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ChatGPT – Another Hype or Out-of-this-World?

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Abstract

The launch of ChatGPT in November 2022 ushered in a new era of generative AI that has taken the world by storm. We wanted to seek the opinion of MWAIS colleagues. We asked the editorial board members of JMWAIS if they wish to respond to the following questions: 1) What is your overall opinion of GPT and similar platforms? 2) GPT's potential implications for teaching, learning, and other student services? And 3) Have you already seen evidence of GPT in student work or in anything else where it might have come across, like research? This article includes responses we received.

Keywords: Generative AI, ChatGPT, Sample Applications and Opinions from the Midwest USA

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1. Introduction

ChatGPT, or generative AI as the underlying technology is termed, has created a buzz. It took ChatGPT five days to reach one million users while it took Facebook ten months to reach the same number of users (Dorbin, 2023). The technology represents a significant advancement in natural language processing and AI capabilities. It is powerful, scalable, easy to implement, and also cost-effective. These kinds of technologies will undoubtedly have a profound impact on human lives and progress. Little wonder that companies all across the spectrum are trying to share the excitement by becoming early adopters - they are experimenting with innovating their processes, products, and overall customer experience using generative AI technologies. The market reaction shows that businesses of all sizes understand that the Return on Investment (ROI) of these technologies, unlike others such as blockchain, is not obscure. The stock market is reflecting the trend – by lifting the stock of not only the software but also the hardware companies associated with ChatGPT and generative AI (Ferre, 2023; Saul, 2023).

Several factors are accountable for this buzz. Generative AI technologies are customizable, scalable, cost-effective, and thus adaptable by companies and businesses of all sizes and natures. These generative AI models are pre-trained on large datasets, which allows companies to utilize them without the need to train models from scratch. Moreover, GPT models can be fine-tuned to specific use cases or domains, which allows businesses to adapt the chatbot's responses and behavior to align with industry-specific requirements and user preferences. Also, these applications can be deployed on cloud platforms.

It has been fascinating to see how the interest in AI exploded on the scene last fall in the public consciousness and appeared regularly in major news outlets, yet AI has been around and firmly integrated into our daily lives for over a decade. Whether embedded in our personal banking (i.e., online check deposits) or as personal assistants (i.e., Apple's Siri or Amazon's Alexa among others), we see it embedded in dashboards or other applications within organizations as part of our professional lives as well.

This public awareness seems due to the ability to directly interact with the AI and get generated content: a summarized search using a particular perspective, images, music, etc. Another common use centers on generating SQL and programming code across languages. People seem more willing to accept the statements put forth by the somewhat confident and conversational tone of these newer GPT models.

Several authors argue that ChatGPT and generative AI is just another hype like blockchain (Tlili et al., 2023). Some key differences seem to make ChatGPT a clear winner this time. Unlike generative AI, blockchain technology is fragmented, with multiple platforms, protocols, and standards. Implementing blockchain solutions involves significant technical expertise, which can be a barrier for many companies. Blockchain faces scalability challenges when it comes to processing large volumes of transactions. This scalability limitation hinders the adoption of blockchain in high-demand applications. Blockchain technology operates decentralized and transparently, which can raise regulatory and legal concerns in certain industries. Lack of interoperability and standardization can create barriers to adoption which is another reason why businesses are still trying to figure out how they can use blockchain technology, and thus its full potential is still being explored.

With that said, it is important to understand that generative AI is not free of limitations. Several prominent AI engineers and business leaders have sounded the alarm, including the CEO of OpenAI, Sam Altman, on ensuring it is regulated and done right instead of fixing it later. Even Elon Musk has advocated for pausing the development of such technologies as concerns are too big to be ignored. GAI is known to have trust issues as it is considered a black box and does not assign any credit for the intellectual property used to train the models (Gefen and Arinze 2023). It is known to fabricate false or misleading responses; create deep fakes - images and videos that are nearly impossible to detect; if not regulated or used judiciously, it has a huge potential for malicious use; the response from such models could be manipulated as they are dependent on the prompt provided. There is also a concern as to what will happen if the courts rule that generative AI cannot learn on intellectual property that is copyright protected. Moreover, there is fear of creating an addictive society – as their use to make social media and video games more overly personalized and thus excessively engaging and addictive.

These limitations also infringe on the role of such technologies in teaching and learning. GPT is trained on large datasets that may contain biases present in the data and may not also grasp the underlying context accurately. This can lead to incorrect or misleading information being generated, which can be problematic for educational purposes. Overreliance on these technologies can make students too dependent on the model for answers and fail to develop critical thinking, analytical and problem-solving skills. Also, relying heavily on AI technologies like GPT may lead to a reduced sense of human connection in the learning process.

But there is another concern - will the big companies get even bigger? Will it level the playing field for small businesses? Looking at the market reaction to the launch of this technology, it seems that both large and small companies are poised to grow. Larger companies with greater resources may have an advantage in implementing and scaling generative AI systems. However, smaller companies that develop customized solutions or improve processes contribute to the generative AI ecosystem by building innovative applications or partnering with larger companies to position themselves for growth and gain access to larger markets.

Such technology also raises an important question: What does it mean to a human vs. AI fight? Several scholars cite that humans are creative thinkers and can also work toward mitigating bias in such technologies (Matt et al., 2023). But for that to happen, they first need to understand and realize that mitigating bias in humans is a challenge, and it is unclear how easy or difficult it will be for one biased system (read *humans*) to create another unbiased system (read *AI*).

2. Implications and impacts for Teaching and Learning

While there are certainly challenges and ethical concerns that come from the advancements of generative AI, there are also opportunities for the simplification and automation of respective tasks. There are also program opportunities for consideration. In fact, Drake University developed an undergraduate major in Artificial Intelligence in the Fall of 2019 and began enrolling students in an AI major in the Fall of 2020. For details see: <https://www.drake.edu/artificial-intelligence/>

At the University of Wisconsin Oshkosh ChatGPT has been deployed in an introductory Python programming course for data analytics. During the first 8 weeks, students learned the basic programming constructs as they would in any introductory programming course. In the second half of the course, students took advantage of ChatGPT by writing structured English definitions of the programs they needed to develop. They asked ChatGPT to generate the code and copied it into the programming environment. Students were asked to reflect on the quality of the generated code before running it to show that they were able to evaluate whether the AI output was appropriate. Students were able to get to the real purpose of the course - using Python for data analytics - rather than being caught in syntax errors and a lack of understanding of how to write the code.

We believe this kind of co-creation between students and AI will become increasingly common – indeed expected by both students and employers. On the other hand, educational programs that have assessments that can be completed mostly by uncritical application of generative AI are likely to be seen as nothing more than diploma mills. Employers and accrediting agencies are likely to scrutinize programs to determine whether student learning is ‘AI-proof.’

There are various approaches to take in developing these kinds of assessments: Strictly controlled testing environments where AI and other assistive technologies are forbidden, and students will have to demonstrate their abilities without these tools. Oral exams are another approach that can be used to allow for a holistic examination of student knowledge and abilities. However, we believe the most exciting area for exploration is to allow for the use of generative AI in the examination by designing exams that assume students will use the technologies but require them to determine the best strategies for its use, create appropriate prompts, evaluate the output, and combine multiple queries to achieve the desired results.

From an educational perspective, there are certainly concerns related to teaching and learning (e.g., academic misconduct, plagiarism, cheating, reliance on false or biased information, decrease in critical thinking, and more), but there are also opportunities. Already there are specific AI tools on the market that can assist educators in creating lesson plans, brainstorming learning objectives, designing quizzes, and developing other classroom materials. Copilot (<https://app.educationcopilot.com/>) is one example of this type of tool and there are certainly others. AI tools for the learner also exist. For example, many students use editing tools (e.g., Grammarly) to help with their writing and communication or simply the editing of their writing. The overall growth of generative AI presents a shift in education that educators have to work through. Focusing less on the teaching of specific tools or mechanics and instead emphasizing

the development of skills (e.g., critical thinking, how technology works, analysis of automated output, emotional intelligence, empathy, etc.) is one way to navigate this change.

Our academic and practitioner editorial board members of JMWAIS see interesting impacts for students, teachers, and those that hire the students from exposure and familiarity with tools such as GPT. We believe that many teachers have found benefits in using GPT-based models to develop learning goals, lesson plans, or potentially an assignment. Does this allow us to find ways to keep curriculums fresher? The opportunity to use this as a new platform to apply concepts within subjects begin to shift to the deployment of and interaction with GPTs.

The need to continue to develop skills across this increasingly complex landscape should be considered as we create assessments for students to explore the interconnection of different system components beyond working with a single system. For example, how can an open source GPT be hosted with a web frontend that provides interaction with organizational data integrated to augment the GPT focus to be more relevant to employees?

3. Implications and Impacts for Scholarship

Outside of the environment of teaching and learning, generative AI is having an impact on the research community. For example, the MWAIS 2023 (<https://mwais.metrostate.edu/>) conference program, hosted by Metro State University and held in St. Paul, Minnesota campus, showed a clear interest in the topic of AI. In fact, the original conference theme was intended to center on the 20-year anniversary of Agile, but the conference committee adapted to focus on the interest in AI instead. Going forward, we can expect to see a growing trend in research related to AI. However, it is important to note that AIS conferences have been quick to respond to the concern that AI tools are authoring research. Both AMCIS and ICIS now require authors to “confirm that no content or aspect of the manuscript was generated by ChatGPT or other AI content generators.” Continued research and exploration of generative AI tools and processes related to both education and practice will be critical to the decisions that are made with these technologies in the future.

4. Practical Implications and Impacts

While there will be some negative impacts to jobs and how we do work, as well as making many of our social media and reporting feeds more complex (i.e., is this post AI generated?), the net outcome will be a general shift in how we do things to effectively leverage this new tool.

Generative AI tools are gaining a lot of attention. Specifically, OpenAI’s ChatGPT, Google’s Bard, and Microsoft’s Bing AI are some of the key players in the market where users can ask questions, receive answers, and then further refine the results by providing more details. At the MWAIS 2023 conference a panel of AI industry experts discussed the increasing attention and interest in these tools. One of the interesting takeaways from this discussion was a comment from a Microsoft executive suggesting generative AI tools have been used behind the scenes for some time already, but it is the accessibility and self-service features new to the general public that are gaining interest. Within the field of information systems, we are consistently faced with technological innovations and advancements that impact what we do.

We have certainly seen that GPT types of systems run rampant through the workplace, as emails are crafted, and queries are written. Fortunately, guidelines for their use are started in some organizations. Many stories proliferate news outlets on the astounding benefits and extreme perils of relying on GPT output and as with any new technology few guardrails are in place. As part of this, we think there will be more focus on explanations as the pressure for teasing out copyright and other potential infringements will increase.

5. Conclusion

We will need to develop new programs that take advantage of the new technologies and support students in leveraging them to their fullest potential while still teaching students the basics of their craft and assuring our stakeholders of student learning. We would expect in the coming years to see more concrete guidelines put in place within educational institutions, businesses, and government organizations.

As educators, we will look back on the time before the release of ChatGPT and the host of GPTs that followed fondly, as a time when students had to work to copy code, text, or other work. Or is this an opportunity where students' gain access to a new skill set to adapt to the technology and industry demands? We have seen many such changes across the history of technology; search engines and graphing calculators, are two recent examples. Education has adapted to both and students have continued to develop appropriate skills to be successful in the workplace. It will be interesting to see where and how the next equilibrium between education and this new GPT frontier will settle.

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Joey F. George is a Distinguished Professor Emeritus in the Ivy College of Business at Iowa State University. His bachelor's degree in English is from Stanford University (1979), and he earned his doctorate in management from the University of California Irvine in 1986. Dr. George's research interests focus on the use of information systems in the workplace, including deceptive computer-mediated communication, computer-based monitoring, and group support systems. He was recognized with the AIS LEO Award for Lifetime Achievement in 2014.

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