ChatGPT AND PLAGIARISM: A THREAT TO ACADEMIC INTEGRITY IN HIGHER EDUCATION

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Abstract

ChatGPT emerged as one of the powerful tools that generates human-like texts and responses. The tool remains a marvel extension of artificial intelligence, but it induced worry and raised the concerns of academicians and teachers as it is being used by students to mimic original content leading to plagiarism. The present study investigates the main reasons for using ChatGPT to plagiarize academic content. It also explores the potential risks for ChatGPT use in academic settings and its effect on integrity. The research was based on a quantitative research method where questionnaires and interviews were employed as main research tools, involving a large scale of university students. The findings divulged that plagiarism is committed due to many reasons but chiefly by virtue of time limitation, lack of knowledge and understanding, and language barriers.

Index Terms: Artificial Intelligence, Human-Like Texts, Mimic Original Content, Plagiarism.

1) INTRODUCTION

AI intruded all fields making the whole world a digitalized small city. ChatGPT as a form of AI remains as one of the most powerful tools ever developed in the recent era. The emergence of AI language models created a revolution in multifarious fields. Among them, education is now supported by ChatGPT in terms of research development and providing support to teachers and students.

Despite its benefits and usefulness, it addressed a number of challenges and risks as it increased the rate of plagiarism. Students in different academic settings are copying, stealing, borrowing and including other people's work in their own papers with neither acknowledgement nor appropriate citation and referencing.

The threat of plagiarism became the main concern of educators in academic settings, especially as universities do not provide tools and software programs for plagiarism detection and do not impose severe penalties on plagiarism committers. The emergence of AI-powered tools provided opportunities and paved the way for teachers and students and it became very easy to generate content on multifarious subjects and various fields.

For that, it is now crucial for academic institutions to set rules and guidelines for wise use of technology along with respecting others' property and maintaining academic integrity. The present paper examines the role of ChatGPT in encouraging students to copy, cheat and use others' work without acknowledgement or citation.

It also investigates the effect of using ChatGPT on academic integrity. The paper states the pedagogical implications for using ChatGPT and offers recommendations to minimize plagiarism and mitigate its repercussions on academic honesty.

2) DEFINITION OF ChatGPT

ChatGPT is a language model developed by OpenAI (Open Artificial Intelligence) based on conversation and human-like text generation. El Khoury and Nasrallah [11] have stated that OpenAI as an organization was founded in 2015 and based in San Francisco. It was developed by a group of scientists, entrepreneurs and engineers enrolled in the field of artificial intelligence, such as Elon Musk, Sam Altman, Greg Brockman and Ilya Sotskiver, while McGeorge [19] has emphasized that Sam Altman is the current chief executive officer of the OpenAI organization that created ChatGPT.

The abbreviation GPT stands for Generative Pre-trained Transformer as ChatGPT lies on understanding texts and generating responses using natural language. Anderson [1] has argued that GPT emerged in June 2020 but in its form known as GPT-3, which is the third generation of the GPT series, and then was made publicly in August. After that, ChatGPT was released in September 2020. It is deemed a variant of GPT-3 model that is able to identify mistakes and ask questions. Though it is free of charge and can be used by public, it has a paid version with additional features as speedy responses.

The model 'pre-trained' is developed to display various texts from a massive dataset, while the aspect 'generative' allows generating responses by understanding input and producing natural language. However, Mikkelsson [20] has added that ChatGPT as one of the revolutionary creations of AI (artificial intelligence) is basically a natural language model that is able to understand and respond to questions.

It is a virtual assistant that comprises a neutral network called GPT-3, meaning Generative Pre-trained Transformer 3 which is an advanced transformer that can process natural language. On a variety of linguistic data, GPT-3 was trained to extract data from multifarious sources as books, websites, newspaper articles and other materials on the basis of deep learning (machine learning technique).

As being the product of OpenAI, ChatGPT is also a chatbot that can relate to different applications, such as chatbots and language translation. A chatbot is defined as an application or a software program that establishes a conversation with a user. As for ChatGPT, automatic responses and recommendations can be generated by this chatbot (Vogler, [30]).

This powerful tool blurs the lines between users and machine-generated texts. ChatGPT enables users to gain understanding on different topics by providing coherent responses. It is featured by adaptability and being relevant to contextual situations. Users are engaged in open-ended conversations and can sometimes fall in plagiarism and unintentional bias.

As also clarified by Baker [3], by comparing ChatGPT to certain AI-enabled chatbots, it can be assured that the former can process dialogues, understand the context and make decisions, while the later cannot do so perfectly as they have certain limitations; for instance, canned responses, dearth of understanding, no decision-making abilities and short dialogues processing due to memory problems.

Gamil [12] has emphasized that the field of Natural Language Processing (NLP) is revolutionized due to language models as ChatGPT.

It is a neutral network-based model which is trained on a massive dataset making it able to understand the relationship between words and sentences to understand the questions and display various responses for them.

ChatGPT is described as the state-of-the-art which is able to generate human-like responses and texts. To identity the significance of every single input, it uses the attention mechanism in order to understand the context of the questions and produce coherent response.

3) FEATURES OF ChatGPT

There are multifarious features that characterize ChatGPT. Some of them are stated below:

1. ChatGPT is trained to understand and use different styles of language and datasets. McGeorge [19] has alluded to the fact that ChatGPT can be used in various areas and perform different tasks, such as writing emails, presentation outlines, product descriptions, content, blogs, articles, job applications, job descriptions, analyses of large amounts of data and many other tasks.

2. ChatGPT is featured by its coherent responses in accordance with diverse contexts and domains. Anderson [1] has stressed that ChatGPT is effective because it generates coherent responses in different fields. It can process up to 500 billion words as well as numbers.

3. It generates massive amounts of data and is pre-trained to display internet texts in a way that is similar to human-like responses. Momesso [22] has argued that ChatGPT uses its core transformers which are deep learning algorithms capable of understanding and generating human-like language and texts.

4. The chatbot can understand and process natural language and engage in different conversations and dialogues. Momesso [22] has stated that ChatGPT is able to generate highly coherent and contextually relevant responses in accordance with the input given to it.

5. It is accessible on a wide range of contexts and to many users as researchers, academicians, businesses, students and others for free. Swarnkar et al. [28] have emphasized that ChatGPT is featured by cost-effectiveness, especially for organizations in the field of business that seek 24/7 customer service without the need for human involvement.

6. It is characterized by fast responses as well accurate ones relevant to the context which helps reducing time and efforts and boosting the users' experience.

7. It is designed to relate to multiple applications, services, chatbots and other sources. Swarnkar et al. [28] have added that ChatGPT is based on the idea of digital

communication, that is why, it can be digitally accessible on any device connected to the internet.

8. ChatGPT is versatile as users can employ it to generate content, conduct research, answer questions, find solutions and other cases.

9. Though the vast use of ChatGPT, it is still criticized for its nonsense responses, bias and irrelevant contextual texts in certain situations.

4) DRAWBACKS OF ChatGPT

While ChatGPT proved its adaptability and versatility, it also demonstrated some drawbacks as listed below:

1. Redundancy and repetition might be the common drawbacks of ChatGPT. To put it simply, it generates repetitive patterns, fillers long responses and paraphrased information. ChatGPT processes the language in repetitive patterns and chunks that might not last long. That is, it does not have a permanent memory. In this concern, El Khoury and Nasrallah [11] have clarified that ChatGPT is limited in terms of knowledge as it provides data related to version launched in November 2022 and earlier.

2. Responses provided by ChatGPT can be changeable and sensitive to the way how users ask questions. In other words, ChatGPT can be affected by input phrasing leading to different responses for the same query.

3. ChatGPT may generate biased responses. According to Mladjenovic [21], some glitches were recorded for ChatGPT use. Some of them include knowledge limitation, bias (when it comes to asking questions about politics, philosophy, public policy and other related fields) and incorrect answers.

4. ChatGPT might misinterpret the users' intentions providing irrelevant responses. Swarnkar et al. [28] have assured that another critical limitation of ChatGPT is the fact that it was trained on English language data, which infers that it may be ineffective and provide inaccurate and irrelevant responses when using other languages. The lack of understanding for the question's context might be the reason for providing irrelevant responses, which means that ChatGPT has a drawback of context misunderstanding

5. Responses are limited, not original and lack creativity.

6. Certain irrelevant or incoherent responses might be provided as the questions posed by users might be ambiguous or confusing to ChatGPT.

7. ChatGPT may provide information that can be inaccurate and out-of-date. According to Swarnkar et al. [28], as ChatGPT is trained on specific data, it may provide inaccurate and irrelevant responses if the training data is limited or biased.

8. It does not evaluate or critically assess information. El Khoury and Nasrallah [11] have added that it cannot understand emotional nuances or forms of graphic

language. Though ChatGPT is trained on huge amounts of information, its knowledge is still restricted by the data it has access to since it was updated to the year 2021 (cited in Wang et al., 2023). New experiences cannot be considered as a source of learning for ChatGPT. Not only this, but it cannot adapt to changing contexts leading to generating irrelevant or inaccurate responses (cited in Sng et al., 2023).

9. Data accuracy is not assured by ChatGPT. It may provide falsified information as it is unable to verify information and facts.

10. ChatGPT might sometimes expose users to inappropriate or offensive content. Baker [3] has mentioned that one of the most shocking disadvantages of ChatGPT was the one related to Microsoft. Microsoft limited ChatGPT which was integrated in Bing to a maximum of 5 questions to be posed by a user per session and a total of 50 questions per a day, and this came as a result of an unhinged spree insulting, lying and emotionally manipulating users when using the search engine. Anderson [1] has added that ChatGPT is criticized for certain ethical issues as it is banned by many educational institutions. Not only this, but researchers expressed their worries with regard to copyright infringement as ChatGPT provides output on the basis of human-generated texts. Questions were also raised on whether it is ethical to use ChatGPT for customer services and therapeutic counseling.

11. The absence of citation is a main disadvantage of ChatGPT which makes it difficult to track the source of information and assure its accuracy.

12. ChatGPT is not professional. It has a limited experience and may provide general information when asked about special fields along with the absence of interaction. Swarnkar et al. [28] have argued that one of the main disadvantages of ChatGPT is the lack of interaction with emotions and empathy, that is, it is not featured by emotional intelligence. The latter can induce frustration and dissatisfaction of its users, especially those who are looking for human-like interaction.

Though ChatGPT was trained on large amount of data, its knowledge is still limited to the one that it has been trained   on. In this way, accuracy might be lost and questions may be out of its expertise.

5) PLAGIARISM

Plagiarism can be defined as the unauthorized appropriation of any piece of writing which is deemed a breach of academic integrity. It refers to the deliberate action of taking others' words and ideas and stating them as one's work.

Using someone's words and ideas without permission, referencing or reverting to their source and mentioning them as one's words and ideas is also called plagiarism.

Plagiarism can be defined as the inappropriate use of intellectual property which can be borrowed, employed and distributed without seeking permission of the owner (Bloch, [6]). Plagiarizers tend to steal images, ideas, words, texts or other forms.

Pecorari [17] has listed the different meanings of plagiarism as follows:

1. It is to include another person's work in one's work without using quotation marks and giving credit to the source.

2. It is the inclusion of other people's work with no acknowledgement.

3. It is to summarize and paraphrase other people's work without acknowledging them.

4. It is to cut and paste online resources without acknowledgement of the data source.

5. It infers submitting a certain paper that was written collaboratively as completely one's work without mentioning those who collaborated to write it. This process is also known as collusion.

6. It is to submit a particular work as imagery and creative products without acknowledgement.

Plagiarism is commonly known in academic institutions where some students tend to submit their papers or projects including plagiarized content. On this wise, plagiarism is a type of academic dishonesty, but it is not severely considered in many countries which might be due to the difficulty of plagiarism detection or absence of plagiarism detection software at the level of academic institutions. Davis et al. [9] have indicated that students belonging to different segments of education are committing plagiarism which might be due to the fact that they feel afraid of failing and getting bad marks or averages. Cheating is defined as the act of defrauding, misleading, deceiving, fooling or depriving by trickery. Students might also cheat with their peers, on their own and even with their parents.

There are diverse forms of plagiarism; for example, it may involve the act of copying and pasting information and presenting it as one's property. This infers that the citations of the original work are not stated in one's work. The forms of plagiarism can be extended to include music, videos, audios, codes, figures, tables and other original works. Montoneri [23] has mentioned that some of the reasons that contribute to committing plagiarism is: the lack of deterrence, time limitation and efficiency, and values and attitudes of students (cited in Park, 2003; Yeo, 2007). Henceforth, plagiarism can be intentional, that is, one deliberately uses others' works without citation or acknowledgement. Whereas, unintentional plagiarism can be committed because of one's lack of knowledge and understanding on academic citation and referencing. As Hall and Longman [13] have broached, certain actions may lead to plagiarism as ignorance and carelessness.

Buranen and Roy [8] have adduced that plagiarism is considered as a legal term; however, it does not necessarily induce a violation of the copyright law. In most cases, plagiarism is committed in the form of wrongful copying. The emergence of technological advances and tools makes it easier for users to plagiarize, but at the same time, it made it easier to detect plagiarism. Plagiarism is a breach to academic honesty, integrity, acknowledgement, originality and ethical considerations. It cannot be minimized by setting punitive measures but rather by raising awareness towards its dangers and precautions. Therefore, promoting a culture of academic integrity is a main responsibility in the academic realm.

6) ACADEMIC INTEGRITY

Academic integrity is defined as the honest approach that one is committed to in all academic activities. It infers allegiance to certain values as loyalty, fairness, responsibility and honesty when using sources. Not only this, but adhering to the academic guidelines and rules and citing others' works is a main feature of academic integrity. Oyekan [24] has described academic integrity as honesty determining the extent to which one is ethical, straight and has academic morals. He has also notified that what leads to academic honesty or dishonesty is linked to behavioral, social and cultural settings. According to McCabe et al. [18], there are many reasons for why academic integrity is significant as follows: Academic integrity is the cornerstone of academia, cheating is widely spread, ethical development is evolved during the college years and pressures are put on college students to cheat. Singh et al. [26] have mentioned that academic integrity is featured by being static and dynamic. It is dynamic as it is reviewed regularly; however, it also remains static between reviews.

Academic integrity or honesty also requires averting all types of cheating, copying and plagiarism; however, it is extended to include a range of ethical standards. That is, following ethical considerations in an academic work can be called academic integrity. Bretag [7] has clarified that it is the pillar of ethical academic practices and consists of values that are commonly agreed upon by the International Centre for Academic Integrity. Among these values, honesty, fairness, trust, responsibility and respect are the core ones for academic integrity.

However, Denney and Roberts [10] have stressed that honesty is the main foundation of academic integrity and is required for realizing fairness, respect, trust and responsibility. Being honest infers being truthful and giving credit to others and encouraging the culture of acknowledgement. Jerjes et al. [15] have added that research integrity is known as the "ethical procedure of research being conducted with strict standards and compliance with the law. It also assures the highest level of honesty and forthright delivery of the information gathered during research" (p. 18). It thus implies the appropriate and transparent report of findings, trustworthiness and truthfulness. Codes of conduct and guidelines are often set by academic institutions, so that students would be committed to integrity in their academic endeavors. Maintaining academic integrity contributes to the evolution of intellectual growth and developing education and its quality and research.

7) PRINCIPLES OF ACADEMIC INTEGRITY

Academic integrity consists of the following principles:

1) Being honest and truthful in all academic works which implies the acknowledgement of the main source and accrediting the original contributions of others. Denney and Roberts [10] have claimed that honesty is the bottom-line foundation of academic integrity.

2) Being committed to ethical standards and citing others' work contributes to respect and appreciation of others' intellectual property.

3) Credibility can be reinforced when one adheres to transparency in an academic work as setting clear methodologies and reporting truthful finding.

4) Individuals should bear responsibility for their work and be committed to the guidelines set by their institutions which fosters ethical behaviors. Oyekan [24] has argued that social, cultural and behavioral settings contribute to constituting academic integrity or honesty. The latter is described as the extent to which one is morally upright and ethical.

5) Adhering to the academic guidelines and ethical considerations is a clear demonstration of trustworthiness. Bretag [7] has stated that academic integrity implies being committed to trust, honesty, respect, fairness and responsibility in learning, teaching and research. It is vital to the reputation of individuals as well as universities (cited in Universities Australia, 2017).

6) Following the academic policies means that individuals are taking responsibility of their own work.

7) One of the main principles of academic integrity is transparency. Adhering to transparent practices when conducting a research implies the clear presentation of its methodology and findings. Bleeker [5] has called attention to the fact that academic dishonesty is associated with the act of copying content, purchasing content and presenting it as one' work, packing entries on a bibliography and copying materials without citation and referencing.

8) Independence is a key principle of academic integrity which involves independent thinking and adherence to one's own thoughts and ideas.

9) Academic integrity fosters continuous learning and knowledge expansion.

Being committed to academic integrity and its principles contributes to valuing honesty, responsibility, fairness, respect and credibility in the academic institutions.

8) METHOD

The present study was grounded on the following research questions:

1) What are the students' perceptions on plagiarism in higher education?

2) Why do university students commit plagiarism in their academic endeavor?

3) How can universities eradicate plagiarism and maintain academic integrity?

The study delves into the topic to verify the hypotheses below:

1) University students deem plagiarism as a serious breach of academic integrity that should be eliminated in higher education.

2) University students tend to plagiarize in their academic works because of lack of knowledge and understanding, time limitation and language barriers.

3) Universities can eradicate plagiarism and maintain academic integrity by setting penalties for plagiarized works and providing free software programs for plagiarism detection.

The current study focused on the use of surveys employing random sampling procedures. The population of the study concerned university students enrolled in multifarious specialties in all Algerian universities. Henceforth, the study is based on a quantitative research method. Interpretivism was the core research paradigm followed in the present study. The rationale behind the study was to advocate an approach which values academic honesty and raise awareness towards the repercussions of plagiarism. In addition, the study promotes otherwise use of ChatGPT amongst university students.

The sample was randomly chosen involving a total of 170 university students. A high majority of the participants were females, including 120 (70.6%) ones, and a minority of 50 (29.4%) males. The participants belong to various age categories; however, the highest rate (N=71; P=41.8%) was attributed to the category aged 21-23 years old. A total of 72 (42.4%) university students are enrolled in the License track, while the highest number (N=88; P=51.8%) are registered in Master degree. In addition, only 11 (6.5%) are Doctorate students. A high number of the students (N=10; P=5.9%) study at university of Algiers 3 (named Ibrahim Soltan), whereas a total of 9 (5.3%) students is similarly recorded for universities of Lounissi Ali Blida 2 and Benyoucef Benkhada Algiers 1. However, 6 (3.5%) students were engaged in the study from university of Saad dahleb Blida 1 and Benkhaldoune Tiaret. A sum of 7 (4.1%) students are enrolled at university Hoari Boumadiene, Elhadj Lakhdar Batna 1 and Mantouri Constantine 1.

A similar number of the students (N=4; P=2.4) was randomly chosen from university of Yahia Fares Médea, Mohamed Eseddik Benyahia Jidjel, Elarbi Tebessi Tebessa, Badji Mokhtar Annaba, Abdelhamid Mehri Constantine 2 and even 3, Mustapha Ben Boulaid Batna 2. Only 3 (1.8%) students were randomly selected from university of Mohamed Bouguerra Boumerdes, Hama Lakhdar ELoued, Mohamed Cherif Messadia Souk Ahras and Mohamed Kheider Biskra. Additional number of students (N=2; P= 1.2%) were also chosen from other universities as Bouira, Ghardaia, Ouergla and others. The participants study different subjects as Computing, Arabic, English, French, Law, Psychology, Architecture, Mathematics, Educational sociology, Chemistry, Accountancy, Trade, Finance, Organizational sociology, German, Biology, History, Pharmacy, Human Resources Management, Dentistry and Artificial Intelligence.

Consent was sought electronically at the beginning of the questionnaire and interview, that is, the participants have to tick the consent box prior to revealing their personal information and answering the questions. As Arabic is the official first language of Algeria, the questionnaire was designed using the Modern Standard Arabic, so that it can be understood by all participants. Thus, the questionnaire and interview tackled a range of participants belonging to different age categories and learning various subjects at the level of diverse faculties at Algerian universities along 58 provinces.

8.1 Materials

The questionnaire consisted of four main sections in which the first one aimed at gaining an overview of the participants demographics, whereas the second one was included to identify the perceptions of university students on plagiarism being committed in higher education.

The third section comprised questions aiming at investigating and listing the main reasons for committing plagiarism; however, the last section consisted of questions aiming at finding ways to eradicate or at least minimize plagiarism in tertiary education and preserve academic honesty and integrity.

The questions pondered in the questionnaire were varied including Yes/No, multiple choice, open-ended and Likert scale questions. Furthermore, interviews were also designed to be conducted with a minority of the students (N=4) as the remaining ones did not accept to be interviewed.

8.2 Procedure

Prior to the investigation, the survey was piloted on a minority of the participants (N= 10). Non-probability sampling procedure was utilized to select the targeted participants. As randomization was the main sample selection procedure, participants belonging to various areas/provinces, age categories, background, gender and specialty were involved in the study. In this way, the study was conducted at a national level in Algeria.

9) RESULTS

Results of the study are listed in accordance with data collection and analysis below:

✓ Perceptions on ChatGPT

The highest number of university students (N=85) emphasized that ChatGPT added value to education by expressing their agreement, in addition to 39 students who strongly agreed as well. Only 14 students disagreed claiming that the chatbot did not provide any value to tertiary education.

The importance of ChatGPT was emphasized by a great number of the students (N=49 for strong agreement and 97 for agreement) as it represents a helping tool and vital assistant in their studies and projects. Only 11 disagreed stating that the chatbot is not helping them in their academic career.

Many students (N= 43 for strong agreement; N= 69 for agreement) confessed that their papers or projects include plagiarism as they use some ideas from ChatGPT without citation or acknowledgement, whereas a minority (N=22) disagreed claiming that their papers do not include plagiarism.

Additionally, 42 strongly agreed and 59 agreed that the work they submit is not original because it includes others' ideas, while only 3 strongly disagreed and 29 disagreed about it assuming that their work include only their own ideas. Bansal et al. [4] have clarified

that students over rely on chatbots as ChatGPT which leads to dismissing guidance and mentorship from their educators.

They also misuse the chatbot to write their assignment which leads to plagiarism and academic dishonesty resulting in negative outcomes. In the interview, similar views were shared by 3 students concerning the absence of guidance which makes it difficult to use the chatbot (e.g., ChatGPT) to get accurate responses and correct feedback.
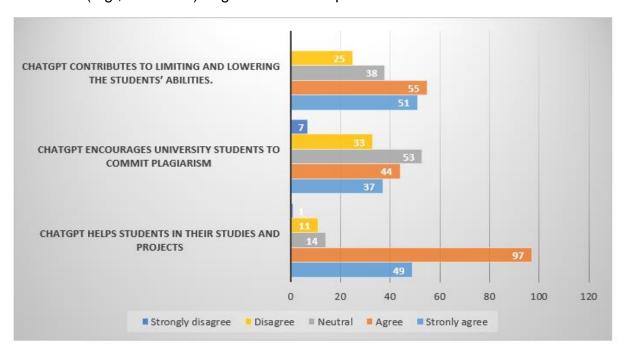

Fig 1: University students' perceptions on ChatGPT

A high number of the students (N= 37 for strong agreement; N= 44 for agreement) stressed that the emergence of ChatGPT and its usefulness in terms of use and human-like responses encourages them to commit plagiarism. A low number of them (N= 33 for disagreement; N= 7 strong disagreement) argued that they are not encouraged to use the chatbot. As a supporting view, ChatGPT encourages students to rely on others' ideas and works, and the view was basically expounded by 45 students (for strong agreement) and 66 others (for agreement). Notwithstanding, only 24 disagreed about it. The idea was also elucidated by Hai-jew [14] who has stressed that using chatbots as ChatGPT hinders the learning process and encourages laziness among students. ChatGPT contributes to limiting and lowering the students' abilities as conceded by 51 students who strongly agreed and 55 who agreed. However, 25 students disagreed about it. ChatGPT helped increasing the rates of plagiarism in higher education which was admitted by 40 students with strong agreement, 58 with agreement and only 23 ones expressed their disagreement. Identical view was expressed by Keengwe [16] who has accentuated that the use of ChatGPT, especially the excessive one, would lead to decreasing the students' cognitive efforts and limiting their analytical skills and critical research evolution. When students were asked whether plagiarism is considered as breach to academic integrity

and honesty, 90 of them strongly agreed, 57 agreed and only 8 disagreed, in addition to the ones who were interviewed (N=4), claiming that it promotes plagiarism and overreliance on chatbots; thus, it is a breach to academic honesty. The same view was shared by Bretag [7] and Velliaris [29]. In this context, the first hypothesis assuming that university students deem plagiarism as a serious breach of academic integrity that should be eliminated in higher education was confirmed.

✓ **Reasons for Committing Plagiarism through ChatGPT**

A sum of 90 students agreed and 55 strongly agreed that they encounter difficulties in terms of writing their papers and projects due to the lack of ideas and knowledge. Howbeit, only 18 students disagreed arguing that they can write their papers using their own ideas. As averted by 62 students who strongly agreed and 77 who agreed, the lack of understanding is the main reason that pushes students to plagiarize, whereas only 19 students disagreed. The interviewed students (N=4) also emphasized that most of the time, they do not have knowledge about the topic that they have to write about; as a consequence, they tend to use others' work without citation and acknowledgement. In other words, students encounter many difficulties when writing their assignments, and in order to hide their lack of knowledge, ideas and understanding, they tend to throw words in their papers. Time given to write research papers and projects is not sufficient which obliges them to commit plagiarism as evinced by 42 university students with strong agreement and 52 with agreement. A total of 44 claimed that time is not a restriction and does not induce hurdles when they have to submit a specific paper or project. Roberts [25] also shares the same view that plagiarism is not intended by many students as the main reason for committing it can be due to the fact they run out of time or because of pressures from work, family or scholarship.
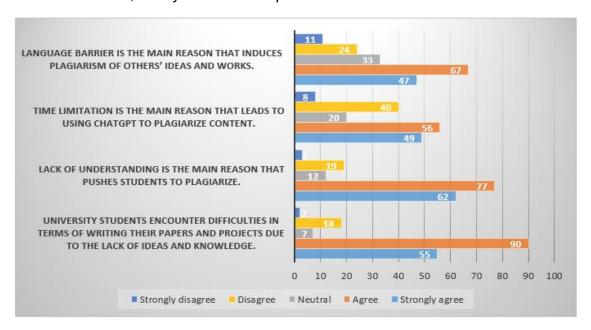

Fig 2: Reasons for committing plagiarism through ChatGPT

To bolster the aforementioned view, 49 students strongly agreed and 56 others agreed that time limitation is the main reason that leads to using ChatGPT to plagiarize content, while 40 students expressed their disagreement. Language barrier is the main reason that induces plagiarism of others' ideas and works as accentuated by 47 students (for strong agreement) and 67 (for agreement) in the questionnaires, in addition to 4 students in the interviews; nonetheless, only 24 students assumed that they do encounter language difficulties once they write their assignments or prepare their projects. Roberts [25] and Angélil-Carter [2] have also elucidated that language problems are the main reason that pushes second language speakers to plagiarize content. The second hypothesis speculating that university students tend to plagiarize in their academic works because of the lack of knowledge and understanding, time limitation and language barriers was vouched.

✓ **Proposed Solutions to Eradicate Plagiarism**

Providing programs that detect plagiarism was the main solution that was suggested by university students (N= 61 for strong agreement; N= 69 for agreement), while only 13 disagreed claiming that it is not the best solution. Providing software programmes that detect plagiarism as well as the use of ChatGPT can help minimizing plagiarism and maintaining academic integrity. The view was upheld by 58 students who strongly agreed and 74 who agreed. While only 11 disagreed about it. The same case was for 4 interviewed students who proposed software programmes provision for detecting plagiarism as a decisive solution for breaching academic integrity. In addition to providing software programs for plagiarism detection, Strittmatter and Braton [27] have alluded to the new policies and honor pledges signed by students that were set in the training program of both Cogdell and Aidulis as a way to minimize the rate of plagiarism and raise the students' awareness towards academic integrity.
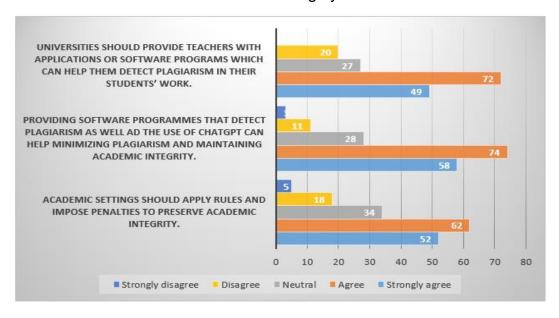

Fig 3: Proposed solutions to eradicate plagiarism

Applying severe penalties can reduce the rate of plagiarism which was underscored by 50 students with strong agreement and 48 others with agreement. A minority of them (N=29) refused imposing penalties on plagiarism committers. However, "the penalties for being caught plagiarizing can be much greater than failing a paper or even a class" (Roberts, [25], p.132).

Similarly, it was pinpointed by 52 with strong agreement, 62 others with agreement and 3 interviewed students that academic settings should apply rules and impose penalties to preserve academic integrity; however, only 5 strongly disagreed and 18 ones disagreed. Universities should provide teachers with applications or software programs which can help them detect plagiarism in their students' work as given prominence to by 49 (for strong agreement) and 72 students (for agreement), whereas in this view, only 20 ones disagreed.

The same view was also expressed by Hai-jew [14] who has made plain that academic contexts started applying preventive measures to eradicate plagiarism, such as the use of outright banning chatbots on computers as well as policies to chatbots misuse along with changing the outcomes assessment. To wit, the third hypothesis which presumes that universities can eradicate plagiarism and maintain academic integrity by setting penalties for plagiarized works and providing free software programs for plagiarism detection was also corroborated.

10) PEDAGOGICAL IMPLICATIONS

A proactive and multi-dimensional approach should be promoted to equip students with the skills required for appropriate use of ChatGPT. The implications of the present study are multifaceted and can be stated as follows:

1. Teachers should raise their students' awareness towards the limitations of using ChatGPT.

2. Educators should emphasize appropriate citation and referencing of resources which helps mitigating the illegal copying and plagiarism.

3. Teaching students how to use critical skills and evaluate the resources they use in their papers can minimize committing plagiarism.

4. Fostering a sense of responsibility and honesty can be assured by including topics about the ethics of using technology in the curricula.

5. Adapting the assessment strategies may help educators detect plagiarism by designing tests and exams that require genuine contribution and thoughts.

6. Guidelines for using AI should be reinforced in academic settings, such as emphasizing the role and importance of academic integrity.

7. Boosting peer review and peer feedback may help students produce original works. It would reduce plagiarism and assure academic integrity.

8. Teaching students how to paraphrase and summarize appropriately can help them avoid plagiarizing and copying AI-generated content.

9. Creativity and originality can be fostered in the class as teachers promote a sense of challenge among students to produce authentic and creative content.

10. Raising the students' awareness towards plagiarism and boosting their responsibility of producing original work through sessions allotted to explaining ethical considerations and ethical decision-making skills can be the first step for maintaining academic integrity.

Not only students, but educators should also be trained to detect plagiarism on the basis of AI facilitated tools.

11) CONCLUSION

There are many challenges, difficulties and opportunities presented by the use of AI language models as ChatGPT at universities. Maintaining academic integrity is an arduous task as it is difficult to detect plagiarism without the use of software programs and applications. Though ChatGPT helps in learning, teaching and research, it raises concerns on stealing content and leads to falling in the risk of academic dishonesty. Fostering the culture of academic integrity can be realized by training teachers on AI and language models use and engaging students in subjects that foster digital skills, critical thinking, appropriate citation and ethical decision-making. Universities and academic settings can help minimizing plagiarism and preserving academic integrity by setting guidelines and policies that reinforce appropriate citation and acknowledgement of others' property.

12) RECOMMENDATIONS

To mitigate the potential risks of plagiarism, some guidelines should be imposed and ethical considerations as well should be fostered in the academic institutions.

1. Curriculum can be supported by certain subjects that can make students wary of the risks and repercussions of committing plagiarism. For instance, including subjects as AI literacy and digital ethics help maintaining honesty, trust and responsibility towards research.

2. Teachers' understanding of AI and technology use should be fostered through training and exposing them to professional development seminars and workshops.

3. Providing equipment, software programs or applications for detecting plagiarism can assist teachers and help preserving academic honesty.

4. Promoting a culture of academic integrity can be realized by setting guidelines and rules against plagiarism and imposing penalties for those who copy, steal or use content without citation or acknowledgement.

5. Providing resources to students, sharing insights with stakeholders on the use of AI tools and addressing the main concerns of using ChatGPT may help raising awareness and maintaining academic integrity.

6. Students can be encouraged to take ownership of their works which would add value to scholarship and academic research.

7. Universities should develop guidelines and implement policies for academic research, so that students would be informed about proper citation and referencing, especially when using AI language models as ChatGPT.

Therefore, promoting a culture of academic integrity in the academic settings would lead to reinforcing honesty, originality, responsibility, trust and respect for content and people's property.

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