

Assessing Master Dissertations In The Age Of Artificial Intelligence Study Case: Master 2 students (2022-2023) at Skikda University

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Abstract

The growth of artificial intelligent generative models, though practical and so useful, is thrusting the various educational institutions to rethink their objectives and take new measures to cope with its evolutionary urges. The overriding aim of this paper is to explore the utility and the effectiveness of the formerly-used evaluative methods of master dissertations in the age of artificial intelligence. In doing so, the study examines the students' failures and motives to use such tools from the perspective the examiners. The study further scrutinizes alternative assessment methods that examiners may adopt if the traditional ones prove a failure. To achieve this, a descriptive approach was employed, and a close-ended questionnaire, with multiple choices, was distributed to 25 teachers in the Department of Foreign Languages at Skikda University during the academic year 2022-2023. The analyses of the questionnaire demonstrate that the teachers are so skeptical about the students' use of ChatGPT to elaborate their research work for different reasons that the study discusses. Nevertheless, the study points to the need to reconsider and potentially rework assessment methods and strategies for Master 2 dissertations, moving beyond traditional approaches and incorporating new ones. Artificial intelligence, despite its significant potential, is essentially a tool that students should use and not be used by.

Keywords: Artificial Intelligence, Assessment, ChatGPT, Master Dissertations, ChatGPT

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Introduction

Technology has long been a tool for enhancing human efficiency. Higher education is no exception, with students across disciplines relying on technology for learning, data collection, analysis, and more. The contemporary worldly digital condition could inevitably shape the distinct frameworks of higher education, its pedagogical purposes, teaching/ learning strategies and methods, courses content, and more importantly, its assessment criteria, of either mid-term exams and finals and/or assignment papers or dissertations. In the dawn of 2023, the rapid growth of the tools of artificial intelligence and the widespread use of what is called ChatGPT (Generative Pre-trained Transformer) compels the reconceptualization of the role of higher education, its objectives, and challenges. Along with this line of thought, examiners at Skikda University-Algeria, in the department of Letters and Foreign Languages, have started speculating about the challenges that such increasingly growing artificial generative models pose to Master 2 students who are supposed to submit a dissertation of about fifty (50) pages in partial fulfillment of their master studies. The statement of the research problem hence stems from the observation that the dissertations of 2022-2023 Master 2 students at Skikda University are replete with common inconsistencies and shortcomings that manifest themselves in an obvious robotic style, unprecedented mistake-free sentence structure, and diction. In other words, the language of 2022-2023 Master 2 dissertations is only structurally correct; incoherence, fragmentation, and superficial elaboration on ideas are very obvious.

Accordingly, the study posits a number of questions that it aims to answer:

1. What are the problems spotted in master dissertations cohort 2022-2023 from the examiners perspective? And what does it account for them?
2. To what extent could the currently used criteria of assessment be effective when ChatGPT and the writing of master dissertations intersect?
3. What are the alternative methods and strategies suggested to preserve the academic integrity of research according to the Examiners?

1. Aims of the study

The overriding aim of this paper is to explore the utility and the effectiveness of the formerly-used evaluative methods of master dissertations in the age of artificial intelligence. In doing so, the study examines the students' failures and motives to use such tools from the perspective of the supervisor and the examiner. The study further scrutinizes alternative assessment methods that teachers may adopt if the traditional ones prove a failure.

2. Research Methodology

Throughout the study, the descriptive method has been used because it does not just stop at collecting the data, but analyses, interprets, classifies and draws conclusions. The main data collection tool is a close-ended questionnaire, with multiple choices, which was administered to 25 teachers/ examiners at the University of 20 august 1955-skikda. The questionnaire received 15 valid responses out of 25. In order to collect data adequately, the questionnaire has been made of two major sections; the first one is devoted to the students' use of artificial intelligence and the second one to the surge of changing the evaluation methods of master 2 dissertations.

3. Literature Review

The pedagogical objectives of writing a master's dissertation are numerous. Firstly, it aims to stimulate intellectual abilities such as connecting ideas and debating them, as the entire research process is based on coherence, cohesion, and unity. Secondly, it seeks to improve students' reading skills, including skimming and scanning. Moreover, it teaches students how to be methodical, engaging them in a systematic process that progresses step-by-step. The systematic nature of research allows students to experiment with different research stages, completing each individually. Lastly, it provides students with the opportunity to approach issues from various perspectives and draw different conclusions, contributing to the creation of new knowledge. As noted in *Artificial Intelligence and Learning Futures*, the role of higher education is

to serve the common good and, with their concentration of academics working together for research and education, can advance knowledge and serve society with wise and innovative solutions for our critical challenges. Higher education is the space where new ideas can organically emerge...The general aim of universities is to disseminate knowledge and nurture more informed, ethical and educated citizens, able to bring a positive contribution for a civil society. (Popenici, 2022, p. 3 as cited in Popenici, 2023, p. 5)

If students fail to develop all these skills and meet all these objectives, university will shut doors and knowledge will wither. In other words, university will never be a resource of elites and great minds that contribute to the growth of community and humanity alike.

In the post-viva reports that the committee fills out and submits to the administration, the evaluation criteria and the corresponding marks are well outlined. These criteria are namely: presentation (1) mark, quality of writing (6) marks, methodology; the ability of the student to formulate arguments and support them (8). According to these criteria, what can be deduced is that a good portion of marks is devoted to the tasks that ChatGPT perfectly do. In this vein, Lodge (2023) argues, "Traditional university assessments have typically relied on students to produce artefacts to infer that learning has occurred. Now that GenAI tools such as ChatGPT can produce these artefacts to a reasonable degree of quality, universities need to rethink the association between learning and performance (as cited in Kelly et. al., 2023, p. 2-3). That is to say, the formerly used measures must be reconsidered to ensure a fairer evaluation and thus a better performance of master students.

Artificial intelligence is becoming so powerful that it is reshaping the various domains and the traditional ways of learning, teaching, experimenting and even assessment. A growing body of literature has begun to document the potential challenges and opportunities posed by Artificial intelligence tools. A study entitled "Ethics of Assessment in Higher Education – an Analysis of AI and Contemporary Teaching," Khan (2023) explores how Artificial intelligence overlaps with and enhances the modern pedagogical approaches. The study explains the opportunities AI offers in customizing learning experiences, optimizing educational resources, and promoting inventive teaching strategies. The study simply argues that ensuring equitable distribution of AI benefits will certainly contribute to the holistic development of students in higher education.

Artificial Intelligence, also called machine Intelligence, serves generating innovative data and processing vast amounts of diverse information in a very considerable amount of time. They are very practical that they create relatively accurate and engaging materials in the different fields of knowledge language, music, images, videos and research just to name a few. In the realm

of language, chat GPT3 and Chat GPT4, as a more advanced model, “have showcased remarkable capabilities in diverse tasks including text completion, translation, question-answering and problem-solving” (2023, p.74). Both Chat GPT 3 and 4 owe origin to the first language models namely Transformer architecture, which has been announced by “Vaswani et al.” (2023, p. 75). Such Large Language Models are a wide set of models that are originally fashioned to process natural language tasks like summarizing, translating and answering precise questions, reformulating, improving text quality of language ...etc. In “Challenges and Opportunities of Generative AI for Higher Education as Explained by ChatGPT”, ChatGPT defines itself as “a large language model trained to ‘generate humanlike text based on a given prompt or context. It can be used for a variety of natural language processing tasks, such as text completion, conversation generation, and language translation” (Villarreal et. al., 2023, p. 1). Such generative models hence allow students to accomplish successfully their tasks, thwarting their learning processes and the improvement of their skills.

4. Results and Discussion:

4.1. Results

Q1. Have you been in a board of examiners of a Master dissertation during the academic year 2022-2023?

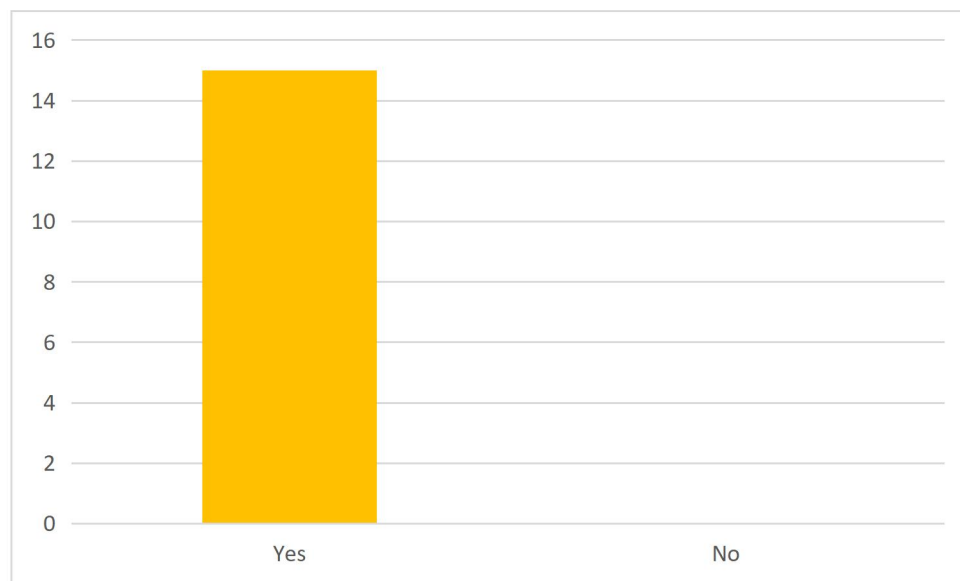


Figure 1: Participants as examiners of Master Dissertations

This figure reveals that the teachers who responded to the questionnaire have all taken part of the examination process of master two dissertations during the academic year 2022-2023.

Q2. Have you detected any recurring patterns of shortcomings in the dissertations submitted during the 2022-2023 academic year?

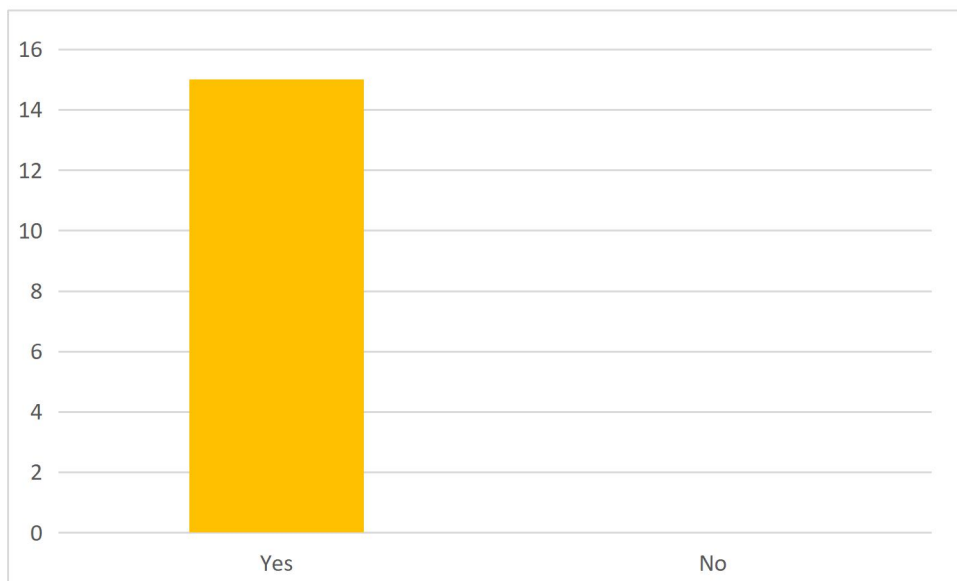


Figure 2: Recurrent patterns of shortcomings detection

This figure illustrates the number of examiners who identified common mistakes and inadequacies in the students' master dissertations. All the participant examiners have positively responded except for one who did not identify any significant difference.

Q3. Which cracks, do you think, were obvious?

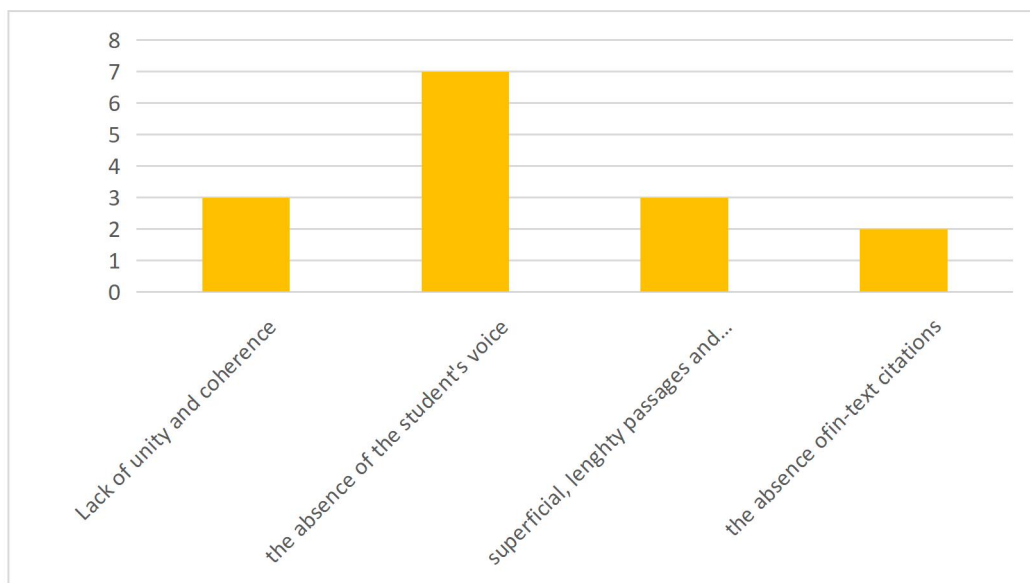


Figure 3: Cracks marked in the students' master dissertations

The figure above demonstrates the examiners' responses to the shortcomings suggested in the questionnaire. Seven (7) out of 15 teachers agreed that one of the major problems in the students' dissertations is the utter absence of the student's voice. Four (4) of them chose the lack of unity and coherence, Three teachers (3) have gone for superficial lengthy passages and only two (2) votes go for the category of superficial, lengthy passages and repetitions.

Q4. Would you please add any other issue that you could spot?

Participants/ Examiners	Issues
Examiner 1	Plagiarism unplanned writing
Examiner 2	Weak rationale with a dismal informative statement of the problem.
Examiner 3	The ability of students to navigate complex concepts, books and papers overnight A very weak methodology
Examiner 4	Mistake free passages with a very sophisticated style that their teachers are not used to.
Examiner 5	Titles and abstracts are not reflective of the content
Examiner 6	Robotic style

Table 1: Examiners additions

The examiners find that what further reveals the students' use of AI in writing their research work is plagiarism and the ability of students to navigate complex concepts, books and papers overnight. Any average reader will not be able to read an exhaustive list of books and write a whole chapter in a couple days. This is what has also driven the teachers to be so skeptical about the AI use. Additionally, the writing style of the research work does not resemble the usual one of the students. The weak methodology and the students' inability to explore the variables adequately is another proof that the research is not written by the department's students.

Q5: Do you think that what accounts for those flaws is the students' resort to the tools of Artificial Intelligence to write their dissertations?

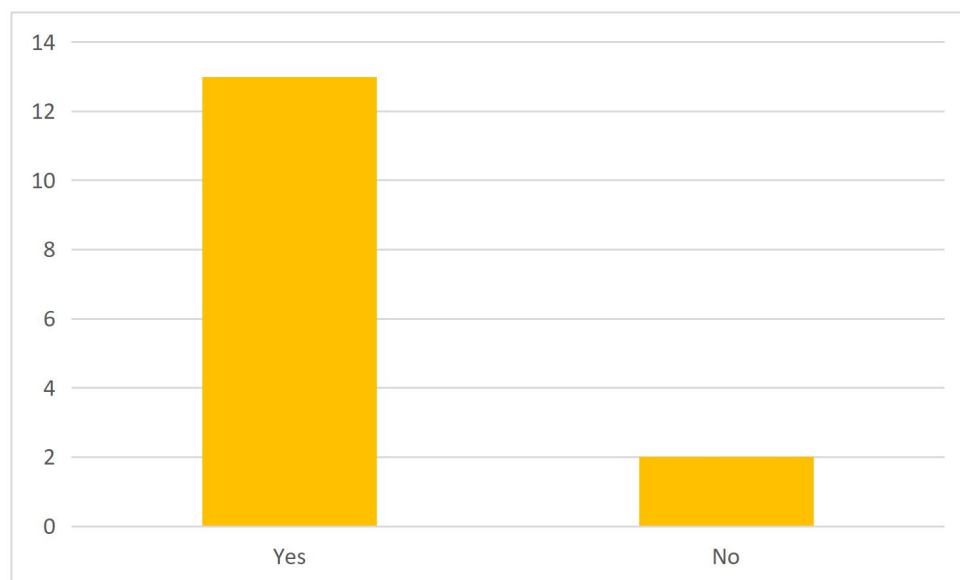


Figure 4: The use of Artificial intelligence

This figure shows that a majority of the teachers think that the students have actually resorted to the use of ChatGPT to write their master dissertations.

Q6: What are some indicators that might suggest a student is utilizing AI to write their dissertations.

Participants/ examiners	Answers
Examiner 1	Misuse of the variables
Examiner 2	Unnecessary lengthy descriptions
Examiner 3	The recurrence of AI vocabulary
Examiner 4	The research is absent stylistically
Examiner 5	Lack of deep analysis
Examiner 6	the huge gap between the students' written production and their oral presentations Presence of some odd paragraphs in the discussion of the research argument

Table 2: Use of AI Indicators

According to the examiners, the common shortcomings all relate to the sentence diction and ideas. In terms of diction, the sentences are imbued with sophisticated words and a highly expressive language. However, these beautifully written sentences convey very superficial ideas. The same idea is repeated multiple times using different words. Fragmentation in meaning becomes very obvious. Worse still, some passages are even out of topic; they deviate from the major thread of thought in the given paragraphs. This same problem is what accounts for the absence of the student's voice, misuse of variables and the huge gap between what is written and orally defended.

Q5: Why do you think students may opt for the use of AI to write their research works?

Participants/ examiners	Answers
Examiner 1	The lack of motivation to make research
Examiner 2	To speed up the writing process
Examiner 3	Inability to write properly and make their ideas flow naturally to express the argument of their research.
Examiner 4	Students' unawareness about the consequences of the use of AI
Examiner 5	Students have no ethics and deontological principles
Examiner 6	Students are weak in methodology

Table 3: Reasons of AI Use

According to the data above, the students' weak competencies are the first reason why they seize the option of ChatGPT to write their research work. The second reason is the students' ignorance of the effects of such a use either ethically or practically. Using AI to write will lead to diminishing more and more the students' motivation to write.

Q7: To what extent is the use of AI useful to the students in writing master dissertations?

Participants/ examiners	Answers
Examiner 1	It might help in paraphrasing
Examiner 2	it provides rarely found information
Examiner 3	edit and review their writing
Examiner 4	It suggests practical plans
Examiner 5	Students need to double check the reliability of data provided

Table 4: Usefulness of AI

This summarizes the most outstanding advantages of using artificial intelligence in writing master dissertation. All the suggested ideas go hand in hand with the essence of writing process: pre-writing, writing and revising. This means that ChatGPT could be of help at planning the students' research work, developing and proofreading it. However, students must not completely rely on it to write the master dissertation.

Q8: Should the assessment process for master dissertations be reconsidered?

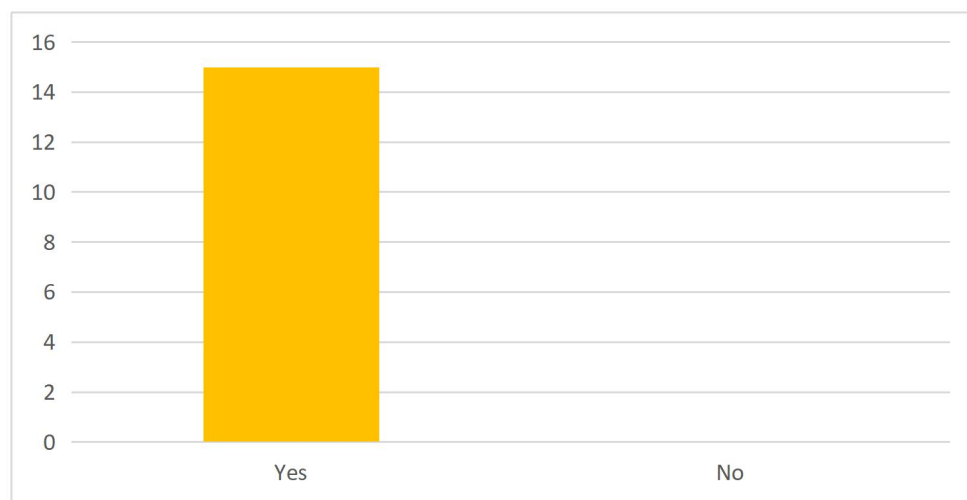


Table 5: Master Dissertation Assessment Reconsideration

This figure demonstrates the number of examiners who find that it is high time the assessment criteria of master dissertation re-checked.

Q9: Are there any other (alternative) assessment tools that you would recommend?

Participants/ examiners	Answers
Examiner 1	Individual assessment (supervisor/examiner to student)
Examiner 2	A reading committee that masters the AI tools
Examiner 3	Constant supervision meetings to examine the writing process
Examiner 4	More attention and marks for the discussion and the oral presentation
Examiner 5	Training teachers to detect more AI content as knowledge is power
Examiner 6	Raise awareness about the side effects of AI use

Table 6: Alternative Assessment Methods

The table above outlines the examiners' alternative methods of evaluation. Six prominent ideas can all work together to prevent any sort of manipulation and ensue equity.

4.2. Discussion:

According to the data presented above, the majority of the department examiners think that master 2 students, cohort 2022-2023, must have used ChatGPT to develop their dissertations' theoretical and analytical chapters. What accounts for their mutual assumptions are the common shortcomings unprecedentedly present in the dissertations. They all find that the students, whose performance at exams was weak enough, could submit elegantly written chapters at a first glance. Subsequently, the chapters seem to entail cracks that are not a pointer to the students' weaknesses as much as to an external force or factor. This is exactly the reason why the examiners and the supervisors of 2022-2023 cohort assume that students have opted for AI generative models to write their research works. The scarcity of materials, which has always been one of the biggest hurdles in writing master dissertations, has no longer been an issue. 2022-2023 students at Skikda University could submit very well researched and documented chapters, replete with beautifully summarized passages that capture the gist of the different resources and the reading material. Yet, the passages are most of the time non-cited. What explains that is probably not the students' failure to cite as they have been studying the module of research methodology for five (5) successive years, but the use of ChatGPT that generally generates lengthy passages without a single reference to the original source.

Speculating about the reasons why these students have opted for such easy means to write their research, the participant examiners suggest that these students wanted to save time. However, the time writing dissertations take will naturally enhance the students' critical skills, language acquisition, etc. And this goes against the rapidity principle of readymade data generated by AI tools. In other words, the process of writing dissertation is not only about acquiring knowledge or forming a new one, but also about improving the students' mental

capacities of inferring, commenting, explaining and synthesizing. What matters most is not the research as a final product but the student as an active agent who can easily move from theory to practice and actually solve problems. This sort of knowledge will help students later assess the reliability of data provided by these generative models. The high risks of misinformation that chat GPT may generate leads to “the propagation of misinformation and hinder the acquisition of accurate knowledge... [this emphasizes] the need for critical evaluation and verification of AI-generated content in educational settings” (2023, p. 93). This process compels the students to learn reasoning techniques, engage in accurate inference and draw rational and sound conclusions from the information they have acquired (2023, p. 94). A solid ground of information equips people and students alike to discern and spot inconsistencies or imprecisions and hence diminish the dangers of absorbing misinformation (2023, p. 94).

According to the examiner teachers’ answers, the dissertation is no longer a space to practice language and research skills. Students seem not too ready to formulate, reformulate, review, elaborate, test, analyze and synthesize as they lack motivation. Yet, what may account for their choices to elaborate their research work this way is rather the fact that they are not good at writing. The students’ performances, either in the former years or during the semester, are not good enough and they generally give students a hard time doing it. Writing dissertations becomes like their first time truly testing their capacity to develop such a lengthy written production using all those skills. ChatGPT is just helping them escape their weaknesses more and more. To solve this, university teachers should help students improve their writing and reading skills, instilling confidence in what they produce.

All teachers unanimously agree on the surge to change the assessment methods of master dissertations. According to Kelly et. al. (2023) “Continuous monitoring, evaluation, and adaptation of teaching and assessment practices will be necessary to integrate GenAI tools effectively into educational contexts while addressing the concerns raised by students and academic staff alike” (p. 12). In such a digital age, the objectives and assessment strategies of writing master dissertations must be adapted to avoid falling in the trap of granting undeserved marks and degrees to Skikda University students. What can be interrogated at this level is the usefulness of ChatGPT. In other words, to what extent can ChatGPT be used as an intelligent machine to elaborate master dissertations? According to the teachers’ responses, the use of ChatGPT must be limited to two main areas. First, it can enhance the writing process in the sense that ChatGPT may offer substitutive approaches and different paraphrases that may help students brainstorm and generate more ideas. Additionally, it might provide students with practical plans that would serve as roadmaps to the developmental paragraphs. Second, ChatGPT might be used for self-assessment to edit and review the texts written by the students themselves. In so doing, the students will benefit from a double act of revision by the artificial machine and the supervisor, preserving the principles of writing a research paper. However, the examiner teachers suggest that the students must rely on their own thinking and reflecting skills to weigh the reliability and the validity of the generated information. To say it differently, students must consider ChatGPT as a means not an end in itself; they should be the ones owning control over it instead of being owned by it.

Alternative evaluation methods require redistributing the marks across criteria and incorporating more evaluative steps that may ensure the integrity of such an academic work. Reading committees and constant scrutiny on behalf of the supervisors are two elements that the Examiners insisted on integrating the evaluation process. In addition, the adaptation of TIC

courses to courses on artificial intelligence that will help students get more familiar with its ethics and limits will teach the students how to use it more effectively instead. Nevertheless, such training TIC courses must be open to the teachers as well to be able to control the students and easily detect it without detectors that take so much time, money and efforts.

Conclusion

A plethora of studies have examined the influence of AI on higher education; while some seem so optimistic about its performance and automatically urge its integration, so many others are so skeptical and find it as a growing threat to the academic integrity. The current study supports the suspicious minds, exploring its utility in writing master dissertations at Skikda University and interrogate the effectiveness of the evaluative methods formerly used from the teachers/ examiners' perspective. Eventually, the research has demonstrated that 2022-2023 master 2 students at Skikda University might have opted for ChatGPT to write their master dissertations from the perspective of their teachers. Furthermore, the teachers find that there is a serious need to re-assess the assessment tools and methods of master studies to ensure equity and academic integrity. To further test the validity of the results of this study. Another questionnaire has been distributed to the students of the same cohort. The results of the students' questionnaire are going to be the concern of a new paper. Artificial intelligence, despite its significant potential, is essentially a tool and not a conscious being with mental and intellectual intelligence. As Garry Kasparov, author of *Deep Thinking*, aptly observed, "Creating better humans will be more important than creating smarter machines." This assertion highlights the indispensable role of the human element, particularly in fields like the humanities.

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