Student/Faculty Partnerships to Teach Computing Ethics Beyond the Computer Science Classroom

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Abstract

Technology, machines, and AI significantly impact nearly every aspect of our daily lives. Yet, computing ethics knowledge remains largely inaccessible, especially to non-computer science students. To address this, we designed an inclusive, interdisciplinary course on computing ethics and pedagogical principles. As part of this course, students (N = 21) partnered with seven non-computer science faculty to co-create a computing ethics module for each of their courses. Building on the course's diverse content, rich class discussions, and engaging activities, students shaped the learning experiences of future students through the successful co-creation of curricular materials. Student reception of our course was overwhelmingly positive, though some students noted an imbalance in how responsibilities were shared with faculty. Through our novel approach to curriculum development, a broader range of students will have access to critical knowledge affecting their daily lives. By teaching students how to teach others, our approach expands who engages with computing ethics and helps democratize knowledge about technology and its social and ethical implications.

CCS Concepts

• **Social and professional topics → Computing education**.

Keywords

Ethics; Course Design; Pedagogy; AI; Broadening Access

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1 Introduction

The rapid advancement of artificial intelligence (AI) and computational technologies demands the development of a more informed citizenry capable of understanding and navigating their ethical and social implications. To address this critical need, our work aims to broaden access to knowledge about computing ethics by embedding relevant ethics content across the undergraduate curriculum. However, creating such curriculum presents significant challenges, particularly when faculty in other disciplines may lack the specialized knowledge required to effectively teach computing ethics concepts.

Our approach addresses these barriers through curriculum co-creation partnerships between faculty and students. This collaborative model not only lowers the knowledge barrier for non-CS faculty but also promotes more equitable learning experiences [5] and enhances overall educational quality [21]. To prepare students for these co-creation partnerships, we designed a novel course that provides computing ethics content while also teaching the students pedagogical processes. Recognizing the value of our collaborative approach, we applied curriculum co-creation principles to the development of this preparatory course itself, both to enhance the student experience and to meet learners where they are in their personal journey.

To ensure broad appeal and accessibility for students of all backgrounds, we grounded our course design in principles of inclusive curriculum design. This paper presents the design of our ethics and pedagogy course and reports on students' experiences participating in this innovative educational approach. Through this work, we demonstrate how curriculum co-creation can serve as an effective strategy for expanding computing ethics education beyond traditional computer science boundaries while fostering more inclusive and engaging learning environments.

2 Related Work

Our work is modeled after [8], who designed a computer science ethics course in which students developed ethics curricula to integrate into other computer science courses. Like many other computing ethics efforts, the focus is on educating computer science students, often by integrating ethics content across the CS curriculum [4, 11, 14–16].

Computing ethics needs to be taught more broadly, integrating it "across the curriculum," not just CS or other STEM courses [23]. However, a recent analysis of AI ethics education found no such interventions [30]. Another review of ethics in CS education found that only 10% of the reviewed articles described courses intended for or included non-computing majors [3]. Courses on engineering ethics often address many of the same issues as computing ethics. Tomlin and Mogul integrated many pedagogical traditions to teach ethics and science and technology studies to STEM majors [27].

However, the target audience was engineers and other STEM majors. While the engineers may often be the people building the new technologies, many others need to become informed about the implications of technology because it is now affecting all aspects of life. To our knowledge, there are no other examples of educating undergraduate students of all backgrounds on computing technologies and its ethical implications.

3 Approach Overview

Our goal is to engage more students in learning about the implications of AI by integrating computing ethics curricula into courses across the undergraduate curriculum. Since integrating computing ethics into courses can be challenging for faculty, we educate the faculty and partner them with students. Our approach involves four phases, described below. We are currently between phases 3 and 4, and we are reporting our experiences from the phases where students co-created ethics curricula—phases 1 and 3.

3.1 Phase 1: Curriculum Co-creation

In Phase 1, we engaged in a curriculum co-creation process to develop a new course on computing ethics and principles of pedagogy. "Co-creation" describes measures to include students as partners in a wide range of educational practices [5]. Because co-creation is founded on **respect**, **reciprocity**, and **shared responsibility**, it disrupts a hierarchical positioning of faculty as knowers and agents, and students as passive recipients of knowledge. This results in meaningful growth for students from minoritized backgrounds related to recognition of themselves as knowers, and the development of confidence in sharing their views in academic contexts [6, 7].

In the summer of 2024, we formed a student/faculty partnership to co-create an entire course entitled "Teaching and Learning Machine Ethics" (TLME). Beginning with only loosely defined learning objectives and a general organizational structure – ethics content in the first half and pedagogy in the latter half – we knew that students would complete a final group project co-creating curricular materials for other courses in partnership with additional faculty members. Through regular meetings multiple times per week, we collaboratively developed the syllabus, selected appropriate readings, and designed course activities. These sessions involved deep conversations about assignments and activities that would be engaging and relevant to students while supporting their preparation for class and comprehension of course material. Our discussions strategically leveraged student perspectives on what constitutes engaging and relevant content alongside faculty expertise in curriculum development and domain knowledge.

Throughout this collaborative process, we remained focused on creating an inclusive learning environment where **all voices** are valued, material felt **relevant and accessible**, students experienced a **sense of belonging**, and everyone felt **safe and comfortable**. This commitment to inclusivity directly informed our decisions about content selection and the design of assignments and activities. Rather than lowering expectations, inclusive design makes rigorous learning more accessible [13] while creating conditions for active student-driven learning, which has been shown to improve engagement and outcomes, especially for students who are not the normal audience [12, 25]. The result of this process is our course design, which is detailed in Section 4.

3.2 Phase 2: Faculty Workshop

Developing computing ethics curricula requires some level of knowledge in ethics, CS, pedagogy, and domain-specific content. Many non-CS faculty do not have sufficient knowledge about computational technologies and their ethical implications, nor the time and resources to develop this expertise, making the integration of computing ethics into their courses difficult. Partnering faculty with CS students to co-create the materials reduces this barrier.

To support this, five partnering faculty participated in a one-day workshop and completed a worksheet summarizing their course and how computing ethics topics could be incorporated into it. This gave partnering faculty an early foundation for the co-creation process.

3.3 Phase 3: Ethics and Pedagogy Course

In Spring 2025, our course was taught by a professor from the computer science department. Students learned about CS, ethics, and pedagogy, and they partnered with faculty to co-create new computing ethics curricula. Our course outcomes can be found starting in Section 5.

3.4 Phase 4 (Future): Partnering Courses

Starting in Fall 2025, partnering faculty will teach their courses that will include new computing ethics content. Collaboratively, students and faculty co-created curricular materials for seven partnering courses from the humanities, social sciences, and STEM:

- Introduction to Data Science (Data Science)
- Narratives of Disability (Public Health)
- Political Economy of Inequality (Economics)
- Indigenous Environmental Justice (Earth and Environment)
- Minds, Machines, and Morals (Scientific and Philosophical Studies of the Mind)
- Sociology of Sexuality (Sociology, Women & Gender Studies)
- Introduction to Creative Writing (English)

4 Course Design

The learning objectives for our course were the following:

(1) Analyze and synthesize various ethical theories and their implications for technology.
(2) Apply knowledge of machine ethics and pedagogical principles to co-create curricular materials.

4.1 Content

The first half of the course was largely focused on developing a foundation in ethical theories and their application to AI and other computational technologies. The latter half of the course introduced the students to pedagogy.

Ethical Theories. To develop more inclusive content, we went beyond teaching the four most common Western ethical theories (utilitarian, Kantian, virtue, and care). To help introduce these theories, students read chapters in [29]. Since non-Western ethical philosophies of Ubuntu and Confucianism are only briefly mentioned in that textbook, we supplemented this with additional reading material, described below. We also included material on environmental ethics (using a chapter from [29] and feminist ethics (using [1, 10, 17, 28]).

We introduced Confucian ethics through [19, 32], which frames ritual and relational obligations as an alternative to rights-based reasoning in robotics and AI ethics. We used Mhlambi's analysis of Ubuntu to explore Southern African ethics, which grounds discussions in community, interdependence, and collective responsibility [22]. In including [1], we were able to engage students in relational ethics, feminist ethics, Afro-feminism, and Ubuntu while addressing issues of AI ethics, fairness, justice, and power. These underrepresented frameworks were necessary to challenge dominant voices on ethics and to allow more students to see themselves as active shapers of the computing ethics discourse, rather than passive recipients of dominant theories [13]. To gain an interdisciplinary perspective on these topics, we invited experts in Confucian ethics in robotics [18, 32], techno-feminism in the Global South [28], and the entanglement of religion and science [24] to be guests in our class.

Pedagogy. Since students would be developing curricular materials, they needed to learn pedagogy. Students were introduced to backwards design [31], Bloom's taxonomy [2], assessment design [26], active learning [12], and inclusive pedagogy [13, 25]. Through the guidance of a resident expert, students also engaged in activities to explore curriculum co-creation and how to manage the changing power dynamics that are present in student/faculty partnerships.

4.2 Assignments

4.2.1 Journal Entries. Journals were the main formative assessment throughout the semester. Each entry was tied to the materials that students engaged with each week. Students used them to respond to prompts that asked them to reflect on different ethical and technological concepts through the lens of their own experiences, values, and academic backgrounds.

4.2.2 Peer Review. Each journal entry underwent a structured peer review process. Students were assigned a peer's journal to review during a designated class time each week. The goal was to allow students to read each other's viewpoints and provide meaningful, constructive feedback. Reviewers were encouraged to consider, among other criteria, whether the journal engaged with assigned readings without merely summarizing them, integrated personal experiences or opinions, and identified any missed connections to the course material.

4.2.3 Curriculum Development Activities. Students completed group activities designed to advance their understanding of the curriculum development process while simultaneously contributing to their final projects. As part of these activities, students developed learning objectives, explored various types of formative and summative assessments, and provided feedback to their peers.

4.2.4 Midterm Essay. The students completed an argumentative essay to assess the second learning objective of the course. They identified a current ethical critique of computational technology and constructed a clear counterargument using Rapoport's Rules for respectful disagreement [9].

This structure required that students carefully reconstruct their original argument, identify areas of agreement, and then build a critical response. Students were encouraged to draw from the ethical frameworks discussed in class.

4.2.5 Curriculum Co-Creation Project. For the final project, groups of three students collaborated with faculty to co-create a computing ethics module tailored to the faculty's course. Each group was intentionally composed to reflect student preferences and ensure a mix of relevant expertise; for example, one CS major and another familiar with the faculty's course content. The goal was to translate key ethical insights from our course into formats relevant and accessible to students in the partner discipline. At the beginning of week 5, project groups were formed and students and faculty started working together. Faculty were expected to have at least three meetings with the students, once at the beginning of the project, a few weeks later to discuss plans, and then near the end of the course as the projects were nearing completion. Faculty and students were encouraged to meet, email, etc. more often, but no strict guidance was provided. We also encouraged faculty to be mindful of the typical power dynamics present between students and faculty. As a result, most meetings were not in the faculty's office, some faculty brought food or snacks, and others dressed more casually than they typically would.

Together, students and faculty partners identified the most applicable ethical themes, developed materials (e.g., case studies, discussion prompts, or readings), and justified the learning objectives each resource would support. In class, the process was supported through the curriculum development activities (described above). The modules received several rounds of feedback from peers in the class and the faculty partner.

4.3 Activities

Class sessions were always interactive and often featured discussions, debates, or small group activities. To cultivate an environment in which everyone, students and instructors, call on one another for help and share responsibility for the learning process [20], we incorporated an improv workshop led by an expert in applied improvisation in education.

One particular activity that was a direct result of our curriculum co-creation is a Hiring by Machine simulation. To move beyond theory and help students experience the stakes of computing ethics, we ran a two-day simulation on AI in hiring. Students were given a resource packet that outlined the flow, roles, and guidelines for the simulation. As part of this activity, students designed algorithms, crafted resumes, and then stepped into different roles— recruiters, engineers, candidates, corporate leaders, journalists, and AI researchers—to simulate how AI is used in hiring. The exercise asked students to think on their feet, take on unfamiliar perspectives, and defend positions they might not personally agree with. It made the ethical trade-offs feel immediate and real.

5 Course Overview and Data Collection

Our *Thinking and Learning Machine Ethics* (TLME) course was offered in the Spring of 2025 at a small liberal arts college. To ensure a diverse mix of skills and experiences, students applied to enroll during Fall 2024. The application, outlines the TLME course goals and listed the partner courses for which students would be developing curricular materials—encouraging applicants from relevant majors or with related interests. Twenty-one students were selected because we had seven partnering courses, and we preferred each group to have three students. Their majors included computer science (10), business (7), data science (5), psychology (3), cognitive science (2), women and gender studies (1), moral psychology (1), creative writing (1), neuroscience (1), and economics (1). Fourteen students were double or joint majors. Students self-identified as Asian (9), White (4), Hispanic/Latinx (4), Black (3), Indigenous (1), and Middle Eastern (1), with the option to select multiple identities. Nine identified as women, nine as men, and three did not complete the final survey, which included demographic items.

The course was approved by our Institutional Review Board as a research project. All students volunteered to participate, provided informed consent, and were assured that participation would not affect their grades. The instructor did not know who was participating until after final grades were submitted.

Students consented to include all coursework in the study, with the option to opt out of specific components. No students requested to remove any work. Students also completed three surveys after weeks 5, 12, and 15 (during final exam period). All surveys were administered in the absence of the instructor and managed by a research assistant. Anonymized data was immediately available to the instructor to allow them to make improvements to the course based on student feedback.

6 Results

The majority of our results are from the three surveys the students completed. Twenty students completed the first survey, 18 the second, and 18 the third. We provide quantitative and

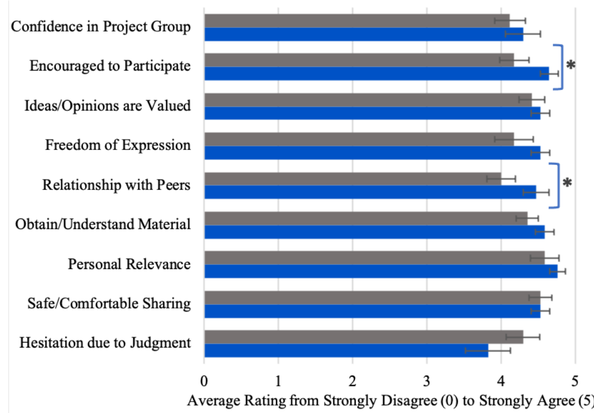

Figure 1: Student Ratings of Inclusive Design

qualitative analysis of the survey responses, and then supplement this data by analyzing some of the students' assignments.

6.1 Survey Quantitative Results

Across the three surveys, 26 items asked students to rate each statement on a Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree scale. All survey responses using this scale were converted to ordinal values 1-5. One question was negatively framed and was reverse-coded for our analysis.

Nine survey items assessing our inclusive design were repeated across the first two surveys. Seventeen participants provided responses to both of these surveys. Figure 1 shows their mean ratings across the two surveys ranged from 3.82 to 4.76. Using a two-tailed paired samples t-test, we found there were a couple of significant differences. In the second survey, students reported feeling more encouraged to participate (p = .006) and found discussions and activities were more fruitful in developing relationships (p = .015).

In addition to the inclusivity survey items, there were 17 additional items across three surveys that were rated using the Agree/Disagree scale. Table 1 summarizes students responses across three themes: **Co-Creation & Pedagogy**, **Course Content & Environment**, and **Application**. Results under each theme are presented in order from highest to lowest scores.

On the final survey, there was one survey item asking which component of the course best facilitated their participation. In-class discussions were preferred by 8 students, followed by in-class activities (3), journal entries (3), final project (3), and peer reviews (1).

6.2 Survey Qualitative Results

We did a two phase thematic analysis of the open survey responses. The first phase collected concepts explicitly referenced. In the second phase, we examined these concepts and reviewed the survey responses again to identify the underlying themes.

Learning from peers. Most students found the peer reviews and in-class discussions to be highly rewarding.

Table 1: Average Survey Responses by Theme

Theme and Item	Mean	SD	N
Co-Creation & Pedagogy			
Respected by faculty	4.89	0.32	18
Mutual exchange of ideas with faculty	4.33	0.91	18
Provided meaningful learning experience	4.28	0.83	18
Learning pedagogy shifted how I learn	4.22	0.88	18
Good communication with faculty	4.11	0.76	18
Changed me as a student	4.06	1.00	18
Productive group meetings with faculty	4.44	0.78	18
Fair distribution of responsibilities	3.78	1.17	18
Course Content & Environment			
Hiring simulation was engaging	4.56	1.04	18
Hiring simulation felt relevant	4.56	0.78	18
Environment for open discussion	4.56	0.98	18
Valuable feedback on journal entries	4.11	0.76	18
Peer reviews improve my understanding	3.90	4.11	20
Application			
Confident in ethics conversations	4.56	0.62	18
Comfortable applying ethics to project	4.50	0.51	18
Can apply theories to real-world tech	4.33	0.59	18
Instructor's use of AI was ethical	4.00	0.91	18

Note: Survey items have been abbreviated for brevity

- "I like getting feedback from my peers as it allows us to better understand the topics"
- "The way discussions unfolded, challenging ideas, refining arguments, and considering real-world applications, made the material feel urgent and relevant"
- "hearing different viewpoints, challenging assumptions, defending my stance, and occasionally having my mind changed"
- "One highlight...was the [class] discussions...especially the ones where people did not agree... It really made class feel more like a conversation where every member was respected and given the opportunity to contribute"

Quicker feedback. However, the journal and peer review process did have a few complaints, mainly focused on the instructor's feedback and grading:

- "feedback for journals come back really late"
- "I don't find it useful when we don't get the teacher's [perspective] on our ideas until 2+ weeks later"

Workload. Students also found the amount of readings and journal entries inhibited their learning:

- "there was a lot of reading and some were very heavy."
- "at some point of the semester I stopped doing the reading."
- "spacing it out might help doing the journal entries a little easier."

Co-creation project. In terms of the final project, students mostly suggested there needs to be more structure:

- "Have clear scope and project [deliverables]"
- "Giving... a timeline of when things need to be done"

Some students also had concerns about the lack of urgency some partnering faculty had:

- "make sure that the faculty is teaching the course soon."
- "This creates a greater sense of urgency, rather than a more lax process that makes your group a little stuck"

Lastly we note that in the final survey, many students expressed strong appreciation for the course.

- "[T]hank you...insights I gained will be valuable in whatever I pursue in the future."
- "one of my favorite courses I have taken at college... preparing students for the real world unlike any other class..."
- "Thank you for giving us the platform to be our authentic selves while learning."

6.3 Assignments

We reviewed the content of the midterm essays and final projects to understand how students chose to apply material from the course.

6.3.1 Midterm Essay. This was an opportunity for students to address an ethical concern that interests them and analyze the problem from multiple perspectives. Across 21 essays, most students emphasized accountability (18 essays), risk and harm (17), deepened ethical awareness (17), transparency and explainability (15), user awareness and digital literacy (14), and bias and fairness (14). Many raised concerns about social relationships (13), referencing "alienation," "loneliness," and how "AI will perpetuate social hierarchies." Some students discussed corporate power (10) and global inequity (9), pointing to the broader structural issues shaping AI's impact.

Students consistently grounded their arguments in ethical frameworks, with most essays drawing on between two to five distinct approaches. Students referenced utilitarian ethics (19), 12 drew on Kantian ethics, 12 on relational ethics, and others cited care (8), feminist (5), Ubuntu (4), virtue (3), and Confucian (2). This range of frameworks reflects application: Students used ethical theory to grapple with real-world problems.

6.3.2 Final Project. The student/faculty groups successfully co-created seven curricular modules. Each module consisted of materials for 1-3 days of class time ($M = 1.86$). Four groups developed slides to be presented by the faculty, and four groups included technical explanations of AI or other computational technologies. All groups developed active learning activities, including a simulation for three courses, a case study in three courses, and four groups featured a debate or some other form of pros/cons discussion.

Materials for all courses engage students in a discussion or activity around ethical considerations. One course materials directly references the environmental ethical theories discussed in our TLME course. Materials for other courses integrate ethical concepts of bias, fairness, inequality, human autonomy, transparency, power, and privacy.

7 Discussion

7.1 What Worked Well

Inclusive design. Since our goal is to broaden access to computing ethics knowledge, it was imperative that our course design be inclusive to people from different backgrounds and experiences. We intentionally included a diverse set of ethical perspectives to help students identify with different theories and encourage them to explore new perspectives. As a result, students explored in their essays and projects a wide range of ethical concepts and applied it topics of personal interest.

In addition to the students reporting a high degree of relevance, we found that later in the course, students felt more encouraged to participate and were better able to develop relationships with their peers. Our data and our experience suggest that we built a community where everyone was learning together and from each other.

Learning from peers. Discussions throughout the course were vibrant and engaging. Whether it was in small groups or as a whole class, students were comfortable sharing their ideas and opinions. Students were willing to disagree, which was most apparent during one class discussion where students decided impromptu to alternate making points and counterpoints, respectfully disagreeing with each other.

The discussions and activities often felt "urgent and relevant," as one student put it. This is also reflected in our survey results. Relevance was the highest rated item in our inclusive pedagogy survey items, and most students strongly agreed that the Hiring by Machine simulation was engaging and relevant. Many students found deep, personal connections to the content of the course, and they felt comfortable and safe sharing those connections with their peers. Most journal prompts gave students space to express some of these deeper connections, and many students appreciated and sometimes were eager to share their experiences with their classmates through the peer review process.

Co-creation - Respect and Reciprocity. Students and faculty successfully co-created curricular materials that incorporate technical details on AI and related technologies, address ethical issues relevant to the course that they will be integrated into, and are consistent with the faculty's goals of the course. Critically, the materials also reflect the students' perspectives on effective learning experiences, and their experience in our course had a significant impact on their choices. Three groups developed a simulation activity, one of which was closely modeled after our hiring simulation. Four activities engage students in a debate or an examinations of pros/cons to encourage students to take different perspectives – which was something heavily emphasized in our course, starting with the improv workshop. During the co-creation process, students strongly felt respected by their faculty partner, and the mutual exchange of ideas suggest there was also some level of reciprocity in these partnerships.

7.2 Areas for Improvement

Balancing Peer Review and Feedback. Initially, students were expected to complete 12 journal entries, but this was reduced to eight based on feedback about workload and pacing. Despite this adjustment, the turnaround window for peer and instructor feedback remained tight, limiting the opportunity for deep, reflective responses. In the future, we will space out journal deadlines to allow for thoughtful engagement in the material while preserving valuable peer feedback.

Co-Creation - Shared Responsibility. While the co-creation model gave students a sense of agency and engagement, it had several limitations. First, faculty involvement varied. Some students felt that their partnering faculty were less engaged, which led to uneven work and influence. Second, the process lacked clear structure, which made expectations and collaboration harder to manage. While students often felt respected for their skills and knowledge, a lack of shared responsibility suggests that some of the traditional power dynamics persisted. In future iterations, we will introduce more structure by defining responsibilities and expectations of roles and providing students and faculty with timelines to create more shared responsibility. We will also focus on partnering with faculty who will be teaching their course in the coming year to create a stronger sense of urgency and increase their engagement with the project.

7.3 Limitations

Sample Size and Analytical Tradeoffs. A goal of the course was to allow for rich discussions, deep relationships, and student-driven learning. Our small class size allowed for these core strengths to be achieved. However, this came with analytical tradeoffs. The combination of a small sample and a highly diverse cohort limited the statistical power of subgroup comparisons. While we found potential trends, we cannot draw definitive conclusions across identity groups. Rather than scaling up the course, future iterations might benefit from collecting complementary qualitative data to support comparative analysis without compromising pedagogical design.

8 Conclusion

Our goal is to broaden access to knowledge about computing ethics by embedding relevant ethics content across the undergraduate curriculum. Through a student/faculty partnership model, we developed an inclusive, interdisciplinary computing ethics course in which students partnered with additional faculty to create computing ethics curriculum that will be embedded into courses across the undergraduate curriculum. We hope that others may learn from or adopt our approach to further broaden participation in computing ethics.

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References

[1] Abeba Birhane. 2021. Algorithmic injustice: a relational ethics approach. *Patterns* 2, 2 (2021).

[2] Benjamin S Bloom, Max D Engelhart, Edward J Furst, Walker H Hill, David R Krathwohl, et al. 1956. *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain.* Longman New York.

[3] Noelle Brown, Benjamin Xie, Ella Sarder, Casey Fiesler, and Eliane S Wiese. 2024. Teaching ethics in computing: a systematic literature review of ACM computer science education publications. *ACM Transactions on Computing Education* 24, 1 (2024), 1–36.

[4] Lena Cohen, Heila Precel, Harold Triedman, and Kathi Fisler. 2021. A new model for weaving responsible computing into courses across the CS curriculum. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education*. 858–864.

[5] Alison Cook-Sather. 2022. *Co-creating equitable teaching and learning: Structuring student voice into higher education.* Harvard Education Press.

[6] Alison Cook-Sather and Khadijah Seay. 2021. 'I was involved as an equal member of the community': how pedagogical partnership can foster a sense of belonging in Black, female students. *Cambridge Journal of Education* 51, 6 (2021), 733–750.

[7] Alise De Bie, Elizabeth Marquis, Alison Cook-Sather, and Leslie Patricia Luqueño. 2019. Valuing knowledge (s) and cultivating confidence: Contributions of student–faculty pedagogical partnerships to epistemic justice. In *Strategies for fostering inclusive classrooms in higher education: International perspectives on equity and inclusion.* Emerald Publishing Limited, 35–48.

[8] Victoria Dean and Illah Nourbakhsh. 2022. Teaching ethics by teaching ethics pedagogy: A proposal for structural ethics intervention. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education-Volume 1.* 272–278.

[9] Daniel C Dennett. 2013. *Intuition pumps and other tools for thinking.* WW Norton & Company.

[10] Catherine D'ignazio and Lauren F Klein. 2023. *Data feminism.* MIT press.

[11] Stacy A Doore, Casey Fiesler, Michael S Kirkpatrick, Evan Peck, and Mehran Sahami. 2020. Assignments that blend ethics and technology. In *Proceedings of the 51st ACM Technical Symposium on Computer Science Education.* 475–476.

[12] Scott Freeman, Sarah L Eddy, Miles McDonough, Michelle K Smith, Nnadozie Okoroafor, Hannah Jordt, and Mary Pat Wenderoth. 2014. Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the national academy of sciences* 111, 23 (2014), 8410–8415.

[13] Kevin Gannon. 2020. Radical hope: A teaching manifesto. *Journal of Public Relations Education* 6, 2 (2020), 193–199.

[14] Barbara J Grosz, David Gray Grant, Kate Vredenburgh, Jeff Behrends, Lily Hu, Alison Simmons, and Jim Waldo. 2019. Embedded EthiCS: integrating ethics across CS education. *Commun. ACM* 62, 8 (2019), 54–61.

[15] Diane Horton, Sheila A McIlraith, Nina Wang, Maryam Majedi, Emma McClure, and Benjamin Wald. 2022. Embedding ethics in computer science courses: Does it work?. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education-Volume 1.* 481–487.

[16] Iris Howley, Darakhshan Mir, and Evan Peck. 2022. Integrating AI ethics across the computing curriculum. In *The Ethics of Artificial Intelligence in Education.* Routledge, 255–270.

[17] Julia Kloiber. 2023. Care Work and Endurance. Lessons from Feminist Activism in Platform Work. https://data-workers.org/julia/ [Online; accessed 29-June-2025].

[18] Boyoung Kim, Ruchen Wen, Qin Zhu, Tom Williams, and Elizabeth Phillips. 2021. Robots as moral advisors: The effects of deontological, virtue, and confucian role ethics on encouraging honest behavior. In *Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction.* 10–18.

[19] Tae Wan Kim and Alan Strudler. 2023. Should Robots Have Rights or Rites? *Commun. ACM* 66, 6 (2023), 78–85.

[20] Carrie Lobman and Matthew Lundquist. 2007. *Unscripted Learning: Using Improv Activities Across the K-8 Curriculum.* Teachers College Press.

[21] Samantha E Martens, Ineke HAP Wolfhagen, Jill RD Whittingham, and Diana HJ M Dolmans. 2020. Mind the gap: Teachers' conceptions of student-staff partnership and its potential to enhance educational quality. *Medical teacher* 42, 5 (2020), 529–535.

[22] Sabelo Mhlambi. 2020. From rationality to relationality: Ubuntu as an ethical and human rights framework for artificial intelligence governance. *Carr center for human rights policy discussion paper series* 9 (2020), 31.

[23] Carl Mitcham and Elaine E Englehardt. 2019. Ethics across the curriculum: Prospects for broader (and deeper) teaching and learning in research and engineering ethics. *Science and Engineering Ethics* 25 (2019), 1735–1762.

[24] John Lardas Modern. 2021. Neuromatic: Or, A Particular History of Religion and the Brain. In *Neuromatic.* University of Chicago Press.

[25] Viji Sathy and Kelly A Hogan. 2022. *Inclusive teaching: Strategies for promoting equity in the college classroom.* West Virginia University Press.

[26] Jesse Stommel. 2024. Ungrading: an introduction. 327–340 pages.

[27] David Tomblin and Nicole Mogul. 2022. STS Postures: Changing How Undergraduate Engineering Students Move Through the World. In *2022 ASEE Annual Conference & Exposition.*

[28] Firuzeh Shokooh Valle. 2023. *In Defense of Solidarity and pleasure: Feminist technopolitics from the global south.* Stanford University Press.

[29] Ibo Van de Poel and Lambèr Royakkers. 2023. *Ethics, technology, and engineering: An introduction.* John Wiley & Sons.

[30] Lucas J Wiese, Indira Patil, Daniel S Schiff, and Alejandra J Magana. 2025. AI ethics education: A systematic literature review. *Computers and Education: Artificial Intelligence* (2025), 100405.

[31] Grant P Wiggins and Jay McTighe. 2005. *Understanding by design.* Assn. for Supervision Curriculum Development.

[32] Qin Zhu, Tom Williams, and Ruchen Wen. 2021. Role-based morality, ethical pluralism, and morally capable robots. *Journal of Contemporary Eastern Asia* 20, 1 (2021), 134–150.

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