Priorities and Precautions apropos Chat GPT in Academia with especial reference to Agricultural Education

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ABSTRACT: ChatGPT was launched on November 2022 and it didn't take them much long to become a global sensation. An AI chatbot so dynamic and powerful that made corporates like Google and Microsoft to launch their own AI models to compete with ChatGPT. It took them just 5 days to reach 1 million user mark which is an incredible feat because even platforms like Facebook and Instagram took months to reach 1 million user mark. Various statistics showing the time required by prominent social media platforms to reach 1 million visits as against ChatGPT has been shown. ChatGPT has become very popular among the students of various education levels and here an attempt is made to study the pattern of use of ChatGPT among students. The level of satisfaction was also measured on a 0-9 continuum and its descriptive statistics are shown. Like everything else in the world, even ChatGPT comes with a lot of limitations. Working with ChatGPT is like trying to solve a puzzle blindfolded if we aren't properly aware of the capabilities and incapabilities of the functioning of ChatGPT. A pretty good example of it is the professor from Texas University who failed the entire class after ChatGPT confirmed that the assignments he gave were done using ChatGPT. Some primary and some secondary data have been collected apropos limitations of ChatGPT which have been stated below.

Keywords: ChatGPT, ICBLE-2023, Blended learning, Level of satisfaction, Alex Twinomugisha.

I. INTRODUCTION

A profound revolution has taken place in various aspects of our lives due to recent advances in artificial intelligence (AI). It is noteworthy that conversational agents like ChatGPT have emerged in recent years as a result of this AI revolution, and they have become an important part of the lives of students around the world. ChatGPT has become a valuable tool for students, allowing them to learn more effectively, engage with others, and solve problems more effectively. As a result of ChatGPT being incorporated into the lives of students, a vast amount of information is instantly available to them, enabling them to learn and grow intellectually. ChatGPT offers the advantage of personalizing the learning experience for each student, which is a key characteristic of the program. In order to adapt to the needs and preferences of the student, ChatGPT uses natural language processing and machine learning algorithms to learn from each interaction. In addition to providing feedback and suggestions, ChatGPT serves as a virtual writing partner, helping students refine their ideas and improve their writing through interactive conversations. Although ChatGPT has many advantages, it is essential that students are

aware of its limitations. The ChatGPT program provides a wide range of information, however students should cultivate critical thinking skills and ensure that the information they are receiving is accurate and reliable. Social skills and teamwork remain vital parts of holistic education, regardless of the prevalence of virtual assistance.

Need for ChatGPT among students and scholars
In this new age of growing competition, students need to prove themselves at various levels. With the advent of internet, information is now readily available everywhere, the only thing that is required to do is to organise this information in a presentable manner. Till the end of 2022, Google was the most preferred search engine for students and potentially everyone else in the world. The major drawback with Google was the requirement of manual organisation of information which is again a time-consuming process. ChatGPT overcomes this limitation of Google by generating synthesised information in an already presentable manner without any human intervention, thus further reducing manual work and time. Students and Scholars who are aware of ChatGPT has already moved from Google search and in the upcoming days, ChatGPT could potentially replace Google search as a whole.

Remarkable success of ChatGPT

ChatGPT has achieved success in a record-breakingtime. To reach a landmark of 1M users, it took only 5 days [1].

Comments of some prominent figures about ChatGPT

1. Tim Cook, Apple's Chief Executive Officer, revealed that he uses ChatGPT, an artificial intelligence (AI) chatbot, and expressed enthusiasm for its "unique applications" [2].
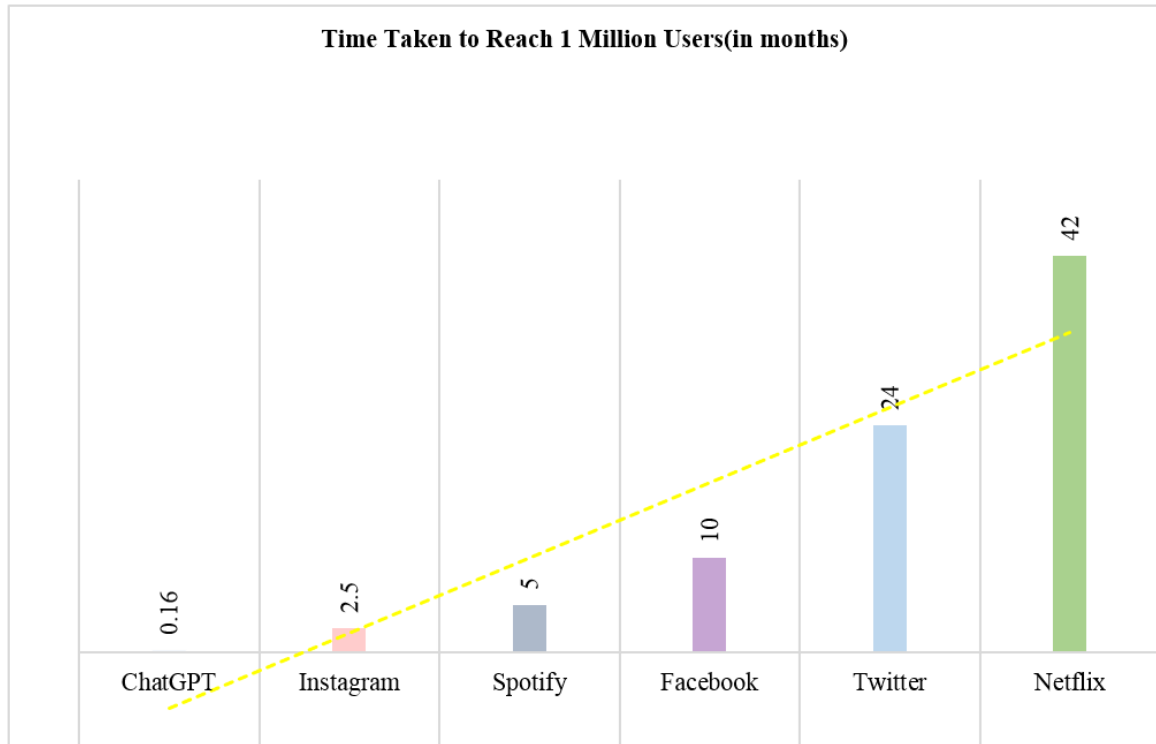

Fig. 1. Graph showing time taken to reach 1 million users by various online service providers (Duarte, 2023).

Fig. 2. Graph showing the number of visits of users to ChatGPT against time.

2. Buffett stated that his close friend and Microsoft co-founder, Bill Gates, assisted him in testing the AI chatbot ChatGPT. Despite the fact that the technology performs "remarkable things", he remains concerned

about its use. Whenever there is a technology that is capable of doing all kinds of things, Buffett gets a little concerned because he knows that we cannot reverse the progress of science and technology [3].

4. Bill Gates acknowledged that he had met the team behind ChatGPT-creator OpenAI in 2016 and was quite impressed with what they had accomplished [4].

MATERIALS AND METHODS

Data was collected in person from the members attending the Blended Learning Conference in person and also from the students studying in Agriculture and various other fields residing in different states of India using Google forms. Ex-post-facto research design was used to reach to the conclusion. Descriptive Statistics was used for the analysis of Satisfaction level and to rank the usability. Pictorial Graphs were created to show various statistics of ChatGPT's tremendous success in such a short span of time [5].

RESULTS AND DISCUSSIONS

We have selected 10 most common uses of ChatGPT and arranged them according to the utilisation pattern, ranking from I to X. It has come to light after the collection of data that, most of the people uses ChatGPT to complete their assignments. Since ChatGPT is capable of synthesising information, it has become a go-to place for students to take assistance in preparation of assignments. Students use ChatGPT to search for general relevant information for their day-to-day life. Next in line is the students who use ChatGPT to kill their curiosity. Almost 57% of the students uses ChatGPT to get assistance for thesis writing. Some of them also uses ChatGPT to improve their creative writing. The least use pattern was found to be for spelling and grammar check and for self-improvement.

The level of satisfaction was measured on a 0-9 continuum. Data of 30 students were collected from Blended learning Conference in Delhi and from some students residing in several regions of the country using Goole forms. The mean satisfaction level ($X\Box$) was calculated to be 6.4 and the Standard Error (SE) was calculated to be ±0.256. Since the upper limit of the scale is 9 and our mean is almost 2.6 less than it, it means ChatGPT has a great scope for improvement (Table 2) [6].

Table 1: Utilisation preference ranking among students apropos ChatGPT.

Sr. No.	Statement	f	%	Rank
1	Study assignments	26	86.67	I
2	General information	23	76.67	II
3	Inquisitiveness	21	70.00	III
4	Thesis assistance	17	56.67	IV
5	Improve creative writing	13	43.33	V
6	Summarise texts	11	36.67	VI
7	Paraphrasing	7	23.33	VII
8	Writing mails	6	20.00	VIII
9	Spelling and grammar check	3	10.00	IX
10	Self-Improvement	2	6.67	X

Table 2: Descriptive statistics of level of Satisfaction.

Mean	6.4
Standard Error	0.256
Median	6.5
Mode	8
Standard Deviation	1.404
Sample Variance	1.972
Kurtosis	-0.991
Skewness	-0.141
Range	5
Minimum	4
Maximum	9
Sum	192
Count	30
Confidence Level (95.0%)	0.524421

Limitations of ChatGPT

Table 3: Listing of limitations of ChatGPT.

Sr. No.	Limitation	Accessed on	Source
1	No data after September, 2021.	07/05/2023	ChatGPT (OpenAI, 2023) [5]
2	ChatGPT cannot detect content written by itself or any AI tool.	18/05/2023	(Moran, 2023) [7]
3	ChatGPT can sometimes make statements but cannot provide evidences to support their statements.	23/03/2023	ICBLE, New Delhi [8]
4	No in-depth knowledge of local terms which may be relevant to Indian Agricultural scenario.	07/05/2023	ChatGPT [5]
5	Wrong binary calculations	07/05/2023	ChatGPT [5]
6	Teacher fails the entire class when ChatGPT claimed that the assignments were done using AI.	01/06/2023	Livemint news (Gupta, 2023) [10].

1. ChatGPT's database is updated only till September, 2021. When asked about anything that falls beyond itscut-off date, it is unable to provide any information. For example: When it was asked about the food loss report of 2022, it replied with "I apologize for any confusion, but as mentioned earlier, my responses are based on information available up until September 2021, and I don't have access to specific reports or data beyond that date. Therefore, I cannot provide you with any reports" [5].

AB food loss in India reports 2022

I apologize for any confusion, but as an AI language model, my responses are based on information available up until September 2021, and I do not have access to real-time data or reports. Therefore, I cannot provide specific reports on food loss in India for the year 2022.
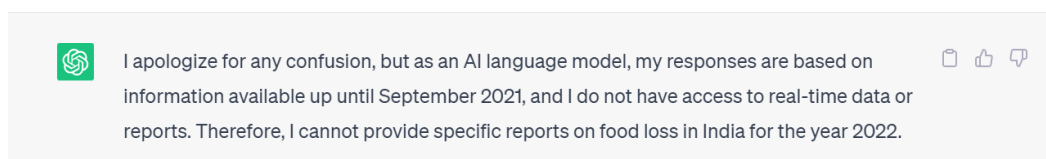
Fig. 3. Visuals of ChatGPT having no data after September, 2021.

2. In this incident, a reporter of a prominent global news organisation, The Guardian received a mail from a researcher regarding an article allegedly written by him a few years ago. When he read the article, he himself was convinced that it was written by him but he still was sceptical about it and went to search the archives to find that the article didn't even exist [3]. When the researcher was asked about the source, he said he found the article through ChatGPT. Basically, ChatGPT made up an article which didn't even exist at the first place and it was so precise that the original author was almost delusional. Even the CEO of OpenAI, Sam Altman agreed that ChatGPT can be used to spread misinformation [7].

3. Alex Twinomugisha, Senior Education Technology Specialist at the World Bank, delivered a presentation on the topic "New Agricultural Technologies in agricultural Education" at The International Conference on "Blended Learning Ecosystem For Higher Education in Agriculture" (ICBLE-2023) organised by Indian Council of Agricultural Research (ICAR) [9] in collaboration with the World bank, held in NASC Pusa, New Delhi-110012. At the conclusion of the session, Alex displayed a slide where he asked ChatGPT "What is the current state of agriculture education in India? Are the students being taught using technology? Are the course relevant?". ChatGPT's answer to Alex's question is depicted in Fig. 2. It could be seen the points listed by ChatGPT are over-generalized and doesn't offer an in-depth illustration. In the context of "Relevance of courses", ChatGPT stated that it is a matter of debate but it didn't provide any specific justifications for why it has been considered a con. Likewise, it was also stated that the courses offered are not keeping pace with the changing needs of the agriculture sector but it hasn't mentioned the whys and wherefores to support the statement. If agriculture education is not in pace then it applies to all other fields like medical, engineering and technology science [8].

3. ChatGPT has been trained in a diverse range of topics but lacks specialisation in any particular fields. When deep rooted concepts of any particular subject is asked, it fails to provide information. In the example ChatGPT failed to answer what 'Mashakhore' middleman are, which seems to an important term in the field of Agricultural Marketing.

Fig. 4. Screenshot of Alex's presentation at ICBLE-2023 conference [8, 9].
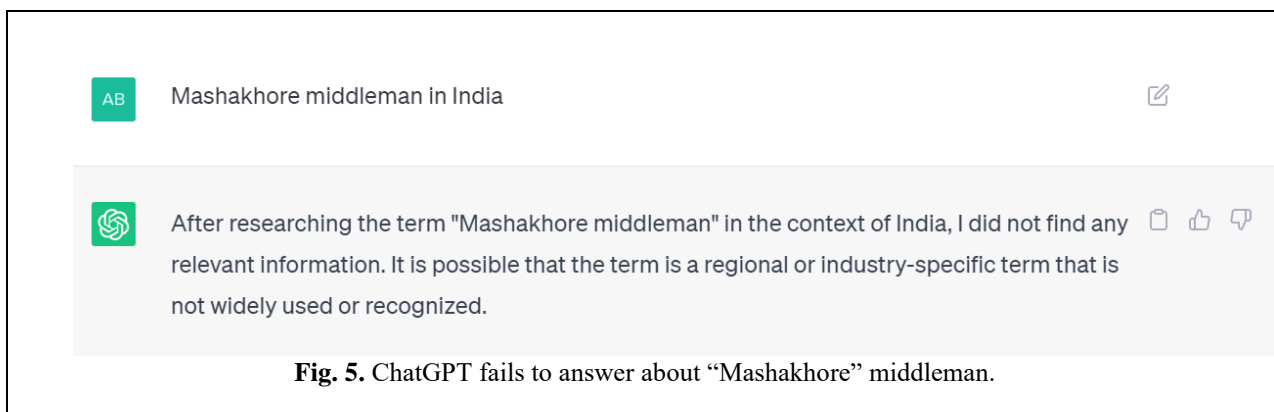

Fig. 5. ChatGPT fails to answer about "Mashakhore" middleman.

4. We didn't expect ChatGPT to make errors in Binary calculations when Sam Altman stated that ChatGPT is prone to providing inaccurate or incorrect results. It is quite ironic for an AI chatbot of such reputation to make errors while performing simple binary additions. When ChatGPT was given a simple instruction to add (-25) and (-45) in binary, it made errors.

5. A professor at the University of Texas failed his entire class [10] after ChatGPT told him that the assignments which he had given to his students have been done using artificial intelligence [10]. The professor believed that **ChatGPT** could detect AI-generated content and used it to determine whether the students had used artificial intelligence to complete their assignments. ChatGPT falsely claimed that their assignments were written using AI. Incidents like this could place dents in the career of students if the approaches aren't taken carefully [10].
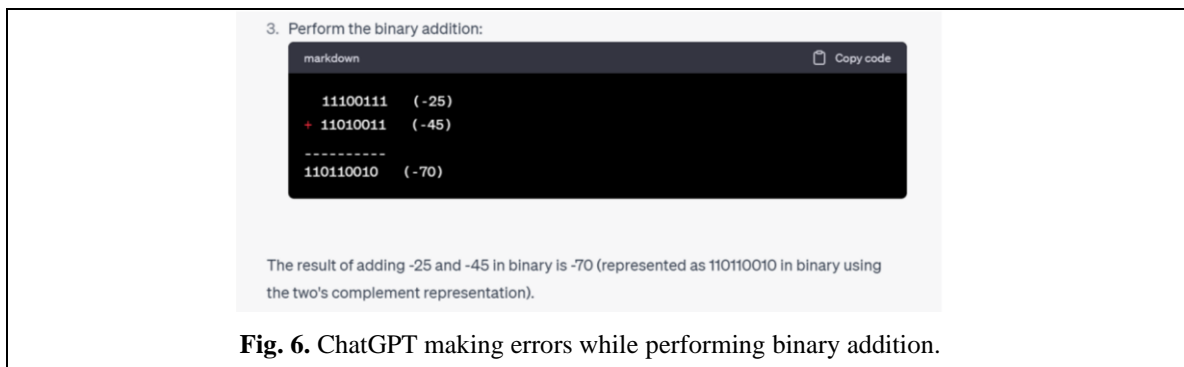
Fig. 6. ChatGPT making errors while performing binary addition.

CONCLUSION

ChatGPT is undeniably the fastest growing and the most popular AI chat bot that has made it to the market. It's easy to use and fast answer generating capacity in such short span of time has made it the most popular chat bot among students and enthusiasts. Therefore, an attempt was made to study the usability pattern of ChatGPT among students and research scholars and it was found out that they mostly use it to take assistance in preparing their assignments followed by General Information seeking and Inquisitiveness. A study was also conducted to record the satisfaction level of users of ChatGPT on a 0-9 continuum and the mean value came out to be 6.4 which means there is scope for improvement. Later in the paper, we have discussed some of the cases which shows the limitation of ChatGPT like having no information base after September 2021. Handling ChatGPT with carelessness can also have devastating effect on the careers of students and scholars. Examples/Cases has been discussed in brief.

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