGPT cannot write an academic paper or perform a literature review as we know it. As it stands, when one asks for academic work related to a specific topic, ChatGPT, for now (the ChatGPT-4 released on 14 March 2023), will very convincingly provide full references of papers that do not exist! In a test we performed, it provided authors, title, journal, volume, page and DOIs of papers that were not real. So this article is an early warning for students and academics. Do not take what ChatGPT offers for granted! Teaching critical thinking and critical assessment, letting students learn how to take the best out of these tools while preserving creativity and the ability to think ‘out of the box’ is even more important today. There is already free software available that can detect whether an essay has AI or a human as creator (for example ZeroGPT—<https://www.zerogpt.com/>) and it seems to us to be accurate.

Of course, ChatGPT could be used as another source of inspiration in the brainstorming process of academic and

essay writing. It can provide some ideas, and set an (early) draft, based on which further developments could be made. So academics might become more demanding and challenging in terms of the work they ask their students to do. It is important that students consider AI as an additional, but not the only, source of input into their work as this could substitute human creativity and imagination. Perhaps AI should be regarded as another person in the team providing input into a project. Humans love diversity and variety, develop their own writing styles and they are characterized by uniqueness. ChatGPT can adapt to different writing styles but it still follows given patterns. If we all rely on ChatGPT we will end up providing the same answers but maybe with slight variations for given topics. It goes without saying that this would be catastrophic. In a test, we asked ChatGPT to simply 'describe gender budgeting', then we asked it to 'describe gender budgeting by using provocative statements', then to 'describe gender budgeting with neoliberalism language' and, finally, to 'describe gender budgeting with a way that is not supportive to it': in all cases it produced credible answers. AI should be the stepping stone for humans, professors and students included, to create and excel by freeing time and resources from dealing with tedious and straightforward topics, such as providing summaries of accounting standards, or identifying similarities and differences among topics.

Educating students on using AI in public sector accounting

Academics should now be educating students about the uses of AI in public sector accounting:

- What can AI do? For example, as explained above, provide an introduction to what gender budgeting is about, as well as the identified benefits and shortcomings.
- What can't AI do? For example provide a comprehensive literature review on gender budgeting by identifying the theoretical lens used in academic studies.
- What is the best way to use the software? For example as a quicker and more comprehensive way to browse the internet for information and not as an expert providing indisputable facts.
- How to ask the right questions? For example theory-based questions for which answers are readily available and not technical questions for which expert knowledge and

methodological calculations are needed, such as the specific journal entries for a case of a financial lease.

- How can AI help in the learning process? For example by providing guidelines on how to structure an essay and organize a presentation.

AI, for now, is a promising and clever junior assistant, albeit sometimes overconfident and with a tendency to make things up. We would not trust such an assistant to do our work for us, would we?

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