MAINTAINING THE INTEGRITY OF THE SOUTH AFRICAN UNIVERSITY: THE IMPACT OF CHATGPT ON PLAGIARISM AND SCHOLARLY WRITING

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ABSTRACT

Recent advancements in artificial intelligence (AI) have reignited discussions about the value of the university and its role in producing and facilitating knowledge. The invention of ChatGPT has led to differing responses in the academy, with some welcoming its abilities and others fearing that it may undermine what schools and universities do, calling it "apocalyptic" (Green 2022). These aspects impact the integrity of the academy and are therefore a fundamental contribution to the debate. The impact, as well as the perceived impact, of AI on teaching and learning in higher education has been consistently documented in popular media. Therefore, the aim of this article is to understand the impact of ChatGPT on plagiarism and scholarly writing. It contributes to the under-researched academic discourse of generative artificial intelligence and teaching and learning by garnering the views of three established professors in South Africa. The findings from this qualitative endeavour demonstrate that, for these professors, these kinds of technology are welcome, and students need to be taught how to engage with them rather than vilifying them. Much of the responsibility rests on the lecturers and the university to create a teaching and learning environment that allows for these technologies to enter the classroom, especially in the way we assess.

Keywords: ChatGPT, artificial intelligence, teaching and learning, higher education, plagiarism, scholarly writing, connectivism, generative AI

INTRODUCTION

Higher education institutions globally have undergone perpetual disruptions over the last ten years. Epistemic disruptions, such as #FeesMustFall (Motala, Sayed, and De Kock 2021), public health disruptions, such as COVID-19 (Sayed et al. 2021) and now the introduction of artificial intelligence, have compelled universities to question how and what they do, including how to remain relevant and resilient. The core function of the university has always been teaching and learning and to be the forerunner in the development of new knowledge production. As such, it is understandable that technology, such as ChatGPT, has ruffled feathers

in the academy due to its ability to generate, synthesize and assess information almost instantaneously. Despite the popularity of this technology "there has been very little academic literature published on ChatGPT and other generative AI tools" (Sullivan, Kelly, and McLaughlin 2023, 1). As such, more systematic and rigorous academic research is needed to understand the effects of such technologies on teaching and learning, not only at universities but at all educational institutions.

To address this gap, this article is based on the views of three professors working at universities in South Africa. It elicits their views on the impact of ChatGPT on plagiarism within higher education and their views on the impact of ChatGPT on scholarly writing. Whilst these two elements are distinct, they are closely tied to the integrity of the university. It is of critical importance to address this as the integrity of universities is being questioned in the context of "massification, privatization and globalization in higher education" (Denisova-Schmidt 2017, 1).

This article is divided into five parts. After the introduction, some background information about ChatGPT, its origins, function and ability are provided. This is followed by a brief review of the literature about the impact of ChatGPT on teaching and learning, citing current literature, including arguments dominating popular media. The article then outlines the methodology, including the research approach, research design, sample and ethical considerations. The final two parts present and discuss the findings and conclude the article.

BACKGROUND

ChatGPT is a language model application that allows users to extrapolate information in a human-like manner. GPT stands for "Generative Pre-Trained Transformer, which is the name given to a family of natural language models developed by open Artificial Intelligence (AI)" and is also known as a "form of generative AI because of its ability to produce original results" (Sabzalieva and Valentini 2023, 5). It was co-founded by the well-known South African, Elon Musk, through a research body called OpenAI Foundation (Lock 2022). It is "capable of providing descriptions, answers and solutions to complex questions including ways to write code". It is also helpful with "generating content for websites, answering customer inquiries, providing recommendations as well as creating automated chatbots" (Lock 2022, Para.11). Its ability to assess and generate information means that it "can play a range of roles in teaching and learning processes" and "could improve the process and experience of learning for students" (Sabzalieva and Valentini 2023, 8). Since its inception, around November 2022, it has already amassed over 100 million users, and its popularity has resulted in Google and Microsoft using it as an added feature in their interfaces (Sundar 2023).

ChatGPT AND ITS INFLUENCE ON TEACHING AND LEARNING

A study conducted by study.com, a prominent online educational resource hub, that sampled 203 teachers in the USA, found different responses to the value of incorporating ChatGPT in the classroom. The study found that 43 per cent of teachers thought it would make their jobs more difficult, 67 per cent of teachers thought that it should not be banned in the classroom, 26 per cent of teachers have found students cheating using ChatGPT and 72 per cent of teachers did not receive any guidance on how to use this technology for teaching and learning (Study.com 2023). Interestingly, the New York Department of Education has already banned the use of ChatGPT as teachers all over the state have raised concerns over the possibility of plagiarism (Biron 2023). Schools in other states, such as Alabama and California have also banned ChatGPT and it seems the trend is rapidly taking root (Study.com 2023). Whilst many of the teachers in Study.com's (2023) research were in favour of the technology, there is a growing cohort of teachers and lecturers who "fear the program threatens academic integrity, encouraging new methods of cheating and plagiarism because of the program's simplicity, accessibility, and convenience" (Blose 2023, Para. 3).

As with all teaching and learning tools, ChatGPT has both its advantages and disadvantages in the classroom. Figure 1 below provides the findings from Study.com's research that asked teachers about skills that ChatGPT may improve if used in the classroom.
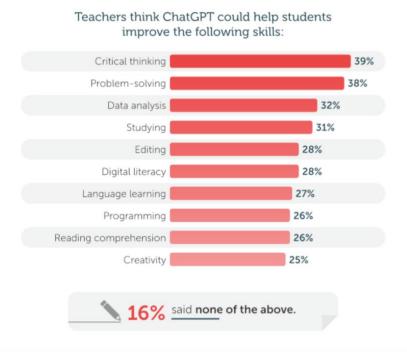

Teachers think ChatGPT could help students improve the following skills:

Skill	Percentage
Critical thinking	39%
Problem-solving	38%
Data analysis	32%
Studying	31%
Editing	28%
Digital literacy	28%
Language learning	27%
Programming	26%
Reading comprehension	26%
Creativity	25%

16% said **none of the above.**

Figure 1: Teacher views on skills that ChatGPT may improve if used in the classroom (Source: Study.com 2023)

Only 39 per cent of teachers thought that ChatGPT could help students improve their critical

thinking skills and 25 per cent of teachers felt that it would improve their creativity. Given this, most of the teachers in this study did not think it would substantially improve students' skills. Other research into the advantages of ChatGPT on teaching and learning include its ability to help students express themselves more succinctly, evaluate assignments, translate texts into students' home languages and interpret complex information (Sabzalieva and Valentini 2023). These researchers have also synthesized some of the more advanced functions of ChatGPT that may assist students at universities (see Figure 2).

Role[6]	Description	Example of implementation
Possibility engine	AI generates alternative ways of expressing an idea	Students write queries in ChatGPT and use the Regenerate response function to examine alternative responses.
Socratic opponent	AI acts as an opponent to develop and argument	Students enter prompts into ChatGPT following the structure of a conversation or debate. Teachers can ask students to use ChatGPT to prepare for discussions.
Collaboration coach	AI helps groups to research and solve problems together	Working in groups, students use ChatGPT to find out information to complete tasks and assignments.
Guide on the side	AI acts as a guide to navigate physical and conceptual spaces	Teachers use ChatGPT to generate content for classes/courses (e.g., discussion questions) and advice on how to support students in learning specific concepts.
Personal tutor	AI tutors each student and gives immediate feedback on progress	ChatGPT provides personalized feedback to students based on information provided by students or teachers (e.g., test scores).
Co-designer	AI assists throughout the design process	Teachers ask ChatGPT for ideas about designing or updating a curriculum (e.g., rubrics for assessment) and/or focus on specific goals (e.g., how to make the curriculum more accessible).
Exploratorium	AI provides tools to play with, explore and interpret data	Teachers provide basic information to students who write different queries in ChatGPT to find out more. ChatGPT can be used to support language learning.
Study buddy	AI helps the student reflect on learning material	Students explain their current level of understanding to ChatGPT and ask for ways to help them study the material. ChatGPT could also be used to help students prepare for other tasks (e.g., job interviews).
Motivator	AI offers games and challenges to extend learning	Teachers or students ask ChatGPT for ideas about how to extend students' learning after providing a summary of the current level of knowledge (e.g., quizzes, exercises).
Dynamic assessor	AI provides educators with a profile of each student's current knowledge	Students interact with ChatGPT in a tutorial-type dialogue and then ask ChatGPT to produce a summary of their current state of knowledge to share with their teacher/for assessment.

Figure 2: Possible roles of ChatGPT in teaching and learning (Source: Sabzalieva and Valentini 2023, 9)

Its role in helping students understand the research process has also been noted as illustrated in Figure 3.
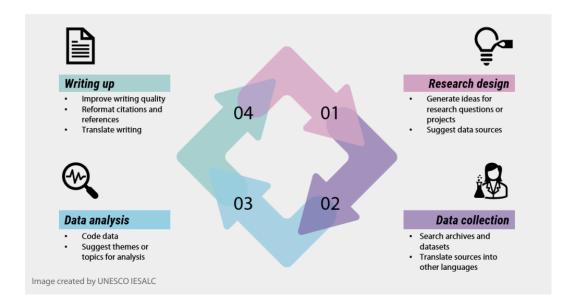
Figure 3: Uses of ChatGPT in the research process (Source: UNESCO IESALC 2023)

On the other hand, ChatGPT also has some disadvantages that could be detrimental to teaching and learning. The Council of the European Union (2023) has cautioned against assuming that ChatGPT is infallible because it may seem reliable due to its sophisticated algorithm, but it most certainly is not. It notes that "it sometimes provides responses which are inaccurate, biased, or nonsensical ... its purely mathematical approach to reasoning should not be mistaken for human-like intelligence" (Council of the European Union 2023, 1). Sabzalieva and Valentini (2023) also mention the cognitive bias of ChatGPT as well as its inherent gender discrimination. This suggests that, whilst ChatGPT may provide useful information, the information would need to be curated for accuracy before use in assignments or research.

ChatGPT AND THE INTEGRITY OF THE UNIVERSITY

Although this kind of technology is useful, it raises ethical concerns which have implications for maintaining the integrity of higher education institutions. Botez (2023, Para. 3) asserts that "with so much data readily available to users, the platform essentially does research for you, which can be detrimental to academic honesty, especially at the university level". A systematic review, conducted by Sullivan et al. (2023) about the impact of ChatGPT on the integrity of the university, found that, out of 100 articles, 88 mentioned concerns relating to cheating and academic dishonesty. The study also found several examples of the technology being used to cheat on university exams and highlighted its ability to write college essays, and exams to earn medical licences. Some studies highlighted the importance of teaching students how to engage with ChatGPT for meaningful learning (n=25) and 51 papers mentioned that universities have technology that can detect AI-generated work, such as "OpenAI's Open Text Classifier,

Turnitin, GPT Zero, Packback, HuggingFace.co, and AICheatCheck" (Sullivan et al. 2023, 4). The article further highlighted four pertinent issues raised in the literature regarding the impact of ChatGPT on the integrity of the university. First, 87 papers mentioned that universities, through their teaching staff, have redeveloped tests and assignments to make them less susceptible to students' use of ChatGPT. Second, universities have made policy changes that ban (n=18), allow the use of the technology (n=10) or are undecided on the way forward (n=22). Third, about half (n=45) of the papers noted that they were considering using ChatGPT in the classroom and, lastly, of the 100 articles being analysed, 79 of the papers voice the opinions, views and ideas from university representatives including both research and support staff. Only 30 papers used the voices of students to support their arguments. The latter suggests that the fears, concerns and opinions about the use of ChatGPT in teaching and learning are from the perspective of teachers and university management rather than students. More research is therefore needed to understand if and how ChatGPT supports student learning from the perspective of university students.

One study that conducted a student-focused survey, using a sample of 1000 college students, found that 30 per cent use ChatGPT for written homework, 60 per cent use it for more than half of their assignments and three out of four believe it is cheating, but use it, despite this (Intelligent 2023). Of the entire cohort, less than 5 per cent noted that they used the technology for all their assignments. This means that students seem to be using the tool mostly to assist them in completing assignments rather than using the technology to complete the whole task for them, which may well dispel fears about the submission of fully plagiarised assignments.

CONNECTIVISM: ChatGPT AS A CONTEMPORARY ADDITION TO THE DIGITAL SOCIETY TO ADVANCE TEACHING AND LEARNING

Whilst the findings from the literature suggest that the integrity of the university is being questioned considering these new technological developments, they also suggest that the technology can be useful in how we generate, understand and present knowledge. As such, ChatGPT and similar technologies can form part of the digital society as a meaningful learning tool if its responses are sufficiently curated and the engagement is facilitated to minimise the risk of misinformation or disinformation. As such, connectivism, the learning theory that is used to describe learning networks, is an appropriate theoretical foundation to advance this discussion. Coined by Siemens (2005), connectivism is based on the premise that

> "knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks ... an account of connectivism is therefore

necessarily preceded by an account of networks" (Downes 2012 cited in Khatibi and Fouladchang 2015, 83).

Siemens (2005, 5) notes that learning is a process that occurs within a "nebulous environment" that is constantly changing and "can reside outside of ourselves (within an organization or a database)" and that these connections allow us to learn and know more than what we could acquire in its absence.

  Table 1 lists the principles which underscore connectivism.

Table 1: Principles of connectivism

		Principles of connectivism
	1	Learning and knowledge rests in a diversity of opinions.
	2	Learning is a process of connecting specialized nodes or information sources.
	3	Learning may reside in non-human appliances.
	4	Capacity to know more is more critical than what is currently known.
	5	Nurturing and maintaining connections is needed to facilitate continual learning.
	6	Ability to see connections between fields, ideas, and concepts is a core skill.
	7	Up-to-date knowledge is the intent of all connectivist learning activities.
	8	Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality.

(Source: Siemens 2005, 5–6)

Connectivism requires the network to be informed by multiple inputs to mitigate discrimination and bias. It also requires up-to-date knowledge to ensure the most recent and accurate information is available. Lastly, the knowledge needs to be facilitated to ensure information is presented in a way that acknowledges the multiplicity of realities.

METHODOLOGY

This section discusses the research design, research approach, instruments, sample, ethical considerations and informed consent.

Research design: Case studies

The data presented in this article are based on online interviews with three professors in South Africa. Two of these professors are based at comprehensive universities and one is based at a traditional university. The respondents are presented as case studies to illuminate the views and experiences of professors in the academy in South Africa, but these views are not necessarily generalizable. Case studies are a valuable method to get insight into a context, particularly if that context is complex and diverse (Leymun, Odabaşı, and Yurdakul 2017). Further to this, case studies "offer an opportunity to learn from experiences and influence the practice of theories" (Leymun et al. 2017).

Research approach: Qualitative

This study aimed to understand the views and experiences of professors in South Africa about the possible effects of artificial intelligence on teaching and learning in higher education. Views, experiences and opinions are best extrapolated using qualitative research techniques and, as such, were the favoured research approach. Mwita (2022, 619) astutely notes that qualitative research "seeks to explore a social phenomenon, reveal feelings associated with the problem and understand the subjective experiences of people associated with a research problem ... and focuses on understanding how people make meaning of their social realities".

Sample

The researcher invited several professors for an interview, of which three obliged and became the sample for the study. The respondents needed to be at the level of professor or associate professor and should have taught and supervised students. All three of the professors in this study fit these criteria. The rationale for selecting professors is that they would have been in the academy for several years to advance to the professor level.

Instruments

The data were procured using one semi-structured interview schedule that consisted of questions that covered aspects such as biographical information, academic journey, initial personal encounters with technology, and views about the potential impact of artificial intelligence on plagiarism and scholarly writing.

Ethical considerations and informed consent

Ethical clearance was provided through the University of Johannesburg's Research Ethics Committee as a project associated with the SARCHi for Teaching and Learning in Higher Education in South Africa. Each participant gave verbal consent to participate in the study and it was noted that they may choose to discontinue the interview at any time without fear of repercussions.

Findings and discussion

The interview schedule specifically asked about the respondents' views on the impact of ChatGPT on plagiarism and scholarly writing. This section commences with an overview of each of the case studies and then presents the responses and discussion under the relevant headings.

CASE STUDIES

Professor Kathleen

Professor Kathleen (white, female) is the Vice Dean at a comprehensive university in South Africa and has a Masters and PhD in ICTs in education. She is involved in digital learning and ICTs in education and supervises and lectures postgraduate students in this discipline. She has been with her current employer for 13 years and, during this time, she has also been involved in learning technologies, initial teacher education and teacher professional development. The first time she encountered a computer was in high school in 1979. She notes,

> "I actually did computer science at school ... we didn't have real computers, we actually did coding and writing programmes on paper and we used a language, SAMOS. It was the first programme language, so we actually used SAMOS and then we did ... it went onto Fortran, it was the second language and then the Matric year we did Basic programme and Turbo Basic and Turbo ... so that was a long time ago."

She was exposed to computers, programming and technology throughout her schooling and post-schooling years and, as such, she notes that she has "a real understanding of ... the time where ... the first personal computers entered the space and then how it's evolved over time".

Professor Stacy

Professor Stacy (non-white, female) is a Vice Dean in a Faculty of Science at a comprehensive university in South Africa. She has been in this specific post for three years but has been in academics since 2016 when she started lecturing in technology and programming. She recalls her first encounters with technology in high school, where she notes,

> "The computers in that school were these really, really old thin stations and what that means was, you know, you either saved your work to the stiffy disk or you don't save anything at all. And you know, I remember because this is a very vivid memory, you would type on the keyboard and you would type until you hear this long 'beeeep' and then you would take your hands off the keyboard and then you would sit and you would wait for the text to just type, to appear on the screen .... Then, when we were in standard ten, ... my teacher said 'Listen, I've got this disk, we are going to try and get onto the internet'. Ja, I remember that, and the four of us sat there in front of the one computer, a very old computer, and we dialled, you know, we phoned, you know, that old dial up, and we dialled in and we got in and we said, 'what is this?' and all four of us were trying to figure out, do you click on the icon, what happens, so that was us, that was my first journey into connecting to the internet."

Professor Stacy is the youngest of the three professors and completed high school in 2000.

Professor Mortlock

Professor Mortlock (non-white male) is a research professor at a traditional university on the east coast of South Africa. He has been in academia for 40 years and his relationship with technology commenced when he started tertiary education. He recalls hand writing his Master's thesis, which was given to a typist to type in preparation for submission. He fondly reflects on his submission as he notes, "I had to handwrite it and give it to a typist to type it up for me and, I remember, it was a major issue because I had to insert a diagram at some point in that and I had to employ a graphic artist to be able to write the diagram".

At that time, the university did not provide any training for lecturers to upskill technologically, so he notes that "I had to take personal responsibility for activating and growing it and I still do, up to today ... my own growth has been ... self-lead ... I think we need, as academics, to be constantly moving".

THE IMPACT OF ChatGPT ON THE EXISTING CHALLENGE OF PLAGIARISM IN HIGHER EDUCATION IN SOUTH AFRICA

Plagiarism, defined as using the work of another and pretending that it is one's own, is common in higher education institutions, particularly among undergraduate students (Walker 2010; Thomas and De Bruin 2015; Jiang, Emmerton, and McKauge, 2013). All three respondents were asked about their views on the impact of ChatGPT on plagiarism.

Kathleen noted that, firstly, the assumption that ChatGPT will increase instances of plagiarism is an overreaction: "I think that statement is overinflated, you know, if you're thinking of plagiarism as we typically define it ..." (Kathleen). Secondly, she suggests that we need to frame the activity (of plagiarism) theoretically to gain a better perspective:

> "If you think of it from a theoretical perspective [about] Vygotsky and the zone of proximal development and where learning takes place within that zone of proximal development, but, in that zone is also a knowledgeable other, a knowledgeable other that you can then work with or consult with or that can help you make meaning of new knowledge or new ideas, etc. So that knowledgeable other, if we take that knowledgeable other to be not just the person but can be other resources, other things, and how we have viewed plagiarism, how we've conceptualised plagiarism over time, and how we have vilified it, I think that is where the problem is. So, for me, it is about, it's a journey, a student journey from first year, second, third, fourth year, so it changes over time and the relationship with that knowledgeable other and how they use that 'knowledgeable other'." (Kathleen).

Lastly, she suggests that lecturers need to redesign their assessments to minimise the possibility of plagiarism:

> "... the problem is not the plagiarism, the problem for me is how do lecturers set their tasks? How do they design their tasks? How do they set the assessments so that there is room for this plagiarism to take place, you know? So, I think there is a developmental journey that lecturers also need to go on in order to first understand that how I set my task or how I set my assessment is actually creating an environment for plagiarism." (Kathleen).

Professor Stacy notes that ChatGPT is just a natural, technological progression as we move from books, libraries and encyclopaedias to online formats that can synthesize large chunks of information. Students will still need to distil that information.

> "So the way ChatGPT works, ... when you did your homework assignment back in primary school, in high school, your teacher said ... 'please write an essay about the role that the Japanese played during World War II'. Let's say that was the assignment you had. I mean, what did you do? You went to the library and you went and, perhaps you even had to consult the catalogues, you know, and you found, oh it's at that location and then you went physically to that place and then you pulled the book out of the bookshelf and you had to read through the content and there you go. Then, afterwards, along the way, Microsoft came out with those Encarta encyclopaedias on CD ... and then Google came along and that made your life even easier because now you go, oh you don't even have to put in a CD anymore and there's a much more vast access to wider knowledge ... and now we've got ChatGPT ... what it's done, it's taken the next level ... so it's just the next level of ... automation, convenience ... it's supposed to help you, it's doing its job, it's achieving its goal of trying to help you. But, if you read what they say, remember, you still have to look at the statements that it makes and you go, okay, I can live with that statement, but now I've got to go and do more reading up on that statement because, number one, where is this statement from, and number two, can I verify that this statement is true?" (Stacy).

She mentions that it may seem like a tool that lends itself to being used for plagiarism, but it is the responsibility of lecturers to make sure students know about the limitation of such applications:

> "Will it encourage academic dishonesty? I think part of our job is to let the students know the limitations of ChatGPT and other tools like this and let them realise that it isn't the answer. So, I think, part of it is our responsibility." (Stacy).

She notes further that there will always be students who cheat, but that this is a small number and that should influence our views about artificial intelligence.

> "Will people cheat, of course, of course, there are going to be your one or two people but, I think, we can't allow, maybe ten percent of the students that do this to pollute our view that no, everyone is going to do it." (Stacy).

Lastly, lecturers need to be more creative in developing their assessments. The emphasis should

be on the process rather than the outcome, as she suggests below:

> "I think we need to change the assessments so it's not so much the end result. You know, we used to be like, okay, your answer's four; that is the correct answer, you can have six out of six. It shouldn't be that anymore because you don't know where they got the answer from. It's now, the emphasis should ... and I've always maintained that the emphasis should be: how did you get there? Please show me how you got there and so, when I award marks, it's marks for telling me how you got there more than the final answer." (Stacy).

Professor Mortlock echoed Kathleen's sentiments when he noted that the notion of plagiarism is not sufficiently theorized and what is absent is teaching students about research ethics and referencing, as he notes in the quote below:

> "I think plagiarism has always been a challenge. Again, it's not a new challenge, it's a challenge of academic integrity and ethics, it's a challenge of, have students imbibed an understanding of why they are there in the first place? ... if you're there for the purpose of getting a certificate, then expediency is your strategy, so you might think this is a great, wonderful strategy to be able to achieve that goal ... the technology has been available to be able to detect similitude of articles in comparison to published articles on the internet, but the conception of plagiarism, as an idea, I don't think has been theorised enough because there are some people who ... will argue that the best form of flattery is imitation ... so if I'm imitating what you've said, I'm actually showing how much I respect you ... in academia, we're plagiarising in a sense of we're borrowing ideas all the time but we're not claiming it to be our own ... the referencing processes, the engagement processes with [that's lacking] ... are we teaching people to be autonomous thinkers, agents of the learning, agents of their engagement with what they're doing and doing it ethically and responsibly in dialogue with the multiple people who shape and form knowledge? I think that's what is not being taught to individuals." (Professor Mortlock).

In line with the theory of connectivism, Kathleen sees ChatGPT as a "knowledgeable other" that can assist teaching and learning in profound ways if we readjust how we theorize the notion of plagiarism. She adds that assessments need to be redeveloped in a way that is more creative and does not lend itself to copy-and-paste activities. As such, the responsibility rests with lecturers to upgrade their knowledge and skills to remain current in their pedagogies and in how they assess. Stacy argues that using ChatGPT in the classroom is a natural progression of technology and, as with all information, the outputs need to be checked and curated. She also agrees with Kathleen by saying that lecturers need to take responsibility for explaining the limitations of these technologies to students, which requires lecturers to become more knowledgeable on the subject. Mortlock is also of the opinion that plagiarism is insufficiently theorized and that the problem lies with the fact that universities do not teach students how to think autonomously, what the purpose is of their tertiary education, and that it is not only about certification. That is why AI becomes attractive to students. The views presented by these

professors mirror the positions of Garvey and Maskal (2020) and Sun et al. (2020) who see AI as having a positive effect on teaching and learning. Given this, it is safe to say that ChatGPT, in terms of its effect on plagiarism, is not going to be a "harbinger of the death of higher education", but that universities, through lecturers, need to take responsibility for teaching students how to engage with these technologies that are meaningful for their development (Rudolph 2014).

THE IMPACT OF ChatGPT ON SCHOLARLY WRITING IN HIGHER EDUCATION

One of the features of Chat GPT is its ability to generate texts and images. As such, it has become a useful tool for producing multitudes of written work, including academic articles and research papers. In fact, Van Dis et al. (2023) note that, not only can it write and summarise research papers, it can also pass medical exams and write computer codes. It is therefore critical to understand if and how these kinds of technologies will impact academic writing – a skill that students need to perfect to succeed.

Kathleen raised important points. First, she confirms that scholarly writing is a challenge for many students at the university and that the university has put in place several support programmes to assist students, including the use of technology:

> "So, scholarly writing remains problematic at all levels and I know that, at [the university] specifically, there's a lot of work that goes into scholarly writing, there's a whole division devoted to it. All students have access to it, there is additional classes, additional short learning programmes, etc., to help students with academic writing, and I want to say, before ChatGPT, there's also what has been available and advocated for was Grammarly over the last few years. And Grammarly has significantly helped students improve their own writing by constantly ... and if you're looking at the way that Grammarly works, Grammarly doesn't fix it automatically for you, Grammarly actually points it out and leaves it up to you to make the decision, in terms of whether you enact it or not, but nobody has raised an eyebrow over how Grammarly will impact on scholarly academic writing over and above from just saying it will improve it. So this conversation now and the fear of ChatGPT that can spit out essays whatnots [is an overreaction] ...." (Kathleen).

She also noted that there have been other platforms that students have used to produce essays and plagiarise in the past, but the problem is not the availability of these platforms, it shows lecturers measure, develop and assess their students through these assignments as she notes below:

> "Before ChatGPT, there were also all of these essay mills that were spitting out essays left, right and centre for students. So, for me, it is about, if you are setting essays as an assessment tool, then your question needs to be why are you using assessment, what are you actually measuring in that assessment or in that ... are you only measuring the final assessment or are you measuring the steps

before the assessment, are you giving feedback in these different steps to refine the ideas or whatnot ...? If you're just asking a student, 'give me an essay on that', yes, you are opening yourself up for all of these other things ...." (Kathleen).

Lastly, she notes that lecturers can incorporate these kinds of technologies in the classroom by making them part of the teaching and learning process. She reiterates the importance of (re)designing assessments to reflect the technological context in which we live:

"You can also use [it] where the student can write things and then you can say to them, 'submit whatever you've written to ChatGPT and ask ChatGPT to evaluate and give you feedback and then implement that and then resubmit it and give me the whole chat between you and ChatGPT that you've been having'. So there's different ... it's just in the way of how [you] do it ... how do we set or how do we measure that students have reached a specific outcome? If there's only one way we're doing it by setting essays, then obviously, we are doing something wrong, so we need to think as lecturers. What are the other ways that we can use to measure whether a student has achieved an outcome or not? And there are multiple other ways that we can do so." (Kathleen).

Stacy concurred with much of what Kathleen said and also noted that the approach lecturers use is important:

"... so again, I think it's about the approach you choose to do with it. I see it as an excellent opportunity to help our students improve their scholarly writing, and the reason for that is because ChatGPT has the ability to do so. So, if a student writes some paragraph, let's say, and puts it through ChatGPT and says, 'ChatGPT, please tell me how I can improve on this writing', ChatGPT will be more than happy to go through it and tell you, 'listen you could have used this word instead, you could have done this, you could have done that'." (Stacy).

She adds that ChatGPT is an excellent tool for students or administrators who do not have English as a first language as it can improve their vocabulary and subsequently their writing skills:

"... and I was just speaking to our administrative assistant and she sometimes says when she's trying to write an email, she doesn't quite know how to get that one word, you know, she struggles, she's like ... she's Zulu, and she says 'I can't figure out what the one word is in English and I just don't know what to say', and she types in what she ... you know, she describes what the word is that she wants to use, and then it comes back and says, 'you mean this?', and she goes, 'yes' and then ... so she says, so for her, it's a real helpful tool. No, you know Grammarly, Grammarly is something that many people are using right. Grammarly is using the same technology that ChatGPT uses, so it's not surprising that ChatGPT is able to go and correct your spelling or correct the way you write." (Stacy).

Mortlock takes a more philosophical approach to his views of the impact of ChatGPT on scholarly writing as he notes that, how we teach and develop students to use language and how we define "literacy" in an academic context, needs to be deconstructed:

"I think the problem is our language; the strategies for language development and I'm talking about basic language development, has been so focused on accuracy ... our basic ideas of competence in how one reads is being or how one writes, for that matter, is about accuracy. It's about getting the correct syntax, about getting the correct words and the correct pronunciation and those are the models of structuralist teaching and learning that have dominated language practice in school education for eons." (Mortlock).

He argues that the problem starts in basic education, where students are not taught the skills of literacy which causes challenges for them when they enter higher education:

"... but the foundations which we're drawing from is school education where they're still teaching nouns, verbs, tenses and etc., and learning the language of academia that they're writing in, which is English, which is, for the majority, not a first language. So, the models of second language teaching and learning or language learning and teaching is flawed at primary and secondary school and we're suffering the consequences in, when they come into university because they still hold onto a subservient notion of a passive reading ... so we're not teaching reading for meaning, we're not teaching comprehension, we're not teaching the process ...." (Mortlock).

He further acknowledges that the academy and lecturers are partly to blame for the poor scholarly writing of students because the manner in which they assess and give feedback to students is not always developmental, but this is due to class sizes which has implications for time spent on marking:

"... the way in which we even assess the written work of students ... you have a thousand students, you're reading essays at a pace of – I have to mark this in five minutes and they've got six pages in front of them, they're skimming to see if they can find some words that resonate in some way with the assignment and they give an impressionistic mark ... they don't have the expertise or the time to be able to look at a paragraph ... so we have this soundbite culture, if you know what I mean, that we're reading an assignment to look for the soundbites, we're not actually engaging with academic argument and writing, and we're accepting soundbites. Now, if that's accepted at undergraduate level, when they come to post graduate level, do you expect them to be writing an academic argument, an innovating and a new direction and creating new knowledge and standing on the shoulders of giants? That's way, way beyond what is being expected ... the foundational kinds of debates about academic writing and conventions of academic writing in undergraduate teaching and learning needs attention." (Mortlock).

Kathleen acknowledges that poor scholarly writing has always been a problem at university, even in the context of substantial resources to help students. However, she cautions that there has been an overreaction to the effects of ChatGPT on scholarly writing. She argues that there have always been resources for students to cheat, such as essay mills, and even the more recently developed Grammarly, but reactions towards these have not been met with the same dissent. She highlights again the importance of designing more complex assessments, which is

the lecturers' responsibility. Stacy is also very positive about the effects of ChatGPT on scholarly writing as it will help students improve their writing, their vocabulary, and it is invaluable for students who do not have English as a first language. As such, lecturers should engage with these technologies in the classroom to show students how to write better. Mortlock notes that the problem of poor writing starts at schools. He also notes that the problem lies with universities in that we do not engage with our students enough to teach them how to write. Assignment feedback is limited due to class size and time limitations, so students cannot develop a skill if they are not taught to do so. Hence, this is why ChatGPT may become attractive for students to use. Zhai (2022) asked ChatGPT to write an academic paper and the response was partially accurate and coherent. This means that, whilst ChatGPT is a useful tool for language and writing development, it requires a facilitator and a curator to ensure accuracy. Further to this, Aydın and Karaarslan (2022) note that, if students did submit essays or research generated by ChatGPT, there is software available to detect this. If students know this, they may be less likely to use generated tasks verbatim, without some form of engagement with the output. Thus, ChatGPT's impact on scholarly writing is not as threatening as represented in popular media.

CONCLUSION

Discussions about ChatGPT and other generative technology and their impact on teaching and learning in higher education require substantial further investigation. Prevailing negative views on the topic have been influenced by popular media and this has unfortunately shaped the responses of some higher education institutions. Media tends to hyperinflate the disadvantages which influences views and opinions more readily due to their accessibility and reach. Hirsh-Pasek and Blinkoff (2023, Para. 1) make an interesting analogy between the invention of ChatGPT and the invention of the telephone when they note that "the invention of the telephone in 1876 was met with simultaneous amazement and trepidation ... critics wondered if phones would disrupt face-to-face communication in ways that made us either too active or lazy". However, history has shown us that this kind of technology can lead to major social advancements without compromising social interaction, including teaching and learning. The findings of this article suggest that lecturers need to develop their technical skills and learn how to incorporate these kinds of technologies into their classes and adapt how they assess students. As such, the professional development of lecturers is important for teaching and learning to align themselves with the constantly changing digital society. The professors in this study have vastly different backgrounds and experiences with technology, and work in different university contexts in South Africa, but their views on the impact of ChatGPT on teaching and learning

are similar. The findings also suggest that ChatGPT will not appear as a threat if universities teach students the skills they need to navigate higher education ethically. By doing so, it will maintain ethical academic standards and subsequently maintain the integrity of the university. Thus, the university is a long way from losing its credibility and relevance, particularly due to its monopoly as a certifying institution.

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