ChatGPT: A Tool for Communication and Lifelong Education in the AI Age

Odeta GLUOKSNYTE[1]

[1]*Mykolas Romeris University,*
ORCID ID: 0000-0003-4504-9759
Email: odeta.gluoksnyte@mruni.eu

Abstract

The article discusses the Artificial Intelligence (AI) technologies and their transformative potential to foster innovation, increase productivity, and promote human-machine collaboration. It explores a significant role of ChatGPT and its still domineering nature among other advanced AI-powered chatbot engines developed by OpenAI. The main objective of this research is to examine the potential advantages and disadvantages of using ChatGPT as a communication tool in lifelong education. The article investigates efficiency of AI technologies, ChatGPT in particular, putting the emphasis on productivity, content creation using certain prompts, advantages and disadvantages of the communication created using different prompts to get the best result in the field of provided content. Lifelong learning has become increasingly important in today's fast-paced world. Knowledge accessibility, communication, life-long learning factors are the ones to be evaluated to maximise the influence of ChatGPT in educational settings. There are offered a big number of applications for generating ideas, completing research, gathering certain information, providing customised tasks by ChatGPT. The study focuses on usability of ChatGPT in education, business communication, and content creation. Hence, to evaluate the effectiveness of ChatGPT, human written texts were randomly selected and then compared with the ones, generated by this AI using different engineering prompts to get the results that resemble with the content written by humans. The article is concluded by outlining strategic steps for leveraging ChatGPT in formal and informal learning and teaching and calls for further research as newer versions in the field appear.

Key words: Artificial Intelligence (AI), ChatGPT, ethical AI, lifelong learning, communication, educational technology.

Introduction

Artificial Intelligence (AI) has revolutionised all processes by automating tasks, replacing search engines and providing an alternative context for information search and content. ChatGPT, developed by OpenAI, works mainly in the field of text-based communication.

Recent studies emphasize that AI-driven technologies allow human employees to focus on more complex and strategic responsibilities at work (Wu et al., 2023). AI-powered chatbots, respond to all kinds of requests providing 24/7 instant service while freeing sales teams for high-value tasks (Zhao et al., 2023). Similarly, advanced AI algorithms analyse people behaviour to personalize advertisements, delivering tailored messages that enhance consumer engagement and conversion rates (Verma, 2024). Moreover, AI changed the nature of communication by offering improved speech, style, natural language processing (NLP), etc. According to Getchell et al. (2022), AI helps not only facilitate communication throughout the world, but also helps understand provided texts and this is the way to overcome any potential communication barriers. AI helps to generate content in various media forms, create advertisements, customise storytelling aspects and in this way increase satisfaction and engagement of customers.

Furthermore, AI-driven textual content technologies help to create exceptional content material, from informative articles to promotional material, saving time and improving the quality of content material (Cardon et al., 2021). AI also personalises media and product links, thereby improving the personal experience (Brown-Devlin et al., 2022).

Additionally, AI tools such as ChatGPT can tailor learning paths to specific individual progress and adapt the curriculum to the needs of the learner. Rivas and Zhao (2023) highlight that artificial intelligence provides capabilities that facilitate a learner-centered approach, which is essential for the new demands of lifelong learning. This adaptability can help maintain learner engagement for all types of learners, without

excluding age, skill level and areas of interest. Recent developments in artificial intelligence, in particular language models such as ChatGPT, have opened up new opportunities for communication and education. Studies by Wu et al. (2023) and Verma (2024) highlight certain abilities of ChatGPT to personalize learning experiences, while Alkaissi and McFarlane (2023) address its limitations, such as biases and hallucinations. Notably, the inclusion of studies by Rana and Bansal (2023), emphasize the importance of responsible development and use of AI tools for the benefit of society in the future. ChatGPT, an innovative speech model, originated at the research lab OpenAI, founded in December 2015. A group of famous people such as Elon Musk, Sam Altman, Greg Brockman, Ilya Sutskever, Wojciech Zaremba and John Schulman led OpenAI to develop AI innovations that can perfectly imitate human generated texts and speech.

Research Object

ChatGPT, an artificial intelligence tool for communication and lifelong education. The aim of the research is to assess communicative, educational, ethical implications of ChatGPT, an artificial intelligence tool, as a means of communication and lifelong education by conducting the comparative analysis between human and AI-generated texts by defining the research questions:
   1. How does ChatGPT generate content compare to human-written texts in terms of accuracy, clarity, and coherence in educational surroundings.
   2. What are the practical benefits and limitations of using ChatGPT in educational and professional communication.
   3. What ethical risks and considerations are challenged using ChatGPT.

ChatGPT as a Language Robot in Modern Society

The applications of ChatGPT expanded into different areas: customer service chatbots, digital assistants, content material, languages translation, information search and processing, and innovative writing. Organisations use ChatGPT to offer proactive and relevant responses, improve user-generated stories and increase the productivity and efficiency of human-computer interactions (Haque, 2022).

In 2022, CHATGPT has emerged as a major improvement in the field of mass-market language modalities. Developed through OpenAI, ChatGPT leveraged a spectrum of deep knowledge acquisition to extract a combination of highly intelligent textual content, language translation, and relevant, personalised content communication representations (Wu et. al., 2023).

CHATGPT is directly linked to constant development of artificial intelligence. As AI research continues to advance, it is expected there are even more sophisticated language innovations to be created to perform prompts that are currently beyond our imagination (Rana, Bansal, 2023).

ChatGPT in Education

ChatGPT has had a major impact on school education by creating innovative and interactive learning resources, facilitating assessment processes and developing customized stories and tools. It has also been used to make recommendations in specific content areas, process researchers' progress and provide personalized support. In addition, it helps to monitor academic progress and make guidance across a wide range of specialized disciplines, demonstrating that it is a flexible and responsive educational tool.

Additionally, ChatGPT enhances student engagement by enabling interactions through digital simulations and role-playing activities, thereby making the learning experience more dynamic and immersive (Santosh et al., 2023).

Adeshola and Adepoju argue that the launch of OpenAI's ChatGPT speech generation model has raised concerns in many sectors, especially in the academic sector (2023). With the advent of ChatGPT, some academics have called on universities to develop new forms of assessment because ChatGPT helps to solve questions in minutes. Academic cheating is not new, but the use of artificial intelligence to complete assignments is a relatively new form of cheating. ChatGPT and other artificial intelligence platforms are positively perceived by students (Gluoksnyte et. al, 2024). The studies emphasize a big significance of AI in educational settings as they enhance self-study and interactive engagement, assist in completing students' assignments, broaden their learning experiences. The findings revealed that the students who used AI tools like ChatGPT and similar, experienced a greater engagement in learning, had greater achievements in learning, improved learning outcomes. Independent learning, especially in lifelong learning, could generate better results if AI tools are implemented in the learning process. Although transparency can be achieved by showing that it is a flexible and responsive educational tool. However, clear institutional guidance is needed reduce the risks associated with over-reliance on such systems. These rules should help learners to

distinguish between AI-derived support and genuine academic input, thereby reducing misinterpretations and potential ethical misconduct.

Such applicability is essential to keep learners motivated, especially in a lifelong learning environment where participants vary widely in age, background and educational goals. According to Verma (2024), AI-based personalisation not only increases engagement but also significantly improves retention in adult learning environments, which is of great importance for lifelong learners who often combine learning with professional responsibilities. The use of ChatGPT in providing support demonstrates how AI can foster a learner-centred approach, which is crucial in educational models outside any traditional classrooms and surroundings (Verma, 2024).

Another important advantage lies in its potential to enhance accessibility, especially by helping overcome language barriers. When used as a translation aid, ChatGPT improves learners' ability to comprehend complex texts and assignments, thereby fostering inclusion in diverse and multilingual educational settings. However, limitations are also significant: ChatGPT responses sometimes exhibit biases, factual inaccuracies and 'hallucinations' - errors where the model generates information that may appear consistent but is factually incorrect (Alkaissi and McFarlane, 2023).

ChatGPT in Business and Communication

In the world of business, efficient communication is fundamental to success. ChatGPT offers valuable assistance in this area by translating and responding to complex queries using natural language. In addition to customer-facing applications, the tool can also streamline internal communication between departments, helping teams t In the world of business, effective communication is crucial to success.

ChatGPT can handle many different tasks and questions, making it useful for communicating with people. It is great because it can adapt to different situations, which changes the way companies communicate with each other. This new way of communicating makes companies more productive and conversations more interesting. By trying ChatGPT in business, companies can see how it can change the way they interact with the people they work with (Waghmare, 2023).

Benefits and Drawbacks of ChatGPT-Powered Communication

ChatGPT, the powerful chat tool developed by OpenAI, is considered a revolutionary model in the field of artificial intelligence and natural language processing. Hague (2022) states that it has attracted a lot of attention for its potential to automate a wide range of tasks and potentially impact sectors such as translation, customer service and content creation. The GPT-3.5 (free version) and GPT-4 (paid version) language models are used to process user requests. GPT has been trained on a very large dataset consisting of a variety of texts from the Internet and other sources. This gave a broad knowledge base and allowed it to produce consistent and human-like answers to a wide range of queries. GPT is one of the largest and most powerful language models developed to date, capable of performing a wide range of natural language processing tasks. Since its release, ChatGPT has become the most popular tool in our modern society among all AI tools (Bahrini et at., 2023).

It is based on Natural Language Processing (NLP), trained on a huge content pool of billions of web pages and documents. This range of information allows us to create textual responses that closely simulate human speech. Since its inception, ChatGPT has grown tremendously to become one of the fastest-growing client applications in history, attracting around a hundred million users. Its vast information base and speech processing capability promises to help transform human-software interaction by providing a highly intuitive and seamless way to interact with technology. However, despite its remarkable capabilities, ChatGPT faces challenges and limitations, including bias and the emergence of meaningless results known as 'hallucinations' (Alkaissi & McFarlane 2023).

Michele Salvagno et al. (2023) presents a figure showing a user's enthusiasm to use AI (Salvagno, et. al., 2023). They argue that misleading directions and hallucinations, wasted time using not correct prompts reduce its use. However, it takes some time to adapt and after some time users realise that it is the best tool if it is used in a supplementary way, complementing their basic knowledge with awareness and knowledge of how to use AI, ChatGPT in particular (Fig. 1).
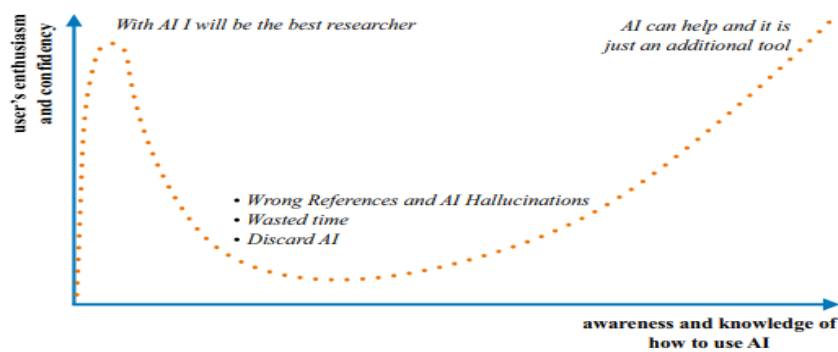
Fig. 1 A revised Dunning-Kruger effect may be applied to using ChatGPT and other Artificial Intelligence (AI) in scientific writing. Initially, excessive confidence and enthusiasm for the potential of this tool may lead to the belief that it is possible to produce papers and publish quickly and effortlessly. Over time, as the limits and risks of ChatGPT and other AI are learned, as well as the complexity of their functioning with the need for specific prompts, enthusiasm and confidence decrease. As this awareness increases, ChatGPT and other AIs can become effective and supportive tools in scientific writing, such as computers and internet search engines, finally achieving a conscious and correct usage

In general, artificial intelligence is the best tool if it is used in a complementary way, to generate ideas, to use the plans offered by artificial intelligence, to translate, to generate and extract, to interpret and synergise facts. A few decades ago, we were afraid of the Internet; before that, half a century ago, we were afraid of a simple mathematical calculator. Today's society should rise to the challenge and adapt more easily to new situations and see it not as a threat but as a helper in the global communications sector.

Ethical Considerations in ChatGPT-Powered Communication

ChatGPT helps with advertisements by offering applied strategies; nevertheless, the ethical problems are very important. Transparency, bias reduction, privacy protection, risk assessment, accountability, continuous monitoring, moral decision-making, human oversight, statistical technology expertise and pleasant practices are crucial when using AI tools (Rivas, Zhao, 2023).

Rivas, Zhao (2023) state that ChatGPT can help entrepreneurs to create content much faster, which is desirable for human content creators. ChatGPT can also help people in the business, health and social sectors to explore and understand the vocabulary, perceptions and attitudes of other companies' customers. ChatGPT helps a wide range of markets, social and health sectors to translate, understand and generate information. ChatGPT helps entrepreneurs to communicate 24/7 and increase their efficiency. It also helps reduce bias, transparency, risk, accountability and ethical considerations. What's more, artificial intelligence tools such as ChatGPT can duplicate or amplify biases. The importance of building strong systems to identify bias and continuously improve the problem is emphasized (Bender et al., 2021). Regular audits should be implemented to ensure that the answers generated by AI are appropriate. In addition, to date, AI tools contain a large amount of private data and user data may not be used for their intended purpose. Accountability and transparency are therefore essential.

In addition, there is a risk that users will become less discerning if they are given information. The biggest concern is 'hallucinations', i.e. information provided by artificial intelligence that is factually inaccurate. Alkaissi and McFarlane (2023) warn of the potential damage that these inaccuracies can cause in important "sectors such as journalism, education and healthcare, where misinformation can have major consequences". To alleviate these problems, establishments should put in place continuous monitoring systems and regularly update policies. These efforts should be complemented by targeted educational initiatives to encourage educators and learners to use AI tools in an ethical and conscious way. Universities and training institutions need to train users on how to reduce bias, protect their data and understand transparency and accountability in AI software. Users must also be encouraged to think critically to reduce risk and ensure responsible use.

The impact of ChatGPT is huge. It gives companies the opportunity to improve customer service, advertising and product development. It is transforming communication by making it more personal, effective and cross-cultural. It is fundamentally changing education by making it more personal, engaging and effective.

Methodology

The study employs a mixed-method approach to get the optimum results. For data collection, human-generated texts and ChatGPT responses were collected using predefined prompts. To analyse the AI functions in a text creation, the example text has been selected from the Internet and that is "5 Types of Business Documents" by Janice Tingum, February 01, 2019, and it was taken as an educational example.

This example text is selected randomly out of 50 different texts used for educational purposes that have been compared with the ones created by ChatGPT. Texts were selected from publicly accessible business communication articles by verified authors, Prompts were standardised in length of approximately 15 words and complexity was taken into consideration. Text clarity and coherence were rated by 24 students in class to avoid bias.

Evaluation metrics: accuracy – percentage of factual correctness, it was assessed by comparing factual correctness with the initial sources; clarity – evaluated in a ten points scale by independent readers (inner-rate reliability – 0.87); coherence – based on logical structure and thematic consistency; readability – calculated using Flesch-Kincaid metrics.

Tools used: ChatGPT (GPR-3.5, free version), Grammarly Premium, Hemingway Editor, readability scoring tools.

Statistical methods: descriptive statistics and percentage calculations for comparison; content overlap analysis (Venn diagram), t-test ($p < 0.05$).

Findings

According to the methodology of the research mentioned above, selected examples based on the information provided by ChatGPT (free version) have been presented. Quantitative results of the research are presented in the Table 1. ChatGPT provided responses with varying depth depending on prompt specificity. While some document types overlapped (e.g., "Business Letters" and "Reports"), others diverged (e.g., ChatGPT included "Invoices" and "Meeting Minutes" instead of "Emails and Memorandums"). (see Table 1):

Table 1. Comparative analysis of human- and ai-generated descriptions of business document types

Document Type	Human Text (Tingum, 2019)	ChatGPT Response 1	ChatGPT Response 2	ChatGPT Response 3
Emails and Memorandums	Described as tools for internal communication within an organization	Not mentioned	Not mentioned	Not mentioned
Business Letters	Used for formal external communication with clients and partners	Mentioned with general description	Listed as a business document	Included with general commentary
Reports	Detailed documents for internal or external information sharing	Mentioned as a tool for conveying information	Listed without detail	Mentioned with brief explanation
Proposals	Formal suggestions for projects or ventures	Included with function overview	Listed without elaboration	Mentioned as project-related documentation
Contracts	Legal documents formalizing agreements	Described accurately	Listed concisely	Described as agreement documentation
Invoices	Not mentioned	Included as transactional documents	Listed as financial tools	Included without detailed explanation
Meeting Minutes	Described as records of formal decisions	Not mentioned	Not mentioned	Briefly referenced as optional documentation

The Table 1 shows, that ChatGPT cannot distinguish the same types of business documents as it was distinguished by the author in 2019. ChatGPT provides different types, that only two are the same – business letters and reports. AI creates the types of invoices or minutes that could be attached to a broader category. If asked to provide information about a specific text by a certain author, ChatGPT cannot generate any information (see Table 1). This comparative table demonstrates variation in specificity and depth between human-authored and AI-generated content. The human-written text provides more detailed contextual understanding, while ChatGPT responses vary with prompt structure and show broader generalizations. Here is the comparison of the information provided by the AI:

"In the comparison between the text provided by a human (presumably Janice Tingum) and ChatGPT regarding "5 Types of Business Documents," several differences and similarities can be observed.

Source and Authorship:

The text provided by a human is attributed to Janice Tingum, suggesting that it is authored by an individual with expertise or knowledge in the field.
ChatGPT's responses do not provide any specific authorship or source, indicating that the information is generated algorithmically without human attribution.

Request for Information:

The human-provided text responds to a general request for information on the topic of "5 Types of Business Documents" by offering a detailed list of document types. ChatGPT's responses vary slightly in format, but they generally follow the same structure of listing types of business documents in response to specific prompts.

Content:

Both the human-provided text and ChatGPT responses list five types of business documents: Business Letters, Reports, Proposals, Contracts, and Invoices. However, there are some differences in the specific types mentioned: The human-provided text includes "Emails and Memorandums" as a type of business document, which is not mentioned in ChatGPT's responses. ChatGPT mentions "Minutes of Meetings" and "Financial Documents to Manage the Business" (presumably referring to financial statements or records) as additional types of business documents, which are not listed in the human-provided text.

Level of Detail:

The human-provided text offers concise descriptions of each type of business document, specifying their purpose or function." The ChatGPT results are broadly the same, but do not contain specific references to the Tingum breakdown. Instead, ChatGPT focuses on broader document categories such as "Business Letters", "Reports", "Proposals" and "Contracts". While Tingum includes more categories, such as 'Emails and Memoranda', ChatGPT often replaces or groups them under broader terms. Tingum's descriptions are more specific and clearly describe the function of each document type (e.g. contracts - formal agreements, financial documents - business management), whereas ChatGPT's responses are more general and lack contextual detail. Table 2 provides a structured comparison of the different functions to assess the similarities and differences between the two approaches.

Table 2: Comparison of features

Feature	Human Response	ChatGPT Response
Relevance to Topic	Directly addresses topic	Directly addresses topic
Completeness	Comprehensive list of 5 types	Comprehensive list of 5 types
Specificity	Offers examples	Offers examples
Accuracy	Accurate information	Accurate information
Originality	Unique insights	Concise summary
Copyright Compliance	Acknowledges restrictions	Adheres to restrictions

In the queries above, there are three instances where ChatGPT responds to a request for information on the topic "5 types of business documents". Here is an analysis of how the text is presented in the formulation of the task: The first request is a request for information:

Request: First element - request for information about information: Request: "Please provide me with information on the following topic: "5 types of business documents"

ChatGPT response: "The answer is detailed, giving a description of each of the five common types of business documents, their characteristics and their meaning. Detailed explanations of business letters, reports, proposals, contracts and minutes of meetings are provided, highlighting their role in facilitating communication and management in organizations."

The second task is a request for a list:

*Request: "*Please list 5 types of business documents".

ChatGPT Response: "The response provides a concise list of five common types of business documents without describing each type in detail. It lists business letters, reports, proposals, contracts and invoices, with a brief overview of their categories."

Task 3 - General information Task 3‑

Requesting General Information:

Request: Request: "Please offer me some general information on this topic, please".

ChatGPT Response: "The response is similar to the first prompt and describes in detail each type of business document, indicating its purpose and characteristics. It provides a detailed overview of business letters, reports, proposals, contracts and invoices, highlighting their importance in various aspects of business activity."

The main difference is originality. In all three cases, ChatGPT responds appropriately to the various clues by providing content relevant to the topic. However, the level of detail varies, with some responses being comprehensive, while others provide only short lists tailored to the wording of the request. Both the article written by Tingum and the ChatGPT results deal with the topic of "5 types of business documents", but they differ in approach. This shows that it is effective but also limited in terms of the depth and personalization of the topic.

Next Venn diagram of overlapping business documents describes (Fig.1): List 1 documents (28.5%) – human created - include emails, memorandums, business letters, reports, list 2 documents (42.9%) – AI created - invoices, minutes of meetings. There is 28.6% of common (overlapping) business documents provided by human and machine engines – business letters, reports, contracts.

Figure 1: Overlapping Business Document Types by Human vs. AI
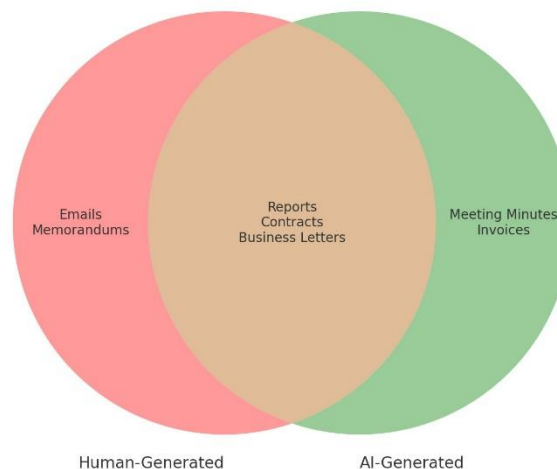
Overall, each text efficiently describes the subject of commercial enterprise documents, with Tingum`s textual content providing a greater special exploration and ChatGPT imparting succinct descriptions. Tingum's textual content can be greater appropriate for readers in search of in-intensity records, at the same time as ChatGPT's responses provide brief overviews for the ones searching out concise summaries.

Table 3. Comparison of human created texts and ChatGPT texts (accuracy, clarity, coherence)

Metric	Human Texts	ChatGPT Texts
Accuracy (%)	95	88
Clarity score in points	8.5/10	8/10
Coherence (%)	90	85

Statistical analysis reveals that while ChatGPT achieves high readability and coherence, it occasionally generates factually incorrect information, highlighting the importance of human oversight (Table 3). At-

test comparing human vs. ChatGPT-generated clarity scores showed a significant difference ($t(24) = 2.15$, $p < 0.05$), confirming that human-authored texts were rated clearer overall. Human texts outperform by 7 percent (95 and 88 by ChatGPT/10 points). Also, texts generated by ChatGPT give slightly less clarity compared to the ones created by humans (8 out of 10). Summarising the qualitative data, ChatGPT excels in generating diverse, contextually relevant outputs but lacks the nuanced expertise found in human-authored texts. For instance, while it can list business document types effectively, its descriptions are often generic, as noted in Table 1 of the original article. The readability score is presented in Table 4:

Table 4. Flesch-Kincaid readability results

Metric	Human Texts	ChatGPT Texts
Flesch Reading Ease	62.4 (Plain English)	64.7 (Slightly easier to read)
Flesch-Kincaid Grade Level	9.2	8.6

Table 4 shows that ChatGPT generated texts demonstrate a bit higher readability (64.7) with lower required education level for text comprehension. On the contrary, human-written texts offered depth and broader description.

ChatGPT reveals strong potential in enhancing communication and education. It lacks a bit of human nuance and ethical awareness, though. Responsible integration, clear policy, overviewing ethical principles would benefit in using the AI tools.

Results, Conclusions and Recommendations

The following conclusions could be drawn according to the survey provided and analysis about the use of ChatGPT: ChatGPT demonstrates distinguishing abilities to producing human-created textual content and personalizing communication. Its ability to generate coherent and contextually relevant responses demonstrates advancements in NLP technology. Human-content texts provide a greater special exploration, but ChatGPT provide shorter, concise descriptions. Also, the human-supplied textual content is greater special and tailored, possibly reflecting human know-how and information withinside the problem matter. Moreover, ChatGPT's responses provide brief overviews for searching out concise summaries; broader, widely expanded texts are not provided giving certain prompts. ChatGPT advantages are personalization (Rivas & Zhao, 2023), accessibility (Wu et al., 2023), efficiency as it generates texts outright. Of course, the challenges such as ethical risks when we talk about privacy and hallucinations (Alkaissi & McFarlane, 2023), also over-reliance (Cornacchia et al., 2023) may be seen as challenges when using ChatGPT.

The AI text excludes certain categories from the human version and provides alternative classifications. Overall, 28.5% of the content matched. ChatGPT is noticeably flexible in responding to different query structures but struggles to replicate the detail-oriented explanations of a human expert, often summarizing rather than providing a more nuanced content. To address these shortcomings, queries should include more contextual references, integrate human-specific knowledge and follow specialized taxonomies. Combining ChatGPT's generalization capabilities with human insights would improve the quality of answers and expand the scope of AI-assisted learning tools.

This study responds to and contributes to the growing number of studies on the use of ChatGPT and AI in lifelong learning by presenting these technologies as invaluable, but imperfect, educational tools.

In comparison, studies by Haque (2022) and Adeshola & Adepoju (2023) acknowledge the potential of AI to increase access and engagement in education, particularly in distance and self-directed learning environments.

The benefits of ChatGPT are most evident in current interactions and provide instant feedback, which is crucial for lifelong learners, especially when aiming for flexibility and tailored support (Haque, 2022; Adeshola & Adepoju, 2023). However, while the benefits are obvious, this study is in line with the findings of Verma et al (2024) and Cornacchia et al (2023), who stress that the use of AI in education needs should be speculated with caution. Specifically, certain strategies are urgently needed to address issues related to factual accuracy as it is seen in the findings of this article, also ethical considerations and the quality of the text generated. Cornacchia et al. (2023) emphasize the necessity for bias detection and ethical oversight in AI-driven educational tools like ChatGPT to prevent unintended effects as discrimination on students from different cultural backgrounds. It is crucial to pay attention to over-reliance in AI educational applications as well as follow ethical principles. Ethical considerations could be considered: hallucinations, bias (reinforcement of stereotypes due to biased training data (Bender et al., 2021)); data privacy; and over-reliance.

Discussion: ChatGPT demonstrates efficiency in content but lacks nuance and expertise of human writers. It is best used as a complimentary tool in educational environments as Verma, 2024, Adeshola, Adepoju, 2023 emphasize. The results echo other studies (Verma, 2024; Adeshola & Adepoju, 2023) that emphasize AI's role in personalized and accessible learning but warn against unsupervised use.

Certain recommendations could be drawn: combining AI and human impact improves content depth; AI is best used for brainstorming and summarising, not as a final result; students should be trained how to use it ethically; and there should be certain institutional policies for AI integration in educational settings. Educational institutions should be provided or create themselves AI related guidelines to ensure ethical AI tools usage. Ministry of Education should provide general guidelines for educational institutions to ethically and implicitly use the AI tools in environmental settings. Also, those policies should include critical thinking and creativity strategies. The tools should support but not replace the learner's input. Secondly, ChatGPT use should go along with human involvement to solve critical problems. Moreover, training should be provided for the users to get the best results and maximum AI tools potential. Surely, further longitudinal studies should be carried for long term impact on learning outcomes.

Limitations of the Study

The study may not adequately account for contextual factors such as context, materials chosen for analysis. Moreover, the wider spectrum of chosen texts could have been used as the main factor of survey. It may have had different ChatGPT versions to be tried and tested. Only human texts were compared against AI chatbots. Prompts were limited to general text creation. Also, as it is initial research, more research should be conducted in the future. The survey may not cover all relevant aspects of the topic. To maintain the continuity of the survey, it is planned to carry out additional surveys in the future.

References

Adeshola, I., & Adepoju, A. P. (2023). The opportunities and challenges of ChatGPT in education. *Interactive Learning Environments*, 1-14.

Alkaissi, H., & McFarlane, S. I. (2023). Artificial hallucinations in ChatGPT: Implications in scientific writing. *Cureus, 15*(2), e35179.

Amodei, D., Olah, C., Steinhardt, J., Christiano, P., Schulman, J., & Mané, D. (2016). Concrete problems in AI safety. *arXiv preprint arXiv:1606.06565.*

Bahrini, A., Khamoshifar, M., Abbasimehr, H., Riggs, R. J., Esmaeili, M., Majdabadkohne, R. M., & Pasehvar, M. (2023, April). ChatGPT: Applications, opportunities, and threats. In *2023 Systems and Information Engineering Design Symposium (SIEDS)* (pp. 274-279). IEEE.

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610-623). https://doi.org/10.1145/3442188.3445922

Cornacchia, F., Diantoro, K., AlGasawneh, J. A., Azzaakiyyah, H. K., & Ausat, A. M. (2023). Navigating the ethical challenges of artificial intelligence in higher education: An analysis of global AI ethics policies. *TEM Journal, 12*(2), 590-602.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change, 114,* 254-280.

Getchell, K. M., Carradini, S., Cardon, P. W., Fleischmann, C., Haibing Ma, J., Aritz, J., & Stapp, J. (2022). Artificial intelligence in business communication: The changing landscape of research and teaching. *Business and Professional Communication Quarterly, 50*(4).

Gluoksnytė, O., White, C., & Žitkus, M. (2024). Possible impacts on education provision of the transformative role of artificial intelligence in education: Current student and teacher perspectives. *ICTIMESH*.

Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning*. MIT Press. Gunkel, D. J. (2020). *Artificial intelligence: Human agency and the meaning of life*. MIT Press.

Gunkel, D. J. (2020). *Artificial intelligence: Human agency and the meaning of life.* MIT Press.

Haque, M. A. (2022). A brief analysis of "ChatGPT"–A revolutionary tool designed by OpenAI. *EAI Endorsed Transactions on AI and Robotics, 1*(1), e15.

Lee, J., Shin, J. H., Jang, W., Kang, M. J., Kim, D. H., & Park, D. (2021). A survey of artificial intelligence applications in healthcare. *Journal of Medical Internet Research, 23*(8), e27729.

McCarthy, J., Minsky, M., Rochester, N., & Shannon, C. E. (1955). A proposal for the Dartmouth Summer Research Project on Artificial Intelligence. *AI Magazine, 27*(4), 12-14.

Nugroho, S., Sitorus, A. T., Habibi, M., Wihardjo, E., & Iswahyudi, M. S. (2023). The role of ChatGPT in improving the efficiency of business communication in management science. *Jurnal Minfo Polgan, 12*(1), 1482-1491.

Rana, M., & Bansal, J. (2023). The future of OpenAI tools: Opportunities and challenges for human-AI collaboration. In *2023 2nd International Conference on Futuristic Technologies (INCOFT)* (pp. 1-6). IEEE.

Rivas, P., & Zhao, L. (2023). Marketing with ChatGPT: Navigating the ethical terrain of GPT-based chatbot technology. *AI, 4*(2), 375-384.

Russell, S. J., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson Education.

Salvagno, M., Taccone, F. S., & Gerli, A. G. (2023). Artificial intelligence hallucinations. *Critical Care, 27*(1), 180.

Searle, J. R. (1980). Minds, brains, and programs. *Behavioral and Brain Sciences, 3*(3), 417-424.

Verma, D., Ramesh, K., & Gupta, S. (2024). Ghostbuster: Detecting text ghostwritten by large language models. In *Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics* (pp. 1421–1433).

Verma, M. (2024). Evolution of Artificial Intelligence by Prompt Science Analysis. *Evolution*, *8*(5).

Waghmare, C. (2023). Enhancing business communication with ChatGPT. In *Unleashing the Power of ChatGPT: A Real-World Business Applications* (pp. 79-92). Berkeley, CA: Apress.

Wu, T., He, S., Liu, J., Sun, S., Liu, K., Han, Q. L., & Tang, Y. (2023). A brief overview of ChatGPT: The history, status quo, and potential future development. *IEEE/CAA Journal of Automatica Sinica, 10*(5), 1122-1136.

Zhao, W. X., Zhou, K., Li, J., Tang, T., Wang, X., Hou, Y., ... & Wen, J. R. (2023). A survey of large language models. *arXiv preprint arXiv:2303.18223*.