A Tale of Academic Writing Using AI Tools: Lessons Learned from Multicultural Undergraduate Students

Ajrina Hysaj[1(✉)], Georgina Farouqa[2], Sara Azeem Khan[1], and Laith Hiasat[3]

[1] University of Wollongong in Dubai, Dubai, United Arab Emirates
ajrinahysaj@uowdubai.ac.ae
[2] CEHE – Dubai, Dubai, United Arab Emirates
dr.georginafarouqa@cehe.ae
[3] Rochester Institute of Technology, Dubai, United Arab Emirates

Abstract. The aim of the current study was to explore the perceptions of undergraduate students of usefulness of using AI tools to write academically. For this study, we utilized a mixed method approach using a structured questionnaire to collect data relevant to the frequency of plagiarism that students commit while completing different kinds of assessments in universities. The sample group consisted of university students and participants were selected through purposeful random sampling. The selection of participants was based on the inclusion criteria that helped in understanding the problem. The questionnaire was made available to participants in an online format and sent by (SNS) or/ and email. The questionnaire was created using Qualtrics. It consisted of 12 questions aimed at understanding students' act of plagiarism while completing assessment as well as the use of AI to complete academic work. The questionnaire emphasized the identification plagiarism frequency and use of AI to complete tasks. Participants were provided with a selection of two to five pre-determined response options and one open-ended response option. In total, 53 questionnaires were completed. Responses were thematically analysed using QDA Miner Lite 2.0.7, qualitative, and mixed method analysis software. Finally, recommendations for further research were presented.

Keywords: Academic Writing · AI tools · Plagiarism

1 Introduction

The variety of education systems worldwide for approximately two decades, has been trying to introduce different technological advances to schools and universities worldwide aiming the facilitation of teaching process and improved students' academic satisfaction [1, 26, 29, 60]. Understandably, the management and policy makers have been supporting these efforts and are very optimistic about the use and the benefits of these advances in education [2, 26, 27, 30, 67]. Furthermore, the continuous utilisation of AI tools by learners in all levels of the education system and particularly in higher education has been encountered with a variety of challenges, starting with the lack of desire of teachers to accept the use of such tools, to the array of difficulties that are related to the purpose, benefits and drawbacks of using AI tools [3, 19, 33, 49].

A. Coman and S. Vasilache (Eds.): HCII 2024, LNCS 14704, pp. 43–56, 2024.
https://doi.org/10.1007/978-3-031-61305-0_3

For the last twenty years or so, an extensive body of research has been trying to understand students' perceptions about the utilization of the AI tools [37, 44]. While the concepts of teaching and learning evolve continuously, it is important to consider the use of AI tools as a reality that we as educators cannot, and should not ignore or even worse try to ban or stop it [4, 5, 17, 33, 34, 37, 44]. The ways that students study vary, and are constantly changing alongside with the number and functions of AI tools, therefore, it is valuable to not only understand the AI tools but more importantly understand the perceptions of our students about the use of these tools [6, 17, 18, 31, 44]. In that way the use of AI tools may support teaching and learning process rather hinder it. The difficulties that students face when studying in higher education are of academic and personal nature and although it is somehow a considerable effort to get to know most of the struggles that students go through, it is nevertheless crucial to explore their purposes in using AI tools [7, 37].

Education is a very innovative and adaptable field in relation to the material development and curriculum alignment [23, 24, 28, 29, 40, 54]. For example, educators worldwide are pioneer of the opinion that students' learning needs to be facilitated through a variety of means, and that the feedback provided by students in regard to the learning and teaching processes should be taken into consideration [8, 25]. Nevertheless, when it comes to the implementation of new technological advances in education and especially AI tools the focus of the educators becomes the shift of power and the enchanted territories offered by the use of technology and AI [9, 29, 30]. Technology and AI become a rather unwanted friend and, in many cases, a non-proclaimed enemy that in most instances provides unwanted or unappreciated challenges and struggles. Furthermore, many educators view AI as a threat to the education system or as an unwanted gift that hinders students' knowledge acquision [10, 33]. COVID- 19 pandemic created favorable conditions for the utilization of AI tools in higher education in a variety of ways prior known or unknown.

The extend of the utilization of technological or AI tools depends on many societal, economic and political factors; nevertheless, the use of AI tools impacts us all in one way or the other. Technological advances are most of the times seen as a progressive force that not only creates new frontiers of research but most importantly it empowers people with tools that facilitate development and growth [45, 65, 66]. Prior to COVID-19, the use of technology in higher education was seen with scepticism for a variety of reasons starting from the inability to fully comprehend its usage to lack of understanding of its benefits [11, 37, 39–41]. Nevertheless, now technology has become synonymous with higher education in the form of whiteboard or smarts boards, smart projectors, conference call applications like WebEx, Zoom and Teams, as well as in the form of LMS like Edmodo, Moodle, Blackboard, Canvas and most recently the extensive use of AI tools. The aim of this article was to explore the perceptions of the usefulness of AI tools by multicultural students in higher education when writing academically.

2 Literature Review

2.1 Exploring the Perceptions of Students and Teachers on the Utilization of AI Tools in Higher Education

Now more than ever before in the history of higher education students are utilising the AI tools to complete assignments or attempt exams. The extent by which AI tools are utilised in higher education by students of all majors has necessitated the need to explore the ways and forms that these tools are being utilised and the frequency of their use [12, 13, 45, 65, 66]. While the levels and reasons for utilisation of AI tools by students in higher education may vary based on students' unique circumstances, and their individual needs or it is worth exploring the use of AI in higher education so we as educators can facilitate teaching while allowing the use of AI tools [5, 14]. Furthermore, the process of utilising the AI tools requires a careful consideration of all parties involved in higher education, therefore, it is worth analysing the use of these tools by students, so we as educators can amend the ways we teach, and share generic or discipline related knowledge [5, 45]. Understanding the use of AI tools in generic or discipline related subjects not only supports our understanding of our students needs when using the tools but also it empowers us with the functions these AI tools may have and more specifically, it educates us about ways these tools are used by our students [15, 42].

As the process of teaching and learning is interconnected with the needs of students and teachers alike, the necessity of understanding the AI tools is interconnected with the successful and ethical use of these tools. Students' viewpoints on the use of technology and AI tools are different and are connected with factors that have intellectual, personal and societal value [57, 65]. The exciting and cautious types of uses of AI tools may differ from student to student based on their specific needs and reasons [3, 6, 16, 17, 57]. For instance, students who may find grammar concepts difficult may utilise the AI tools to write with a more sophisticated language. On the other hand, students who lack an extensive vocabulary may consider the academic texts, randomly used to write a literature review, as very challenging and may use a variety of AI tools to paraphrase and summarise these texts to the extent of understanding them better or even changing them completely [9, 18].

Other common uses of AI tools by students are related to generating ideas about unknown concepts or notions [8, 9, 19]. For instance, some students may have acquired a considerable amount of general knowledge prior to attending university, while others lack general knowledge on specific topics and may use the AI tools to empower themselves with such information. Moreover, it is understood that the abrupt and widespread use of AI tools in educational institutions places the less technology savvy educators of students at a disadvantage and imposes an additional burden to the curriculum adaptation. In the higher education sector, one group of people who tend to embrace the use of technology faster and at a larger scale compared to others are the faculty members of engineering and computer sciences faculties [8, 20, 59]. Commonly, these educators take a leading role in conducting the much-needed training sessions for other faculty members, and serve as the avant-garde force of the application of AI in universities. In academic study skills classes, the implementation of AI tools is associated with consecutive adaptations of methods of delivery, classroom or online activities and assessment tasks and their submission

form [21, 36]. Adaptations of the material and assessment tasks that occur due to the implementation and use of technology should be reflected in the alignment of subject outcomes, classroom activities and assessment tasks [13, 22]. Education and progression are considered to be equally important, and in the perspective of implementation of the use of technological tools like the AI tools they are required to provide a certain level of conformity to each other to ensure successful co-existence for the benefit of students, educators and the higher education system as large [11, 13, 23, 24, 32].

3 Exploration of Utilization of AI Tools in Academic Study Skills Classes

AI tools are now utilized in teaching and learning environments in all four corners of the globe [25, 40, 42]. Levels of utilization of AI tools vary and are connected with individual preferences of teachers and students, as well as with institutional preferences [11, 13, 26]. Understandably, the levels of positivity and excitement for the prospect of using AI tools by some educators for reasons that may or may not be justifiable to all people. Similarly, the levels of enthusiasm deriving by the prospect of utilizing AI tools in learning process, reasonably, vary in students too [27, 49, 50]. Undoubtedly, individual preferences of reluctance to utilise AI tools in teaching and learning processes are overshadowed by those of institutions that tend to be backed up by research that emphasizes the positive aspects of using technology and its specific user-friendly tools.

The rapid advances of AI tools and their subsequent extensive spread throughout the globe, have created the necessity to explore and understand their use, their benefits and their drawbacks [7, 21–23, 28, 34, 35, 37]. Understanding the nature of AI tools and their utilization in academic study skills settings, as well as the level of adaptations needed for the content to be delivered appropriately, is the main concern of management and policy makers in higher education and as such is transferred to the educators involved in teaching study skills classes, to be acted upon [29, 58]. Teachers and instructors of academic study skills are required to understand the application of their content when using AI tools to facilitate learning [30, 58]. In other words, they are required to exit their comfort zone and experiment with technology and AI tools [32, 33, 58, 64]. Justifiably, the understanding of the utilization of technological tools in academic study skills classes takes time to be comprehended and embraced [28–31, 66]. Like all changes, the variations imposed by the use of the unknown AI tools create anxiety, fear and confusion in academic study skills teachers to say the least. Furthermore, teachers as well-grounded professionals, reasonably require in-depth understanding of the benefit and use of any tools that they are required to be used in their classrooms or in the online platform [21, 24, 26, 32, 34, 67].

Understanding the use of AI tools in the process of teaching and learning is a requirement imposed to academic study skills teachers by their profession [4, 24, 25, 35, 64]. In other words, it is necessity that teachers are well-informed about the AI tools and their application to enhance learning process of their students well before the practical applications of the same in classrooms or in the online platform [37, 53, 65]. Increased teacher awareness about the uses and benefits of the AI tools can result in enjoyable teaching experience for teachers [36, 39, 40, 62, 68]. Moreover, awareness about AI tools can

lead the way to a successful learning experience for students and has the potential to minimize the undue stress for teachers. Hindrance of the adequate use of AI tools can potentially slow down the process of learning and create in students an increased level of disinterest to complete tasks or submit work in an audio, video or written format [41, 51, 53, 63].

4 Academic Writing Using AI Tools and Plagiarism

The extent by which AI use has spread throughout the world in one way or the other affects us all. So much so that we are all involved in our daily lives with many gadgets and tools that use some sort of AI functions and in many instances, and we depend so heavily on these tools, that their existence is dearer to us than values that we grow up believing in and have been nurturing throughout our lives [10, 42, 63]. Although the creation process of AI tools and continuous development are no doubt the expertise and contribution of coders and programmers, the utilization of AI tools is benefiting us all and a lot of it is even offered for free like is the case of Automatic Article Generator (AAG) or AI Text Generator. From the viewpoint of students or people who generally find academic writing as complex, dry and abstract, these tools could be seen as lifesavers since they provide them with the much needed "support" to produce the kind of work needed to pass subjects or even achieve a decent GPA [23, 29, 43, 44]. Nevertheless, in the lenses of us educators these tools, if used to deceive the whole system of higher education, are morally and academically inappropriate and deceitful [46, 47]. The algorithm writing that AI is capable of producing was first thought to be at an infant stage from a Scopus, grammatical, content and academically appropriate structure.

Nevertheless, according to the article by Motlagh et al. [48] these tools have evolved during the last two years, in a rapid and steady upward fashion, positioning us the educators a fragile and awkward situation. As people who are directly involved with curriculum design and method of delivery of our respective subjects, we expect a minimum involvement of our students with the matter taught during our sessions [40, 42, 47]. Traditionally this has been the case for decades, however, as AI gets extensively involved in designing of AAG or Text-processing tools this resembles an unspoken battle between humanity and AI [15, 44, 49]. According to Motlagh et al. [48], AI in the shape of programs like Text-processing gives us an alternative equal if not superior to human capacity in terms of intelligence and material production. Rationale behind this statement is supported by the studies by Kaplan and Haenlein, [39], Thacker [56], and Kumar et al. [43]. The value of algorithm has long been recognized in all mathematical sciences, mainly due to the constant progression of computational and computability usage in different fields. The basic usage of Turing machine paradigm in contemporary computing which started in 1936 [60], has now evolved to the theory that AI is a newly born intellectual non-living machine. This newly created concept on the nature of AI creates the environment for its recognition and makes it worthy to be explored and understood from a variety of angles such as the actual scope and usage in producing academic writing as well as for the limits and dangers associated with it [14, 50, 51]. According to Sudlow [54], such endeavour is required to be undertaken by coders and programmers while taking into consideration the repercussions that these AI tools have on the psychological, linguistic,

relational, policy and ethical basis. Nevertheless, according to Humble and Mozelius [22] and Hancock, Naaman and Levy [23] coders and programmers are not necessarily considering the linguistic and social aspects of these technologies, in contrary they are more focused on their intellectual capacities as these tools are competing with human brain and are a display of Turing's definition on intellect and the knowledge accumulated through years and experience [12, 66].

5 Methodology

For this study, we utilized a mixed method approach using a structured questionnaire to collect data relevant to the frequency of plagiarism that students commit while completing different kinds of assessments at four-year universities in UAE. The sample group consisted of university graduate and undergraduate students. Participants were selected through purposeful random sampling. The selection of participants was based on the inclusion criteria that helped in understanding the problem. The questionnaire was aimed at providing insight from undergraduate student perspectives. The questionnaire was made available to participants in an online format and sent by (SNS) or/ and email. The questionnaire was created using Qualtrics. It consisted of 12 questions aimed at understanding students' act of plagiarism while completing assessment as well as the use of AI to complete academic work. The questionnaire was part of a PhD thesis by one of the authors of this articles and the questionnaire aimed at identifying plagiarism frequency and use of AI to complete tasks. Participants were provided with a selection of two to five pre-determined response options and one open-ended response option. In total, 53 questionnaires were completed. Responses were thematically analysed using QDA Miner Lite 2.0.7, qualitative, and mixed method analysis software.

6 Results

The first objective of the study was to better understand how frequent do students plagiarise while completing different kinds of assessments like exams, research papers and projects. The results are displayed in Table 1, 2, and 3. The second objective of the study was to get a clear insight into the use of AI tools in academic writing. The results are displayed in Table 4, 5 and 6.

Approximately (41%) of participants plagiarised more than twice during an exam, using their own notes or the notes of others. Other (13%) plagiarised twice and similarly (11%) copied only once. These findings indicate that more than 50% of students plagiarised at least twice during exams. According to data collected through the questionnaire (33.3%) of participants stated that they never cheated during an exam. The frequency of plagiarism while writing a research paper is presented in Table 2.

Table 2 shows that half of participants did not plagiarise while completing a research paper. Around quarter of participants (24.1%) copied more than twice. Few (9.3%) plagiarised only once while (14.8) copied twice. One participant commented "I don't remember if I did so". The analysed data indicates that the frequency of plagiarism while writing a research paper decreased when compared to cheating during exams. It

Table 1. Exams

Cover and included terms	Occurrence Frequency	Percentage comments
1. Frequency		
1.1 Once	6	11.1%
1.2 Twice	7	13%
1.3 More than twice	22	40.7%
1.4 Never	18	33.3%
1.5 Do not remember	1	1.9%

Table 2. Research Paper

Cover and included terms	Occurrence Frequency	Percentage comments
1. Frequency		
1.1 Once	5	9.3%
1.2 Twice	8	14.8%
1.3 More than twice	13	24.1%
1.4 Never	27	50%
1.5 Others	1	1.9%

Table 3. Projects

Cover and included terms	Occurrence Frequency	Percentage comments
1. Frequency		
1.1 Once	6	11.1%
1.2 Twice	4	7.4%
1.3 More than twice	12	22.2%
1.4 Never	32	59.3%

was important to further explore plagiarism during projects as another way of assessing students. Results are shown in Table 3.

As indicated in Table 3. More than two thirds of participants never copied assignments while completing a project. Approximately (30%) plagiarised their work on projects. These results provide further evidence that the percentage of plagiarism drops when the level of student engagement increases and students' need to cheat becomes less. In this study it was also important to further understand whether students use AI to complete assignments and which specific tool they use. Results are shown in Table 4.

Table 4. AI for Academic Work

Cover and included terms	Occurrence Frequency	Percentage comments
1. Usage		
1.1 Yes	27	52.8%
1.2 No	7	13.2%
1.3 Sometimes	18	34%
2. Software		
2.1 Chat GPT	44	83%
2.2 Others	9	17%

Table 4 illustrates that most students (86%) use AI to complete their academic assignments. Few (13.2%) participants reported that they never used AI for their work. A similar percentage was of (83%) used Chat GPT as an AI software. It is probable that these findings were related to easiness or comfort using these tools. The analysed data shown in Table 5 presents evidence that shows the level of comfort and easiness experienced by students while using AI.

Table 5. AI Usage for Academic Writing

Cover and included terms	Occurrence Frequency	Percentage comments
1. Comfort		
1.1 Very comfortable	13	24.5%
1.2 Comfortable	17	32.1%
1.3 Somehow comfortable	11	20.8%
1.4 Uncomfortable	10	20.8%
1.5 Others	2	1.8%
2. Easiness		
2.1 Easy	42	79.2%
2.2 Not easy	8	15.1%
2.3 Somehow easy	2	3.8%
2.4 Others	1	1.9%

As shown in Table 5, more than half of participants felt comfortable using AI. (20.8%) felt somehow uncomfortable. Similarly, the same number of participants felt uncomfortable using AI. Data also shows that most participants (80%) found that it was easy to use these tolls to complete their academic writing tasks. It was important for this study to understand whether students try to mask their AI written assignments to make them similar to those written by humans. Results are shown in Table 6.

Table 6. Humanizing AI Text

Cover and included terms	Occurrence Frequency	Percentage comments
1. Online tools		
1.1 Yes	20	37.7%
1.2 No	33	62.3
2. Online tools		
1.1 Yes	14	26.4%
1.2 No	39	73.6%

More than third of participants use online tools to humanize their AI written work. Similarly, more than quarter of participants intentionally make errors in their assignments to show that they were written by themselves. Many participants did not write any errors in their assignments, nor did they use online tools for their work.

7 Discussion

This study revealed the use AI tools is viewed in a variety of ways from students and teachers alike. Furthermore, this study highlighted the need that students have is using AI tools when completing academic writing tasks like essay, reports or case studies [20, 52, 53]. Specific measures and procedures that involve the use of AI tools are required to be taken into consideration when analysing the needs that students have when completing academic writing tasks [5, 18, 46, 54, 55]. The aim of utilizing the AI tools when teaching academic writing should be implemented while maintaining high levels of academic integrity [37]. In other words, although educators should not tend to stop the use of AI tools by students, at the same time they need to equip students with the ability of understanding the ethical use of such tools to facilitate a successful experience in higher education [42, 56]. Furthermore, as the use of AI tools may became a necessity of any work environment, equipping students with this type of knowledge not only serves to the benefit of students when in university, but also it paves the way to their subsequent success in their professional life [17, 57]. Moreover, the study highlighted the requirement that AI tools may be used by teachers to design curriculum or provide formative feedback while allowing teachers to focus on their teaching performance and classroom management. The creation of a communicative and supportive environment in academic classes while allowing students to use AI tools may not only support the knowledge acquisition but also educate students about the ethical implications of AI tools [29, 37, 58].

8 Conclusion and Recommendations

No one can deny that academic writing skills play a vital role in students' successful experience in higher education [24, 25, 59, 62]. Students need to develop their vocabulary and grammar skills to cope with their studies in general [19, 61]. Furthermore, the

completion of academic assessment tasks in many instances involves the use of AI tools [16]. This study found that students used AI tools for a variety of purposes and these purposes are of individual and academic nature. Moreover, this study found that it is important for educators to get involved in the process of the use of AI tools by students as active participants rather than passive and distant spectators. Also, the study found the need to consider plagiarism when academic integrity when considering the use of AI tools when writing academically. The findings of the current study indicate that aspects of academic writing can be supported by the use of AI tools if used efficiently and ethically. However, as pointed out by Hysaj and Suleymanova [24] as well as Hamam and Hysaj [19], it is the responsibility of academic writing teachers to make pragmatic decisions as to how much to encourage the use of AI tools, so they can shape students' discourse abilities and facilitate their learning and triumphant entrance to the broader academic community. These decisions may include choices to use the specific features of AI tools for pedagogical and andragogical purposes to ease the undue amount of stress experienced due to the lack of adequate knowledge when writing academically in a variety of general of discipline related topics.

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