

Final Report and Recommendations

MTU AI Working Group
2023-2024

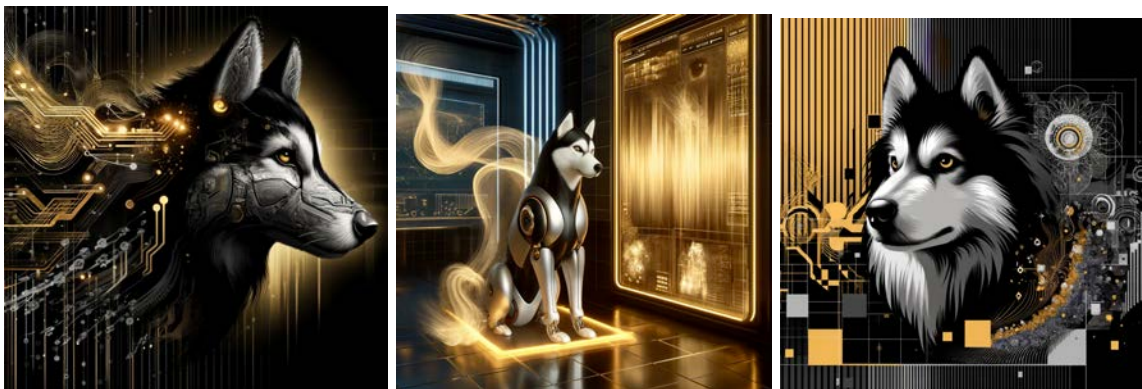


Figure 1: ChatGPT4 results from the prompt: “make a picture that brings together the color scheme of michigan technological university with the concept of generative artificial intelligence and huskies”

Artificial Intelligence Working Group Members

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Background

At the beginning of Fall, 2023 semester, the Provost assembled an AI working group with the following charges:

- **Goal:** *“To be a leader in incorporating AI into our curricula and into the student academic experience.”*
- **Vision:** *“Michigan Tech will deliver academic programs and experiences that prepare students for a world in which AI is omnipresent.”*
- **Charges:**
 - Identify ways in which we can best prepare students for a workforce in which AI will be omnipresent.
 - Explore, document, and make recommendations relating to the opportunities and challenges that the rise in artificial intelligence brings to academic affairs at Michigan Tech.
 - Organize a university listening event to hear concerns and opportunities that the campus community sees with the rise in access to artificial intelligence resources.
 - Identify other formal groups on campus who are also working on issues relating to AI in the academic affairs area to ensure that work is not being duplicated.
 - Develop and maintain an adaptive web-based set of resources that can be used for reference by faculty, staff, and students. This includes removing or archiving outdated materials in this fast paced area.
 - Discuss issues relating to artificial intelligence and higher ed with the goal of bringing forward recommendations to the university as to how to navigate this new landscape, including developing recommendations relating to policies and procedures, as well as articulating best practices.
 - Engage with others around campus who have interests and expertise in

this area. This may include the formation of subcommittees to address different issues relating to AI.

The committee held a variety of listening sessions, marshaled materials for a [web resource](#), and gathered input through a campus survey and meetings with different units on campus. This final report summarizes the information we learned through our data gathering and provides 15 recommendations in four areas: curricular and pedagogical, policy and logistics, sustainability, and resource investment.

Campus Perspectives

Meetings with Academic Units

As documented in our [Fall 2023](#) and [Spring 2024](#) reports to the provost, the AIWG issued an invitation to have members of our Working Group visit some of the regularly scheduled meetings of offices and academic units. This invitation was circulated through Tech Today each semester, and we created a Google form so that academic units could make requests. See [Appendix A](#) for a summary of the visits and presentations.

Through this data gathering, we were able to identify issues and questions that emerged most frequently, as well as get a sense of where units across campus are on a spectrum of engaging with AI. Commonly raised topics among academic units included the following:

- Implementing AI technology in classes (and the spectrum of engagement from embracing to rejecting it)
- Implications for data privacy and confidential conversations (such as some tools like Otter.ai that are integrated into Zoom meetings scheduled via a calendar tool)
- The merits of different AI tools (ChatGPT 3.5 and 4.0 versus Gemini versus Claude, for example)
- Implications for academic integrity and plagiarism, including how to attribute use of GAI tools for writing and research and which tools, if any, should be used for the purpose of detecting AI-generated content
- Practical suggestions for uses of AI that will increase efficiency and productivity balanced by critical awareness of the implications this may have for the development of critical thinking and creativity (for all members of the campus community)
- Requests for resources that would support knowledge building for faculty, staff, and students, including templates for use in syllabi
- Challenges around how to help students build essential skills that can be performed by AI (but that are nevertheless skill based knowledge practices and habits that are foundational for functioning in their discipline or industry)
- A desire for universal access to AI tools (versus individual subscriptions)
- Clarity around what kinds of AI sites/programs are allowed for different purposes (research, publication, responding to student work, creating course materials, completing assignments, etc.)

We held two general listening sessions for faculty and staff in February 2024. We summarize the main themes below, noting several align with the AI WG's meetings with individual campus or academic units (summarized in the prior section).

Support for a campus subscription or license to access GAI

- Although individual preferences for specific GAI tools varied (Chat GPT, Copilot, Gemini, etc.), there was a clear consensus that any campus subscription or license is a large

improvement (i.e. something is better than nothing). This will also help in the classroom if instructors know that all students have access to a specific GAI tool.

- This also relates to equity concerns surrounding access to GAI tools, particularly for students. For example, Chat GPT 4.0 has a paywall. Students who are able to pay for the higher-performance GAI tools have an advantage in some academic areas, particularly in accuracy and sophistication of output for quantitative fields like mathematics and coding.

Questions about IT's approach to GAI tools

- Several faculty and staff mentioned that IT's current approach to GAI tools prevents their use of GAI tools on campus. For example, IT shut off access to certain GAI softwares such as Microsoft Copilot and Google Gemini. It is difficult for faculty, staff, and students to learn how to use GAI tools and to incorporate them into academic exercises when the tools are disabled on campus.
- It was suggested that IT be given guidance from the university regarding the needs of faculty, staff, and students to work with GAI tools on campus.

Policy needs related to GAI on campus

- Suggested syllabus language: There was a desire expressed to have sample policy language for instructors to use, adapt, or select from. In response, the AI WG created a few [samples of syllabi language](#) specific to AI use in the classroom and on assignments. The sample syllabi language examples are linked to the web-resource.
 - a. The university might also consider adding an AI statement to the campus-wide syllabus template.
- Guidelines for using GAI in academic exercises.
 - a. It was suggested in the listening sessions that MTU consider adapting NSF's published guidelines for using GAI in proposal writing and review to broader campus purposes. For example, under these guidelines, users must indicate when/where they used GAI and must take responsibility for any issues associated with GAI outputs. However, GAI cannot be used with confidential information.
 - b. Campus guidance for using GAI must also be flexible enough to allow individual instructors to set their own classroom policies.
 - c. Campus guidelines for using GAI in academic exercises should also incorporate academic integrity policy and concerns. For example, faculty may rely on GAI detection tools, but these are not yet well developed or reliable.
- Allow GAI expenses to be reimbursed by the university. Reimbursement requests for GAI subscription fees (ex: Chat GPT 4.0) have been denied. This limits access to GAI tools as access requires paying out of pocket.

Campus resources and support specific to GAI

- a. Training across GAI tools to promote a basic understanding of GAI across faculty and staff. Specific requests include:
 - i. Examples of how to integrate AI in the classroom; materials on getting started with AI in the classroom
 - ii. Examples of how faculty, staff, and students can use AI productively
 - iii. Prompt engineering assistance
- b. Requests were made on incorporating a "How to use AI?" course in the new essential education (for example, a First Year Seminar course).
- c. Copyright policies across GAI tools should be made explicit.

- d. In the absence of university policy/guidance, one must consider the variety of course and instructor-level policies that students must navigate each semester (ranging from some faculty forbidding it, while others encourage it).

Survey

We include a snapshot of findings in [Appendix B](#) from our campus survey which was circulated through *Tech Today* and received 70 responses. Primary findings were that respondents are using GAI in their work for administrative tasks and teaching-related tasks and that the greatest need was for best practices, resources, recommendations about tools, and policy language for syllabi.

Undergraduate Student Listening Sessions

The Student Government held a listening session on March 27th. The discussion by undergraduate students on AI implementation in education and work at Michigan Tech indicates a general acceptance and utilization of AI tools, primarily for generating and summarizing information, reviewing work, providing creative direction, and basic coding tasks. While most respondents use AI both on and off-campus, preferences vary regarding openness about its use.

Regarding faculty-generated course materials using AI, participants expressed skepticism about AI's current accuracy but conditional acceptance if faculty review its output and establish guidelines for student use. Participants express moderate comfort with professors using AI for course materials but highlight potential overreliance on AI and accuracy concerns as negative impacts on learning. Despite AI's facilitation of information search and understanding from multiple perspectives, concerns about equitable access and citation standards persist, with mixed opinions on the necessity of university-provided AI software.

Graduate Student Government

The graduate student government leadership held a listening session on February 21st. The following notes were provided by our Graduate Student Government. The notes below capture the perspectives represented during the dialogue with graduate students.

General Themes

- The listening session discussion revealed that usage is diverse based on department and discipline - general usage cuts across use for public speaking support, brainstorming, and outlining.
- Participants in the listening session believed it is fair for faculty to use AI tools as much as students are allowed to use them. However, there is potential to create disparity among different faculty - especially when we account for diverse salary rates of faculty members.
- Participants in the dialogue expressed the view that privacy concerns cannot be erased, and may not be satisfactorily protected.
- The GSG dialogue addressed issues of equity. Participants believed there should rather be an emphasis on access to research materials before the focus on specifics like AI softwares.

GSG Perspectives Emerging from the Listening Session:

- Usage of AI tools should be restricted for solving or engaging more demanding and difficult academic options rather than a foundational development.

- Usage by faculty should be material-specific, and faculty should be a great example/leadership in adhering to the AI policy instituted for their classes. Policy directed at faculty usage should be departmental-focused rather than university-wide.
- AI usage should be cited or acknowledged through established formats like the APA or MLA citation styles or the requirements of funding sources or journals. This ensures transparency and accountability.
- Established and standard measures must be taken to provide a good layer of protection for campus usage of AI.
- Since AI is part of our new infrastructure, the university should have in its future considerations the possibility of providing paid AI software access to all members of the university through the library. However, this is not a current priority.
- GSG noted that AI policy should closely align with the university learning goals; this requires that AI usage should be treated as a skill that students should embrace - and must be equipped with to thrive in the modern economy.

As with the feedback from the survey, faculty listening sessions, and academic unit presentations, many but not all of the requests from the GSG are reflected in the working group's final recommendations.

Working Group Recommendations

The working group provides the following:

Curricular and Pedagogical Recommendations

1. *Student-Facing Learning Modules:* In order to broaden campus-wide understanding of AI tools and their capabilities, the working group recommends that Michigan Tech develop a Canvas Module that is available on the Canvas Commons. Modules could be student-facing (undergraduate and graduate) and be available for instructors to import into their courses, focusing on developing foundational AI literacy skills.
2. *Support Faculty Development:* The university should support ongoing faculty development in the form of a course, seminar, professional learning community or other recognized faculty development model. Modules, badges, or courses similar to ED 5101: Foundations of Online Teaching could be developed to introduce faculty to the uses of AI in the classroom, how to incorporate AI into curriculum, and what kinds of learning tasks may not be appropriate for incorporating AI use. We also emphasize the importance of this kind of resource development taking place across and in collaboration with various campus units: Center for Teaching and Learning, the Provost's Office (such as new faculty orientation and assessment leaders), the library, the composition program, etc. In other words, this kind of resource development is not the responsibility of a single campus unit or office.
3. *Teaching Resources:* Some campuses and professional organizations are creating online teaching repositories specific to AI (see this MLA/CCCC [Exploring AI Pedagogy](#) example). Such a resource could be integrated into the AIWG page that we have created or be coordinated with the Center for Teaching and Learning. The Working Group supports the creation of a workshop for faculty, either online or in-person (or both) offered on a regular basis in order to support ongoing faculty knowledge of how generative AI is evolving, what capacities and affordances it offers the classroom, and how to both critically engage with AI and teach students about critical AI literacies.
4. *Curricular Development:* The AIWG recommends that MTU develop an interdisciplinary or cross-disciplinary undergraduate course that focuses on critical AI literacies. The

course could draw from the expertise of multiple units on campus (College of Computing, Humanities and Social Sciences, Cognitive and Learning Science, etc.) to offer a substantive academic experience focused on developing 21st-century critical literacy skills around prompt engineering, the functionalities of AI tools, and key ethical issues emerging in various social contexts.

5. *Create Opportunities for Revision:* The AI Working Group recommends that the provost's office or CTL establish an award or mini-grant that would recognize instructors who are integrating AI in their classrooms in effective or innovative ways, including around literacy, ethics, and critical engagement.

Policy or Logistics

6. *Role of Information Technology Services:* The AIWG recommends that campus leadership determine the role and scope of IT decision-making around tools and their availability to faculty, staff, and students. Staff, in particular, desire more clarity around what tools are acceptable for use and—if programs or tools are going to be discontinued, that should be communicated in a timely fashion (see, for example, the unannounced removal of CoPilot from on-domain computers).
7. *Develop a Stance on Detection Tools:* Many universities are taking a public stance opposed to detection tools like TurnItIn and its AI detection application (see, for example, [Vanderbilt University's](#) public position and the recent [MLA/CCCC Task Force](#) on AI and Writing Working Paper on policy guidance). We recommend that MTU develop its own stance on AI detection tools, which is then distributed to the campus community, and revisit this policy as tools are further developed. As it stands, the working group recommends against the use of AI detection tools as a primary mechanism for assessing authorship of a text or as a single measure to assess academic integrity.
8. *Create Guidance for Use:* The working group recommends that academic leadership collaborate across units (for example, research and creative activity, academic integrity, and university senate) to determine how to resolve tensions that might emerge around what is permissible in various sites on campus (research, for example, versus classrooms). This might include the following issues:
 - a. How to accommodate students who do not want to provide information to or create accounts with AI tools/companies
 - b. Unethical use of AI tools and consequences for these violations
 - c. How and when AI tools have been used for academic and nonacademic purposes within MTU.

Sustainability

9. *Hiring and Course Development:* The Working Group suggests that the university leadership should prioritize hires and new course development in AI usage in departments and academic units across campus. Criteria might also be integrated into the review processes of hiring committees to assess AI literacy and expertise in candidates to build a critical mass of expertise on campus.
10. *AI in Education Standing Committee:* Establish a standing committee consistent with representation from all stakeholders to address ongoing or newly developed AI issues, and to propose new policies. This committee can also be responsible for secondary tasks including maintenance of our AI literacy resources, faculty development in AI usage, and continuous data collection. We recommend this committee exist at the senate level or be integrated into the charge of an existing governance committee, with specific emphasis on representing a range of constituencies across campus. This group

might be a current senate committee (like the Technology committee) or a committee convened by the senate through established governance processes.

11. *Continued Data Collection:* As AI further develops, new unforeseeable consequences may arise that this workgroup cannot anticipate. Mechanisms should be put in place to understand the adoption, literacy, and general climate around AI on campus. This should be carried out no less than on an annual basis. In addition, strongly encourage academic units to engage with external advisory committees to better understand how AI is being used within the industries of their fields.
12. *Form a Staff and Administrative Working Group:* GAI is affecting not just the academic side of higher education but our nonacademic and support services as well, including Human Resources, Auxiliary Services, Facilities, and Equity. We spoke with representatives from nearly all of these areas on campus, but because our charge is primarily academic in nature, we couldn't always provide the kind of answers or guidance being requested from these stakeholders. We encourage the university leadership to form a parallel working group to serve these members of the university community.

Resource Investment

13. *Campus Wide Subscription to Chat-GPT:* According to our campus-wide survey, Chat-GPT is the most commonly used tool. Given the many plug-ins and ease of use, it is a clear choice among faculty and students (though there may not be as much familiarity with some other tools like Claude which has shown to have some different dialogic functions than ChatGPT). As the adoption and acceptance of AI tools grow, this may become problematic because *most* students use the freely available Chat-GPT3.5, which is not nearly as capable as Chat-GPT4 with regard to analytic problem solving. If students are allowed the use of AI tools on assignments, those who pay for GPT4 will be at a distinct advantage, posing a clear equity issue. Therefore this working group recommends acquiring a site-wide license for Open AI's Chat-GPT. This has the secondary effect of making the tool clearly available to students, and likely increasing adoption. The AI Working Group is not opposed to subscriptions to other, comparable tools, should further investigation reveal a better option that fits the needs of the campus community. In particular, the campus might prioritize a product that can offer guarantees about data security and/or an internal server.
14. *Professional Development:* Continue to provide opportunities for professional development with regard to AI literacy and integration in class activities. We recommend some activities be hosted on campus to keep low barriers for reluctant adopters. There is significant interest from staff and those with administrative appointments in trainings that would introduce them to tools that can be used to support their work.
15. *Web Resource Maintenance:* The working group has created a resource on AI in education available at <https://www.mtu.edu/provost/ai/>. Since the field of GAI is continually evolving, we recommend that the content of this web resource be assessed on a quarterly basis. Review should include ensuring accuracy of content, updating out of date material, and generating new material to supplement university needs. If a standing committee is established (see point 10 under sustainability), it is recommended that the stewardship of this resource be given to them.

Appendix A: List of Campus Listening Activities and Summary of Content

Fall 2024

- Admin & Auxiliary Services
- Meeting with Will Cantrell, Graduate School Dean
- College of Forestry and Environmental Science.
- AI Coffee Chat: CTL and library
- Department of Computer Science
- EOC/Title IX Retreat
- Professional Staff Development Day
- Meeting with Robert Hutchinson (MTU senate chair)

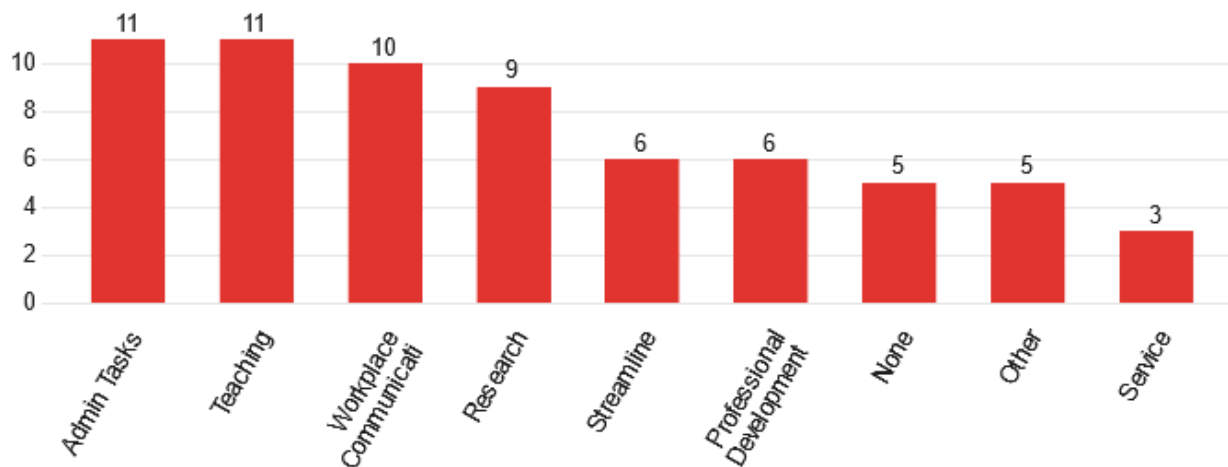
Spring 2024

- Department of Cognitive and Learning Sciences
- College of Business
- CSA College Council
- Graduate Student Government
- Department of Materials Science and Engineering
- Facilities Management
- Department of Civil, Environmental, and Geospatial Engineering
- Department of Geological and Mining Engineering Sciences
- Department of Chemical Engineering
- Department of Kinesiology and Physiology
- University Senate
- Center for Teaching and Learning Lunch and Learn
- Academic Staff Council

Appendix B: Select Results from Campus-Wide AI Survey

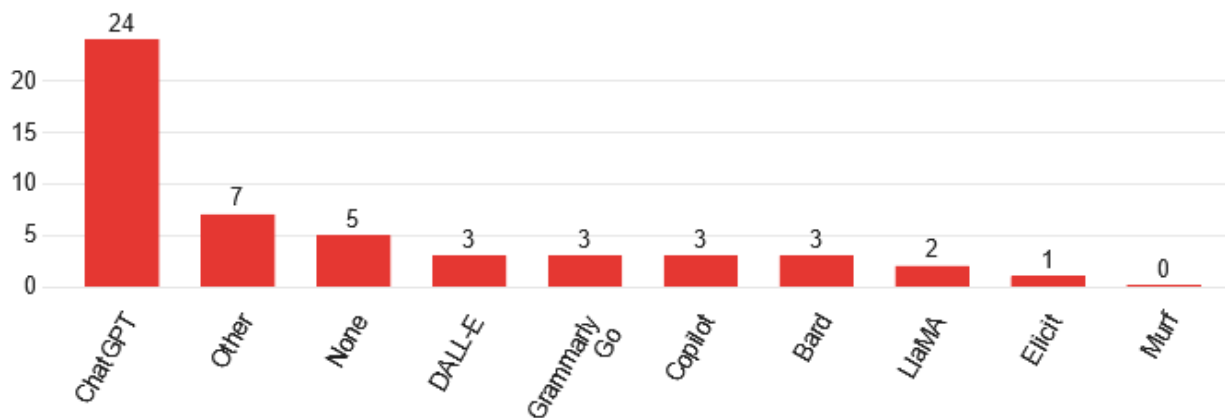
Q2 - In which areas of your work are you integrating AI tools? Select all that apply. - Selected Choice

33 Responses



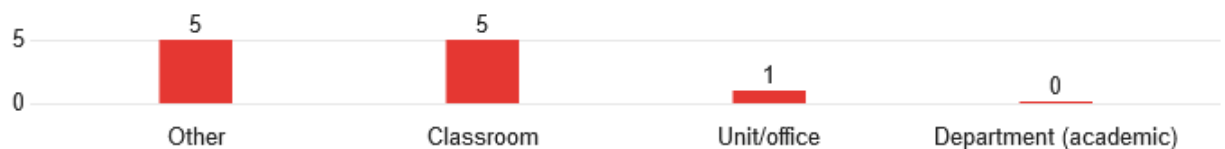
Q3 - Which of the following AI tools are you using? - Selected Choice

33 Responses



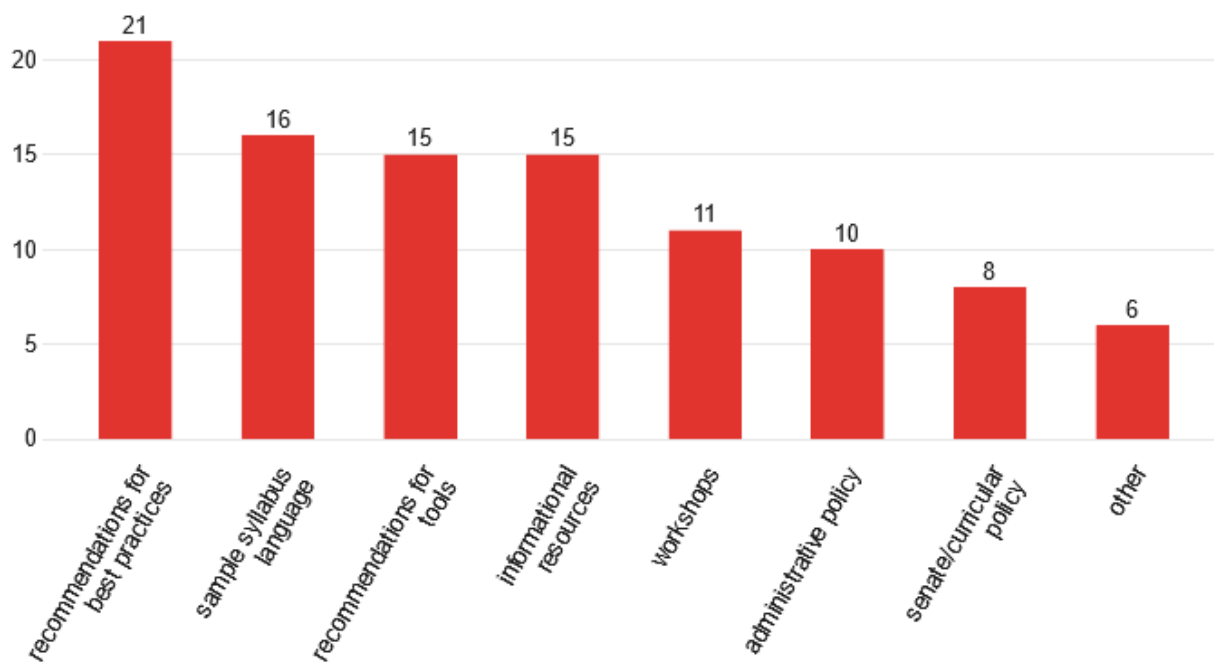
Q5 - Have you developed a policy for any of the following contexts? - Selected Choice

11 Responses



Q7 - Thinking about the AI Working Group and its charge, which of the following kinds of resources or guidance would be most helpful to you in relation to academics and AI? - Selected Choice

30 Responses



Q9_0_GROUP - These are true about my role on campus

30 Responses

