Engineering Educators Bringing the World Together
2025 ASEE Annual Conference & Exposition
Palais des congrès de Montréal, Montréal, QC • June 22–25, 2025 ASEE
Paper ID #48032

Evaluating engineering ethics case studies: Can generative AI replace the textbook?

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Abstract

While generative artificial intelligence (GenAI) has the potential to enhance learning through better access to information, it also challenges many of our traditional educational methods. The emergence of GenAI has left educators grappling with the need to adapt while also finding ways to integrate GenAI skills, critical thinking, and ethical awareness into their courses. In this study we investigated the use of GenAI to generate information on engineering ethics case studies and integrate GenAI into a course. First, we examined whether GenAI could produce comprehensive case studies as compared with the case studies from our course textbook. We then introduced review of GenAI-generated case studies into an engineering and computer science ethics course to emphasize critical thinking and awareness of GenAI issues. We found that GenAI was effective in producing basic information about well-known case studies but lacked the technical detail, ethical analysis, and professional judgment that was evident in the textbook case studies. When prompted, GenAI could provide information on environmental and societal concerns that were lacking in the textbook. In reviewing the GenAI-generated case studies, students reported increased confidence in their ability to recognize GenAI text and judge it for bias based on pre- and post-assignment surveys. While continued integration of GenAI into coursework is essential for developing graduates who can critically evaluate GenAI and use it effectively, the textbook remains a valuable resource for the course. Future steps include new assessments to better address the myriad of ethical issues introduced by GenAI.

Introduction

Generative artificial intelligence (GenAI) is changing all aspects of society, including education [1]. Students can now access GenAI to complete their homework and write essays [2]. The ease by which GenAI can produce standard assessments—used in many disciplines—is alarming [2, 3]. Educators have expressed concerns that GenAI is diminishing learning and negatively impacting development of basic skills. Educators are reassessing how best to develop and assess students' abilities to organize and communicate ideas, synthesize information, and think critically given the presence of GenAI [1, 4].

Despite the dire warnings that have arrived with GenAI tools, there are positive aspects and many feel that GenAI can be used beneficially in education [1, 5]. GenAI is useful for summarizing information, explaining complex topics, providing examples, and identifying references. Further, GenAI can be used to develop study guides and supplement information in textbooks. For students, using GenAI can feel empowering because it provides scaffolding and enhanced access to information [5, 6]. As a tutor, GenAI can adjust its level and tone to better suit the needs of a learner. For some students, GenAI may feel more relevant than older

educational resources such as textbooks. Beneficial use of GenAI has been demonstrated by Uddin et al. [7] where student responses to questions in a civil engineering course improved after using GenAI. Huang et al. [8] showed that students could use GenAI in an interactive and critical manner when completing electronic assessments for an undergraduate research methods course. While there are few published studies demonstrating the efficacy of GenAI assessments, we expect more in the coming years.

The disruptive nature of GenAI requires a proactive response from educators in higher education [1]. The availability of GenAI to serve as a substitute for student work must be addressed to ensure learning objectives are met. While the expectations and acceptable use policies for technology in a course should be clear, educators must recognize that GenAI is readily available to students and its use is difficult to control. Additionally, students should be learning to work efficiently with GenAI and be capable of critically evaluating GenAI output and processes [4]. Student also need to develop awareness of the ethical issues and professional responsibilities with using GenAI [9-11].

An engineering ethics course is an appropriate venue for addressing the issues of GenAI because ethical concepts and critical thinking are central. Ethics has been a standard part of the engineering curriculum for decades [12, 13]. There is flexibility in how engineering ethics courses are taught, and these courses typically integrate contemporary topics such as GenAI. Topics in engineering ethics courses include basic moral theories, principles of professional conduct, codes of ethics, and case studies [12]. Case studies are narratives that demonstrate ethical dilemmas around technical issues where relevant actors are faced with choices regarding their actions [14, 15].

The efficacy of using case studies in engineering ethics education is well-documented [12-15]. Case studies cover a range of engineering disciplines and present moral dilemmas that are engaging to students. Both fictional and historical case studies are used. Case studies may focus on microethics, where the actions taken by engineers in specific circumstances are evaluated, but they can also address macroethics that cover the broader social obligations of the profession [13, 16]. In an engineering ethics course, students read summaries of case studies and then analyze them by applying a code of ethics, evaluating actions or potential actions, and considering the impacts on society and/or the environment [12, 17]. These activities are responsive to 2023-2024 ABET Student Outcome 4 [18] and address concepts of social responsibility that are relevant in professional ethics. Frameworks exist for evaluating case studies, providing a process for students to follow [19]. GenAI could be integrated into ethics courses as part of the discussions around professional obligations. Additionally, ethics courses can use case studies that feature GenAI topics and explore the opportunities and limitations posed by GenAI [9, 20].

In addition to using engineering ethics education to cover the ethics and professional responsibilities of using GenAI, ethics courses could be used to develop assessments that promote critical thinking and ethical awareness of GenAI. Additionally, the use of GenAI may be helpful for summarizing information and providing examples of ethical concepts and historical events that may be unfamiliar to students. Textbook readings can be detailed and challenging for students to read—it may be possible to leverage the summarizing capabilities of GenAI to provide scaffolding for students to access important information. Such opportunities were explored in this research.

Study Objectives and Research Questions

The purpose of this study was to integrate critical thinking about GenAI into an engineering and computer science ethics course. First, we wanted to better understand how well GenAI can create content on engineering ethics case studies. Second, we wanted to engage students in reviewing and evaluating AI-generated case studies to encourage critical thinking and ethical awareness of GenAI. The following research questions were addressed in our study.

1. Can GenAI describe engineering ethics case studies in a manner that is detailed and comprehensive as compared with case studies presented in the textbook?
2. How does evaluation of AI-generated case studies influence students' view on GenAI and their perceived ability to recognize issues with GenAI and develop judgement in assessing GenAI text?

Methods

The study was conducted in two parts. First, we reviewed and compared GenAI case studies with the case studies from the textbook using a rubric. Next, evaluation of GenAI case studies was introduced into an engineering and computer science ethics course where surveys were conducted before and after an assignment to assess its efficacy.

GenAI Case Study Evaluation

GenAI was used to produce engineering ethics case studies. The following case studies were used: Hurricane Katrina, Deepwater Horizon/Macondo Well Blowout, and Flint Michigan Water Crisis. These case studies are well-known, routinely used in ethics courses, and described in the most recent edition of the textbook [21] that we use.

The following GenAI tools were used: ChatGPT-4o, Gemini 1.5 Pro, and Microsoft Copilot. First, a simple prompt was used (Table 1). Then, a more detailed prompt was used that was based on ABET [18] and the “CARE” case study evaluation method [19]. Detailed prompts were entered using a single prompt in one chat session and then, in another chat session, the detailed prompt was used again where each question was entered in a separate prompt. No information was added to the chat session before entering the prompts listed in Table 1. Generative-AI output

produced in December 2024 was used in our final assessment. The case studies from GenAI and the course textbook [21] were assessed using a rubric (Table 2).

Table 1. Prompts used in GenAI chatbots to obtain engineering ethics case study descriptions.

Prompt type	Text entered[a]
Simple	Write an engineering ethics case study on the Hurricane Katrina disaster for a college course.
Detailed[b]	Write an engineering ethics case study on the Hurricane Katrina disaster for a college course. Address the following questions. • What are the relevant facts and events that occurred? • Which technical details were important? • Who were the stakeholders and why were they stakeholders? • Which sections of the NSPE Code of Ethics were violated and why? • What were the ethical responsibilities of the engineers involved? • What were the professional responsibilities of the engineers involved? • Which moral principles were relevant? • Were there any institutional or legal issues that should be considered? • Who was responsible and should be blamed? • Which potential actions could have changed the outcome? • Can you describe any global, economic, environmental, or societal concerns? • What role did racism play? • What role did redlining play? • Can you describe any policy changes that occurred after this event? • Which engineering practices changed after this event?

[a]The prompts shown are based on the Hurricane Katrina disaster. Similar prompts were used for other case studies. [b]Adapted from ABET [18] and the "CARE" case study evaluation method [19].

Table 2. Rubric used to evaluate engineering ethics case studies, as based on ABET [18].

Category	Excellent (3)	Adequate (2)	Deficient (1)
Establishes case study events, facts, and details	Case study is fully described, and includes many facts and details	Case study is described, and includes many facts and details of events	Case study is missing facts and details, so the case study is unclear
Recognizes ethical and professional responsibilities	Ethical and professional responsibilities are identified and fully connected to the actions	Ethical and professional responsibilities are identified and are connected to the actions	Ethical and professional responsibilities may be identified but are not connected to the actions
Makes informed judgements in engineering situations involving ethics	Judgement is used to evaluate actions and inactions and how these met or did not meet the ethical and professional responsibilities	Actions and inactions are described but are not interpreted or connected to ethical and professional responsibilities	Actions and inactions may be described but these are not connected to ethical and professional responsibilities
Considers global, economic, environmental, and societal impacts	Relevant impacts and concerns are identified and fully explained	Relevant impacts and concerns are identified but not explained	Relevant impacts and concerns are not identified, or their introduction is brief

Course Assignment and Surveys

The assignment was completed in an undergraduate engineering and computer science ethics course that was taught online during the summer of 2024. At that time, 24 students were enrolled. This course is required for undergraduate engineering and computer science majors, but it is open to all students and does not have pre-requisites. This course satisfies general education requirements for ethics and for diversity and inclusion. We use this course to assess ABET Student Outcome 4 that addresses ethical and professional responsibility in engineering [18].

The assignment involved reviewing AI-generated text for an engineering ethics case study and comparing it with the case study in the textbook that had been read previously as part of an earlier assignment. The case study used was the Deepwater Horizon/Macondo Well Blowout disaster. Three versions of AI-generated case studies were presented to the students; these were generated using ChatGPT, Co-Pilot, and Gemini. Students had the option to use any of the AI-generated case studies presented or to generate their own case study using GenAI.

The format of the assignment was an online discussion. Students were required to address the prompt in a post (minimum 400 words) and then respond to two posts written by other students. The prompt consisted of two parts. First, students were asked to consider the accuracy, comprehensive nature, and potential bias of the AI-generated case studies in comparison with the textbook. Next, students were asked to discuss any concerns they had with using GenAI as a source for information for engineering ethics case studies.

To assess student views on AI and the potential impact of the assignment, a survey was conducted the week before the assignment (pre-survey) and a second survey was conducted the week after the assignment (post-survey). The survey questions were identical before and after the assignment. The survey questionnaires contained 10 statements that students responded to using a Likert scale and three open-ended questions about AI (See Appendix 1). The following Likert scale was used: strongly disagree, disagree, neutral, agree, and strongly agree. There were also questions about major and class standing. We chose not to collect demographic data to preserve the anonymous nature of data collection. The survey questionnaires were voluntary, electronic, anonymous, and approved by our Institutional Review Board (IRB) prior to deployment. Students in the class were recruited into the study by email and by the course site. Students earned a few extra credit points for completing each survey questionnaire.

Survey data were evaluated to better understand student views of GenAI and assess assignment efficacy. Responses to open-ended questions were coded to characterize topics and how inclusion of these topics changed before and after the assignment. Coding of open-ended responses was done by reading each response and characterizing the themes present in each response. The themes included topics such as privacy and bias. The themes were then tallied for all of the responses to each question. Visualization of Likert responses was done using the

"likert" package in R. Differences in Likert responses to survey statements were assessed for significance using the non-parametric Wilcoxon Signed-Rank test in R version 4.4.2. Likert responses were quantified using the following interpretation: Strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, and strongly agree = 5.

Results

AI-generated Case Study Evaluation

Assessment of the case studies from GenAI and the textbook provided a basis of comparison (Table 3). The case studies generated using different GenAI tools and different events had similar strengths and weaknesses. Accordingly, the assessment scores were pooled by the prompt type: simple prompt, detailed single prompt, and detailed sequential prompt.

Table 3. Results of assessment of case studies from GenAI and the textbook. Scores were assessed as follows: 1 = deficient, 2 = adequate, and 3 = excellent.

Category	Simple prompt	Detailed single prompt	Detailed sequential prompt	Textbook
Establishes case study events, facts, and details	1	1	2	2
Recognizes ethical and professional responsibilities	1	2	2	3
Makes informed judgments in engineering situations involving ethics	1	2	2	3
Considers global, economic, environmental, and societal impacts	1	2	3	1

The case studies generated using a simple prompt in GenAI were deficient, receiving the lowest scores in all categories (Table 3). Few facts and details were presented in the responses of GenAI. The technical descriptions were underdeveloped and lacked depth, often containing vague and ambiguous statements (e.g., "levee system was underdesigned"). Ethical and professional concepts were identified but were not connected to the case study. The connections between engineering responsibilities, actions, and the injuries suffered by others were unclear. Some environmental and societal concerns were presented, but these were presented without evidence or explanation. The case studies from ChatGPT were most specific about engineering and ethics issues while the case studies from Gemini included more information on environmental impacts and societal concerns. The case study descriptions for Hurricane Katrina and the Deepwater Horizon were slightly more detailed than the descriptions for the Flint Michigan Water Crisis.

Using a more detailed but still a single prompt yielded better results (Table 3). There were more facts presented and better descriptions of events. The technical detail was improved but was still lacking in coherent explanations. There were more ethical concepts presented, but these were

still vague and lacking explanations. Blame was assigned but this blame lacked specificity. For example, engineers were blamed, but it was not clear which engineers were being blamed. The case studies from Gemini listed relevant parts of the NSPE Code of Ethics in the analysis, while the case studies from ChatGPT and Co-Pilot did not. The case studies from Gemini and Co-Pilot were more specific about stakeholders and policy changes after the event than the case studies from ChatGPT.

When the detailed prompt was entered sequentially, with each question being added in a separate prompt, the results were more detailed (Table 3). The technical explanations improved although jargon was used in some responses. The ethical issues were explained, and the evaluations were consistently done in relation to specific parts of the NSPE Code of Ethics [17]. The responses contained information on specific stakeholders and policies that were developed after the disasters. Unfortunately, some of the information presented was repetitive and could be found in the responses for different prompts. Also, this method of using GenAI with each question being placed in a separate prompt produced a longer case study description (losing its summary characteristics). Copilot provided a list of references with each response while ChatGPT and Gemini did not. When asked, Gemini provided a list of suggested search terms and organizations that would be expected to have information on the case study. ChatGPT was able to provide a list of suggested references when asked.

The case studies from the textbook provided excellent narrative and connections between the case study events and engineering profession. However, the facts and details provided about the case studies were deficient. Notably, some of the facts and figures were estimates and did not reflect the most current information (even at the time of publication). Some of the information presented was summarized from authoritative documents such as the ASCE panel report on the Hurricane Katrina disaster [22]. The textbook case studies provided excellent technical summaries without going into too much detail. These case studies also focused on the actions of the engineers involved and identified where there was a breach of duty in each case. Organizational shortcomings were also discussed. On the negative side, there was almost no mention of environmental and societal impacts. For example, the impacts of historic redlining and systemic racism were not considered in any of the case studies. The textbook did consider economic impacts on corporations (e.g., cost of the oil spill for BP). The textbook also considered the benevolent responses of engineers and corporations (e.g., in responding to disasters).

Course Assignment and Survey

All 24 students participated in the pre-survey, while only 21 students participated in the post-survey (Table 4). There was a twenty-fifth pre-survey response, but it was only partially completed so it was eliminated from the analysis. Most students in the class were engineering

and computer science majors (21 out of 24 students), and most students were seniors (17 of 24 students).

Table 4. Number of students responding to surveys by major and class standing.

Major	**Pre-survey responses**	**Post-survey responses**
Engineering & computer science	21	19
Other	3	2
Class standing	**Pre-survey responses**	**Post-survey responses**
Sophomore	3	2
Junior	4	4
Senior	17	15

The survey Likert responses allow us to verify the efficacy of the assignment (Fig. 1). Based on increases in the percentage of affirmative responses, it appears that students' confidence in recognizing GenAI text and judging it for bias increased following the assignment (affirmative responses increased 25% and 29%, respectively). These increases in affirmative responses were significant (p-value < 0.05), suggesting that the assignment was successful in helping students to realize that they can identify GenAI text and evaluate it for bias. Interestingly, there were not clear issues of bias in the GenAI text, but the assignment seemed to raise awareness of potential bias.

Although confidence in recognizing GenAI text and assessing it for bias increased, student perception of their ability to judge GenAI for accuracy did not change appreciably after the assignment (< 5% change). More than half of the students responding reported confidence in their ability to judge GenAI statements for accuracy (Fig. 1). This result is somewhat surprising since the assignment specifically asked students to review AI-generated case studies for accuracy. Perhaps a different result would have been obtained if there had been more errors in the AI-generated case studies or if the basis of comparison had contained more facts and figures to use in the comparison.

Students’ self-reported understanding of the ethical concerns and professional responsibilities of GenAI were high (> 85% affirmative) and did not change appreciably following the assignment (< 5% change). This result is not surprising because the assignment did not specifically address these issues. This result is consistent with our previous study with civil engineering students where 81% of students reported being familiar with the ethical concerns of AI [11]. Future assignments should address GenAI ethics and professional responsibility to confirm students’ understanding.

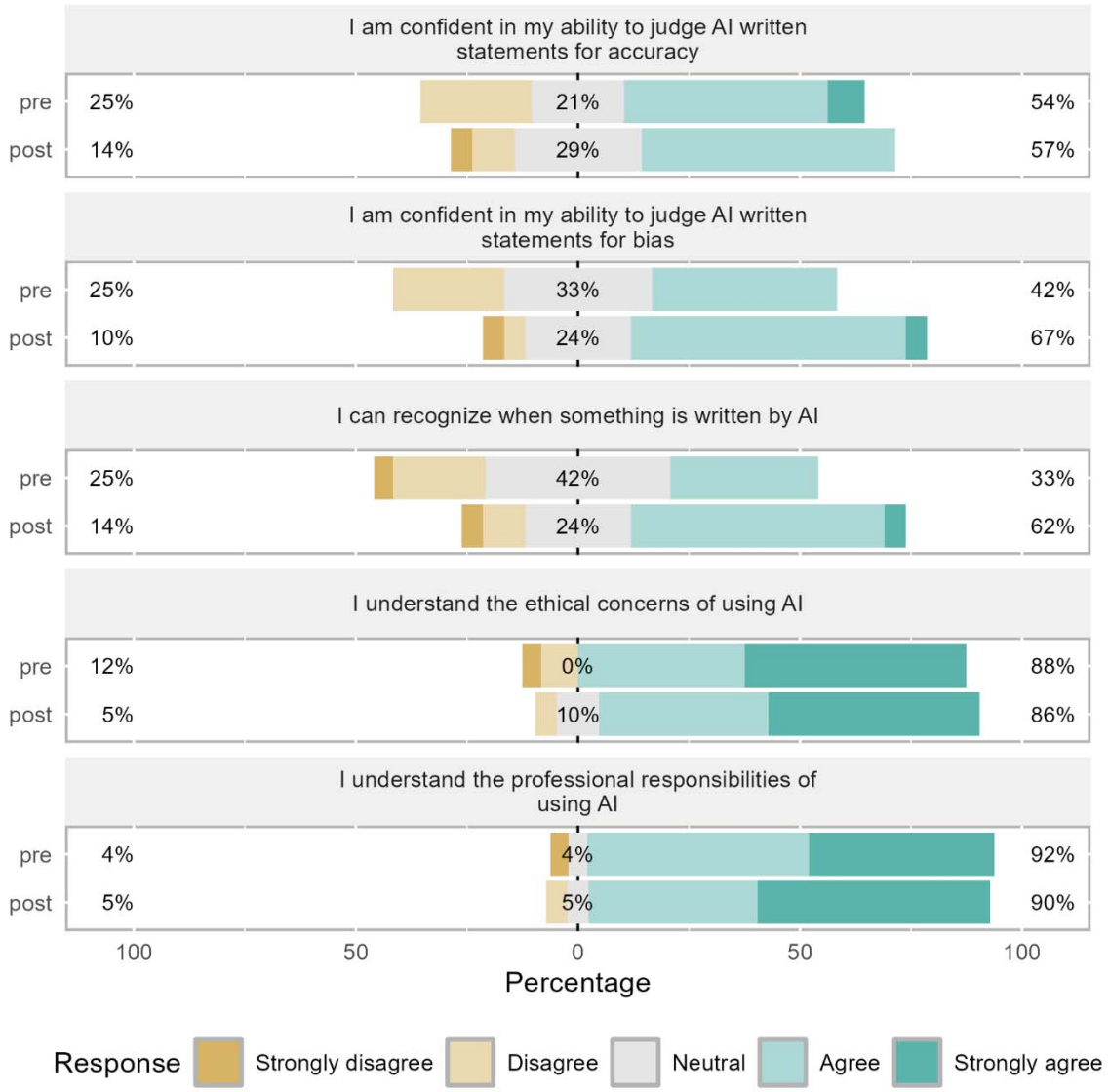

Figure 1. Student responses to survey statements about their understanding of GenAI.

The survey results confirm student perceived understanding of GenAI (Fig. 1). The survey Likert responses also provide insight into how students view AI in academic and professional settings (Fig. 2). These views did not change significantly before and after the assignment (p-value > 0.05). Only one-third of students thought that students should be using AI. A higher percentage of students (48 - 58%) thought that engineering and computer science professionals should be using AI. Self-reported comfort levels regarding use of AI in both academic and professional settings decreased following the assignment although the decreases were not statistically significant (p-value > 0.05). Self-reported comfort in academic settings decreased from 62% to 48%, while self-reported comfort in professional settings decreased from 67% to 48%. It was not clear why the assignment potentially impacted students' comfort in working with AI, but perhaps the assignment made them more aware of issues. In future studies it would be helpful to ask

students to explain the basis for their responses. Students reported having good understanding (67%) of how AI is used in engineering and computer science and responses did not change appreciably after the assignment.

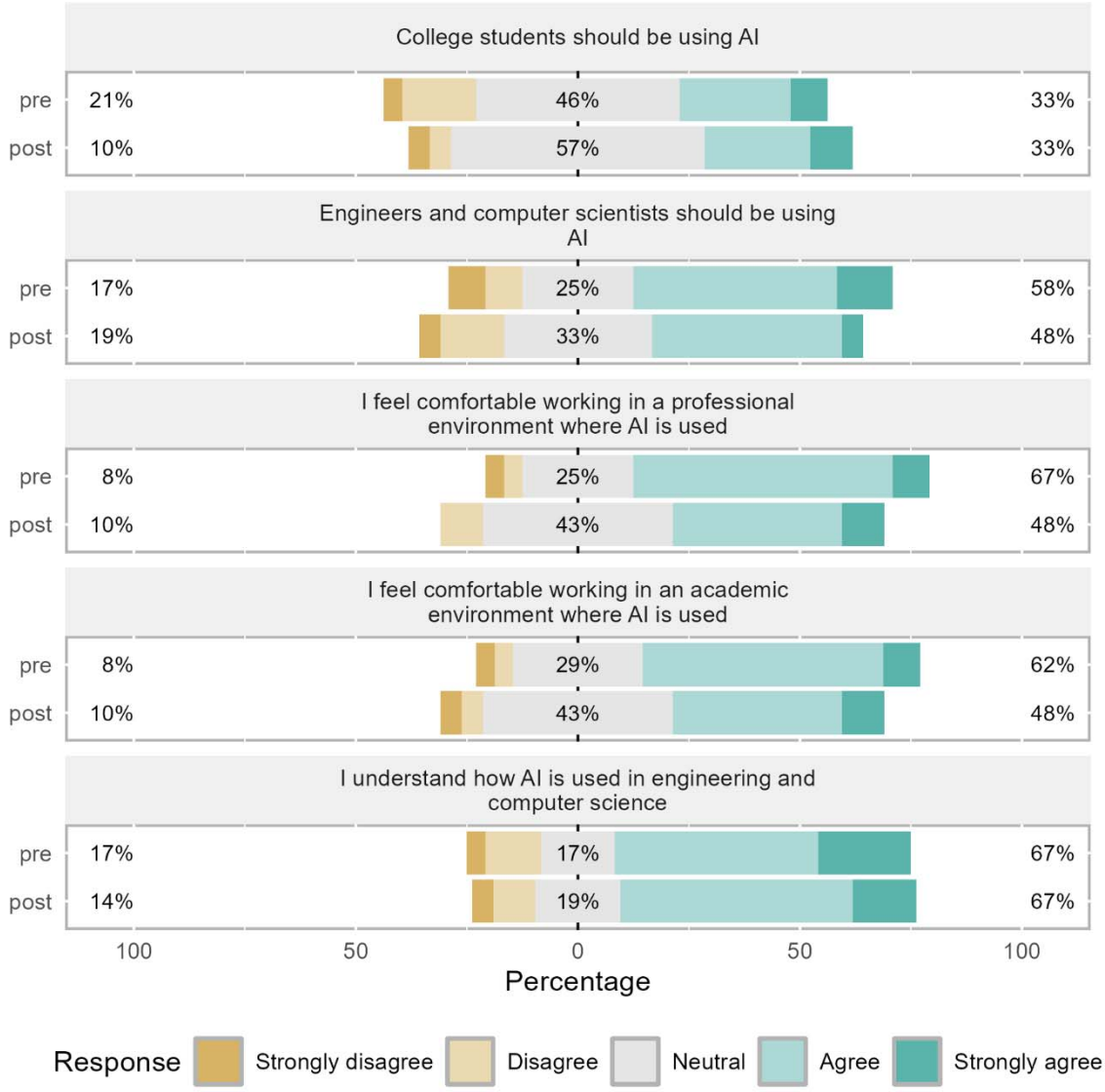

Figure 2. Student responses to survey statements about GenAI in academic and professional settings.

Student responses to open-ended questions reveal their viewpoints on GenAI that changed somewhat after the assignment. When asked about their most pressing GenAI concerns before the assignment, students frequently reported being concerned about an over-reliance on GenAI and generation of inaccurate information (Fig. 3). These topics were also found in the post-survey responses, but concerns about an over-reliance in GenAI decreased while concerns about inaccurate information and bias increased. The students reported various other concerns (e.g., job loss) although these concerns were reported less frequently.

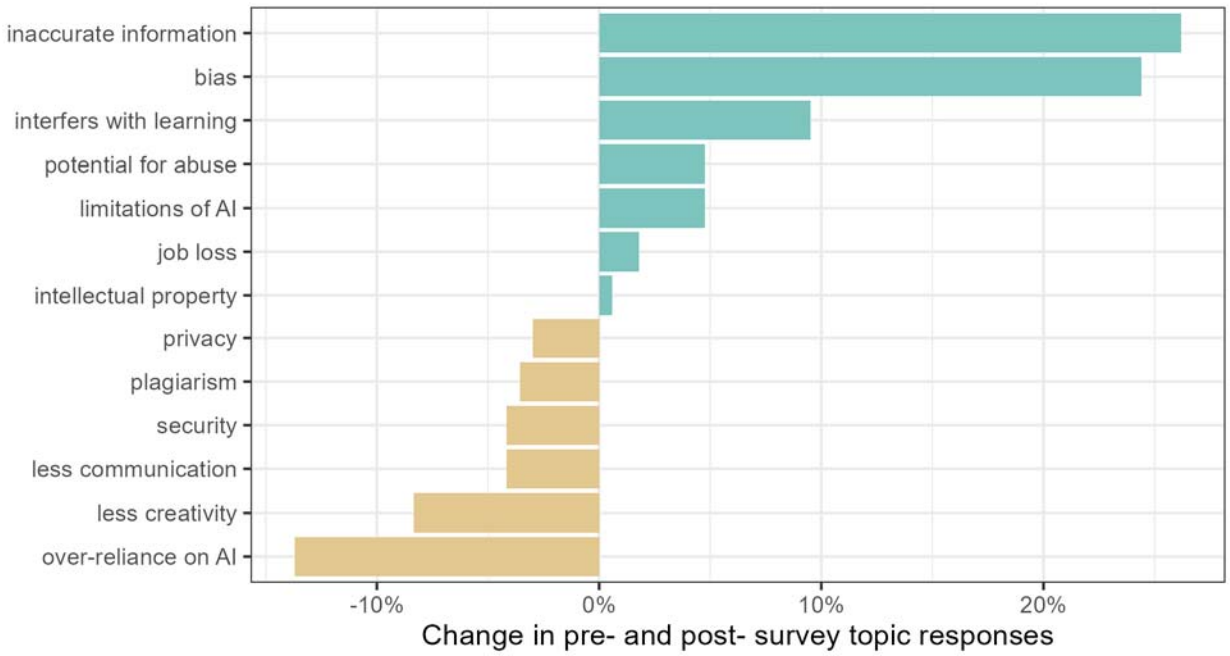

Figure 3. Changes in topics covered in responses to a question about students' most pressing concerns of AI. Positive changes represent topics more frequently covered in post-survey responses. Negative changes represent topics more frequently covered in pre-survey responses.

Responses to an open-ended question about the benefits of using AI in engineering and computer science were more varied than the question about concerns (Fig. 4). The most consistent responses before the assignment were about using AI for research, brainstorming, and writing code. After the assignment, students still prioritized research as a good way to use AI, but the responses appeared to pivot and prioritize using AI to gain efficiency and in automating tasks. It is possible that the use of AI for generating engineering ethics case studies prompted students to expand their thinking about AI and how it can be used to make gathering of information more efficient. Conversely, the post-survey responses placed less emphasis on the use of AI for learning. It would be beneficial to work with students to gain a better understanding of how they view AI as a tool in engineering and computer science.

Responses to an open-ended question about the disadvantages of using AI in engineering and computer science were more varied in the responses before the assignment than in the survey after the assignment (Fig. 5). After the assignment students were more consistent in their responses. In both cases, the topics of inaccurate information and over-reliance on AI were well-represented in the responses. After the assignment, the topic of bias increased in the responses and the topic of privacy decreased. It could be that simply asking students to evaluate AI text caused them to be more aware of potential bias in the information AI produces.

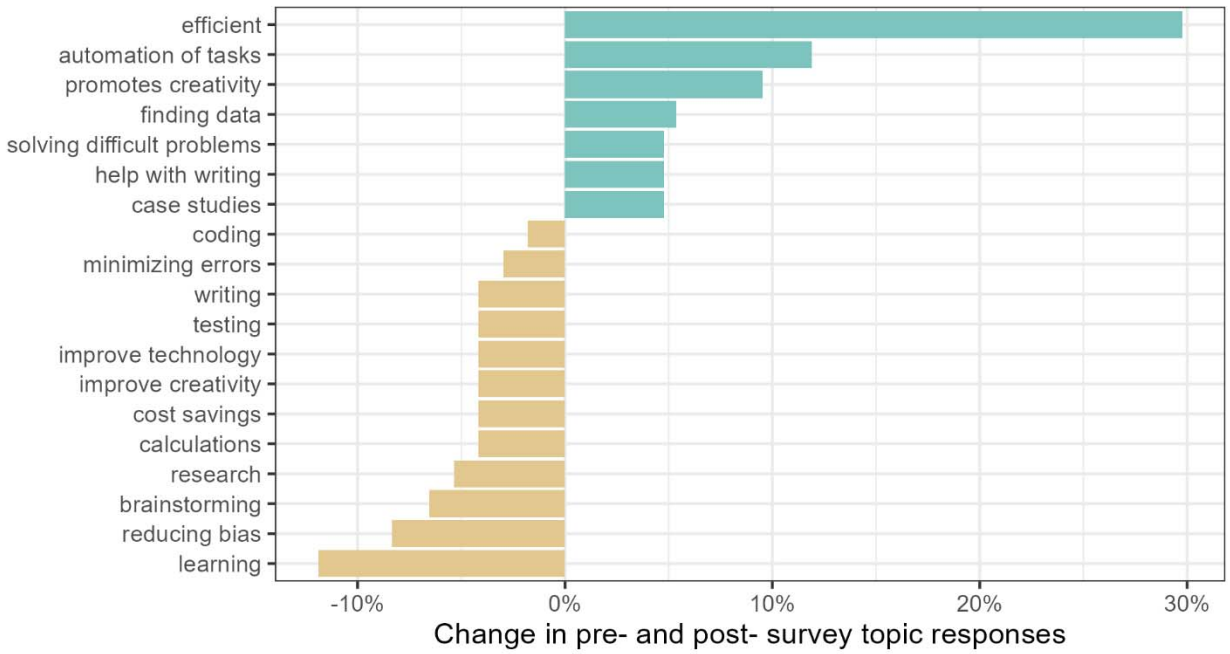

Figure 4. Changes in topics covered in responses to a question about the benefits of using AI in engineering and computer science. Positive changes represent topics more frequently covered in post-survey responses. Negative changes represent topics more frequently covered in pre-survey responses.

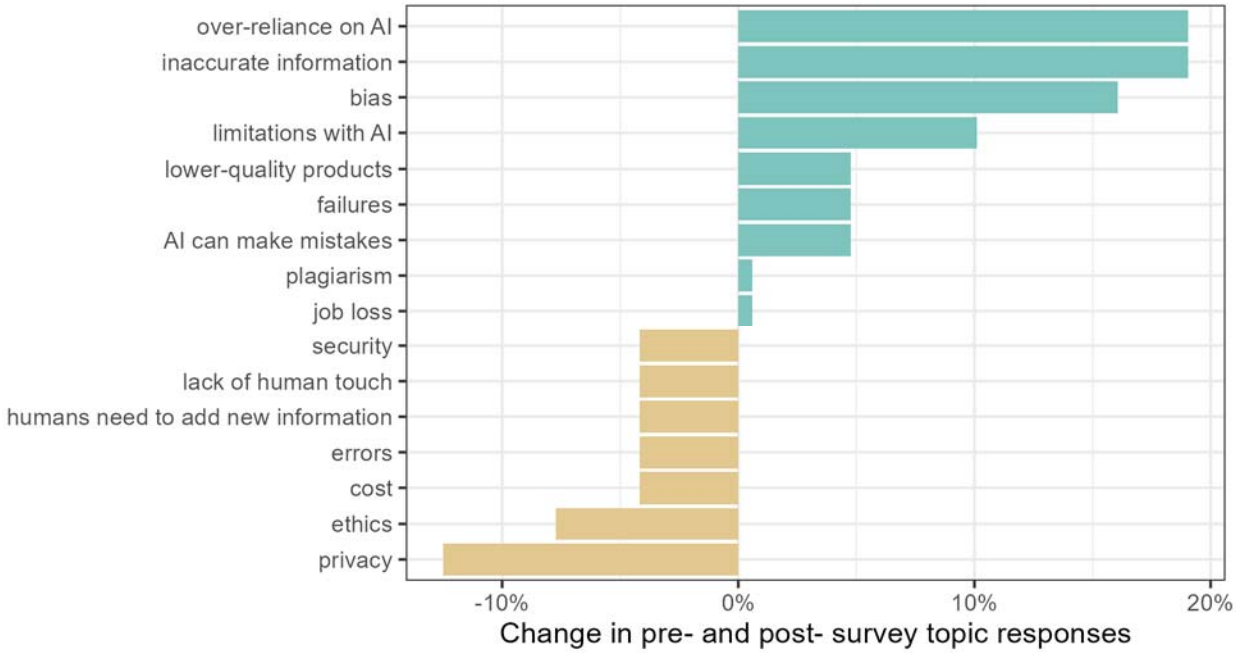

Figure 5. Changes in topics covered in responses to a question about the disadvantages of using AI in engineering and computer science. Positive changes represent topics more frequently covered in post-survey responses. Negative changes represent topics more frequently covered in pre-survey responses.

Discussion

AI-generated Case Study Evaluation

Given the strengths and weaknesses of GenAI, we find that its best used to provide summaries of case study information. GenAI can be used for confirming and strengthening prior understanding or for getting an overview before reading more detailed information. Information from GenAI must be compared with other sources to verify accuracy. Information from GenAI must also be scrutinized for bias. In our study we did not find inaccurate information. In the course, one student noticed that the description of BP's handling of the oil spill seemed unnecessarily favorable. It is possible that bias will be present in GenAI case studies if it relies on information published by the companies, organizations, and institutions involved.

An advantage we found in using GenAI for case study evaluation was to locate information missing in textbook descriptions. This experience suggests that one potential role for GenAI in education is to address gaps or deficiencies in existing course materials. In an engineering ethics course, the use of GenAI can provide additional information on the environmental and societal impacts of engineering projects. GenAI could also be used to locate information about the policy implications of historic events and long-term impacts of engineering failures. The case studies featured here had far-reaching, multi-faceted effects on the communities impacted. While the technical and decision-making processes featured in the textbook are important, GenAI can be useful for developing a more holistic view of engineering case studies.

Our study demonstrated that the best results from GenAI were obtained when short, directed prompts were used in a chat session. For example, we found that it was best to inquire about ethical responsibilities and professional responsibilities in separate prompts rather than to combine them in a single prompt. The prompts in Table 1 provide guidance and could be expanded further.

The study raises questions about the continued use of case study analysis in an ethics course. GenAI can summarize the basic information needed to learn about a case study, but it can also perform case study evaluations that is typically part of standard assessments such as an essay [14]. Assessments must change [2]. We anticipate future studies where we develop and test strategies to guide student use of GenAI for case study analysis.

There are a few limitations in this study. First, GenAI technology is evolving and it is likely that future results will be an improvement over what we observed here. Future and improved versions of GenAI may be sufficiently advanced to warrant its consistent use—reassessment of GenAI use in education will need to occur over time. Another limitation of this study was that we used our course textbook as a reference for comparison. Other sources of case studies could be used in future comparisons [14]. Investigation of other GenAI tools might also be helpful. Finally, we

limited our study to case studies that are well-known and well-documented. The results may be different for case studies that are more recent or for case studies with less available information.

Course Assignment and Survey

While the study was small (24 students) and limited to a single class and assignment, the study demonstrated that students benefit from assignments that address critical thinking and GenAI. Developing evaluative judgement of GenAI is a skill that has been advocated by others [4]. In this study, student awareness of bias appeared to increase just by asking them to look for it. Future activities could be crafted to further demonstrate the importance of GenAI and inaccuracies.

One interesting survey result was that students believe the use of GenAI is appropriate for professional engineers and computer scientists; however, they were not confident that students should be using GenAI. This result, which is consistent with our previous work [11], suggests that students need guidance around the appropriate and ethical use of GenAI. Clarity of institutional policies and norms has been identified as an important issue for students [5, 10].

This study joins a growing body of evidence of educational activities and assessments that have been transformed to recognize the presence of GenAI, which is critical work for educators [7, 8]. Future work includes educational activities and assessments that leverage GenAI for learning and address the ethical and professional responsibilities that come with using GenAI. Our survey questions captured general student opinions about GenAI. Future efforts will further explore student experiences and investigate why students carry such opinions about GenAI.

Conclusions

GenAI ethics and professional responsibilities need to be addressed in engineering education. In this study, we addressed this need by engaging students in critically evaluating case studies obtained from GenAI and from the course textbook. Students were asked to evaluate GenAI case studies for completeness, accuracy, and bias. Although the GenAI case studies were generally accurate and unbiased, the assignment appeared to increase student awareness of potential issues. In reviewing case studies from GenAI, we found them deficient in technical information and lacking the moral and professional judgement that was present in the textbook. While the case studies from GenAI provide high-level summaries that might be helpful, they are currently not an adequate replacement for case studies written by professionals. Thus, the textbook remains an important aspect in our course because it provides guidance on developing the ethical and professional judgement that is necessary to become a good engineer.

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Appendix 1 – Student Survey Questionnaire

1. Please rate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I can recognize when something is written by AI					
I am confident in my ability to judge AI written statements for accuracy					
I am confident in my ability to judge AI written statements for bias					
I understand the ethical concerns of using AI					
I understand the professional responsibilities of using AI					
I feel comfortable working in an academic environment where AI is used					
I feel comfortable working in a professional environment where AI is used					
I understand how AI is used in engineering and computer science					
College students should be using AI					
Engineers and computer scientists should be using AI					

2. What is your most pressing concern about AI?

3. What are the benefits of using AI in engineering and computer science?

4. What are the disadvantages of using AI in engineering and computer science?

5. Are you majoring in engineering or computer science?
   Yes
   No

6. What best describes your class standing?
   Freshman
   Sophomore
   Junior
   Senior
   Graduate student/5th year blended student