



**CELTT**

Center for Excellence in Learning,  
Teaching and Technology

# **WHITE PAPER: AI PERCEPTIONS AT THE UNIVERSITY OF BALTIMORE**

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## CONTENTS

<b>Executive Summary</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
The UBalt Generative AI Team.....	4
What is Artificial Intelligence, Generative Artificial Intelligence, ChatGPT and GoogleBard? .....	4
<b>Survey Methodology</b> .....	<b>5</b>
Survey Questions and Findings .....	6
Faculty and Staff Demographics .....	6
Students Demographics .....	6
Perceptions of AI Tools Among Faculty, Staff and Students .....	7
Perceived Familiarity, Comfortability and Use of AI .....	7
Perceived Ethics.....	8
Perceived Acceptability.....	8
Perceived Usefulness .....	9
Perceived Impact of Learning.....	9
Discussion of Findings.....	9
<b>Qualitative Themes from Faculty and Students</b> .....	<b>11</b>
Collection and Analysis of Qualitative Data.....	11
Uses of AI Tools for Educational, Professional, and Personal Purposes .....	11
Faculty and Student Perspectives on the Advantages and Challenges of AI in Academia .....	12
<b>The Role of AI in Future Learning and Teaching</b> .....	<b>13</b>
<b>Next Steps and Recommendations</b> .....	<b>14</b>
<b>Conclusion</b> .....	<b>15</b>
<b>References</b> .....	<b>16</b>
<b>Appendices</b> .....	<b>17</b>
Figure 1.....	17
Figure 2. ....	18
Figure 3. ....	18
Table 1.....	19
Table 2. ....	20
Table 3. ....	21
Table 4. ....	22
Table 5. ....	23
Table 6. ....	24

## EXECUTIVE SUMMARY

This white paper, produced by the UBalt AI team, explores the perceptions of Artificial Intelligence (AI) and generative AI within the UBalt community. It aims to uncover how students, faculty, and staff view AI's role and implications in the educational landscape. The university collaborated with Ithaka S+R to acquire established, reliable and valid surveys from the AI literature, which was then adapted by the UBalt AI team to meet the needs of our academic community. This survey included a blend of both quantitative and qualitative questions, ensuring a deep understanding of the respondents' views. The survey was distributed to the university community of faculty, staff and students for two months. By doing so, UBalt sought to paint a holistic picture of AI perceptions across the institution. The responses obtained were then analyzed using descriptive and inferential statistics, as well as an exploratory qualitative analysis to extract meaningful insights, setting the stage for informed discussions and decision-making around AI in education.

One of the interesting findings was the variance in familiarity with AI tools between faculty and students. Contrary to common perceptions influenced by media, faculty members showed higher familiarity with AI tools like ChatGPT and GoogleBard, while students were more acquainted with tools such as Grammarly. This contrast highlighted a lesser-than-expected engagement with AI tools among students. When it came to ethical considerations, faculty and staff expressed significant concerns about the potential of AI tools to enable academic dishonesty. Students, however, were divided in their ethical evaluation of using AI in their coursework, suggesting a generational or experiential divide in how AI is perceived ethically.

In terms of the acceptability of AI tools, there was a noticeable difference between students and faculty. While both groups moderately agreed on the acceptability of using AI tools like ChatGPT, students showed a more pronounced approval for using online resources, study groups, and tutoring services. This difference might reflect varying levels of comfort and familiarity with digital tools in academic settings. Students also saw AI tools, particularly ChatGPT, as more beneficial in enhancing personalized learning and gamification in education, indicating a more optimistic view of AI's potential to revolutionize learning experiences. Conversely, faculty perceptions were more tempered, suggesting a cautious approach to integrating AI into educational paradigms.

Qualitatively, the survey unveiled a broad spectrum of views on AI's role in academia. The participants recognized the transformative potential of AI in personalizing learning and augmenting research capabilities. Yet, they also voiced concerns about challenges like diminishing critical thinking skills and the risk of academic dishonesty. These insights underscore the importance of integrating AI literacy into academic curricula and promoting responsible use of AI technologies.

In conclusion, these findings are guiding the UBalt AI team in reshaping the narrative around generative AI in academia. The team believes focusing on developing AI literacy, encouraging ethical usage, and implementing measures to prevent AI misuse are the next steps to propel the university forward. This proactive approach aims to integrate AI into the educational landscape responsibly, enhancing the learning and teaching experiences while upholding ethical standards. The University of Baltimore, by understanding and addressing these perceptions, is positioning itself as a leader in AI-driven educational innovation, preparing its community for a future where AI plays an integral role in education.

## INTRODUCTION

Artificial Intelligence (AI) is revolutionizing the realm of higher education, heralding a new era of learning and teaching methodologies. By harnessing AI's capabilities, educational institutions are now offering personalized learning experiences, adapting teaching methods to suit individual students' needs, and automating administrative tasks like grading (Wang et al., 2023). AI's role extends beyond just enhancing teaching methods; it also involves providing intelligent tutoring systems, predictive analytics for better student performance assessment, and round-the-clock academic support through AI-powered chatbots. This technological integration not only streamlines the educational process but also prepares students for the demands of an AI-influenced professional world, marking a significant transformation in how education is imparted and received (Montenegro-Rueda et al., 2023).

Within the University System of Maryland (USM), there are several key initiatives aimed at enhancing AI literacy and application in educational settings. The Faculty Center for Teaching and Learning (FCTL) at the University of Maryland, Baltimore, for instance, supports faculty in integrating AI into their teaching and research, focusing on the use of tools like ChatGPT. Similarly, the Teaching and Learning Transformation Center (TLTC) at University of Maryland, College Park emphasizes adapting instructional approaches to leverage AI technologies effectively, with offering resources and workshops for faculty.

In contrast, the University of Baltimore (UBalt) is pioneering a distinct approach within the University System of Maryland. UBalt's initiative, focusing on understanding the current landscape of AI perceptions, is unique in its method of using data to deeply understand the needs and perspectives of both students and faculty. This approach aims to inform the development of AI tools specifically designed to enhance the educational experience at multiple levels. More importantly, UBalt's Center for Excellence in Learning, Teaching and Technology has partnered with Ithaka S+R, which is leading a two-year research project, in partnership with selected universities, to explore and assess the impact of AI applications on higher education, focusing on teaching, learning, and research. UBalt is leading the way forward in the USM as one of the few schools in this national and international partnership to comprehensively assess student and faculty perceptions about AI. This initiative not only reflects UBalt's innovative approach to AI in education but also underscores its commitment to student success, demonstrating a proactive stance in leveraging AI to support and enrich the academic journey of its students. This proactive stance also makes explicit AI usage of faculty and students, respectively, and their perceptions about its usage in academic contexts. This positioning also begs consideration of how emerging AI is being utilized now and what that might suggest about modes and methods of utilization in the future of education.

This white paper presents a comprehensive analysis of the University of Baltimore's AI Perceptions project. Using a data-driven approach this white paper aims to highlight the methods, findings, and implications of this study, demonstrating how data-driven insights can guide the development of AI tools tailored for enhancing teaching and learning experiences. Additionally, the paper underscores UBalt's commitment to faculty and student success, highlighting how such forward-thinking initiatives can significantly contribute to the advancement of educational practices and student outcomes in the modern digital era. Faculty are an important part of student success, and it is critical to consider pedagogical approaches that enhance teaching and learning experiences so that students are equipped with the education, skills, and knowledge to compete in a 21st century workforce that includes generative artificial intelligence.

## THE UBALT GENERATIVE AI TEAM

Ithaca S+R's two-year research project involves 19 selected national and international universities exploring generative AI in higher education across four phases. The initiative assesses how AI reshapes research and teaching, focusing on policy and technology advancements. It includes evaluating campus readiness for AI, identifying instructional and research needs through interviews, designing support strategies for scholarly use of AI, and updating institutional policies. Each participating university forms a research team representing different campus units. The project's outcomes, encompassing comprehensive findings and strategies for AI integration in higher education, will be shared publicly to guide broader implementation and inform the academic community.

Leading UBalt's involvement in the Ithaca S+R project, Dr. Jessica Stansbury, as the Director of Teaching and Learning Excellence, assembled a cross-disciplinary team to explore the multifaceted aspects of generative AI in higher education. Our team comprises experts from various departments: Dr. Kevin Wynn, a member with a social science background from the Merrick School of Business (MSB), David Kelly, an expert in writing pedagogy and head of our writing center in Academic Success, Dr. Nima Zahadat, Director of Digital Forensics and Security Graduate Program from the College of Public Affairs (CPA), and Dr. Stansbury, an expert in pedagogy, instruction, scholarship of teaching and learning (SoTL) and assessment from our Center for Excellence in Learning, Teaching and Technology (CELTT). This diverse team brings together expertise in social sciences, writing, pedagogy, instruction, SoTL, assessment and technology, positioning us to address the transformative impacts of AI in academia, particularly in how we approach writing and technology integration in teaching and learning. This collaborative approach not only taps into the strengths of each team member but also serves as a strategic step towards breaking down silos within the university. By bringing together experts from MSB, Academic Support, and CPA, we are fostering cross-disciplinary collaboration, recognizing that AI's influence transcends academic boundaries. This initiative is a proactive move in preparing for an educational landscape where AI impacts all disciplines, promoting an integrated and cohesive approach to teaching, learning, and research in the face of rapidly evolving technological advancements.

## WHAT IS ARTIFICIAL INTELLIGENCE, GENERATIVE ARTIFICIAL INTELLIGENCE, CHATGPT AND GOOGLEBAR?

Artificial Intelligence (hereafter AI) is an umbrella term that encompasses many areas related to artificial intelligence and includes a larger array of technology (e.g., edge computing) than mentioned within this report. Some of these areas are:

- Discriminative AI: focuses on classifying or identifying data based on preexisting data.
- Reactive Machines: examples are in self-driving cars and trains.
- Limited Memory AI: examples are for various weather forecasting.
- Theory of Mind: examples are for chat services and customer services.
- Narrow AI: examples are for customized product suggestions for e-commerce.
- Supervised Learning: examples are for identifying objects such as images and videos.
- Unsupervised AI: examples are for detecting fraud in bank transactions and for reinforcement in learning to teach a machine how to play a game.

Generative artificial intelligence (hereafter GAI), as the name suggests, generates content. Though Generative AI can be part of some areas of AI already mentioned, GAI can be used in creating image generation (such as OpenAI's DALL-E3), video synthesis, music composition, poetry, essay composition, and more. One of the most well-known forms of GAI is ChatGPT, a large language processing model developed by OpenAI, and is considered the original generative AI model among media (Hughes, 2023). Presently, ChatGPT offers versions 3.5 (free) and 4.0 (paid version). The paid version provides uninterrupted access, unlike the free version, which may experience timeouts, and has applications (such as Excel) and programming languages (such as JavaScript and Visual Basic). While useful, ChatGPT's data can sometimes be outdated or inaccurate, especially in generating specific references. It also has the tendency to make up data at times such as when asked to write a paper with proper references; the references are often fake, and this is referred to as creating 'hallucinations' (OpenAI, 2023).

GoogleBard, leveraging real-time data, provides immediate responses to queries such as traffic and weather conditions and supports voice commands, while seamlessly integrating with Google products. It primarily uses web search to deliver relevant information but is progressively incorporating more AI-driven responses. In contrast, ChatGPT specializes in generating conversational content, embodying AI's capability to mimic human intelligence. While our research primarily focused on these two tools, it is important to recognize that they are just a part of the broader spectrum of generative AI technologies available in the market. Furthermore, we acknowledge the rapidly evolving nature of OpenAI, which is advancing at an extraordinary pace. This constant evolution poses a challenge in keeping up to date with the latest developments, underscoring the dynamic nature of our research in this field.

## SURVEY METHODOLOGY

Our research design and methodology commenced through collaboration with Ithaca S+R, where we were provided with a few vetted AI perception surveys that were established in the literature. After thorough deliberations, our UBalt team selected and adapted a survey that aligned with our objectives of assessing AI perceptions among faculty, staff, and students across the university. This chosen survey incorporated both quantitative and qualitative questions. To ensure widespread participation, we disseminated the survey for two months through various channels: it was featured in the university's Daily Digest, announced via the president's community email, and prominently displayed as a pop-up message on Canvas, targeting both students and faculty.

We adapted Amani et al. (2023) survey with permission from the authors to meet the UBalt community population. Like Amani et al. (2023), we created two surveys, one for faculty and staff ( $\alpha = .880$ ) and one for students ( $\alpha = .871$ ), to assess the current perceptions of AI on campus with the intent to understand the UBalt community to provide a path forward for the research team in the use of AI at UBalt. Both surveys featured identical questions on demographics, familiarity, and usage of AI tools like ChatGPT and GoogleBard, as well as questions related to academic integrity. The student survey included an additional question about the ethical use of AI in coursework. Both surveys also explored faculty, staff and students' opinions on the appropriateness of resources (e.g., online homework help, study groups, supplemental tutors) beyond those provided by instructors, the usefulness of ChatGPT in various learning areas (e.g., personalized learning, gamification, adjusting difficulty of material), and its perceived impact on several aspects of learning (e.g., critical thinking, problem solving, self-efficacy). Responses to these questions were captured using a 5-point Likert scale, where higher scores indicated greater agreement.

While both surveys shared core questions, there were differences tailored to the distinct perspectives of students, faculty, and staff. The surveys included different "check all that apply" options for the various uses of ChatGPT and GoogleBard. For example, students' options included solving homework, checking solutions to problems, and explaining concepts, whereas faculty and staff were asked items such as preparing materials for your courses, grading writing assignments, and writing technical documents to name a few. Uniquely, students were asked about their peers' use of these AI tools, a question designed to encourage openness without personal scrutiny, given the potential stigma around AI tool usage in academia. Faculty and staff, on the other hand, rated their comfort level with various AI tools on a 5-point Likert scale, a feature not included in the student survey. Additionally, students were questioned on how they believe AI tools will impact education in general, while faculty and staff focused on the impact within their specific discipline via qualitative responses.

## SURVEY QUESTIONS AND FINDINGS

### FACULTY AND STAFF DEMOGRAPHICS

A total of 97 faculty (n= 48) and staff (n= 49) participated in the survey. Respondents in the survey classified themselves into four primary roles within the university. Of these, 18% identified as administrators, such as department chairs, deans, or provosts, 46% identified as faculty members, including professors, lecturers, and adjuncts, 39% identified as staff members, encompassing roles like support staff and IT personnel, and the remaining 4% fell into the 'other' category. Each of the university's four schools were represented in the survey, with the Merrick School of Business leading in response rate at 32%. This was followed by the College of Arts and Sciences (25%), the College of Public Affairs (19%), and the Law School (11%). Additionally, Academic Affairs saw an 11% response rate, while the RLB registered a 4% participation. Respondents' median age was 55.

The racial and ethnic composition of faculty varied, with the largest group being White/Caucasian, comprising 60.5%. Black or African American faculty, account for 9.2% of the respondents. Asian/Pacific Islanders represent 7.9%, while Hispanic faculty account for 1.3%. Additionally, 1.3% identified with multiple ethnicities or other categories, and 19.7% preferred not to answer the question. The gender distribution among the faculty showed that 42.9% identify as female and 41.6% as males. A smaller portion, comprising 1.3%, included identification not listed, and 14.3% preferred not to answer.

### STUDENTS DEMOGRAPHICS

147 students participated in the survey. More than half, 58.2% of the respondents were graduate students (Full-time = 31.5%, Part-time = 26.7%) and 41.8% identified as undergraduates (Full-time = 26.7%, Part-time = 15.1%). All four schools of the university were represented; Merrick School of Business with the largest response rate (29.1%), followed by the College of Arts and Sciences (27%), the Law school (22.7%), and College of Public Affairs (21.3%). For a breakdown of student response rate by enrollment status and school see Figure 1. The age distribution of students in the study is varied, spanning from 18 to 74 years. The largest age group is the 25-34 year-olds, accounting for 28.6% of the total sample. This is followed closely by the 18-24 age group, representing 22.4%; the 35-44 age group representing 21.1%, those aged between 45 and 54 years are fewer, accounting for 7.5%, and combining the 55-64 and 65-74 age group constitutes 6.1%.

In the student body, the racial and ethnic composition varied, with the largest group being White/Caucasian, comprising 44.8% of the students. This is followed by Black or African American students, accounting for 36.8% of the respondents. Asian/Pacific Islanders represent 6.4%, while Hispanic students account for 4.0%. Additionally, 7.2% of the students identify with multiple ethnicities or other categories. The least represented group is American Indian or Alaskan Native, making up 0.8% of the student body. The gender distribution among the students shows that 45.6% identify as female and 34.7% as males. A smaller portion, each comprising 0.7%, includes transgender males, transgender females, and those who identify as gender variant/non-conforming. Additionally, 3.4% of the students preferred not to answer regarding their gender.

## PERCEPTIONS OF AI TOOLS AMONG FACULTY, STAFF AND STUDENTS

We explored the multifaceted perceptions of AI and GAI within the university setting, as seen through the eyes of faculty, staff, and students. The report is systematically divided into five key sections: Perceived Familiarity and Use of AI, Perceived Ethics, Perceived Acceptability, Perceived Usefulness, and Perceived Impact on Learning. Each section begins with an overview of the relevant survey questions and measurement scales, followed by an analysis of the responses.

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### PERCEIVED FAMILIARITY, COMFORTABILITY AND USE OF AI

To understand respondents' familiarity with AI, other than ChatGPT, they were asked to evaluate their familiarity with various AI tools (e.g., Turnitin, intelligent tutoring systems and virtual teaching assistants, Grammarly) using a 5-point Likert scale, ranging from 1 (not at all familiar) to 5 (extremely familiar). Faculty and staff only were also asked to rate their level of comfortability with their students using each of the AI tools using a 5-point Likert scale, ranging from 1 (not at all comfortable) to 5 (extremely comfortable). Respondents were also specifically asked whether they have used ChatGPT or GoogleBard for any purpose, whether personal or educational. Respondents were then asked in what ways they had used ChatGPT/GoogleBard from a list of drop-down items. This list was designed as a series of checkboxes, allowing for multiple responses, and varied depending on respondent with students having a separate set of options than faculty/staff. There was an 'Other' option accompanied by an open text field, enabling respondents to specify any other unique ways they have employed ChatGPT. This approach aimed to capture a comprehensive view of the diverse applications of ChatGPT across different academic and personal contexts.

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### FINDINGS

Analysis of the familiarity eight item scale for faculty and staff ( $\alpha = .825$ ) and students ( $\alpha = .720$ ) revealed low to moderate familiarity on AI tools on average on all individual items, while students reported similar ratings. There were significant differences between faculty and students' familiarity with GAI tools, with faculty reporting more familiarity with ChatGPT and GoogleBard. However, students were significantly more familiar with Grammarly than faculty; for a full list of means, standard deviations, t statistic, and p values see Table 1. When asked specifically about the use of ChatGPT for personal or educational use, faculty and staff were collapsed into one category, with 67% reporting use of ChatGPT, and only 13.4% use of GoogleBard. Interestingly, despite the reporting of widespread media belief that students are ahead of faculty in ChatGPT and generative AI use, only 53.7% of students reported use of ChatGPT and only 6.8% of use of GoogleBard. Figure 2 describes the many ways that faculty and staff report using ChatGPT and GoogleBard, and Figure 3 describes the



many ways students report themselves and their peers using ChatGPT and GoogleBard. Lastly, analysis of the comfortability seven item scale for faculty and staff ( $\alpha = .891$ ) reported low to moderate comfortability on student use of AI tools on average on all individual items; for a full list of means and standard deviations see Table 2.

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## PERCEIVED ETHICS

Faculty, staff, and students' beliefs regarding the use of external resources in academic settings, as well as their views on the ethical implications and potential for academic dishonesty when using ChatGPT, specifically, were explored. Two questions were designed to assess the level of agreement or disagreement with using external resources not provided by the instructor (e.g., Coursehero, Chegg, Quizlet, ChatGPT), and whether using ChatGPT would enable academic dishonest behaviors, using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Additionally, students were asked to what extent using ChatGPT/GoogleBard was ethical for coursework using a 5-point Likert scale, ranging from 1 (extremely unethical) to 5 (extremely ethical).

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## FINDINGS

Faculty ( $M = 3.20$ ,  $SD = 1.41$ ) and staff ( $M = 3.75$ ,  $SD = 1.12$ ) report agreement on students being able to use external resources not provided by the instructor, with students reporting significantly higher agreement ( $M = 3.87$ ,  $SD = 1.21$ ) than faculty, Welch t-test,  $t(65.30) = -2.83$ ,  $p < .01$ ,  $d = .53$ . As expected, faculty ( $M = 3.93$ ,  $SD = .998$ ) and staff ( $M = 3.45$ ,  $SD = .975$ ) report high agreement believing that the use of ChatGPT will enable academic dishonesty. Faculty reported significantly higher potential for academic dishonesty than students ( $M = 3.36$ ,  $SD = 1.14$ ), Welch t-test  $t(82.82) = 3.17$ ,  $p < .01$ ,  $d = .53$ . To gain deeper insight into students' viewpoints on utilizing ChatGPT/GoogleBard for coursework, the findings indicate a divided opinion ( $M = 2.86$ ,  $SD = 1.05$ ), students' responses suggest a balanced split in their beliefs, oscillating between considering the use of these AI tools as borderline unethical or ethical in their coursework.

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## PERCEIVED ACCEPTABILITY

This question aimed to understand the perceived appropriateness of various external academic aids in the context of coursework. Respondents were asked to evaluate the acceptability of various resources that students might use outside those provided by an instructor, with a rating scale from 1 (extremely unacceptable) to 5 (extremely acceptable). Resources included ChatGPT, Online Homework Help, Study Groups, Supplemental Instructors, and Private Tutoring. Additionally, there was an option for 'Other' with an open space for respondents to specify any additional resources they deemed appropriate for student use.

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## FINDINGS

Analysis of the perceived acceptability six item scale for faculty and staff ( $\alpha = .838$ ) showed moderate to high acceptability on average on all individual items; whereas students ( $\alpha = .735$ ) revealed significantly higher acceptability for all items compared to faculty, except for ChatGPT. Interestingly, ChatGPT averaged similar ratings between staff, faculty and students for acceptability of use; for a full list of means, standard deviations, t-test and p-values see Table 3.

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## PERCEIVED USEFULNESS

This question aimed to understand the perceived usefulness of ChatGPT to students. Respondents were asked to evaluate the many potential ways that ChatGPT would be useful to students, with a rating scale from 1 (extremely unbeneficial) to 5 (extremely beneficial). The different uses included Personalized Learning, Gamification, Effective and Instant Feedback, Progress Tracking, and Adjusting of Difficulty of Material. Additionally, there was an option for 'Other' with an open space for respondents to specify any additional uses they deemed appropriate for student use.

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## FINDINGS

Analysis of the perceived usefulness six item scale for faculty and staff ( $\alpha = .823$ ) revealed that they perceive ChatGPT as not as useful in various areas of learning compared to students ( $\alpha = .881$ ) on average on all individual items, except personalized learning, gamification, progress tracking and adjusting of difficult material which were perceived significantly more favorably by students as ChatGPT being useful to learning; for a full list of means, standard deviations, t-test and p-values see Table 4.

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## PERCEIVED IMPACT OF LEARNING

This question was designed to assess perceptions on how ChatGPT might influence different facets of the educational experience, from enhancing cognitive skills like critical thinking and problem solving to affecting emotional and psychological aspects such as test anxiety and intrinsic motivation. Additionally, the impact on overall academic performance and student engagement was also a focus, providing insights into the broader educational implications of integrating AI tools like ChatGPT into learning environments. Respondents were asked to assess the potential impact of ChatGPT on various areas of learning, using a 5-point Likert scale ranging from 1 (extremely negative) to 5 (extremely positive). The areas of learning included Critical Thinking, Problem Solving, Teamwork, Self-Efficacy, Test Anxiety, Academic Performance, Intrinsic Motivation, and Student Engagement.

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## FINDINGS

Analysis of the perceived impact eight item scale for faculty and staff ( $\alpha = .930$ ) showed that ChatGPT would have lower impact on these perceived learning outcomes compared to students ( $\alpha = .922$ ) on average on all individual items, except teamwork, academic performance, and intrinsic motivation. Students revealed significantly higher beliefs that these areas would be impacted from ChatGPT compared to faculty. For a full list of means, standard deviations, t-test and p-values see Table 5.

## DISCUSSION OF FINDINGS

In our findings, faculty members were more familiar with AI tools such as ChatGPT and GoogleBard compared to students, while students show greater familiarity with Grammarly. Interestingly, despite the limited use of GoogleBard—a tool known for its internet connectivity and potential for providing accurate information—most respondents have engaged with ChatGPT in some capacity. This discrepancy may be attributed to the extensive media coverage surrounding GPT technologies, overshadowing the presence and capabilities of GoogleBard. Contrary to widespread anecdotal concerns within the university and media portrayals about students using AI tools for dishonest purposes, our findings suggest a lesser

degree of familiarity among students with these tools than expected. Moreover, the data reveals a divergence in perceptions of academic integrity: students are less convinced than faculty that ChatGPT will lead to academic dishonesty. They also exhibit mixed feelings about the ethicality of using such AI tools for coursework. This suggests a complex landscape where the perceived risks and benefits of AI in academia are viewed differently by students and faculty, challenging some of the prevailing narratives around the use of AI in educational contexts.

In exploring perceptions of acceptable learning methods beyond those provided by an instructor, our survey revealed a significant difference in opinion between students and faculty. Students demonstrated a higher level of agreement that tools like Chegg, Coursehero, and various AI applications should be permitted in learning contexts. When delving into specific methods, it emerged that both students and faculty moderately agree on the acceptability of using ChatGPT. However, a surprising contrast was observed in other areas: students expressed significantly greater approval for the use of online homework help, study groups, supplemental instructors, and private tutoring, compared to faculty members. This divergence highlights a crucial area for reflection in higher education: the need to reassess perceptions around student learning methods. Rather than focusing solely on controlling the tools students use, there might be a more significant opportunity in guiding them towards effective learning, aligning with the overarching goal of higher education. The data suggests that students view these tools as valuable for their academic success, indicating a potential shift towards encouraging their use. Failing to recognize and support these methods could inadvertently lead to stigmatizing them as inappropriate, potentially hindering student learning and success. Therefore, there is a need for a balanced approach that both acknowledges the utility of these tools and aligns them with educational objectives, ensuring that students are supported in their learning journey without compromising academic integrity.

The survey also shed light on the perceived usefulness of ChatGPT in enhancing the learning process. Students reported significantly higher usefulness of ChatGPT in areas such as personalized learning, gamification, progress tracking, and adjusting the difficulty of material, in contrast to the perceptions of faculty members. This suggests that students see ChatGPT as a valuable tool in tailoring their educational experience to their individual needs and learning styles. However, it is interesting to note that both students and faculty shared moderate agreement on ChatGPT's usefulness in providing effective and instant feedback. This shared perspective might indicate a recognition of ChatGPT's limitations and biases, acknowledging that while it can offer immediate responses, the accuracy and effectiveness of the information provided may not always be reliable. This moderation in agreement could also stem from the potentially double-barreled nature of the survey item, as it encompasses two different constructs: effectiveness and instantaneity.

The survey results regarding the perceived impact of AI tools on various learning areas presented an intriguing picture across staff, faculty, and students, with all groups generally agreeing to a low to moderate extent on the impact. However, students showed significantly higher agreement compared to faculty on the positive impact of tools like ChatGPT on teamwork, academic performance, and intrinsic motivation. This difference in perception could be partly attributed to how students view the use of ChatGPT, possibly perceiving it as a tool that facilitates individual effort rather than collaborative work. This interpretation aligns with the qualitative findings, suggesting that leveraging ChatGPT and similar tools in an equitable and strategic manner can enhance learning experiences, thereby increasing students' chances of academic success. This leads to the inference that students perceive AI tools as integral to their learning experience, highlighting the need for educators to recognize

and utilize these technologies. By incorporating tools like ChatGPT into the educational framework, faculty can not only align with students' learning preferences but also contribute to a more dynamic and effective academic environment. The findings suggest a shift towards embracing AI as a valuable asset in education, underscoring its potential to enhance student engagement, personalization of learning, and ultimately, academic achievement and student success.

## QUALITATIVE THEMES FROM FACULTY AND STUDENTS

### COLLECTION AND ANALYSIS OF QUALITATIVE DATA

The qualitative data collected was based on open-ended instrument questions, offering participants the opportunity to elaborate their answers. The data was collected in a codebook using Microsoft Excel to organize the data and findings. An exploratory approach (Saldaña, 2016), also known as an inductive process, that permits themes and codes to emerge throughout the analysis was utilized in conjunction with the constant comparative analysis method as defined by Glaser (1965). This method suggests thoroughly reading the data sets multiple times, noting emerging codes, and comparing them until a consistent and clear understanding of the data is developed. This approach left space for preliminary codes and themes to be revised throughout each analysis cycle. The primary data collection and findings source in this study is the above outlined quantitative data and its findings, whereas the qualitative data aims to support the results of the quantitative data by offering an additional perspective to provide "evidence for a conclusion through convergence and corroboration of findings" (Johnson & Onwuegbuzie, 2004, p.21).

### USES OF AI TOOLS FOR EDUCATIONAL, PROFESSIONAL, AND PERSONAL PURPOSES

The qualitative data shows that faculty and students use AI tools for similar purposes. A top theme for both groups, though slightly stronger for faculty than for students, was "Exploring AI". Statements like "I want to see what it is all about" or "testing [its] functionality" were frequent findings, indicating that faculty and students are still in an exploratory phase and are curious about the technology and possibilities.

A strong faculty theme was AI being used for "Brainstorming/Creativity", often connected to writing and editing. For example: "[AI] helped me to reword titles and come up with ideas," "Brain-storming ideas. Story-telling. Writing-assistance," or "helping to create emails, helping to provide ideas for papers". As mentioned, many participating faculty have used AI for "Writing/Editing/Administrative" tasks, including "generating formulaic content, alternate framing," "help me "rewrite" things," "compose communications," and "generate ideas, write draft emails, create timelines for tasks". Another common theme among participating faculty included "AI as a teacher and search engine". The data shows that AI tools are used for "looking for ways to explain things. [Finding] answers to a few questions," and "learning code, generating code, understanding mechanisms". However, AI was not only used to find answers to work related questions, but also personal reasons including "asking it questions to help with my daughter's homework to explain things at an 8th grade level". The last primary theme for faculty answers identified was "Teaching and Course Design". For this, example statements include "I sometimes use it to provide alternate verbiage, especially when students are confused about a tricky topic (e.g., describing concepts like degrees of freedom)," "[I] ask it questions to help with generating class materials," "draft

assignments," and "[...]draft ideas for class exercises; draft specific content for students; summarize key principles of complex topics, etc."

The student data set revealed AI usage as a study tool for writing/editing, for organization/administrative, and for personal use. Example statements for using AI as a study tool include "[AI] give[s] me practice questions for studying for exams, to learn Spanish," "Quick codes in python, [...] tutor for harder concepts, spanish to english translator," and "Help with coding, guiding me to find the best research". Participating students who have experience with using AI for their degree work, overwhelmingly agree to use these tools for writing and editing task, and this statement summarizes the majority of tasks mentioned in the data "summarizing notes for essays, arranging running documents to make a cohesive essay, title suggestions, choosing synonyms for certain words, generating story samples, rewriting sentences/paragraphs in different ways, rewriting emails, generating ideas for writing". In addition, "Improving grammar for personal writing projects, gain ideas for writing prompts," and "draft a cover letter" were popular answers. The next theme "organization & administrative" was in some cases doubled with writing and editing usage, demonstrating the multitasking usage of AI. A cumulative comment in this theme was "Organization, data parsing, summarization, source aggregation, content reorganization" and a comment by a participant who uses AI tools for personal organization matters as well "[...] asked it to create grocery lists, workout plans, had it help me get started on work assignments, had it provide me summaries of novels, movies, and historical events, had it help me create travel itineraries". Other student answers also showed that AI tools offer entertainment and support for personal matters. For example, recipe search, writing children's stories, and "to ask questions when I can't remember a song or movie or book, and sometimes to write funny stories".

## FACULTY AND STUDENT PERSPECTIVES ON THE ADVANTAGES AND CHALLENGES OF AI IN ACADEMIA

The qualitative data analysis indicated different and similar takes on how students and faculty perceive the impact of AI tools on education. The main concerns identified from the faculty answers were "academic integrity" meaning students may use AI tools to cheat, "loss of Interpersonal/ teamwork skills," "loss of writing skills," "loss of critical thinking & AI dependency," and "loss of learning motivation". On the other hand, faculty answers showed positive opportunities as well, including "AI as a Learning Tool" and "growth of critical thinking skills". Table 6 shows an example statement for each of these themes.

Similar to faculty answers, the student data was also majorly based on "reluctancy and worries". Some example statements include: "I worry that people will abuse AI to cheat at the end of the day. I don't really know enough about AI from first-hand experience, but I have heard stories of people using AI to take shortcuts. I think so long as there are measures in place to control the way in which AI is used, then it can be a good tool to facilitate learning," "It will be a distraction rather than a tool and will affect the future of the law profession in a potentially negative or potentially positive way depending on how it is handled," and "More students will depend on ChatGPT rather than their own critical thinking skills". Yet, some answers portrait AI tools to enhance learning and productivity. As an example, one participant wrote: "ChatGPT can create questions, prompts, or ideas that I haven't thought of at that moment in a time efficient manner. Once I find an idea, I can do more research and expand upon that initial idea." Another student's answer supported this statement by noting: "I think it will change the way we approach work completion and potentially allow for more focus on engagement with more critical learning functions and less repetitive, mundane

assignments". A noteworthy comment came from this student who encouraged faculty to move with and adapt to the challenges of AI by evolving their teaching: "I believe my teachers are more resistant to change because they already have their lesson plans created. Unless there is a driving force to create new classroom content, there will not be a change. There is also the stigma that AI tools can complete assignments traditionally completed by students and teachers are unable to tell the difference. Thus, there is resistance for teachers to encourage the use of AI tools". Yet other students also point out the responsibility of the learners to stay motivated learners. For example: "[AI can be] useful for those who are curious, self-motivated, and know how to ask questions. I expect the gap between the performance of motivated and unmotivated learners will increase dramatically".

## THE ROLE OF AI IN FUTURE LEARNING AND TEACHING

The overall findings from our research suggest that students perceive AI tools like ChatGPT as beneficial in enhancing various aspects of their learning journey. This presents a significant opportunity for faculty to adapt their teaching methods, becoming more attuned to the evolving needs of students. Integrating AI into educational processes can make learning materials more accessible and understandable, leading to a more equitable and effective educational environment. Importantly, consistent with Deci and Ryan's (2000) research on intrinsic motivation, the use of AI can boost students' sense of competency. This enhanced perception of their own abilities fosters a greater sense of autonomy in their learning process. By incorporating AI tools into the curriculum, educators can not only augment traditional teaching methods but also empower students to take a more active and autonomous role in their education. The integration of AI in this manner has the potential to transform the educational landscape, making learning experiences more personalized, engaging, and successful.

With all the potential that AI presents to both students and faculty's experiences in the classroom, respectively, we also recognize some of the ethical challenges presented by AI and writing across the disciplines. Our preliminary focus here is on the challenges and benefits AI presents for students. AI tools like ChatGPT and GoogleBard have the potential to blur the lines of ownership between the writer and platform depending on the strategies to create content. Relying on AI as a substitute for critical thinking undermines writers' agency as learners and ability speak to the disciplinary expertise in their own voice(s). AI does not know the nuanced contexts that situate writing prompts in our disciplines. Nor is it effective at providing supporting and concluding information in contextual ways that understand the historical and contextual significances that focus and frame how student contextualize and respond to writing prompts. Offloading the majority of the research and writing process, generating large chunks of text, and trusting generated content at face value present not only academic integrity concerns, but also concerns around misinformation and distortion of information generated (Watkins, 2023).

There are also some opportunities for AI to support the writing process for the University's writing center and writing program, respectively. Making students aware of the ethical consideration of using AI better frames how they might use these platforms for writing and other academic projects. AI is effective at assisting the writing process, which comes with developing literacies and strategies for more effective assisted utilization of these platforms. Academic support resources like workshops/webinars and peer modeling via tutoring at the writing center and other Academic Success services can help students practice more ethical strategies when using AI on writing and other academic projects. Some of the benefits of AI-assisted writing include but are not limited to brainstorming and exploring potential

arguments/counterarguments; developing topic sentences and transition sentences; and generating models of genre-specific texts across disciplines that make the conventions of those genres explicit (De Herder, 2023). These are some of the practices and strategies that could be incorporated into academic support and undergraduate composition courses.

This survey represents a pivotal initial step in adopting a data-informed approach to comprehend the perspectives of students and faculty surrounding generative AI. The insights gained are invaluable for the Center for Excellence in Learning, Teaching and Technology (CELTT), as they provide a clearer understanding of the university community's stance on this transformative technology. Armed with this knowledge, we can now focus on developing targeted programming and enhancing AI literacy. These efforts are crucial in positioning us as leaders within the University System of Maryland (USM) in navigating the evolving landscape of AI in education. By embracing this proactive approach, we aim to harness the potential of generative AI not just as a tool, but as a catalyst for innovative teaching and learning strategies. This endeavor will guide us in shaping an educational environment that is both forward-thinking and responsive to the emerging needs and expectations of our academic community.

## NEXT STEPS AND RECOMMENDATIONS

As a result of our partnership with the Making Generative AI for Higher Education research initiative, our research will continue. Each member of the University of Baltimore team will be meeting with Ithaka S+R in January 2024 to be trained on how to interview faculty at their own institution. After the training, each member will interview three faculty members in their own department (CAS, CPA, MSB), with Dr. Stansbury interviewing faculty from LAW. Interview notes and data collected will be used to further complement our survey findings and provide us with a deeper lens of faculty beliefs, perceived obstacles, and opportunities for the university to move forward in the AI landscape.

Based on the insights gained from our data, we are actively working on reshaping faculty and student perceptions of generative AI in education. As a part of this initiative and supported by an Elkins SoTL grant award through the University of Maryland Kirwan Center for Academic Innovation, we have developed two asynchronous AI courses tailored separately for faculty and students. Each course comprises five modules designed to educate participants on the beneficial use of AI in teaching and learning, while addressing the critical aspects of academic integrity and ethical considerations. These courses are currently in their pilot phase, with a comprehensive review of their effectiveness planned for spring 2024. Pending the analysis of the pilot data, our objective is to roll out these courses to the broader UBalt community. Notably, the student-focused course is among the first of its kind, aiming to equip students with the skills to utilize AI as a complementary tool in their learning journey.

Additionally, we recommend collaborating with Academic Success to offer workshops that enable students to interact with and leverage AI in key areas such as writing and coding. These workshops will also focus on cultivating AI literacy skills. The larger vision includes the development of a comprehensive AI literacy curriculum that integrates skills highly valued by employers. This literacy extends beyond mere familiarity with AI technologies; it encompasses a deep understanding of ethical usage and the implementation of controls to prevent and detect AI abuses. Recognizing that we are navigating uncharted territory, the development of relevant processes and policies is an experimental journey, requiring flexibility, adaptability, and a willingness to learn and adjust. Essential to this endeavor is the collaboration across various departments and disciplines, bringing a diversity of perspectives to the table, which is key to formulating inclusive and effective policies and procedures. This forward-thinking

approach aims to provide our students with a competitive edge in the workforce, ensuring they are well-prepared to navigate and utilize AI technologies effectively. These initiatives are a testament to our commitment to embracing AI as a vital component of modern education, aligning with the evolving demands of the digital era.

## CONCLUSION

Looking ahead, we envision generative AI (GAI) becoming as commonplace in our academic and daily lives as email, with its own set of etiquettes and codes of professionalism. These norms, collectively referred to as ethics in AI, are crucial for its effective and responsible application. As we embrace the remarkable capabilities of GAI, our responsibility is to ensure its ethical integration and use within academic contexts. This commitment to responsible usage is not just a necessity but an imperative, as we prepare our academic community to harness the full potential of generative AI in a manner that is both impactful and conscientious. In summary, our findings at the University of Baltimore underscore the significant role of GAI in shaping the future of education. Students and faculty alike recognize the potential of AI and GAI tools to enhance learning experiences, emphasizing the need for adaptive teaching methods and AI literacy. This necessitates the development of ethical guidelines and tailored curricula integrating GAI. The importance of continued dialogue and research in this rapidly evolving field cannot be overstated. As AI technologies advance, ongoing conversations and investigations are vital to navigate the challenges and opportunities they present. By staying at the forefront of generative AI research and application, UBalt is poised to lead in creating an educational environment that is innovative, equitable, and responsive to the needs of our academic community.



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## APPENDICES

FIGURE 1.

Response rate by School and enrollment status.

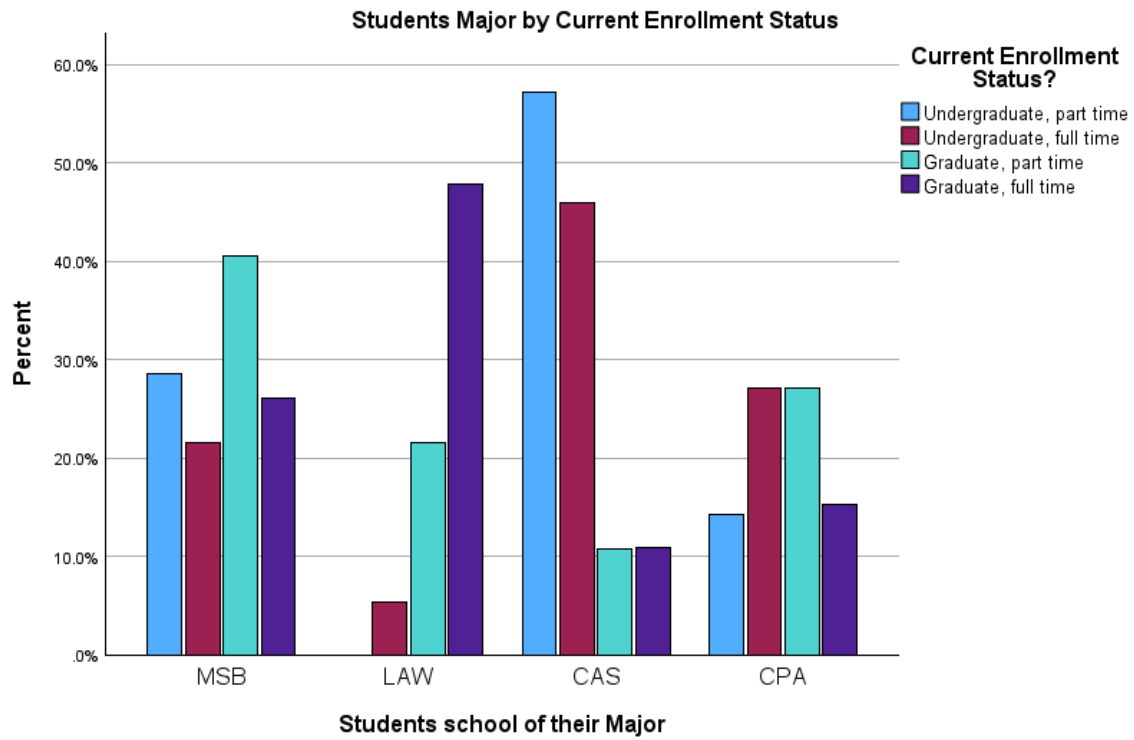


FIGURE 2.

Faculty and Staff ways of using ChatGPT and GoogleBard

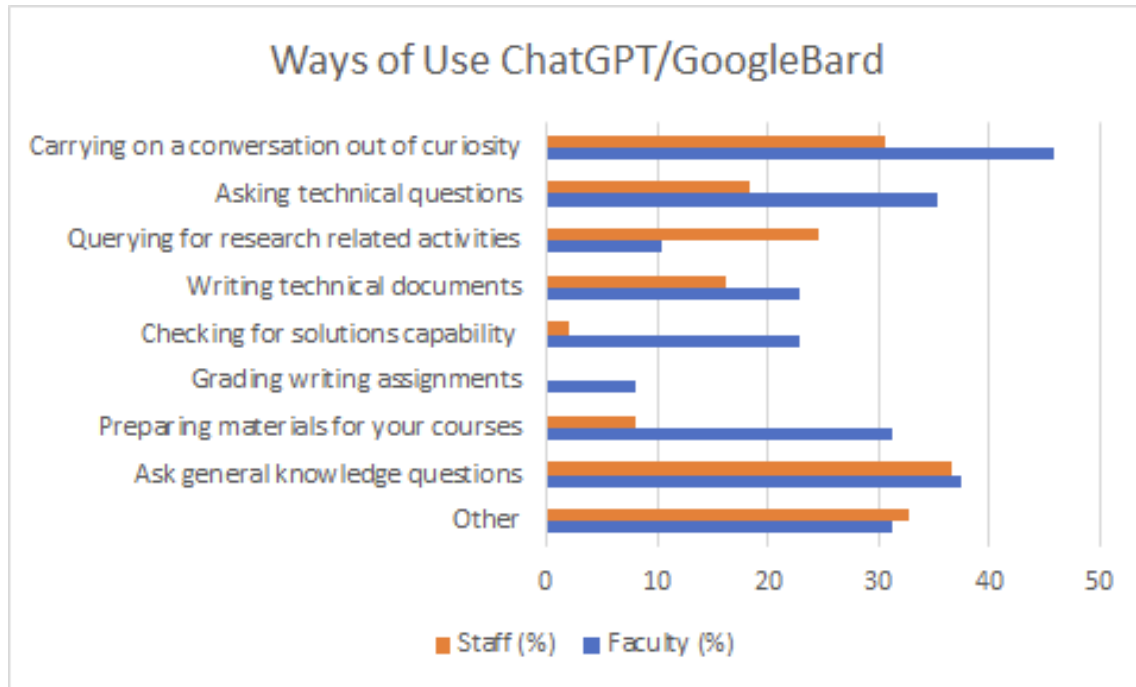


FIGURE 3.

Students and peer's ways of using ChatGPT and GoogleBard

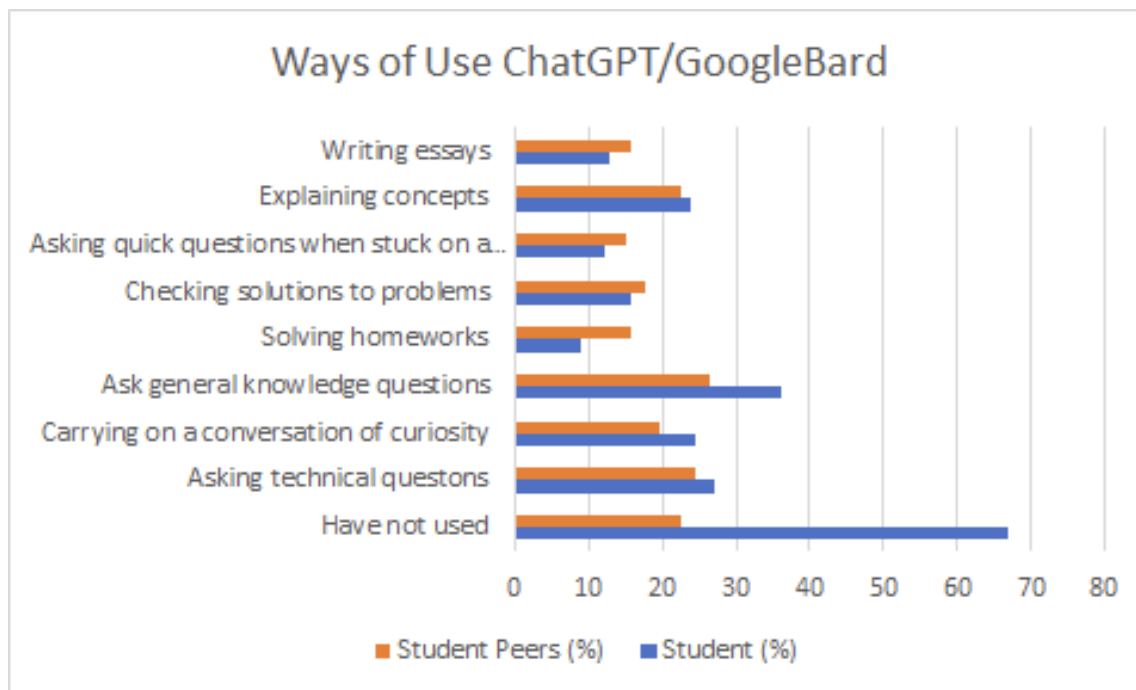


TABLE 1.

*Means, Standard Deviations, Sample Sizes and Welch t-test of Perceived Familiarity of AI tools among Staff, Faculty and Students*

Measure	Staff			Faculty			Students			t(df)	Cohen <i>d</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
ChatGPT	2.84	1.25	49	3.27	1.03	48	2.84	1.33	146	2.33(103.41)*	.34
GoogleBard	1.67	1.03	49	2.02	1.10	48	1.50	0.91	145	2.96 (69.30)**	.54
Bing Chat	1.69	0.98	49	1.96	1.05	48	1.73	1.16	145	1.28 (87.60)	
Turnitin	2.71	1.53	48	3.29	1.35	48	3.03	1.52	145	1.20 (71.04)	
AI-powered analytics	2.02	1.07	48	2.21	1.17	48	2.02	1.13	146	0.98 (62.02)	
Tutoring & VTA	1.60	0.79	48	2.81	0.87	47	1.84	1.14	146	-0.06 (104.23)	
Grammarly	3.14	1.34	49	2.81	1.28	48	3.66	1.23	145	-4.02(77.71)**	.68

\* $p < .05$ . \*\* $p < .001$ .

Items were measured on a 5pt. Likert scale with higher numbers indicating greater agreement. Due to assumed unequal variances and varying sample sizes, a Welch t-test was conducted to determine if any significant differences existed between faculty and students on the various measures. Welch t-tests were only conducted between faculty and students, as the majority of staff does not interact via teaching in the classroom with students.

TABLE 2.

*Means and Standard Deviations of Perceived Comfortability of AI tools for student use between Faculty and Staff*

Measure	Staff		Faculty	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ChatGPT	3.05	1.10	2.82	1.37
GoogleBard	2.97	0.87	2.80	1.27
Bing Chat	2.95	0.90	2.73	1.25
Turnitin	3.58	1.22	3.86	1.39
AI-powered analytics	3.17	0.98	3.17	1.31
Tutoring & VTA	3.23	1.17	3.11	1.37
Grammarly	3.80	1.10	3.93	1.10

Items were measured on a 5pt. Likert scale. Higher numbers indicate greater agreement.

TABLE 3.

*Means, Standard Deviations, Sample Sizes and Welch t-test of Perceived Acceptability of Resources among Staff, Faculty and Students*

Measure	Staff			Faculty			Students			t(df)	Cohen <i>d</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
ChatGPT	2.71	1.06	40	2.72	1.30	43	2.77	1.20	132	-0.22 (66.89)	
Online Homework											
Help	3.35	.89	41	2.93	1.22	43	3.43	1.21	134	-2.34 (70.34)*	.41
Study Groups	4.17	.92	41	3.93	1.14	43	4.40	.92	134	-2.46 (60.44)*	.48
Supplemental											
Tutors	3.93	1.01	41	3.56	1.28	43	4.06	1.10	132	-2.54 (65.86)*	.47
Private Tutoring											
analytics	3.88	1.03	41	3.67	1.15	43	4.29	1.04	134	-3.15 (65.51)**	.58

\* $p < .05$ , \*\* $p < .01$

Items were measured on a 5pt. Likert scale with higher numbers indicating greater agreement. Due to assumed unequal variances and varying sample sizes, a Welch t-test was conducted to determine if any significant differences existed between faculty and students on the various measures. Welch t-tests were only conducted between faculty and students, as majority of staff does not interact via teaching in the classroom with students.

TABLE 4.

*Means, Standard Deviations, Sample Sizes and Welch t-test of Perceived Usefulness of ChatGPT among Staff, Faculty and Students*

Measure	Staff			Faculty			Students			t(df)	Cohen <i>d</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Personalized Learning	2.91	1.17	35	2.84	1.30	38	3.36	1.30	129	-2.17 (60.49)*	.40
Gamification	2.83	1.15	35	2.47	1.20	34	2.97	1.29	129	-2.13 (54.85)*	.39
Effective and Instant Feedback	3.09	1.25	35	2.97	1.35	38	3.42	1.31	129	-1.82 (58.99)	
Progress Tracking	2.59	1.05	34	2.35	1.02	34	3.01	1.33	129	-3.14 (65.80)**	.52
Adjusting Difficulty of Material	3.06	1.33	35	2.58	1.23	36	3.22	1.29	129	-2.73 (58.28)**	.50

\* $p < .05$ , \*\* $p < .01$ .

Items were measured on a 5pt. Likert scale with higher numbers indicating greater agreement. Due to assumed unequal variances and varying sample sizes, a Welch t-test was conducted to determine if any significant differences existed between faculty and students on the various measures. Welch t-tests were only conducted between faculty and students, as majority of staff does not interact via teaching in the classroom with students.

TABLE 5.

*Means, Standard Deviations, Sample Sizes and Welch t-test of ChatGPT Perceived Impact on Learning among Staff, Faculty and Students*

Measure	Staff			Faculty			Students			t(df)	Cohen <i>d</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Critical Thinking	2.54	1.067	35	2.41	1.05	41	2.78	1.23	125	-1.87 (78.95)	
Problem Solving	2.74	1.27	35	2.56	1.16	41	2.86	1.26	125	-1.41 (73.40)	
Teamwork	2.51	1.01	35	2.45	.92	38	2.82	1.14	125	-2.05 (74.74)*	.34
Self-Efficacy	2.86	1.17	35	2.83	1.24	41	2.97	1.36	125	-.61 (74.07)	
Test Anxiety	3.11	1.08	35	2.98	.91	41	3.22	1.10	125	-1.39 (81.49)	
Academic Performance	3.20	1.02	35	2.83	1.05	41	3.44	1.22	124	-3.09 (78.59)**	.52
Intrinsic Motivation	2.63	1.03	35	2.51	1.05	41	2.98	1.12	124	-2.44 (72.42)*	.43
Student Engagement	2.80	1.08	35	2.73	1.10	41	2.92	1.20	124	-.94 (73.95)	

\* $p < .05$ , \*\* $p < .01$ .

Items were measured on a 5pt. Likert scale with higher numbers indicating greater agreement. Due to assumed unequal variances and varying sample sizes, a Welch t-test was conducted to determine if any significant differences existed between faculty and students on the various measures. Welch t-tests were only conducted between faculty and students, as majority of staff does not interact via teaching in the classroom with students.



TABLE 6.

*Faculty perspectives on AI impact on education.*

Theme	Example Statement
"Academic integrity"	"[AI] creates an environment ripe for violation of academic integrity."
"Loss of Interpersonal/ teamwork skills"	"One of my larger concerns is that working with others continues to be less and less of a skill that is valued and I worry about the long term implications of AI to continue to point us as screens rather than at each other."
"Loss of writing skills"	"I believe it will become a crutch for the students and they will lose all self critical thinking and rely solely on technology"
"Loss of critical thinking & AI dependency"	"Eliminates the need for student writing and generation of ideas and how to communicate effectively."
"AI as a Learning Tool"	"A great tool to empower students with more direct control of their learning. Very personalized 'coaching' when taught to use it well. Helps them learn about organized thinking, writing, the importance of asking the right questions in the right ways, etc."
"Growth of critical thinking skills"	"Chat GPT can help student engage in critical thinking, problem solving, self efficacy, and academic performance used as an intentional learning to under the guidance of instructor and independent. In order to get desired outputs (writing and or writing related topics) from the platform the user has to know how to word what question(s) they want to ask; engage in iterative question asking to refine output as needed. For research related tasks, the platform could foster self efficacy in generating basic information as a starting point researching and outlining. When taught under guidance of faculty, librarians, staff students could be taught how to fact check and cross reference information with primary and in some cases secondary sources."