

Engaging Students in Implementing Generative Artificial Intelligence

Creating Simple Infographics to Reinforce Sustainable Living Concepts

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Abstract

The rapid integration of generative artificial intelligence (GenAI) into educational settings has created both opportunities and challenges for student learning. While GenAI adoption in education continues to grow, instructors remain divided about its educational value and appropriate usage. To further complicate matters, instructors are learning in real-time how this new and rapidly evolving tool works. Here, we describe an assignment developed for a large-enrollment, 100-level general education, environmental science course at the University of Arizona (RNR 150 - Sustainable Earth) that provides students with structured opportunities to experiment with and critically evaluate GenAI tools. The assignment requires students to create a public facing infographic about water conservation using Piktochart's GenAI platform and then to evaluate and edit the style, format, and content of the AI output. Students then complete reflective writing analyzing the strengths and limitations of AI-generated content. Students completing this assignment in spring 2025 generally responded positively to using GenAI as a tool to support their thinking and effort, recognizing the importance of GenAI now and in their future.

Introduction

Generative Artificial Intelligence Has Landed

The rise and infusion of generative artificial intelligence (GenAI) into nearly every facet of our lives has been swift and intense. GenAI is now embedded in healthcare, transportation, retail, and manufacturing, and GenAI was even recognized in two recent Nobel Prizes (Maslej et al., 2025). A representative of Accenture, an international company that offers strategy and consulting services in technology and operations, recently referred to GenAI as “the fastest-growing technology” he had seen in the history of the company (McKendrick, 2024).

The rapid adoption of GenAI is also occurring in educational settings, with mixed opinions and success. Pew Research Center reports that 26% of teens aged 14-22 admitted to using ChatGPT for schoolwork in 2024, up from 13% in 2023 (Blake, 2025). A meta summary of recent surveys of students and faculty in higher education revealed that over three quarters of students use GenAI in their studies in some way (Mulford, 2025). Support for the tools is varied, and students and faculty alike noted the potential for GenAI to enhance learning and offer time savings in some contexts. However, they also expressed concerns that a heavy reliance on GenAI will decrease critical thinking and verbal communication skills (Mulford, 2025). Arguing the downsides of GenAI in the classroom, professors of art history Drimmer and Nygren (2025) flatly discourage the incorporation of GenAI in the classroom.

The impacts of the rapid rise of GenAI are also being carefully considered by leaders in the field of writing instruction. In 2023, the Association for Writing Across the Curriculum (WAC) published a statement regarding artificial intelligence, stressing the importance of writing as

prompt

a journal of academic
writing assignments

Volume 10, Issue 2 (2026),
pages 77–84.

DOI: 10.31719/pjaw.v10i2.278
Submitted August 31, 2025; accepted
May 22, 2026; published August 17,
2026.

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a means to deep learning and cognitive development. In this statement, the authors stress that the cognitive and social development that emerges through the act of writing “cannot be replaced by AI language generators” (Association for Writing Across the Curriculum, 2023, p. 1). In the same year, the Modern Language Association and the Conference on College Composition & Communication (MLA-CCCC) Joint Task Force on Writing and AI Members argued that writing is a process as well as a product and warned of several risks, to students, teachers, and the profession, of relying on GenAI tools for generating written text (MLA-CCCC Joint Task Force on Writing and AI, 2023). Risks to students include missing out on thinking and writing practice, an undervaluing of the act of writing, and increased lingual injustice; risks to teachers include increased labor to keep up with quickly evolving technologies; and risks to the profession include a devaluation in writing and language by society. Yet, notably, both statements also acknowledged the potential benefits of incorporating the use of GenAI tools in writing and encouraged faculty to consider how such technologies may benefit students in their thinking and writing.

Even with these many risks, GenAI is very present in our lives and professions. We contend that providing students safe spaces to experiment with using GenAI and to critically evaluate the tool’s output and their experience using it can assist with learning about both the content of the assignment as well as good practices of how to work productively and authentically with GenAI. The integration of GenAI into university education in thoughtful, careful ways presents an opportunity to advance digital literacy, communication, and critical thinking skills among students and faculty. We designed this assignment with this intention, recognizing that we are just at the beginning of the GenAI revolution and knowing that our particular assignment will likely change quickly as students, faculty, and GenAI itself evolves through their collective experiences.

Our Student Audience and Learning Goals

Here, we present an assignment that introduces students in a 100-level general education environmental science course at the University of Arizona (RNR 150 - Sustainable Earth) to GenAI tools. RNR 150 is a freshman/sophomore level survey course on climate change and its global impacts on societies, both past and present. It serves all University of Arizona campuses and is offered in person and in an asynchronous online environment with an average of 105 students per term. The course is offered through both main and online campuses. The students are predominantly pre-health, pre-business, and communications majors, with lower representations from STEM fields. Students display a wide knowledge base in subject expertise, digital literacy, communication, and critical thinking, as expected in a university with incoming students with highly variable levels of college preparation and limited previous formal writing experience. The assignment has been taught twice previously at the University of Arizona in 7.5-week online, asynchronous sections of the course, but it is adaptable for incorporation into large, entry-level classes such as ours.

In this assignment, students are introduced to using GenAI through a relevant, real-world assignment with low-stakes writing. Specifically, students are prompted to create an infographic using the free online tool Piktochart, following structured guidelines. Piktochart is a free, online platform that leverages AI models to create infographics, presentations, posters, and social media graphics. The assignment first asks students to create an infographic depicting water use in Arizona in a sector of their choosing (dairy, golf, industry, or residential). Students are also offered choice in the temporal period evaluated (1970s, 1980s, 1990s, or recent present) and the location of focus for their product (Yuma, Tucson, Phoenix, or Bisbee). Next, students must adapt the infographic, changing incorrect information and adapting it to reflect their own

design choices. In the final aspect of the assignment, students are asked to provide a short, written reflection describing what the AI tool got correct, what they needed to change, and their thoughts regarding their experience using the tool. Students are graded on successful creation of the infographic using Piktochart, their changes to the AI-generated product, and their reflection (see the [Evaluation Rubric](#) included with the assignment in the Supplementary Material).

This assignment incorporates several Writing Across the Curriculum principles (International Network of WAC Programs, 2014). First, by providing opportunities for agency in their deliverable, this assignment embodies the principles of engaging students in meaning-making and authentic learning experiences in their writing. Students are encouraged to carefully consider what the GenAI tool created based on the prompt and what needs to be changed to be sensible and appropriate. As well, because the topic of the activity focuses on the locally relevant issue of water use, this activity engages students in research and synthesis in a real-world, applicable way. The grading of the students' reflections reflects WAC principles by placing focus on the process of writing and thinking. This reflection is primarily graded on students' insights; points are not taken off for grammar or writing style, reducing the stakes for students to put pen to paper. The focus in grading is on process—the experience working with Generative AI and evaluating the outputs—rather than on the final product.

In this assignment, we attempt to pull back the curtain on AI use for students, providing them with the foundation for using the Piktochart tool (<https://piktochart.com>) effectively to improve their work and creative process. Our perspective is that computers are not humans, and it is the student's responsibility to instruct the computer and check its work, rather than allowing the computer to drive the creative process and final product. The assignment could easily be adapted for use at other universities by swapping in different regional or disciplinary issues, and it would work well in other course formats, including online synchronous and in-person.

Assignment Overview

This assignment appears in Module 2 of a five-module course, at the conclusion of a unit focused on present-day environmental changes and their impacts on human societies globally. Prior to initiating this assignment, students have engaged with a lecture unit introducing them to the concepts of the unique physical properties of water, the critical nature of water for survival of all living things, its uneven distribution around the globe, and how access to water shapes societies.

Students use Piktochart's GenAI platform to generate an infographic addressing changes in water usage in Arizona, tailored to a specific audience and time period. Each student has the ability to choose their own combination of variables; the prompt structure directs students to specify the type of water user, geographic location, and time frame, resulting in a focused and contextually relevant product.

Following the creation of the infographic, students are instructed to make substantive edits to the infographic in three domains: factual accuracy, stylistic presentation, and overall format. Students are expected to consider whether the information provided by the GenAI tool is valid and to verify it through consultation of trustworthy sources. These edits are documented through before-and-after screenshots, providing a transparent record of the revision process that is easy to assess in a high-enrollment course.

In addition to the design and revision components, students are required to compose a brief reflection detailing their design choices, the strengths and weaknesses of the GenAI output, and the rationale behind their editorial decisions and improvements in a one-page low-stakes written reflection. This reflective element is central to the assignment's pedagogical goals; it encourages

students to articulate their personal and human engagement with both the technology and the subject matter (O'Loughlin & Griffith, 2020). An optional extension invites students to supplement their infographics with information sourced from GenAI-powered research tools, further reinforcing the value of evidence-based communication. We strongly prefer that the students not use GenAI in preparing their reflection, as the reflection is the critical step where they consider how well the technology performs. By deemphasizing proper grammar and writing style in the reflection, we aim to encourage students to share their own thoughts.

Experiences and Outcomes

Faculty Experiences and Outcomes

This assignment has been taught twice, each time in a 7.5-week online, asynchronous course environment. The second time the assignment was implemented, we formally sought feedback from students regarding their experiences using GenAI and with the overall assignment through a for-credit chat post. To ensure students provided their honest feelings about the assignment and their experience, points were awarded for the chat post regardless of what was shared.

The initial implementation of this assignment in a formal classroom setting yielded several notable outcomes. The assignment was delivered without significant logistical challenges, and students were able to navigate the technical requirements with minimal need for support. Subsequent discussions revealed a high level of engagement, with students actively reflecting on both the capabilities and limitations of GenAI tools. From an instructional perspective, the assignment facilitated meaningful dialogue around digital literacy, information quality, and the evolving role of AI in academic and professional contexts.

The diversity of student majors contributed to an array of infographic products, each reflecting editorial choices and perspectives seemingly informed by their disciplinary standards. The assignment's structure, which balances guided prompts with opportunities for individual expression, proved effective in accommodating varying levels of prior experience with GenAI technologies. The grading process was streamlined for a high-enrollment class by the use of a detailed rubric, while the reflective component provided valuable insights into student learning and attitudes toward GenAI.

Student Experiences and Outcomes

Approximately half of the students indicated previous experience with GenAI platforms, while the remainder were encountering such technology for the first time with this assignment. Some students reported a previous deliberate avoidance of GenAI tools, citing concerns regarding the reliability and authenticity of AI-generated information. One student articulated this perspective succinctly, stating, "GenAI will never be as genuine as someone's own words."

Despite initial reservations, most students ultimately agreed that the assignment was interesting, enjoyable, worthwhile, and enlightening. Several students highlighted the utility of GenAI in structuring content. One student noted, "I liked that it generated section headers; they helped me organize my topic into clear sections." The assignment's requirement to edit the GenAI infographic for factual accuracy, stylistic coherence, and audience relevance gave students guideposts that shaped their evaluation of the GenAI output strengths and weaknesses.

Notably, many students observed that while GenAI was effective in generating visually appealing layouts and organizing information, the content often was factually incorrect, sometimes ridiculously so. Several students pointed out the GenAI-created photographs as particularly inaccurate; other students noted that editing the results was necessary for both factual accuracy and tailoring toward a particular audience. One student accurately quipped, "AI would not receive a good letter grade [on this assignment] on its own." Students also noted that GenAI out-

puts lacked a human voice, “struggl[ing] with the more imaginative aspects of design.” Another student shared the insight that “AI should be used as something more as a framework rather than a finished product.”

The reflective component of the assignment encouraged students to articulate their editorial decisions and to consider the value added by human intervention. It also helped students identify where their new roles and skills in writing and communication might lie when working with GenAI, such as creating a personal voice, identifying and focusing on the target audience, and verifying content accuracy. Students described the process of revising the infographics as an opportunity to enhance both the clarity and credibility of the final product.

Students were encouraged to share their honest thoughts on the assignment, and none shared a negative opinion, even when encouraged to do so. The prevailing sentiment was that the experience was helpful for revealing the weaknesses that can occur when using GenAI and how to approach them. Many students expressed appreciation for being forced to interact with the tools even when they did not want to and felt it was a worthwhile learning experience. Through this exercise, students reported increased confidence in their ability to use and critique GenAI tools, as well as a greater appreciation for the importance of human oversight in digital content creation. These responses were surprising, given that approximately 40% of students in other general education courses in our department have recently stated that it feels like cheating when they are required to use GenAI for written assignments. Overall, this assignment succeeded in fostering both technical proficiency and critical awareness, equipping students with foundational skills for navigating an information landscape shaped by emerging technologies that will likely be part of their professional toolkit.

Reflections and Future Applications

The outcomes of this assignment underscore the potential of GenAI as both a pedagogical tool and a subject of critical inquiry. By requiring students to engage directly with AI-generated content and to reflect on their editorial decisions, the assignment fosters a more connected understanding of the interplay between computer automation and human expertise. The reflective component serves to deepen students’ metacognitive awareness and to promote the development of transferable skills in information literacy and digital communication. Our experience suggests that, as GenAI continues to change students’ engagement with writing, WAC principles will need to be reconsidered.

Looking ahead, this is just the first of many revisions to this assignment. We have considered incorporating peer review to provide additional opportunities for collaborative learning and for exposure to diverse approaches to editing and design. Expanding the range of topics and audiences may further increase the assignment’s relevance and appeal, while continued integration of GenAI-powered research tools can reinforce the importance of evidence-based practice. Ultimately, this assignment aims to prepare students to navigate a communication landscape increasingly shaped by GenAI, equipping them with the skills and ways of doing we see as necessary for critical engagement and responsible authorship.

Acknowledgments

We recognize our students in RNR 150 *Sustainable Earth* at the University of Arizona. We appreciate all your thoughts, participation, and hard work. We thank Ben Pawlowski, UCATT Instructional Designer, for assistance in testing the first versions of the assignment and Scott Jones for incorporating the assignment into RNR 150 online. We thank the other authors of this special issue for their thoughts and feedback, and we are grateful to two anonymous re-

viewers for their insightful and helpful comments. We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O’odham and the Yaqui. Committed to diversity and inclusion, the university strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

ASSIGNMENT

Employing GenAI to Create an Infographic

Assignment Learning Objective

Analyze GenAI created data visualization (informatic) for fact, audience, and design (20 pts)

GenAI Platform

<https://piktochart.com/generative-ai>

Deliverables

An edited infographic co-created by you and GenAI tailored to a particular audience and place; documentation of your prompt; a short reflection on what GenAI did well and where it did not perform well, how a human editor improves GenAI products, and what the next set of improvements would be if you had more time and expertise.

Background Scenario

You are a program manager of a local non-government agency focused on water usage in the state of Arizona. You are responsible for creating communications materials for your website that show the changes in Arizona water usage over the past 50 years. Your audience includes four audiences: the general public and land managers across three settings (agriculture, wildlands, and urban). Your goal is to produce a website infographic for all the audiences that is factually correct and engaging.

The audience for this assignment is **the general public**; the purpose of this assignment is to **inform and motivate action by the audience**; and the organization and style of this assignment is **an infographic provided by a non-profit**.

Assignment Instructions

1. Register for a free account at <https://piktochart.com/generative-ai>
2. Once you have registered and logged in, navigate to the AI tool, called **Piktochart AI** (Figure 1).

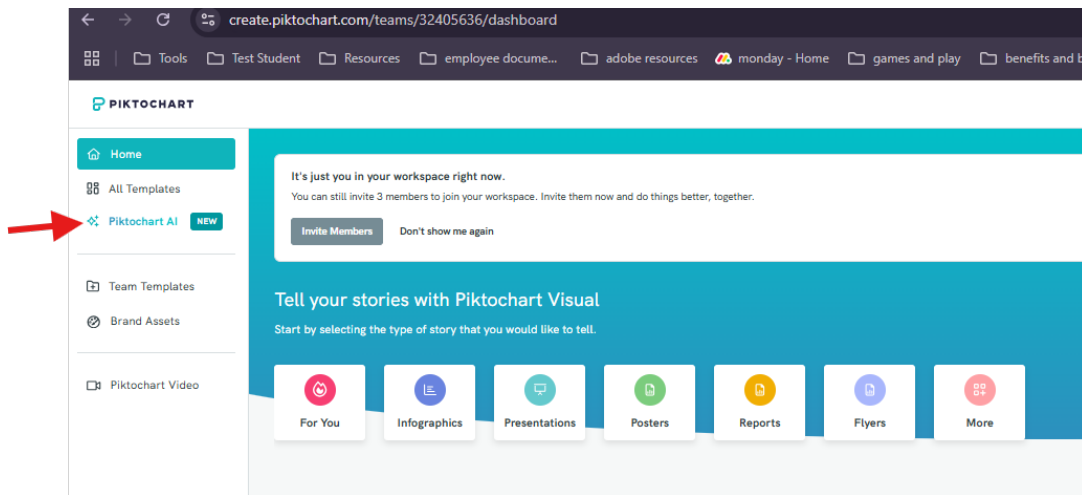


Figure 1. Screenshot of Piktochart dashboard. Arrow on left side points to link for Piktochart AI.

3. Provide the following text prompt to Piktochart AI. “Create an infographic about water usage by (1) in (2) from (3).” Populate the blanks 1, 2, and 3 with one of the choices provided for each number below.

Create an infographic about water usage by:	(1)	in	(2)	from	(3)
	dairy farms		Yuma		1965-1980
	golf courses		Tucson		1980-1995
	industrial parks		Phoenix		1995-2010
	residents		Bisbee		2010-2024

Tailor your prompt with these choices: (1, choose one): dairy farms, golf courses, industrial parks, or residents. (2, choose one): Yuma, Tucson, Phoenix, or Bisbee (3, choose one) 1965-1980, 1980-1995, 1995-2010, or 2010-2024

4. Edit the infographic on these three aspects: fact, style, and format tailored to your audience and personal aesthetic with a minimum of 1 change for each category, highlighting those changes.

The easiest way is to make edits on the Piktochart website then take a screenshot. You will take two screenshots: one of the infographic before you make any edits, one after you make your edits. Both screenshots will be included in your assignment (see [Sample Response](#) in the Supplementary Material). Label them “draft” and “revised infographic”.

5. Write a brief reflection (no more than 20 sentences) on how you chose your particular infographic design, what the GenAI algorithm did well, and what edits you made to improve the infographic. Use your own words filled with your personal voice and human emotion that is creative and insightful, not GenAI please. The focus here is on sharing your thoughts; you will not be graded on your writing style or perfect use of grammar.

6. Include your original GenAI prompt and the course GenAI citation in your write-up.
7. Format your assignment like the example (see [Sample Response](#) in the Supplementary Material), and remember to cite the GenAI platform per course policy please!

Supplementary Material

For supplementary material accompanying this paper, including a PDF facsimile of the assignment description formatted as the author(s) presented it to students, please visit <https://doi.org/10.31719/pjaw.v10i2.278>.

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