

Students' perception about ChatGPT's impact on their Academic Education

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Abstract. *Goal: This study explores the impact of ChatGPT, an OpenAI language model, on undergraduate students in Brazil, aiming to uncover its benefits and challenges in higher education. It investigates students' experiences and perceptions, providing insights for educators and policymakers in Brazil and beyond. Method: A survey of 206 undergraduate students was conducted to gather data on profiles, usage frequency, and perceptions of ChatGPT's impact in education. Results: Participants recognized ChatGPT's value in enhancing productivity, organization, study orientation, code writing, and text revision. Concerns were also raised about user dependency, answer reliability, and ethical considerations. Conclusions: Undergraduate students perceive ChatGPT positively, but are also mindful of its limitations and potential negative effects. Integrating it into education requires careful consideration and the promotion of responsible usage. Educating users on ethical guidelines and addressing concerns can maximize benefits and mitigate drawbacks. This research contributes to understanding the implications, applications, and challenges of incorporating ChatGPT into education, emphasizing the need for further research and a balanced approach.*

1. Introduction

A chatbot is a computer program or an Artificial Intelligence (AI) application designed to simulate human conversation through text or voice interactions [Zhou et al. 2023]. In recent years, chatbots have become increasingly popular as a means of providing automated assistance and interaction in various domains [Taecharungroj 2023], including the educational landscape. Traditional methods of learning are being augmented by innovative technologies that revolutionize the way students access information and engage with their studies. One such technology that has gained significant attention is ChatGPT, an advanced language model developed by OpenAI [Ouyang et al. 2022]. With its vast knowledge and natural language processing capabilities, ChatGPT presents a promising avenue for supporting students in their academic education like never before.

In order to acknowledge the reason behind ChatGPT great success, it is crucial to have a comprehensive understanding of how it operates. A great challenge when it comes to large language models, such as ChatGPT, is the generation of untruthful, toxic or unhelpful outputs to the user. The OpenAI Alignment team [Ouyang et al. 2022] made

available a paper explaining the proposed methodology for aligning language models with user intent on a wide range of tasks by fine-tuning with human feedback. Their method follows three steps: supervised fine-tuning, reward model training, and reinforcement learning via proximal policy optimization.

To identify the consequences of chatbot popularity and its impact in student life, several studies have investigated this topic. In [Taecharungroj 2023], the early Twitter opinions and reactions about ChatGPT are analyzed, providing valuable insights into the general perception of this technology. Although the findings aligned with our own research, they were not specifically focused on the educational domain. In [Tlili et al. 2023a] explored the educational context and concluded that ChatGPT offers a customized and interactive experience. However, it also highlighted limitations such as difficulty in understanding complex or specific inputs, as well as ethical concerns regarding data privacy and bias.

Lastly, [Smutny and Schreiberova 2020] reviewed a study conducted prior to the development of ChatGPT, which examined chatbots in general. It revealed that while chatbots can effectively deliver personalized learning experiences with immediate feedback, they often struggle to comprehend natural language and their responses can be predictable and robotic. Moreover, the systematic review [Paschoal et al. 2022] highlights the need for additional investigation to uncover the specific characteristics that contribute to the success or failure of chatbot utilization in educational contexts.

Based on these existing works, we recognized the need to investigate the perceptions of undergraduate students regarding the influence of ChatGPT on their studies and learning within the specific context of Brazilian universities. By focusing on the Brazilian context, this paper aims to contribute a unique perspective to the existing body of knowledge and shed light on the potential benefits and challenges of incorporating ChatGPT in higher education in Brazil.

This paper is divided as follows. Section 2 delves into an analysis of related works in the literature about ChatGPT and human interaction. Section 3 will be dedicated to explaining the configuration and methodology of this research such as study questions, study results, discussion and threats to validity. Section 4 concludes the paper by summarizing the key insights derived from the study made and discuss options and ideas for further works.

2. Related Works

The literature on chatbots, specially ChatGPT, presents some researches discussing its impact on various domains, including in the educational prospect. In this section, we detail some previous works that explored the potential of chatbots and analyzed the perception of users about this tool.

Viriya Taecharungroj analyzed, in her work, the early reactions to the innovative AI chatbot, ChatGPT, on Twitter [Taecharungroj 2023]. The study examined user feedback and discussions on social media to explore the capabilities and limitations of ChatGPT. Users perceive ChatGPT as an impressive and engaging tool despite its occasional incorrect or nonsensical responses. The analysis categorizes user discussions into themes such as ChatGPT's conversational skills, knowledge, opinions, and its ability to

understand and generate content in specific domains. Users also express concerns about potential misinformation and the impact of AI chatbots on human-to-human communication. The findings emphasize the need for ongoing research and development to improve AI chatbots and address ethical concerns.

Tlili et al. [Tlili et al. 2023a] explored the potential of using chatbots, specifically ChatGPT, in educational settings. The authors examined the use of ChatGPT as a virtual assistant to support students in their learning processes, exploring the benefits and limitations of utilizing chatbots in education. To support the research, they considered factors such as student engagement, personalized learning experiences, and the ability to provide timely and relevant feedback. Overall, the study concluded that ChatGPT can provide personalized and interactive experiences, but it also acknowledges challenges such as the limitations of chatbots in understanding complex or context-specific queries and potential ethical concerns in terms of data privacy and bias.

Before the success of ChatGPT, the topic of chatbots and their impact on education was already being explored [Shoufan 2023], [Rueda et al. 2023],[Joyner 2023], [Rospigliosi 2023],[Kim et al. 2023],[Tlili et al. 2023b]. Smutny and Schreiberova [Smutny and Schreiberova 2020] provided a comprehensive review of educational chatbots designed for the Facebook Messenger platform, also exploring the effectiveness and potential of these chatbots in supporting learning experiences. The chatbots are found to be effective in delivering personalized learning experiences, providing immediate feedback, and supporting students in their self-paced learning journeys. Moreover, Tlili et al. also identify some limitations, such as the need for improvement in natural language understanding and the potential for chatbot responses to be too formulaic or predictable.

While most of the previous works have examined similar topics in various countries, this paper takes a focused approach to analyze and understand the impact of ChatGPT in the academic education within the Brazilian context.

3. Study Settings

This research investigates the impacts of ChatGPT on the lives of undergraduate students. The study aims to expose how the utilization of ChatGPT as a support tool affects students' lives. To reach the main goal of the research, a questionnaire consisting of eight questions was answered by 206 undergraduate students from various courses. The questionnaire was built and distributed through the Google Forms platform and required a time between 5 minutes to complete, considering the reading of the guide as a requirement for its completion. Moreover, it was conceived in Portuguese since it is the mother language of the researchers and invited participants.

Participants were primarily recruited through personal contacts who were undergraduate students familiar with ChatGPT. Additionally, we then extended the invitation to social networks and email lists, emphasizing that the survey was specifically aimed at undergraduate students who had experience using ChatGPT for educational purposes. It was essential that the target audience provided consent for participation, ensuring anonymity, voluntariness, and the exclusive objective of contributing to the research's success. Furthermore, participants had the freedom to exit the survey at any point before clicking the send button, and they could do so without experiencing any discomfort, as the response process was unsupervised.

3.1. Study Questions

The survey included questions that covered various aspects of participants' experiences and perceptions related to the use of ChatGPT as a learning tool. Table 1 presents the questions of the survey.

ID	Question
Q1	What state do you currently live?
Q2	What is your academic degree?
Q3	How long have you been using this tool?
Q4	Approximately, how often do you use this tool?
Q5	Based on my opinion, ChatGPT will have strong impact on every knowledge area.
Q6	Based on my opinion, ChatGPT will have strong impact on the education field, mainly on Higher Education.
Q7	Have you ever used some of these techniques to support your learning process?
Q8	The use of ChatGPT on learning will be permanent. It will be a new tool to be utilized for students for creating knowledge.
Q9	In your opinion, which are the advantages of ChatGPT as a support tool in your learning?
Q10	In your opinion, which are the disadvantages of ChatGPT as a support tool in your learning?

Table 1. Survey questions

The initial two survey questions consisted of pre-defined options designed to gather information about the participants' profiles and ensure sample diversity. Questions 1 and 2 also featured pre-defined options that measured time and frequency intervals. Additionally, questions 3, 4, and 6 presented statements where users were required to select a number from 1 to 5, representing a Likert scale of agreement (i.e., strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree). These statements were derived from the Technology Acceptance Model (TAM) [Davis 1989], which assesses an individual's perception of how using the guide will enhance their performance and the belief that it won't require significant effort. Question 5 consisted of multiple check boxes, allowing users to select pre-defined options or add new ones about the main purposes for their interaction with ChatGPT. Finally, the last two questions (7 and 8) were open-ended, encouraging participants to freely express their thoughts about the tool.

3.2. Study Results

The survey collected 206 responses from students all over Brazil. Their identification profile results (Q1 to Q4) can be seen in Figure 1. It is observable that the majority of the answers came from STEM students and most of them are in a degree related with Computation field. It is also notable that the majority of the students uses the tool at least once a week and have been using for at least one month.

The answers for questions Q5, Q6 and Q8 can be observed in Figure 2. It can be noticed that around 80% of participants agree in some level that ChatGPT is going to

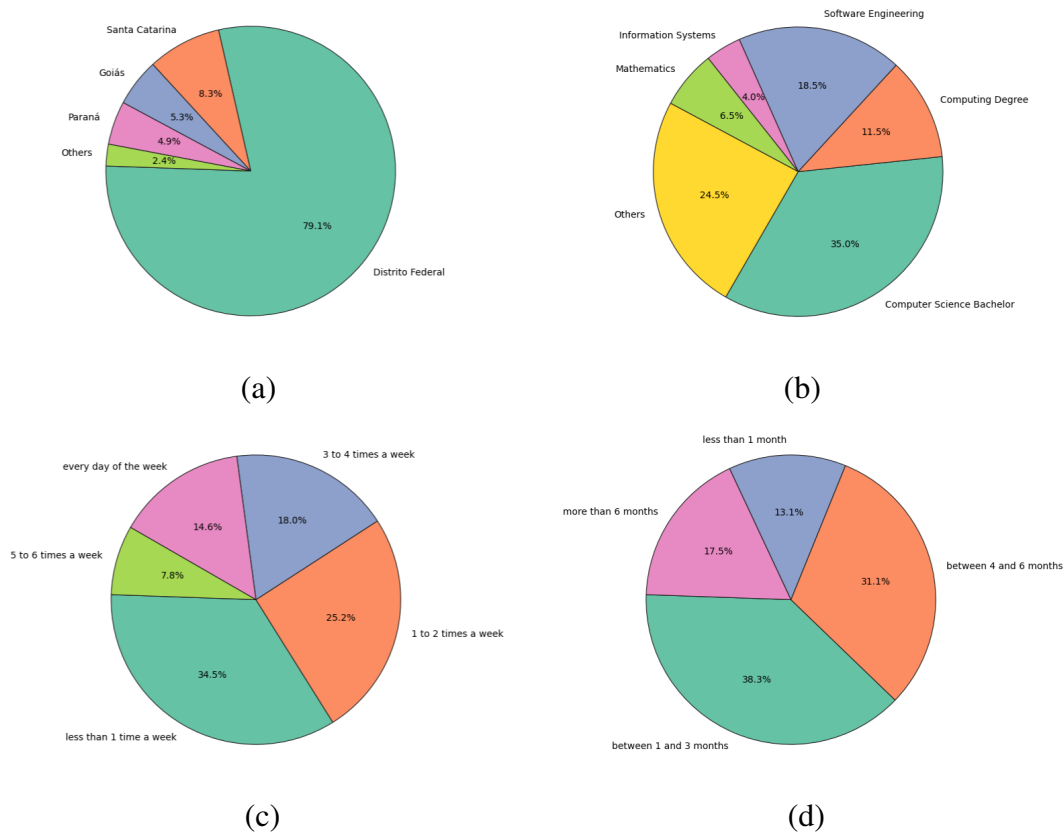


Figure 1. Profile of survey respondents. (a) Participants' state . (b) Participants' degree. (c) Tool familiarity time. (d) Tool use frequency.

impact in all knowledge fields. Furthermore, 83% believe that it is going to have strong impact in the educational field, mostly in higher education settings. Additionally, 81% of the participants think it is going to become a permanent tool in education, utilized by students to generate knowledge.

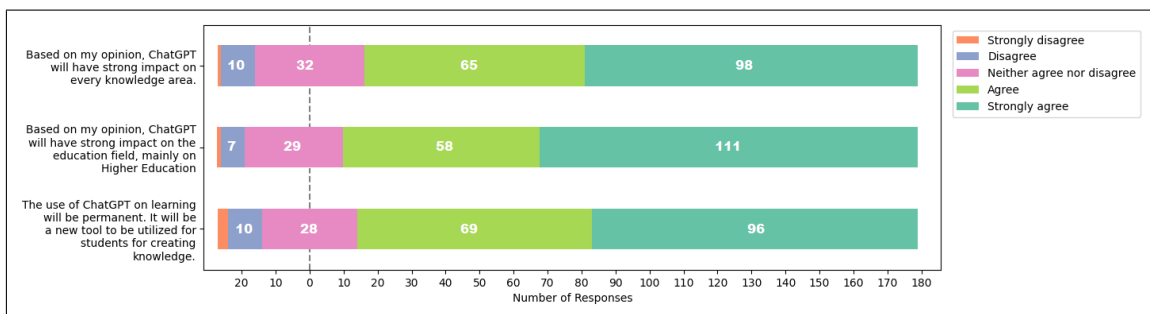


Figure 2. Respondents' level of agreement to questions 3, 4 and 6.

Figure 3 shows the main uses of ChatGPT for the interviewed students. The participants could choose more than one option, including an extra field where it could be specified other uses for the tool. The options are listed below and correspond to the labels on x-axis of Figure 3.

L1 Support in writing a report or assignment for a subject, providing the model with

- key points of the topic to be researched.
- L2** Assistance in code development and debugging.
 - L3** Text editor and grammar corrector.
 - L4** Text translator.
 - L5** Answering questions: providing questions and answers in specific domains.
 - L6** Automated summarization: automatically summarizing paper or other documents, making it easier for students to understand a subject.
 - L7** Other

The results have shown that the main purposes for ChatGPT, according to students, are: support in writing, assistance in code development and debugging, and answering questions. Those topics were also observed as the most commented ones inside the functional domain on Taecharungroj's study [Taecharungroj 2023]. In our survey, the high number of choices for L2 option is justifiable for the large portion of students in Computation related fields, as seen in Figure 1. Inside an average interval there are L3, L4 and L6, related to text manipulation, revision and summarization. Few participants added other uses for ChatGPT, however, topics like "brainstorm", "elaboration of mathematical proofs" and "self-expression" were mentioned.

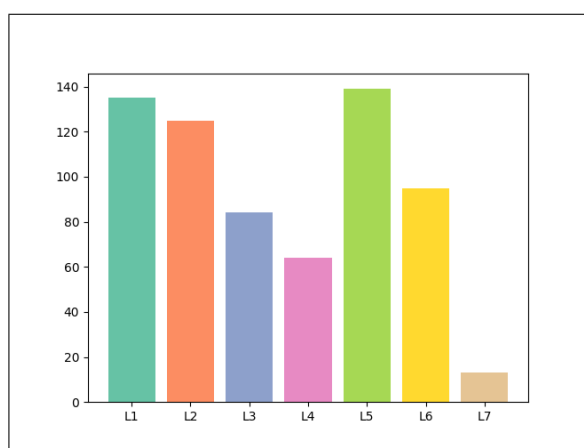


Figure 3. ChatGPT uses according to participants.

Questions Q9 and Q10 allowed participants to express their opinions about ChatGPT on education, based on their experiences, via small texts. The main advantage cited was the answers' complexity for asked questions, compared to conventional search engines that just lists different sources of knowledge. On the other hand, the main disadvantage mentioned was the answers' lack of sources and reliability, as also observed by participants on the study conducted by Tlili et al [Tlili et al. 2023a]. Others advantages listed were practicality and time optimization, because of its fast and direct, yet clear answers to complex questions. As contradictory as it sounds, these were also mentioned in a large number of responses about the disadvantages of the tool, as a cause for student laziness and dependency of it.

Many students answered about ChatGPT's high sophistication for text writing, revising, summarization, and translation as a positive point of the tool, however it was also pointed the convenience for unethical uses of it, this topic was also mentioned and discussed by interviewees as a big issue in Tlili's study [Tlili et al. 2023a]. Tables 2 and

3 list the main topics cited by participants and three transcripts each, collected from the responses that reinforce them.

Construct	Transcripts
Productivity, organization and study orientation	"Road-maps for mastering a specific area or field, I often don't know where to begin when I want to learn something completely new to me."; "ChatGPT is a great tool for organizing content to be learned in a personalized way. This organization greatly facilitates the learning process."; "[...] increased productivity and improvement in task development."
Code writing and debugging	"There are many learning platforms that only accept one programming language, even though the knowledge being taught is valid for all languages. ChatGPT has been a great help on those platforms by translating C++ and Python into other languages"; "It assists in finding bug solutions or performing programming activities, and it also helps in code explanations."; "[...] It can help you find errors in code much more quickly. [...]"
Writing and revising texts	"The ChatGPT serves as a great starting point for writing. Beginning an academic text tends to be the most challenging part, and the way it helps with these beginnings is very beneficial."; "[...] Its an extremely useful tool to create very informative and grammatically correct texts [...]" ; "Text correction is easy and convenient."
Translating and summarising texts	"Support for non-fluent individuals in other languages who need foreign texts to complete their studies."; "[...] providing great support to students in reading foreign language texts or writing their own texts."; "It is excellent for summarizing texts and rewriting paragraphs with language more suitable to the context."
Search engine	"ChatGPT can provide much more elaborate and comprehensive answers compared to a Google search, for example. The chat has the capacity to provide detailed explanations on various subjects, which can facilitate understanding."; "The main advantage currently is to expedite research and present it in an organized manner, leaving the validation of the presented information to the student/teacher."; "[...] it also greatly aids in the research of specific information."
Answering questions	"[...] It helps in resolving doubts in a similar way to a teacher or tutor, without the need for email exchanges, availability scheduling, and so on."; "Its ability to answer questions and explain the response step by step is a great help. It comprehensively understands the topic rather than providing just a ready-made answer."
Problem solving	"It's very useful for problem solving and quick help [...]" ; "It solves problems that would typically require another person's assistance. It is of great help for programming problems and even some mathematical problems."; "In addition to being useful in text manipulation, I find it helpful in the field of mathematics to start solving problems. [...]"
Summarize information	"I believe it is a good tool for providing concise summaries of specific knowledge, as well as for creating basic templates for reports, papers, or any type of documentation."
Insight generator	"It is something that works very well to generate insights about a certain topic and, from there, ensure the student has a better starting point to proceed with their work."; "[...] content creation; ideas generation."; "[...] it is very useful as a partner for creative discussion and for generating foundations for human work (in the current state)."
Its free access democratizes information	"More accessibility to specific topics [...]" ; "Democratization of education in general"; "It can answer specific questions at any time. This makes learning more accessible"
Time optimization and efficiency	"Save time on mechanical tasks, allowing me to have more room to perform other tasks of greater importance."; "We can save a lot of time by doing tasks that would take many hours in just a few minutes."; "It optimizes students' study time, helping them achieve higher quality in their professional development."
Simple and Practical	"The speed of response is the main advantage for me, and the summaries provided are also very useful."; "It is a very user-friendly tool, and its responses are typically clear, making understanding easier."; "It's fast, practical and do manual tasks automatically"
It's helpful for manual and repetitive tasks	"ChatGPT is very useful for performing simpler manual tasks. In the Information Systems class, for example, we needed to formulate questions to validate our project, and ChatGPT was helpful in understanding our concept and generating questions based on it."; "It assists on repetitive tasks, like text formatting"; "Assistance in automating routine tasks, saving effort."

Table 2. Transcripts of participants' responses about the main advantages of ChatGPT in education

3.3. Discussion

This study investigated undergraduate students experiences to reveal their perceptions regarding the utilization of ChatGPT in educational settings through a combination of qualitative and quantitative analysis. Overall, the results indicate that the majority of students hold a positive view of ChatGPT and recognize its value in various aspects of their academic lives, including productivity enhancement, organization and study orientation, code writing and debugging, writing and revising texts, etc. However, it is important to note that the students are also mindful of the potential harm and limitations associated with ChatGPT, such as user dependency, the possibility of students becoming lazy or overly reliant on the tool, the potential for missing sources and unreliability, the tool's limited knowledge base, and concerns regarding unethical use.

In comparison to previous research, the findings of the current study align with the research conducted by Viriya Taecharungroj [Taecharungroj 2023] and Ahmed Tlili et al. [Tlili et al. 2023a]. The first research reveal a positive perception of ChatGPT among users and also discuss the main advantages perceived in this study, such as question answering, text and code writing and the huge impact it may in our lives, specially in the tech

Construct	Transcripts
User dependency	"Maybe the strong dependency on the tool and believing in it 100%."; "The risk of complacency, as if a person only uses the tool to get answers without seeking to understand and study the subject, they won't truly learn."; "It can create a certain dependency on the student, as it is a convenient tool for cheating, and not all the information it provides is correct."
Researches and tasks poorly done	"[...] Poorly done assignments and low grades. [...] The use of a paper completely written by AI is detrimental to the student (even if it is their choice) and to the teacher who may feel inadequate in the face of such technologies."; "Furthermore, apart from the point where many students use it to complete assignments without any personal development, I observe that when it comes to mathematics, especially in subjects that require heavy reasoning, ChatGPT falls short and presents many flaws in its arguments. This can lead to mistakes and even a false understanding of a particular subject."
Missing sources and unreliability	"Its responses may seem convincing, but they are not always correct or well-founded. It is common for it to make statements that are taken as true without explaining how or why it reached that conclusion. Less informed users can easily become confused and contribute to misinformation."; "ChatGPT is not a reliable search tool, as it makes many mistakes. If the user is aware of this, it's fine, but I believe that multiple people rely solely on ChatGPT, which is not a secure source in many cases."; "There are no citations of sources, and there is partial or completely incorrect information. There are limitations in current subjects and discoveries."
Students laziness	"On the other hand, ChatGPT often does all the work for the student, and many times they take advantage of it to avoid their responsibilities and tasks, making them lazy and less competent."; "Indeed, many students end up not reading the texts and papers that should be submitted and simply ask ChatGPT and other AI systems for a summary, thereby not learning what really matters in their courses."; "There is a risk of complacency because if a person only uses the tool to get answers without seeking to understand and study the subject, they won't truly learn."
It can harm students' development and learning	"It hinders the memorization process because it makes the process so easy that it diminishes the learning potential that would be present if ChatGPT were not used, although it doesn't completely eliminate it, just reduces it."; "Many students will become overly dependent on the tool, which hampers their learning process, as their first instinct will be to type the question into ChatGPT instead of attempting to formulate their own response. Additionally, they will not make an effort to learn anything since they are just a click away from a satisfactory answer, which will be generated within seconds, copied, and pasted onto their worksheet."; "Depending on how the tool is used, it can end up removing an important part of the learning process, taking away the opportunity to acquire certain specific knowledge that we would have only gained by solving a problem on our own. The tool can be used as a shortcut to solve problems more efficiently, but the shortcut is not always the best path for learning."
It has limited knowledge	"[...] The limitation of the training data set up to September 2021 is a significant disadvantage in areas that require constant updates of knowledge. [...]"; "It is reasonable for general knowledge and common sense, but when it comes to specific areas, it can get lost and start inventing things that lead the user to learn falsehoods (which are much harder to unlearn later on)"; "The tool still has knowledge gaps, and not all information provided can be trusted."
User must have previous knowledge	"To obtain coherent responses, one must have prior knowledge of the subject in question. If ChatGPT doesn't know certain information, it may make up answers."; "While the responses may seem convincing, they are not always correct or well-founded. It is common for ChatGPT to make statements without explaining how or why it reached those conclusions. Less knowledgeable users can easily become confused and contribute to misinformation."; "In my opinion, if users do not delve deeper into the topic they are seeking information about, their understanding of the subject will remain superficial, hampering their overall comprehension."
Unethical use	"The main disadvantage is that many people use it unethically, which leads to the loss of its intended purpose as a learning aid, turning it into a tool that facilitates plagiarism."; "[...] Some individuals do not know how to use it in a beneficial way, but rather as a means of cheating."; "[...] Another problem is that it encourages students to simply rely on the texts generated by ChatGPT to complete their assignments and tasks, turning it into a source of plagiarism rather than a tool for learning support, ultimately hindering their learning process."
Lack of accessibility	"Lack of accessibility for individuals with hearing or visual impairments."; "[...] Lack of accessibility for individuals who are not familiar with Natural Language Processing"; "[...] Another disadvantage is that to get access to the full version of the tool requires payment, which makes it inaccessible to everyone."

Table 3. Transcripts of participants' responses about the main disadvantages of ChatGPT in education

landscape. Additionally, the second study reiterates these findings and also discusses some of the limitations we obtained. The unethical aspect, which was also a concern highlighted in Ahmed Tlili's study, is a real issue that we have observed. However, it is worth noting that Tlili's study does not advocate for a complete ban on the technology. Instead, they propose embracing the technology while emphasizing the importance of promoting ethical guidelines and educating users about responsible application. Similarly, we recognize the significance of addressing ethical considerations and ensuring responsible usage of ChatGPT in educational settings and beyond.

Furthermore, in comparison with the study from Facebook Messenger [Smutny and Schreiberova 2020], notable similarities and differences emerge. First of all, even though both studies focus on chatbots for educational purposes, they differ a lot in terms of tool development and quality evaluation. As previously mentioned, ChatGPT, being a large language model, employs a complex training method, whereas the chatbots from the Smutny's research have simpler structures like decision trees or classification models. Consequently, it is understandable that the feedback obtained from Facebook's chatbots may not be as robust as that from ChatGPT. However, consistent with the find-

ings of our study, Smutny's research suggests that despite being in the early stages, the explored chatbots show potential as artificial intelligence teaching assistants.

Overall, it is possible to realize that most undergraduate students perceive ChatGPT positively and acknowledge its usefulness in various academic contexts, but they are also aware of the potential drawbacks and limitations. By comparing these findings with relevant previous research, a comprehensive understanding of the implications, applications, and challenges associated with integrating ChatGPT into education can be achieved.

4. Threats to Validity

Several threats to the validity of this study should be acknowledged. First, the limited sample size poses a potential limitation. While we collected 206 responses, which is a significant sample size, it represents only a very small percentage of the entire undergraduate student population in Brazil. With the vast number of approximately 8.9 million undergraduate students enrolled in higher education institutions [BRASIL 2022], generalizing the findings to the entire population should be done with caution.

Another potential threat is the bias in participant backgrounds. Our study observed that 69% of the participants were from computing-related areas such as Computer Science, Information Systems, Software Engineering, and Computing Degree, which may introduce bias and limit the generalizability of the findings. Including a greater diversity of courses and academic disciplines would have provided a more comprehensive understanding. The use of open-ended questions in the survey also poses limitations. While they allowed participants to freely express their thoughts, subjective interpretation and personal perspectives could influence the nature of their responses, potentially limiting the completeness and accuracy of capturing participants' true feelings.

The questionnaire design itself introduces a potential bias. The questions were developed by the researchers, that is, likely based on their own perspectives, which may influence participants' responses and affect the objectivity of the analysis. Careful consideration should be given to this bias when interpreting the results. Furthermore, the recruitment method through personal contacts, social networks, and email lists may have led to self-selection bias. Individuals who were more interested or had positive experiences with ChatGPT may have been more likely to participate, affecting the generalizability of the findings to the broader population of undergraduate students. Lastly, social desirability bias may have influenced participants' responses. Participants might have been inclined to provide socially desirable answers, aligning with societal expectations or the perceived objectives of the study, rather than expressing their genuine thoughts and experiences.

These threats to validity should be taken into account when interpreting the results of this study and considering its implications. Future research with larger and more diverse samples, as well as alternative data collection methods, could help mitigate these limitations and provide a more comprehensive understanding of the impact of ChatGPT on undergraduate students.

5. Conclusion

In this study, we investigated the impacts of ChatGPT on the lives of undergraduate students, focusing on its utilization as a support tool. Through a questionnaire survey

answered by 206 undergraduate students from various courses, we aimed to uncover how the use of ChatGPT affects students' lives and their perceptions of its value in educational settings. The survey questions covered various aspects of participants' experiences and perceptions related to the use of ChatGPT as a learning tool. The results obtained from the survey provided valuable insights into the participants' profiles, frequency of tool usage, and their beliefs about the impact of ChatGPT in different knowledge fields.

The findings revealed that the majority of participants agreed, to varying degrees, that ChatGPT has the potential to impact all knowledge fields. Particularly in the educational field, participants believed that ChatGPT would have a strong influence, especially in higher education settings. Moreover, participants expressed the view that ChatGPT is likely to become a permanent tool in education, utilized by students to generate knowledge. The main uses of ChatGPT identified by the surveyed students included support in writing, assistance in code development and debugging, and answering questions. These findings aligned with previous research, emphasizing the value of ChatGPT in enhancing productivity, organization, study orientation, code writing, and text revision.

While the majority of students perceived ChatGPT positively and recognized its usefulness, they were also aware of its limitations and potential drawbacks. Concerns were raised regarding user dependency, the possibility of students becoming lazy or overly reliant on the tool, the potential for missing sources and unreliability, the limited knowledge base of ChatGPT, and ethical considerations. Comparisons with prior research conducted by Viriya Taecharungroj and Ahmed Tlili et al. further supported our findings. These studies shared similar positive perceptions of ChatGPT among users, highlighting advantages such as question answering, text and code writing, and discussing the potential impacts of the technology. The ethical aspect was also a concern raised by both studies, emphasizing the importance of promoting ethical guidelines and responsible usage.

Overall, this study provided valuable insights into undergraduate students' perceptions of ChatGPT as a learning tool. While acknowledging its benefits, it is important to consider the potential drawbacks and limitations associated with its use. These findings contribute to the existing body of knowledge and provide a comprehensive understanding of the implications, applications, and challenges associated with integrating ChatGPT into education. As ChatGPT continues to evolve, further research is warranted to address the concerns raised and explore strategies to mitigate potential negative effects. Educating users about responsible application and ethical guidelines can help maximize the benefits of ChatGPT while minimizing its drawbacks. By fostering a balanced and informed approach, we can harness the potential of ChatGPT as a valuable tool in educational settings and beyond.

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