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Exploring Campus Perceptions of GenAI through a Civic Learning Project for First-Year Engineering and Mathematical Sciences Students

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Exploring Faculty, Student, and Staff Perceptions of Generative AI through a Civic Learning Project for First-Year Engineering and Mathematical Sciences Students

Introduction

When ChatGPT became available to the public in late 2022, conversations in education immediately shifted. Arguably all aspects of university work suddenly entered a state of flux, including how we support students and develop as teachers. On our campus, these conversations took place initially in the absence of any broad institutional-level response to shifting technologies (although that is changing as we draft this manuscript). The Writing in the Disciplines Program and the Center for Student Conduct—responsible, respectively, for professional development around writing instruction and academic integrity policies and procedures—were frequently approached by colleagues seeking guidance. Together and separately, they developed workshops and resource materials; university librarians similarly developed resources. Each faculty member made choices about whether, when, and how to address or incorporate genAI. Students frequently had no direction from their faculty, which raised questions about whether it was acceptable for them to experiment with ChatGPT or whether it was something students should avoid unless specifically invited to use. The Writing Center developed a guide for student writers and integrated genAI topics into tutor education, but if a student wasn't sure about the policy for genAI use in a class, it was hard for writing tutors to know how to guide them.

There has been, unsurprisingly, great variation in what studies have reported about learner behaviors and attitudes. Student uptake of genAI tools happened rapidly [1, 2] with students generally recognizing that AI simultaneously offers potential efficiency as well as inaccuracy. Overall, learners report positive perceptions [3, 4]. Mohandas & Mentzner's [5] qualitative approach to understanding student perspectives revealed that students valued AI for its ability to provide assistance with clarifying concepts, improving the quality of projects, and searching for information. Both Mohandas & Mentzner [5] and Ogunleye et al. [2] found awareness of limitations of genAI and a desire for genAI to enhance work without cheating.

While this research reveals student perspectives and needs, it was important for us to understand how students, faculty, and staff were interacting with and experiencing genAI on our campus, to inform the selection of a specific AI literacy (AI-L) framework and investment in related campus resources. We conceived of a course project that would engage students in this research using a service-learning model of reciprocal student and community partner engagement. Service-learning is considered a high impact educational practice as it engages students in meaningful, real-world projects in service to a community partner or organization [6]. Civic learning is the designation given to campus-based service-learning courses at the University of Vermont and is therefore the language we will use in this case study.

Funding for the undergraduate student research in this civic learning project was provided by the [College] Peer Mentor Internship Program and Dean's Office.

The goals for the project were multi-layered (Figure 1). At the core was the question of how campus stakeholders were interacting with genAI, their perceptions of genAI, and perceived resource and support needs in Fall 2024 (*Question*). As we were acutely interested in student perspectives and how they might inform our work, a civic learning project was embedded in a first-year course taught by the first author (*Approach*). For the project, student teams were to (1) conduct meaningful campus-based research using interviews and basic qualitative methods, (2) improve their own AI literacy through online modules and resources identified for the project, and (3) present their findings and recommendations to the campus partners during a final poster presentation session (*Educational Outcomes*). We leveraged student surveys and the findings and recommendations from student posters to identify patterns of genAI use, perceptions, and needs among students, faculty, and staff (*Research Outcomes*). Students and campus partners were asked to reflect on their experience and learning throughout the project (*Campus Impact*).

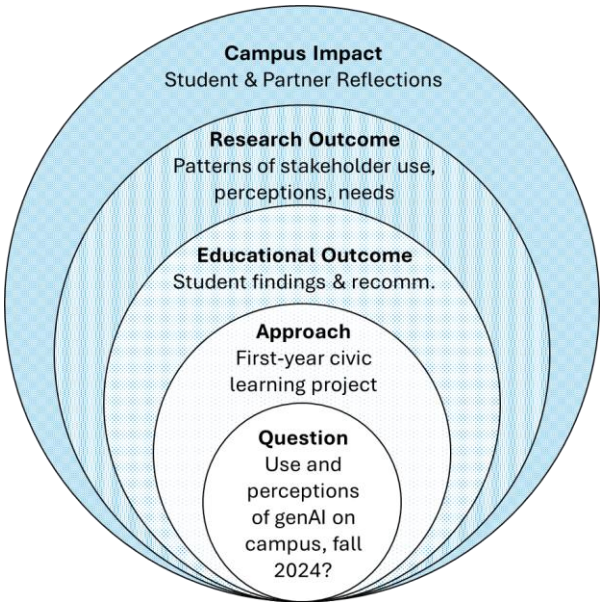

Figure 1. Project layers described in the case study.

Approach

Institutional Context

This study was conducted at the University of Vermont, a public Land Grant research university in the north-eastern United States with approximately 12,000 undergraduate students and approximately 2,000 graduate students spread across seven colleges. The College of Engineering and Mathematical Sciences hosts the first-year course in this study and enrolled approximately 1,400 undergraduate students in Fall 2024, majoring in engineering, physics, computer science, data science, mathematics, and statistics.

Civic Learning Project

In Fall 2024, 315 first-time-first-year students (FTFY) joined the College and were enrolled in a required, one-credit first year seminar. The first-year seminar equips new students with key skills, information, and resources to support their academic and professional success [7]. Modules address health and well-being, academic integrity and success, career preparation, and experiential learning. The course carries a civic-learning designation, meaning students are required to work on a campus-based project that promotes community engagement and service. In Fall 2024, the project options included "Campus Use of Artificial Intelligence."

The campus AI project was developed in coordination with partners from multiple campus literacy and academic success organizations (authors 2, 3, 5, 6), namely Writing in the Disciplines, the Center for Student Conduct, the Undergraduate Writing Center, and the Libraries. Of the 315 students enrolled in the course, 44 students (19 teams) chose the campus AI project, which required students to interview peers, faculty, or staff and learn about genAI usage habits as well as the perceived benefits and limitations of using genAI for teaching and learning. Student teams that chose to interview peers were asked to complete at least five interviews, whereas student teams that focused on faculty or staff only needed to conduct three interviews. The project was scaffolded through a series of class sessions and assignments (Table 1). Additionally, special guidance was developed for students on how to choose interview subjects (students, faculty, or staff), develop interview questions, schedule and conduct interviews, generate and analyze interview transcripts, summarize interview findings (see **Resources**), and present their Findings and Recommendations in poster format during the final presentation event.

Table 1. Intermediate project assignments and learning outcomes.

Assignment	Learning Outcomes
Team Contract	Establish team goals; Reflect on team member assets / growth opportunities; Identify team member roles
Project Problem Statement	Develop a problem statement that describes the needs / challenges of the user (campus partner) and focuses the team on a specific question related to campus use of genAI
Project Research and Bibliography	Gather references relevant to project research; Compile bibliography and citations in APA style
Poster Presentation Draft and Interview Data Upload	Conduct interviews, prepare transcripts, and summarize findings; Communicate team problem statement, project background (citing sources), ideas explored, findings, and recommendations
Final Presentation	Present project research, findings and recommendations to college community and project partners
End-of-Semester Critical Reflection	Reflect on one's own learning, learning from peers, and how the project will influence beliefs and behaviors moving forward

Data Collection

According to the policy defining activities which constitute research at the authors' institution, this work met criteria for a project that does not require review by the institutional review board (IRB Educational Exempt).

Teams' final poster presentation files containing Findings and Recommendations were the primary artifact in this analysis. We used the deidentified poster data to generate a snapshot of attitudes and practices on our campus at the time of the study. Two additional surveys were deployed to students, one in the second week of the semester (Week 2 Survey) and the second in the last week of the semester, after final presentations were complete (End-of-Semester Survey).

The Week 2 Survey consisted of 20 optional questions adapted from Mohandas and Mentzer [5] (Appendix 1). Students responded anonymously. The questions pertained to genAI use in coursework, benefits, limitations, impacts to learning, and guidance received. A subset of the questions was selected for this analysis based on the themes identified in the students' posters.

The End-of-Semester Survey asked students to reflect on their entire first semester of college as well as the project, including (1) the most important thing they learned over the course of the project, (2) the most important thing they learned from their peers' projects, and (3) whether they think the project experience will influence their future behaviors or beliefs.

Data Analysis

The Findings and Recommendations sections of the student posters were analyzed using summative content analysis [8], a semi-quantitative method for determining the abundance of certain types of responses or characteristic text (codes). First, one author reviewed a subset of text from the Findings and Recommendations sections to identify preliminary, primary codes for the analysis. Two of the other authors then independently reviewed all findings and recommendations text, noting where primary codes were present, and developing and revising these codes until consensus was reached. Another two authors then evaluated the finalized primary codes to further identify and refine sub-codes within each primary category.

For the poster analysis, summative content analysis was used to analyze open-ended question responses in both surveys. For a given question, preliminary codes were defined by one author and then two other authors independently refined and assigned codes for all question responses. Coding by the two authors was compared and differences discussed until consensus was reached. The finalized primary codes and assignments were then reviewed and refined by a third author. This process was repeated for all survey questions.

In addition to co-developing the project, project partners led class sessions on AI literacy, academic integrity, research approaches, writing and library resources; attended the final poster presentations; contributed to the review and analysis of poster and survey data, and the writing of this report. Following completion of the poster analysis, partners were asked to select specific codes or sub-codes that related to their work, review the associated poster text, and develop written reflections. These reflections addressed (1) the merit and practicality of the student

recommendations, (2) any opportunities or challenges identified throughout the project, (3) any new questions that arose for them by being involved in the project, and (4) if / how the project influenced their plans for programming needs moving forward. As the project partners are also co-authors, these reflections are embedded in the Discussion.

Results

First Year Student Perspectives on Generative AI

In the second week of the Fall 2024 semester, 209 students (66% of first-year class) responded to the optional, anonymous survey on genAI use and perceptions. Forty-two percent (N = 87) indicated that they had used ChatGPT or other AI tools for coursework. Regarding frequency of use, 58% indicated they used these tools rarely, 22% occasionally, and 20% frequently or always. Specific coursework activities included homework (54%), idea generation, studying, and self-teaching (Figure 2).

Students noted a range of limitations for AI tools, with accuracy of outputs (43%) being the most frequent (Figure 2). One student commented on potential bias and 13 students (12%) indicated that there were no limitations for using it in coursework.

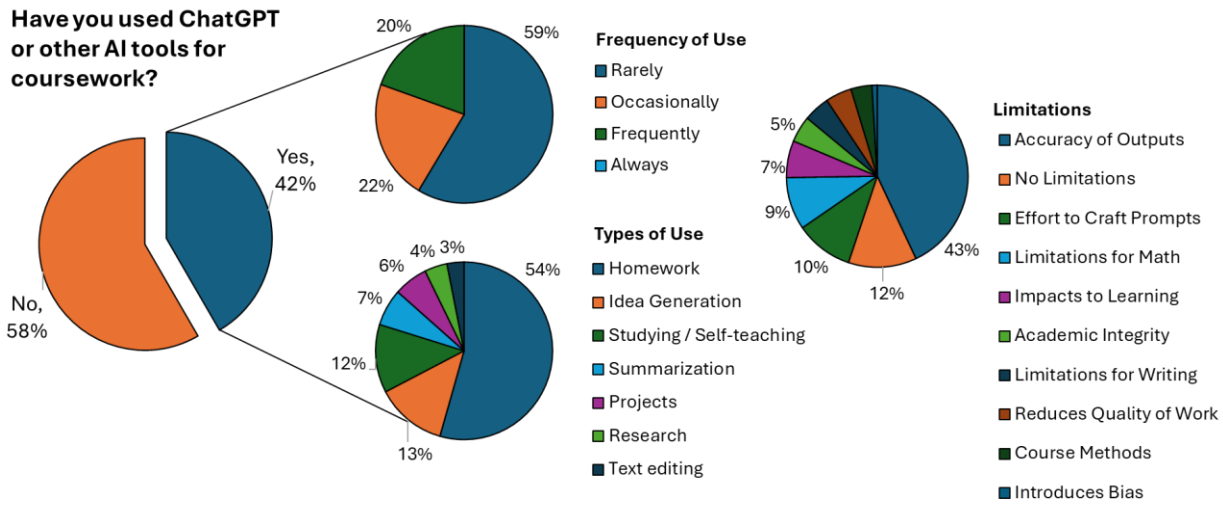

Figure 2. Student use of genAI tools for coursework at the beginning of the first semester of college. Legend labels listed from most to least abundant.

Despite these perceived limitations, 75% of students that had used genAI for coursework (N = 65) indicated that they had found it helpful. Speed and efficiency (35%), studying / self-teaching (33%), generating ideas for assignments or finding answers (26%), and summarizing (7%) were the main reasons cited. Appendix 2 presents selected quotes.

When asked how their experience with genAI tools had impacted their learning, only ten students indicated any negative impacts. Negative impacts included overreliance on genAI,

getting an answer without thinking critically or understanding the meaning of the output, and derailing learning due to inaccurate or misleading information.

The Week 2 Survey indicates students had a generally positive outlook on genAI at the beginning of the semester and a cursory awareness of ethical issues, accuracy concerns, and potential negative impacts to learning. Students found genAI helpful for coursework, despite an awareness of these limitations, and nearly half of the students surveyed had already used it. Guidance from instructors was limited for the students that responded.

Civic-learning Project

Nineteen teams (44 students) worked on the AI project. Of these, 16 teams interviewed peers (81 interviews), two teams interviewed faculty (six interviews), and one team interviewed staff (three interviews). While the teams were comprised of first-year students in engineering and mathematical sciences, several teams interviewed peers in other majors and years of study.

A total of 523 codes were generated pertaining to the primary categories shown in Figure 3. Several sub-codes were identified within each category (Appendix 2 Table A2.1).

There were 88 poster sentences or bullet points coded from Findings and 97 coded from the Recommendations section of the student posters. Findings were largely related to interviewees' uses and perceptions of genAI, whereas Recommendations included codes related to training and guidance, development of campus policies, and academic integrity concerns (Figure 3).

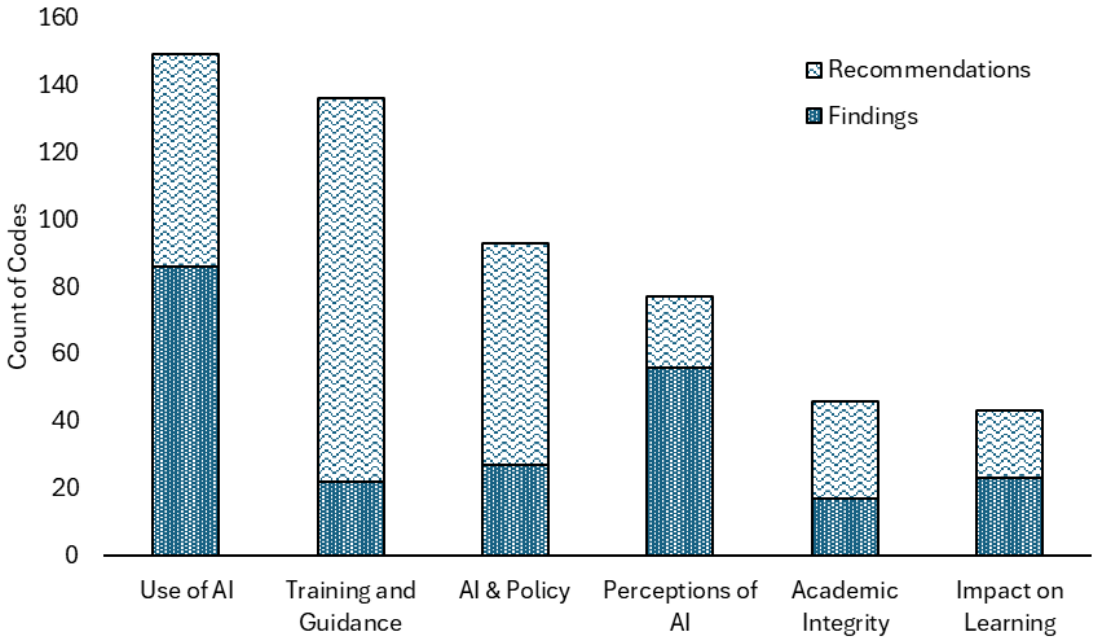

Figure 3. Primary categories and counts of qualitative codes identified in the Findings and Recommendations sections of teams' posters.

Student Findings

"Use of AI" pertains to frequency and extent of AI use, specific type of academic and non-academic uses, and the emerging ubiquity of AI (Appendix 2 Table A2.1). Use of AI was a prominent theme throughout the presentations, both in the Findings and Recommendations. Eight teams reported interview responses pertaining to frequency of AI use. With the exception of one team, students indicated that their peers had used AI anywhere from once to a few times per week and primarily in relation to coursework. There was no indication that the faculty interviewed (N = 6) had used AI tools themselves for teaching or other purposes, whereas the summary of staff interviews indicated they *"…often use AI to support them through menial tasks (e.g., summarizing meeting notes, source identification, etc.) and resume creation."*

Academic uses included use of genAI for supplemental instruction and tutoring, spelling and grammar checks, summarizing reading, brainstorming, generating outlines, compiling sources for research, "predigestion" of complex ideas, problem-solving approaches, and proofing written work, which were more varied than the uses identified in the Week 2 Survey (Figure 2), possibly due to the inclusion of other majors and years of study in the interviews. There were several comments pertaining to non-academic uses by students, such as for career preparation and general creativity (Appendix 2 Table A2.1). A minor, but notable, sub-code was the growing ubiquity and persistence of genAI tools in education and in the workplace, as indicated by comments such as *"…all touched on the importance of understanding AI because 'it will never go away'"* and "*It is clear that AI is not going away anytime soon.*"

"Training and Guidance" pertains to AI literacy for students and faculty, student expectations of faculty, and campus roles, resources, and guidance. This was the second most common theme in the presentations (Figure 2). Several teams reported peers' lack of awareness of campus AI resources as well as a lack of instruction on proper use of AI in classes: "*Through our interviews we found that, in general, the biggest barrier for proper use of AI among students is a lack of education on both the risks of using AI, and, when applicable, how to use it correctly and ethically.*" Only three teams reported the need for AI literacy for faculty in Findings, with the majority of those comments originating from the two teams that chose to interview faculty.

"AI & Policy" pertains to student perceptions of existing policies and resources, the enforcement of AI policies, the assessment of policies, and guidelines at the course, department, and university levels (Appendix 2 Table A2.1). In Findings, students reported that their peers had received limited to no guidance in courses or more broadly at the university, with one team stating: *"The students interviewed agreed that the majority of their professors did not go into great detail about their policies. Students mentioned some professors stated AI was not to be used to cheat on assignments, but did not elaborate further on the policy. It was also said that some professors directly oppose any use of AI, while others allow it in certain instances."*

"Perception of AI" pertains to an awareness of broader societal perspectives of genAI and its reliability (Appendix 2 Table A2.1). Perception of AI was the most abundant sub-code in the poster Findings (32%) as would be expected from an interview-based project. Perceptions were mostly positive or neutral when pertaining to genAI use for learning (See also "Impacts to Learning," below). Teams also described perceptions of reliability, including students' concerns

about the accuracy and quality of work generated with genAI: *"Don't base your whole knowledge bank off AI as it's often inaccurate. AI has drawbacks when used to find answers for graded assignments or specific details of complex issues."* Staff perspectives of genAI were also positive, noting the benefits of using it for clerical tasks (summarizing meeting notes, source identification, etc.) and no concerns related to work quality or accuracy. Faculty perspectives ranged from concerned to positive. Concerns included the "*threat that AI poses to students critical and original thinking,*" counterproductive uses of genAI, and a belief that "*it makes students lazy and gives them an easy way to cheat.*" One faculty encouraged students to use it: "*You should find out every possible way to use it and abuse it…I can't imagine a student going on to something after [college] and not having used AI.*"

"Academic Integrity" pertains to academic dishonesty, cheating, plagiarism, ethical use, or other uses of genAI for "nefarious purposes" (Appendix 2 Table A2.1). Though the abundance of Academic Integrity codes was small (n = 22 or 9% of all sub-codes), every presentation addressed it. Academic integrity codes coincided with every other code category throughout the analysis, indicating that students were associating and communicating academic integrity concerns independent of what their final recommendations were and, in some cases, to justify their final recommendations: "*If the proposed solution were to be implemented, students, faculty, and other community members would have the knowledge to benefit from its many capabilities without the concern of unethical or improper use.*"

"Impact on Learning" pertains to any mention of how genAI influences the learning process (Appendix 2 Table A2.1). Negative impacts included disruptions to the learning process, critical thinking, or cheating. Positive impacts included enhancement of and support for learning, often qualified with the need for training on proper use. Ten of 19 teams commented on impacts to learning (n = 22 codes), which were positive or neutral across the Findings and Recommendation sections. Where concerns for negative impacts were mentioned, it was typically associated with academic integrity (Appendix 3 Table A3.1, Topic 2).

Student Recommendations

The majority of student recommendations were related to Training and Guidance (n = 114) and AI & Policy (n = 66; Appendix 2 Table A2.1) and are summarized in Table 2. Students recommended more comprehensive and systematic AI literacy opportunities for all stakeholders on campus. Several teams indicated that this training and guidance might come from existing offices (campus partners) or need to be created. Teams also expressed certain expectations of faculty to become, or already be, literate in the use of genAI, both for applications in their field and for guiding student use of genAI in the classroom (Table 2).

Table 2. Student recommendations related to AI training, policy, guidance, and implementation.

	Training, Policy, Guidance	Implementation
AI Literacy for Students	• Proper use (prompt engineering, evaluating results, learning aids)	• Mandatory learning modules • New General Education course

	• Limitations (ethical issues, accuracy, bias) • Impacts to learning • Specific considerations by discipline / career interest • Academic integrity / policies	• "AI Literacy" tab in LMS • Train early, reinforce in all years • Widespread and accessible • Trainings developed with faculty and staff
Expectations of University / School	• Require colleges to have policy on genAI use for coursework • Support AI literacy training for the campus community • Establish AI support center	• Campus partners host workshops; Specialize by college / department • Staff / Librarian dedicated to genAI literacy • Campus events and campaigns
Expectations of Instructors	• Be literate in genAI use in the discipline • Provide policy on genAI for every course; Follow-through • Coordinate policies with other faculty • Clarify proper / improper use and citation strategies • Communicate consequence	• Professional development workshops / trainings • Policies in syllabus / LMS • Consistent policies by department / school • Frequent reminders / discussions in class • Check for AI misuse / plagiarism in student work

Recommendations related to AI & Policy varied in regards to where policies and guidance should originate. Teams recommended AI policies be implemented at the course- (27%), university- (24%), and department or college-level (4%). For course-level guidance, teams recommended that instructors (1) provide clear, course-specific guidance on genAI use (for example in syllabi), (2) train students on how to use genAI appropriately, (3) prohibit genAI use for exams and quizzes or return to a "*traditional testing environment*", (4) discuss when it is and is not appropriate to use genAI, and to clarify consequences. One group provided a specific example: "*Generative AI may be used as a teaching assistant. AI cannot be used to complete assignments that are to be submitted. If AI is used as a source it must be cited properly. If there are unclear expectations, please see professor outside of class before continuing*."

Teams that focused recommendations at the university and department/college-level indicated that guidance should be widespread and accessible, centered on AI literacy, balanced to consider both benefits and limitations to learning, and integrated with existing university systems. Recommended mechanisms included: mandatory online modules, General Education courses, and a dedicated area for AI policy on the university's learning management system (LMS) (Table

2). Teams also noted the possibility of differentiating guidance by college and "*conducting ongoing feedback surveys to evaluate the effectiveness of AI policies and tools across campus.*"

End-of-Semester Student Reflections on Learning

Forty-two of 44 students that worked on the campus AI project responded to the End-of-Semester survey. When asked about the most important thing they learned, the most common responses were related to working on a team, changes to their perspectives or use of genAI, and awareness of policies, rules, and guidance (Figure 4). Students also mentioned learning about research methods and existing campus resources. Teamwork was the most frequently mentioned component of project learning followed by others' Perspectives of AI and Use of AI, in which students reflected on how their peers are or are not using it (Figure 4; Appendix 3 Table A3.1, Topic 3). Students noted different aspects of teamwork including the importance of communication with teammates, effective ways to split up work, strategies and challenges of navigating group dynamics, personal areas for improvement in future projects, and the value of sharing ideas (Appendix 3 Table A3.1, Topic 3). Six students wrote about the analytical and research methods that they learned throughout the project, including the value of "*good background information*", how to conduct interviews, analyze interview data, draw conclusions, and present findings (Appendix 3 Table A3.1, Topic 3).

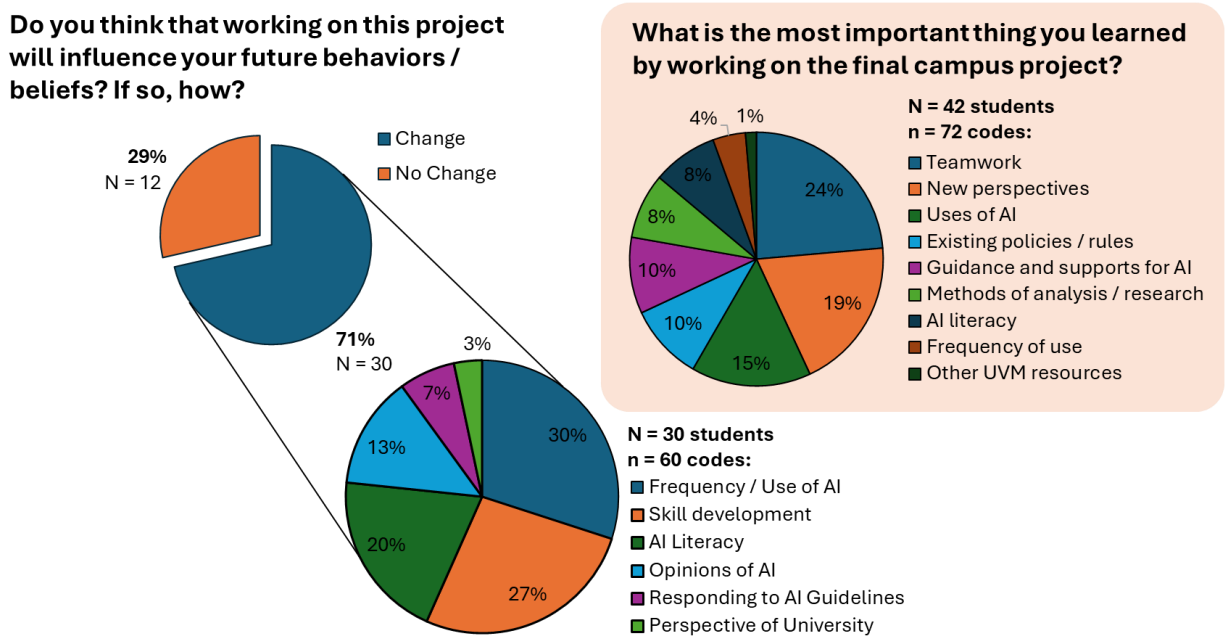

Figure 4. Student responses to end-of-semester survey on how the "Campus Use of AI" civic-learning project may influence future behaviors / beliefs and learning (N = 42 students).

Students were also asked to reflect on the most important things that they learned from their peers' poster presentations. The most common reflection was related to peer perspectives, frequency, and use of genAI (n = 20). For example, some students acknowledged that there is "*a lot of work to do*," that "*AI isn't going away any time soon*," and that defining and implementing

a single policy will be challenging, considering the breadth of subjects taught at the university (Appendix 3, Table A3.1, Topic 4).

Thirty students indicated the project would change their future behavior or opinions. Sixteen said it would influence their approach to working in teams, project ideation, and presentations (Figure 4). Twenty-one students commented on changes related to genAI, including personal use, opinions, desire for training, and willingness to respond to campus guidelines. Changes of opinion on genAI ranged from being more skeptical to being more optimistic. Skeptics noted problems with the quality of information (hallucinations), limitations for specific uses such as brainstorming, and concerns about cheating. Optimists noted opportunities to use genAI as *"a positive tool to help me study"* and a *"useful resource."* Notably, the students that planned to use genAI in new ways or more frequently indicated a need to do so more cautiously (Appendix 3 Table A3.1, Topic 5).

Regarding campus guidelines, four students shared the need for guidelines or willingness to follow guidelines: *"I'd love to adopt policy implemented by my professors regarding the use of AI. I believe that if professors can become educated on how to best use AI in their classes, I will gladly follow their personal rules and guidelines."* Twelve students indicated that the project did not influence their behaviors or opinions. Of these, six indicated not changing the way they use genAI due to prior learning and experience with AI tools (Appendix 3 Table A3.1, Topic 5).

Discussion (Project partner reflections)

Investing in and Scaffolding AI literacy

As reported in other studies [3, 4, 9], students had a generally positive outlook on genAI and only a cursory awareness of ethical issues, accuracy concerns, and potential negative impacts to learning. Students found genAI helpful for coursework, despite an awareness of these limitations, and nearly half of the students surveyed had used it by week 2. Most students indicated a desire for more guidance via course syllabi, online modules, or the LMS. In particular, students expressed the need for education on how to use genAI tools and properly cite them to avoid cheating and plagiarism. Students appeared to be receptive to guidance in the first semester. It is also likely that students had not yet experienced the stress of multiple or high-stakes assessments and had not yet been tempted to use genAI in academically dishonest ways. Therefore, AI literacy interventions could be best suited early in students' academic experience and reinforced (scaffolded) throughout the curriculum, as appropriate for the discipline.

Students shared expectations that faculty, librarians, administrators, and program directors should educate them about how to use genAI appropriately in higher education to enhance their learning and get them career-ready. It is appropriate for students to look to these groups to develop a systemic, comprehensive AI literacy curriculum, which they believe will enhance learning, reduce cheating, and address other inappropriate uses. Clearly, universities and colleges need to take coordinated action, but even these first-year students recognized the challenges, with one team noting it will "*most likely be costly*" and will need to be "*thorough and user friendly*" to be "*truly impactful*."

The different suggestions for when and how students would be required to learn about genAI—through a preorientation module, in a General Education course, in courses that pertain to their fields of study, through library workshops—are all appropriate. This range highlights the challenge institutions face in determining how to reach all students at different stages of their journey and at point of need [10, 11].

Since no course or orientation can address all the nuances of genAI, adopting a shared AI-L framework would help our faculty, departments, and the larger institution scaffold our instruction appropriately from foundational knowledge and skill to more advanced abilities relevant to students' disciplines and path toward graduation. Any framework should also consider the need for ongoing assessment of students' AI-L. Assessment is important for effective instruction and learning but has been lacking in the literature [12]. It will take time and leadership to guide campus stakeholders to a consensus on an AI-L framework and its place in our General Education curriculum and beyond.

Academic Integrity and Policy Issues

Academic integrity was a minor but pervasive theme throughout the project. Students commented on fairness, cheating, equity, and policy enforcement, even where there were no direct questions or prompts about this topic. While few studies have focused on academic integrity specifically, ethics is a driving force of AI policy creation [10]. As reported by Rajabi et al. [13], students are seeking clarity on policies and consequences so that they can adjust their learning strategies accordingly. They expect fairness in the setting of policies as well as appropriate and consistent enforcement. Students also indicated that they may be more inclined to use genAI tools, against course policy, if other students were using them without consequence.

Teams seemed to agree that there should be clear guidelines about when and how genAI can be used, and that there should not be a blanket ban due to the potential benefits for learning and the need for students to be literate in the technology for career development. There was no consensus about whether a policy should be university-wide or course-, department- or major-specific.

This indicates that most students aligned with the recommendation by Dabis and Csáki [14] that institutions use "soft enforcement" of AI policies over punitive responses, include AI policy information in syllabi, and allowing faculty autonomy for setting course- and discipline-specific policy. This approach is consistent with the current academic integrity policy at our institution, where faculty may define what is acceptable in their classes. However, soft policies will be most successful and feel fair to students only if all critical ingredients are in place (AI literacy, faculty development, course policies, enforcement). As campus discussions on AI literacy and curricular integration progress, we will continue to evaluate campus policies through an "AI lens" [15].

Peer Learning, Writing, and Tutoring Services

One goal of this civic learning project was to help engineering and mathematical sciences students build teamwork skills, which aligns with the emphasis in STEM fields on peer collaboration for creating knowledge and solving real-world problems. It is striking, then, that even though students reported learning about genAI from interviewing peers, most of their

recommendations overlooked learning with and from peers as a component of an AI literacy curriculum, with the exception of one team who thought that AI could "*be used within tutoring centers to help relieve the pressure on student tutors*." This suggestion could address some of the concerns that peer tutors and the directors of tutoring programs at our institution have expressed about overreliance on genAI potentially reducing the frequency with which students seek peer support or weakening students' critical thinking, writing, and information literacy skills.

Students throughout the project reported use of genAI for tutoring, supplemental instruction, text proofing, and other writing and studying assistance, even as they noted some limitations. Baidoo-Anu and Ansah [16] found benefits of genAI to include personalized, interactive, and adaptive learning, but they also identified many drawbacks, including lack of human interaction, limited understanding, lack of contextual understanding, and limited ability to personalize instruction. Essid [17] responds to concerns about AI replacing humans with algorithms by emphasizing that learners benefit from the metacognitive questioning, active listening, and instruction in principles of fair use that writing tutors can provide and which are not yet afforded by AI writing tools.

The majority of writing center administrators in the study by Lindberg and Domingues [18] indicated that genAI will change the way that tutors are trained. Peer tutors need training to help them coach students to make ethical, appropriate, and informed decisions about genAI. Students should find that writing tutors and subject-area tutors have been prepared to provide guidance and support for using genAI to enhance their learning and promote their rhetorical agency.

Tutors are often trained to serve as higher education "cultural informants" [19] who share their rhetorical, cultural, linguistic, and disciplinary knowledge with other students. Shortly after ChatGPT was released, writing tutor education at our institution expanded to include information about genAI and opportunities to explore AI writing tools while reflecting on uses that might enhance or hinder learning and agency. Tutors contributed to our writing center's guidance about how genAI works, its limitations and benefits, and how to harness it to develop effective writing processes without cheating, plagiarizing, or hindering the development of writing and information literacy skills. Establishing clearer institutional and course policies, adopting an institutional AI-L framework, and scaffolding instruction across the curriculum would potentially make peer tutors' work even more beneficial to students.

Libraries and Information Literacy

Students are using genAI for simple information queries and tasks for checking facts, summarizing, and explaining questions. This is convenient, efficient, and follows practices in most workplaces. At the same time, students are evidently using genAI for more complex queries and tasks. This presents questions and concerns, as many students in this and other studies have recognized [1, 9]. One team reported the use of genAI for compiling sources – a small number but confirmation of a major issue for students' engagement with academic publications given the limits of genAI content, the presence of algorithmic biases, and the possibility of hallucination. Students' use of genAI for finding sources also detracts from their development of robust information seeking skills – an important workplace skillset for professional practice and especially for any students who might pursue graduate studies. Several students perceived the "*threat that AI poses to students [sic] critical and original thinking*."

Several student teams recommended that the library, among other units, meet the need for instruction in AI. This fits with the university library's view that several aspects of AI literacy align with, or extend from, the broader discipline of information literacy. Most recommendations for library AI instruction were not specific, for example, library AI instruction was framed as "how to use it properly", and "benefits" and "limitations." Specific recommendations, which have been echoed in other studies on AI literacy [3, 20, 21], included understanding limitations and the risks of inaccuracy; summarizing or clarifying complex texts or language; generating overviews; understanding how to integrate AI-generated information in one's work ethically, and how to fact-check and critically evaluate AI-generated information. These aspects of information literacy have been key elements of library instruction on source evaluation in the era of fake news and misinformation but may be taking new importance in the age of AI.

Implications for Faculty and Faculty Development

Among the most valuable aspects of our data is its reflection of student experiences across campus at a single moment in time. Most instructors understandably focus on their own courses as a point of connection to students and often have little prompting to consider how their course policies and expectations compare with those in other departments. As for all users of technology, instructors exist on a spectrum of early adopters to cautiously curious to fully reluctant. Professional development is equally important for all. For fully reluctant users, professional development provides insight to the ways that genAI could undermine their teaching goals and identify ways to adapt even if they choose to avoid it for pedagogical purposes.

Students are aware that a one-size-fits-all campus policy is unrealistic, given disciplinary differences. They often demonstrate a nuanced understanding that genAI use can be contextual and more-or-less appropriate, whereas many faculty conversations on campus have had a bifurcated approach: should I allow students to use AI in this course or not? Faculty development needs to focus on how faculty can communicate transparently with students about the possibilities and challenges around genAI. More connections across campus – involving tutoring centers, teaching centers, and the libraries – will support faculty as they learn more about genAI and how to guide students in their developmental trajectories. Faculty development programs can be a hub for such engagement, particularly as a site where frameworks for AI-L are shared and evaluated with attention to disciplinary contexts and student development.

Limitations and Recommendations for Future Studies

Jacoby [6] identified ten steps for developing cocurricular service-learning experiences, which are a useful guide for planning projects like ours. A key step is defining a project scope that is academically appropriate and of value to the project partner(s). In this project, the scope was intentionally broad to learn as much as possible on a range of topics related to genAI. However, as a one-credit, large enrollment course, contact time was limited. One effect was that student research relied mostly on interviews rather than scholarly research. This does not make the student recommendations less valuable, but it highlights the importance of calibrating scope and scaffolding, considering student preparedness and contact time. Where contact time is limited, we recommend providing students a curated list of sources to jump-start their own research.

We undertook a lengthy qualitative analysis to identify nuances in student perspectives and experiences. This required input from undergraduate research assistants (authors 7 and 8) and, at times, the campus partners. While we believe this level of partner engagement with the data led to a deeper understanding of student recommendations, a more narrowly defined project for a first-year class, or a similarly broad project for an upper-level research methods class, may not require the same depth of analysis. For example, civic learning instructors and partners could focus a first-year project *only* on campus AI policy, take more time developing students' research skills, and analyze only students' reports or presentations.

Below are key questions that we have identified to help instructors and campus partners plan projects like this and balance student preparedness, contact time, and partner needs:

- What are the goals of the campus partner? What are they hoping to learn?
- Who are the students (class level, research skill, AI literacy)?
- What are the course or project learning goals for the students?
- How much time is available for students and partners to work on the project?
- What materials or training will students need to achieve the learning goals?
- What will students need to know / do to get started on the project?
- What intermediate activities or assessments will support students' progress?
- What are the touchpoints between the students and project partner(s)?
- What is the final deliverable for the students?
- What is the final product for the partner (if different)?
- How will students and project partners reflect on their learning and participation?

Conclusions

The civic learning project described in this study engaged 44 students (19 teams) in an interview-based research project to learn how students, faculty, and staff used genAI on campus in Fall 2024. Insight to faculty and staff perspectives were limited, however students gathered a wide range of insights on genAI use, perspectives, and recommendations from their peers. We learned that students expect instructors to be AI-literate, both for teaching and for applications within their discipline, and for instructors to clearly articulate policies in every class. Students also expect coordination of policies and resources across campus, including comprehensive, practical, accessible, equitable, and discipline-specific AI literacy training.

Nearly half of first-year students surveyed had some experience using genAI for coursework and a cursory awareness of its benefits and limitations in the second week of college. The students that engaged in the civic learning project expressed more caution toward genAI at the end of the semester and expressed a desire for more training thereafter. The campus partners identified several opportunities and challenges based on the student recommendations, including support for peer tutoring, information literacy, academic integrity, and considerations for campus-wide policy and AI literacy frameworks. We recommend that instructors interested in this approach consider additional scaffolding to support student research and define the scope of the project as appropriate for the available time, resources, and needs of the campus partner(s).

Resources

The Civic Learning Project Guidelines provided to students are available upon request to the corresponding author.

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Appendices

Appendix 1. Week 2 Survey Provided to the First Year Class

1. What is your major? [Multiple Choice]
2. Did you complete Module 2 Skills: Introduction to AI Literacy? [Yes / No]
3. Have you utilized ChatGPT or other AI tools in your coursework? [Yes / No]
   If Yes:
   i. How often have you utilized ChatGPT or other AI tools in your coursework? [open response]
   ii. What specific tasks or assignments have you used ChatGPT or other AI tools for in your coursework? [open response]
   iii. Have you found ChatGPT or other AI tools to be helpful in completing your coursework? Why or why not? [open response]
   iv. How has your experience with ChatGPT or other AI tools impacted your learning in your coursework? [open response]
   v. Have you noticed any limitations or challenges with using ChatGPT or other AI tools in your coursework? [open response]
4. Have you heard of other students using ChatGPT or other AI tools for their coursework? [Yes / No]
5. In what ways do you think AI tools like ChatGPT improve the learning experience for students? [open response]
6. In what ways do you think AI tools like ChatGPT limit the learning experience for students? [open response]
7. How do you think the use of AI tools like ChatGPT will change the future of education? [open response]
8. What are some potential ethical considerations surrounding the use of AI tools in education? [open response]
9. Have you discussed the use of AI tools like ChatGPT in your classes or with your instructors (outside of this course)? [Yes / No]
   a. If Yes: What perspective do your instructors (outside of this course) take on ChatGPT and other AI tools? [open response]
10. Have you received guidance on how to properly use AI tools like ChatGPT for coursework (outside of this course)? [Yes / No]
    a. If Yes: What guidance have you received on how to properly use AI tools like ChatGPT for coursework (outside of this course)? [open response]
11. Have you received guidance on how to properly cite the use of AI tools like ChatGPT (outside of this course)? [Yes / No]
    a. If Yes: What guidance have you received on how to properly cite the use of AI tools like ChatGPT (outside of this course)? [open response]
12. How would you like to see AI tools like ChatGPT integrated into your coursework in the future? [open response]*

Appendix 2. Codes and subcodes.

Table A2.1. Primary themes (codes) and secondary themes (subcodes) identified in the findings and recommendation sections of first year student posters.

Code	Subcode	Findings	Recom.	Total
Use of AI	Total of Subcodes	86	61	147
	AI & Academic Use (General)	41	37	78
	AI & Tutoring	12	7	19
	AI Non-Academic / Other Uses	8	10	18
	Frequency / Extent of Use	10	3	13
	AI & Homework and Assignments	12	1	13
	Ubiquity of AI tools	3	3	6
	AI & In-Class Use	0	2	2
Training and Guidance	Total of Subcodes	22	114	136
	AI Literacy for Students	14	43	57
	Student Expectations of Faculty	3	29	32
	Campus Roles, Resources, & Guidance	2	30	32
	AI Literacy for Faculty & Staff	3	12	15
AI & Policy	Total of Subcodes	27	66	93
	Course-Level Guidelines or Policy	11	27	38
	University-Level Guidelines or Policy	11	23	34
	AI Policy Enforcement	2	10	12
	Department Level Guidelines	3	4	7
	Assessment of new policies/guidelines	0	2	2
Perceptions of AI	Total of Subcodes	56	21	77
	Student Perceptions of AI	28	8	36
	Perception of AI as Reliable/Authority	11	5	16
	Instructor perspectives AI	8	1	9
	Student Percep. Existing Policy / Resources	5	4	9
	Staff perspectives AI	3	1	4
	Societal Perceptions of AI	1	2	3
Academic Integrity	Total of Code	17	29	46
Impact on Learning	Total of Subcodes	13	9	23
	Positive	8	4	12
	Negative	0	4	4
	Neutral	5	1	6

Appendix 3. Supplemental Results

Table A3.1. Select quotes from the Week 2 Survey, Civic-learning Project Posters, and End-of-Semester Critical Reflections.

Data Source	Topic	Code	Select Quotes
Week 2 Survey	1. Reasons given by students for why genAI is helpful for coursework	Speed and efficiency	• Absolutely, it's a great resource for being able to skip the monotonous part of college work and save yourself many hours of work and struggle • You don't have to search through massive articles to find something. It gives the information you are looking for
		Studying / Self-teaching	• When I need a question explained it's easy to ask ChatGPT to explain the question so I can answer future questions • It has made it quicker to digest information specific to what I need • I struggle in organizing and generating and revising my own work but I often use it as a second set of eyes
		Assignments / Finding answers	• When I'm blanking and can't think of an idea for a free write, GPT helps out a lot • It shows step-by-step ways to complete a problem when the professor isn't there • I have found it helpful in terms of debugging code • It thoroughly explained to me how to use the formula, which helped me complete my assignment
Civic Learning Project Posters	2. Impact on Learning	Positive or neutral codes	• Students have generally found AI tools to be beneficial to their learning as a means of supplemental instruction • It is clear through our surveying of students that AI can be a positive learning tool when used right • AI is a powerful tool, and if used correctly, it can enhance learning, not hinder it

		Negative codes	• Every student interviewed mentioned that AI can have drawbacks to the learning process, used as a cheat code to bypass real learning
End-of-Semester Student Reflections	3. Project learning	Teamwork	• The most important thing I learned by working on this project was the value of sharing ideas. During the brainstorming phase, every group member was able to contribute. I think that this was the reason we came up with a good proposal. So much thought went into it.
End-of-Semester Student Reflections (continued)		Use of AI	• Many of the students we interviewed either used AI as a clarification method or didn't use AI in their studies. They emphasized how they don't generate their work with AI. Rather, they use it to learn material and guide their studies in ways such as summarizing documents or extra help with writing without taking the authenticity out of their work (grammar, punctuation, help with tone, etc.). This is very important insight for our project partners in their effort to create programs for AI policy and education on campus.
		Research methods	• The most important thing I learned/had practice doing, was interviewing someone. I had never held such a formal interview with someone before, and I quite enjoyed it. I now feel much more confident that I have the skills I need to conduct interviews in the future.
	4. Peer learning	Policy impacts on students	• I learned that a lot of students struggle with the fact that the university does not have an overarching policy for AI. Some professors have suggested its use as an educational tool while others have no support at all for its use. • AI is a powerful tool that deserves a place in academia, however it poses a serious threat towards students critical and original thinking so must be used and monitored accordingly.
	5. Influence on behaviors / beliefs	Use of AI	• I think this project will make me use AI more critically. It will make me formulate questions in AI more concisely and read its answers more carefully. It has also made me aware of the

			frequency at which AI gives the wrong answers, meaning I plan to use AI with more caution in the future.
		Willingness to follow genAI guidelines	• Yes, I'd love to adopt policy implemented by my professors regarding the use of AI. I believe that if professors can become educated on how to best use AI in their classes, I will gladly follow their personal rules and guidelines.
		No change	• I do not think it will. I have been very mindful about my use of AI, I have attended talks about the future of AI in the past and have made an effort to be conscientious about how often and what I have used it for. Therefore, while I learned a lot I do not think I will alter my behavior. • Not really. I don't use AI to cheat, but I do use it a lot as a tutoring resource, and I don't plan to stop using it any time soon. I do worry a lot though, and it's very frustrating that those people who are using AI to cheat on all their assignments are allowed to get away with it.

Table A3.2 Poster Codes and Sub-codes Reviewed by Campus Partners for their Reflections.

Campus Partner / Office	Codes / Sub-codes
Center for Student Conduct	Use of AI; Academic Integrity; Training & Guidance; AI & Policy
University Libraries	Use of AI (all subcodes); Training and Guidance (all subcodes); Perceptions of AI (all subcodes); Impact on Learning (all subcodes)
Undergraduate Writing Center	Use of AI, subcodes: AI & Homework/ Assignments; AI & Tutoring; Training & Guidance, subcodes: AI Literacy for Students; Student Expectations; AI & Policy, subcodes: Student Perceptions of Existing Policy / Resources
Writing in the Disciplines / Center for Teaching and Learning	Use of AI, subcodes: AI & Homework/ Assignments; AI & Tutoring; Training & Guidance, all subcodes