

STUDENT PRIVACY ACTIVISM: PROTESTING RADICAL DIGITAL TRANSFORMATION IN EDTECH

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ABSTRACT

Student-organized activism and obfuscation respond to intrusive surveillance in digital assessment within higher education. This article explores privacy surveillance disconnects and the emergence of protests against antinormative practices. Employing qualitative and quantitative methods, including content analysis of subreddits focused on higher education, student privacy, and specific university campus communities, the study considers multiple stakeholders' perspectives. The findings illustrate the creative avenues students have adopted to counter online assessment tools. Emphasizing the significance of privacy and autonomy in higher education, this work sheds light on the challenges faced by students and provides insights into their strategies for addressing privacy concerns.

Keywords: educational technology, student privacy, privacy governance, activism, surveillance

Due to unprecedented disruptions caused by the global pandemic, the landscape of higher education in the United States increasingly trends toward relying on digital platforms to support distance and hybrid learning and online assessment. This shift, although pivotal for educational continuity, has given rise to a host of challenges concerning *student privacy*. Notably, ambiguities in academic policy conditions and uses of proctoring software prompted a surge in student activism and protests, with concerns

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amplifying over nontraditional educational practices and intrusive surveillance. The lack of alignment among various education stakeholders gives rise to privacy surveillance problems, fueling student activism and protests against unconventional practices and rapid, dramatic shifts in data collection ostensibly in support of academic integrity. This article examines the tactics employed by students to voice their privacy concerns on Reddit. Focusing on the intersection of education, technology, and activism, we explore how students employ obfuscation techniques to counteract surveillance in the context of digital assessment. One approach students have taken to is organizing in-person demonstrations on college campuses. In April 2021, for example, over sixty students protested outside of the dean's office at Dartmouth's Geisel School of Medicine after students were falsely accused of academic misconduct.¹ Another approach, often supplementing in-person efforts, are robust online collaborations, discussions, and strategy sharing.

The digital realm provides students with alternative avenues for expressing concerns and further organizing. Online platforms such as Discord and Reddit have become gathering points for student activists, offering a level of privacy and security that traditional modes of protest often lack.² As we navigate the contours of student activism both online and offline, our work addresses fundamental questions surrounding the nuanced ways in which students navigate privacy concerns and engage in activism amid the evolving landscape of digital assessment in higher education. To that end, we ask:

1. What roles do students and other stakeholders play when acting on privacy and surveillance concerns about digital assessment?
2. What are the modes of student activism that emerge in response to privacy infringements in online assessment?

We thus seek to understand the student organizers and privacy advocates, as they take on a variety of actions and assume distinct roles when responding to concerns about surveillance and privacy within digitally mediated academic assessments.

1. Natasha Singer and Aaron Krolik, "Online Cheating Charges Upend Dartmouth Medical School," *The New York Times*, June 10, 2021.

2. Nicholas Proferes, Naiyan Jones, Sarah Gilbert, Casey Fiesler, and Michael Zimmer, "Studying Reddit: A Systematic Overview of Disciplines, Approaches, Methods, and Ethics," *Social Media + Society* 7, no. 2 (2021), <https://doi.org/10.1177/20563051211019004>.

We employ a mixed-methods approach, incorporating qualitative and quantitative methods to capture the perspectives of multiple stakeholders. Through content analysis of thirty-four public subreddits, we uncover how students form consensus around privacy expectations and voice their concerns when practices by educators and institutions fail to meet their needs. In our analysis, we identify the tactics used in activism and/or protests surrounding recent educational technology controversies, building on recent literature that explores Reddit data to understand norm formation and political uses of anonymous platforms.³ We consider not only the broad context of education, but the more specific connotations of distance and hybrid learning in higher education. We focus upon interactions between stakeholders on individual campuses and interplay between local action arenas and broader US trends in the United States at this time. This helps us to better understand the perception of appropriateness and legitimacy of information handling practices in context.

We find that students take up creative avenues to respond to and seek redress against the use of online assessment tools. By uncovering and examining these strategies, we provide valuable insights into the evolving landscape of student activism and highlight the significance of privacy in higher education. In our discussion, we highlight unresolved scenarios, such as ongoing negotiation over particular assessment technologies and disagreement over governance in effect, as evidenced by student protests. Both point toward governance failures and externalities that must be addressed in order to establish trust in this context. We further discuss the implications of our findings related to chosen approaches and strategies, privacy trade-offs, and governance, aiming to make a case that new governance is needed that reflects the interests of the students and stakeholders impacted by digital transformation of educational assessment.

Background

We contextualize our research within the dynamic landscape of education during the global pandemic. As we explore student activism on Reddit, we trace both the broad landscape of higher education and the nuanced

³. Ibid., Sara De Candia, Gianmarco De Francisci Morales, Corrado Monti, and Francesco Bonchi, “Social norms on Reddit: A demographic analysis,” In Proceedings of the 14th ACM Web Science Conference 2022, 139–47.

implications of distance and hybrid learning. Our literature review first introduces the scope of EdTech tools we investigate in our study. We then trace prior scholarship in educational privacy, student activism, and governance to frame our conceptual foundation and justify our mixed-methods approach.

Emerging EdTech Tools and Platforms

We focus our research on *exam proctoring tools*, a subset of EdTech tools and platforms popularized during the global pandemic. The deployment of intrusive online proctoring tools to counteract cheating during examinations introduces myriad privacy concerns. Proctorio, for example, is a widely utilized online exam proctoring tool that has ignited substantial controversy within educational circles.⁴ Notably, students have voiced vehement objections to Proctorio, contending that the software operates in a discriminatory manner while infringing upon their privacy rights. Allegations have emerged that Proctorio unfairly flags certain test-takers, leading to undue disadvantages, and further perpetuates an environment of suspicion and distrust.⁵ This wave of disapproval reverberated through academic institutions, compelling some, such as the California Community College system, Cabrillo College, and the University of Illinois to opt out of renewing their Proctorio software licenses.⁶ A movement against Proctorio garnered global support, with educators and institutions worldwide participating in a boycott. This collective response was punctuated by their withdrawal from prominent conferences, like the Online Teaching Conference (OTC), which before this time enjoyed sponsorship from Proctorio.⁷

Along these lines, novel features of online proctoring such as “room scanning” create further concerns. Room-scanning techniques require

4. Todd Feathers, “Schools Are Abandoning Invasive Proctoring After Student Backlash,” *Vice News*. February 26, 2021, <https://www.vice.com/en/article/7k9ag4/schools-are-abandoning-invasive-proctoring-software-after-student-backlash>.

5. Sara Morrison, “How Teachers Are Sacrificing Student Privacy to Stop Cheating,” *Vox*, December 18, 2020, <https://www.vox.com/recode/22175021/school-cheating-student-privacy-remote-learning>.

6. Monica Chin, “University Will Stop Using Controversial Remote-Testing Software Following Student Outcry,” *The Verge*, January 29, 2021, <https://www.theverge.com/2021/1/28/22254631/university-of-illinois-urbana-champaign-proctorio-online-test-proctoring-privacy>.

7. Feathers, “Schools Are Abandoning Invasive Proctoring After Student Backlash.”

students to employ their device's camera to provide a comprehensive 360-degree view of their surroundings during a test. The legality and ethical implications of this approach came under scrutiny in *Ogletree v. Cleveland State University*.⁸ Importantly, a federal judge ruled the "room scan" unconstitutional. The court's ruling emphasized that such scans, granting insight into students' private spaces, effectively contravened the protections accorded by the Fourth Amendment. Ordinarily, government searches within homes, including those conducted by state-run universities, necessitate a warrant. The court found the university's proffered justifications, centered on deterring cheating, to be inadequate in outweighing the safeguards provided by the Fourth Amendment.⁹

Such platforms highlight the significant challenges in establishing an inclusive discourse between students and administrators. Although students raise valid concerns about the discriminatory nature and invasion of privacy caused by exam proctoring tools, many educational institutions have been reluctant to engage in meaningful discussions. The absence of a foundation of trust between students and administrators further exacerbates this issue, engendering difficulties in finding common ground and effectively addressing concerns in the context of privacy and academic integrity.

Educational Privacy

As the abundance of educational data available through EdTech platforms grows, so too has the use of collected data to understand learners' needs, commonly referred to as *learning analytics* (LA).¹⁰ There are numerous arguments touting the effectiveness of LA from empowering educators, administrators, and policymakers to make data-informed decisions, to personalized instruction models, supporting at-risk students, and

8. Emma Bowman, "Scanning Students' Rooms during Remote Tests Is Unconstitutional, Judge Rules," *NPR*, August 26, 2022, <https://www.npr.org/2022/08/25/1119337956/test-proctoring-room-scans-unconstitutional-cleveland-state-university>.

9. Jason Kelley, "Federal Judge: Invasive Online Proctoring 'Room Scans' Are Unconstitutional," Electronic Frontier Foundation, February 1, 2023, <https://www.eff.org/deeplinks/2022/08/federal-judge-invasive-online-proctoring-room-scans-are-also-unconstitutional>.

10. Melissa Laufer, Anne Leiser, Bronwen Deacon, Paola Perrin de Brichambaut, Benedikt Fecher, Christian Kobsda, and Friedrich Hesse, "Digital Higher Education: A Divider or Bridge Builder? Leadership Perspectives on Edtech in a COVID-19 Reality," *International Journal of Educational Technology in Higher Education* 18 (2021): 1–17.

continuously enhancing the quality of education.¹¹ Despite the potential benefits of LA, critical privacy issues emerge from the extensive collection of students' personal and educational data. These concerns encompass activities such as surveillance of students' activities, data collection practices, and the potential sharing or selling of data to third parties.¹² The sensitivity of the information collected, which often includes personally identifiable information, learning progress, and behavioral patterns, amplifies these privacy concerns. Further, the utilization of data analytics also introduces the possibility of algorithmic biases, further exacerbating privacy risks.

Further, LA creates an ecosystem of stakeholders interested in leveraging sensitive student data. Stakeholders involved in data analysis, such as instructors, administrators, and EdTech companies, utilize educational data for a variety of purposes. For example, instructors may leverage academic analytics to gain insights into student performance and tailor their instructional strategies accordingly, while administrators may rely on the data to inform educational policies and decision-making processes. Finally, EdTech companies may utilize data analysis to enhance both their product and their commercial gains.¹³

To address and attempt to remedy these concerns, legal frameworks and institutional policies play a vital role in protecting students' personal and educational data. In the United States, the Family Educational Rights and Privacy Act (FERPA) establishes federal regulations that control the use and disclosure of students' educational records.¹⁴ Similarly, the General Data Protection Regulation (GDPR) in the European Union provides guidelines for data protection and privacy of EU citizens. Additionally, educational institutions themselves have a responsibility to develop robust policies that address privacy concerns and ensure the secure handling of student data.

11. George Siemens and Phil Long, "Penetrating the Fog: Analytics in Learning and Education," *EDUCAUSE Review* 46, no. 5 (2011): 30.

12. Francesc Pedró, "New Millennium Learners in Higher Education: Evidence and Policy Implications," in *International Conference on 21st Century Competencies* (Brussels: OECD/CERI, 2009).

13. Amo, Daniel, David Fonseca, Marc Alier, Francisco José García-Péñalvo, María José Casafí, and María Alsina. "Personal data broker: A solution to assure data privacy in EdTech." In *Learning and Collaboration Technologies. Designing Learning Experiences: 6th International Conference, LCT 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019, Proceedings, Part I* 21, pp. 3–14. Springer International Publishing, 2019.

14. Eric Leyerly, "FERPA and Disclosures of COVID-19 Data on Campus: A Case Study," *The Successful Registrar* 21, no. 10 (2021): 6–7.

While LA can enhance learning experiences and increase accessibility, it is essential to strike a balance between the benefits of data-driven insights and robust privacy protection mechanisms. Legal frameworks such as FERPA and GDPR, along with institutional policies, are vital to safeguard educational privacy and foster trust among students, instructors, administrators, and EdTech companies.

The concept of an *educational consumer* arises in the context of virtual education as novel or emerging technologies are adopted for assessment.¹⁵ Vendors in the education sector assume that students will cheat, leading institutions to license software to maintain assessment integrity. However, these companies prioritize consumer privacy norms over students' conceptions of privacy, treating students as consumers rather than respecting their privacy concerns within the educational context. This model prioritizes consumer privacy at the expense of student privacy, eroding decades of progress in safeguarding student privacy. The use of proctoring software, LMS metadata, and for-profit tutoring platforms raises privacy concerns, but universities often fail to engage with students' issues, even in cases of discrimination, despite their commitments to diversity, equity, and inclusion.

Student Privacy Activism

The fracturing of dialogue between students and administrators poses a significant collective action problem around privacy and highlights the importance of trust within knowledge commons arrangements such as higher education and in defining privacy.¹⁶ Student activism has been a critical part in how students respond to commercially oriented data practices, the dearth of trust between students and administrators, and the lack of voice mechanisms afforded them in higher education.¹⁷ Even when

15. Madiha Choksi, Kim Zahrah, Min Cheong, Yan Shvartzshnaider, and Madely Sanfilippo, "Assessment Integrity Norms: Consumer and Student Privacy in EdTech," February 20, 2023, <https://ssrn.com/abstract=4588074>

16. Michael J. Madison, Brett M. Frischmann, and Katherine J. Strandburg, "The University as Constructed Cultural Commons," *Wash. Washington University Journal of Law & Policy* 30 (2009): 365; Yuxi Wu, W. Keith Edwards, and Sauvik Das. "A Reasonable Thing to Ask For: Towards a Unified Voice in Privacy Collective Action," in *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, 1–17, 2022.

17. Rachel Brooks, Kate Byford, and Katherine Sela, "Students' Unions, Consumerism and the Neo-liberal University," *British Journal of Sociology of Education* 37, no. 8 (2016): 1211–28;

the administration does not want to listen, they demand to be heard. Yet, even when they are heard, there are good reasons for disillusionment and long-lasting distrust, which indicate that activism around privacy is likely to persist in many forms.¹⁸

Modern student activism with respect to issues such as climate change and gun control receives substantial media and scholarly scrutiny.¹⁹ Central to these dialogues is the combined relationship between technology, surveillance, and privacy concerns.²⁰ Notably, students' digital footprints with respect to activism have come into decision-making processes regarding student conduct and higher education admissions.²¹ Decades of student activism scholarship shed light on these recent behaviors and events, tying social factors including privacy and secrecy to activist behaviors.²²

There is also significant evidence that privacy is a key consideration of student activists in other policy domains. Research regarding student activists and DREAMERS addressing US immigration policy in online communities and via hybrid movements shows that digital privacy is key to their tactics and communication.²³ Further, decades of scholarship on identity-based activism among college students underscores the importance of privacy and independence from educational institutions as

David Carless, "Trust, Distrust and Their Impact on Assessment Reform," *Assessment & Evaluation in Higher Education* 34, no. 1 (2009): 79–89; Helen Young and Lee Jerome, "Student Voice in Higher Education: Opening the Loop," *British Educational Research Journal* 46, no. 3 (2020): 688–705.

18. Rose M. Cole and Walter F. Heinecke, "Higher Education after Neoliberalism: Student Activism as a Guiding Light," *Policy Futures in Education* 18, no. 1 (2020): 90–116.

19. Zachary Jason, "Student Activism 2.0," Harvard University, August 27, 2018, <https://www.gse.harvard.edu/ideas/ed-magazine/18/08/student-activism-20>; Naomi Larsson, "People Thought I Was Too Young to Protest: The Rise of Student Activism," *The Guardian*, August 25, 2021, <http://www.theguardian.com/education/2020/sep/15/people-thought-i-was-too-young-to-protest-the-rise-of-student-activism>.

20. Beth Norrow and Sommer Ingram Dean, "The Law of Students' Rights to Online Speech: The Impact of Students' Ability to Openly Discuss Public Issues," The American Bar Association, January 4, 2022, https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/the-state-of-civic-education-in-america/the-law-of-students-rights-to-online-speech/.

21. Josh Moody, "Student Activism and College Admissions," *US News*, September 24, 2020, <https://www.usnews.com/education/best-colleges/articles/what-student-activism-means-for-college-admissions>.

22. Jeanne H. Block, Norma Haan, and M. Brewster Smith, "Socialization Correlates of Student Activism 1," *Journal of Social Issues* 25, no. 4 (1969): 143–77.

23. Madelyn Rose Sanfilippo and Katherine J. Strandburg, "Privacy Governing Knowledge in Public Facebook Groups for Political Activism," *Information, Communication & Society* 24, no. 7 (2021): 960–77.

key to their work and a central social norm.²⁴ These studies provide evidence that student privacy is a long-standing concern that requires new governance approaches to respond to changing sociotechnical systems.

Conceptual Foundations

We conceptually approach privacy through the contextual integrity framework. This research also builds upon recent scholarship that integrates institutional theory and privacy theory to explore privacy governance challenges in recognition that student privacy is (1) broader than information policy and (2) a complex assemblage of governing institutions impacts student privacy experiences.²⁵ Along these lines, as institutional governance frameworks are highly compatible with the contextual integrity framework for privacy, and this work builds upon an emerging tradition that explores norm formation and privacy governance evolution.²⁶

Contextual Integrity

Drawing on social theory, social philosophy, and law, Nissenbaum's theory of contextual integrity (CI) conceives of social life as comprising distinct social domains or contexts, such as commerce, education, healthcare, and civic life. A CI context is defined by its ends, aims, or goals, which further determine its role in society at large, as well as its values, be it equality, justice, or individual autonomy, among others. As such, we may argue that in a healthcare context, the goal or aim is to cure and prevent illness, alleviate

24. C. Linder, S. J. Quaye, A. C. Lange, M. E. Evans, and T. J. Stewart, *Identity-based Student Activism: Power and Oppression on College Campuses* (London: Routledge), 2019.

25. Priscilla M. Regan and Jolene Jesse, "Ethical Challenges of Edtech, Big Data and Personalized Learning: Twenty-first Century Student Sorting and Tracking," *Ethics and Information Technology* 21 (2019): 167–79; Elana Zeide and Helen Nissenbaum, "Learner Privacy in MOOCs and Virtual Education," *Theory and Research in Education* 16, no. 3 (2018): 280–307; Kyle M. L. Jones and Chase McCoy, "Reconsidering Data in Learning Analytics: Opportunities for Critical Research Using a Documentation Studies Framework," *Learning, Media and Technology* 44, no. 1 (2019): 52–63.

26. Yan Shvartzshnaider, Madelyn Rose Sanfilippo, and Noah Apthorpe, "GKC-CI: A Unifying Framework for Contextual Norms and Information Governance," *Journal of the Association for Information Science and Technology* 73, no. 9 (2022): 1297–313; Madelyn Rose Sanfilippo, Brett M. Frischmann, and Katherine J. Strandburg, eds. *Governing Privacy in Knowledge Commons* (Cambridge: Cambridge University Press, 2021).

pain, as well as being committed to values of equity and patient autonomy. The precise composition of ends and values may differ from society to society and be open to political contestation, e.g., in an education context it is open to debate whether the goals are to enlighten or train, to teach rote skills or encourage creativity, or to generate workers as opposed to enable a responsible citizenry.

Shifting away from notions of privacy as information control or secrecy, CI conceives of privacy as the appropriate flow of information, meaning flow that conforms with contextual informational norms. Contextual informational norms define acceptable data practices and may range from implicit and weak—social disapproval of friends betraying confidences—to explicit and embodied—laws protecting journalists refusing to name sources or requiring physicians to maintain the confidentiality of health data. A complete statement of a contextual informational norm provides values for five parameters: data subject, data sender and data recipient (collectively referred to as actors), information type (topic or attribute), and transmission principle (the conditions under which information flows).

Actors (subject, sender, recipient) are labeled according to contextual capacities or roles, such as physicians, educators, or political figures. Information types are labeled according to contextual ontologies, such as an educator's report or notes about a student's learning progress in an educational context. Transmission principles are the conditions or constraints under which a particular information type of data about a subject flows from senders to recipients. Transmission principles include confidentiality, reciprocity, consent or mandated by law, among others.

CI (and therefore privacy) is achieved or preserved if all information flows within a particular context align with entrenched informational norms. Hence, to determine the appropriateness of an information flow, one must determine all five parameters characterizing such flow.

In favoring entrenched informational norms to assess the appropriateness of information flows, in question, CI has a conservative bias. However, acknowledging that informational norms may become outdated considering social changes (in values, ends, purposes, roles, and traditions) and technological advances, CI includes a heuristic approach to evaluating whether disruptive information flows (i.e., flows that do not conform with entrenched informational norms) may nevertheless win out over entrenched norms. The heuristic prompts us to probe (1) whose interests are affected and how; (2) how contextual goals, purposes, and values are affected; and (3) how societal values, including fundamental liberties and

rights, are affected. CI thus explicitly highlights the critical relationship between information flows and contextual ends.

Several prior efforts use the CI framework to evaluate the implications of EdTech technologies. Terpstra, De Rooij, and Schouten use the framework to understand the perception of information flow generated in using proctoring systems, highlighting the importance of analyzing all five contextual parameters.²⁷ The study identified several information flows that students viewed as inappropriate. Information flows generated for advertising purposes and information collected outside the exam environment were viewed as unacceptable by the participants. The work further reaffirms the use of the CI-based survey methodology to gauge privacy expectations and emerging norms.

In another effort to understand student privacy, Korir et al. examined the contextual factors contributing to students' privacy concerns about data handling practices behind learning analytics.²⁸ A survey of 111 students in a laboratory setting conducted using the theory of CI showed that students consider information sharing within the university setting more appropriate compared to e-commerce setting. Specifically, the students were more concerned about the flow of information to third parties in the e-commerce setting as compared to the educational context.²⁹

Creel and Dixit (2022) examine current student privacy laws in the United States such as the FERPA, the Children's Online Privacy Protection Act (COPPA), and the Protection of Pupil Rights Amendment (PPRA) and the used of EdTech through the lens of CI.³⁰ They recommend updating current federal privacy laws in order to meet these challenges, as they do not hold school districts or educational software providers to the government's own standards of student privacy and information security. The goal is to ensure "that school officials and educational software providers respect the contextual integrity of information transmission for student data."

27. Arnout Terpstra, Alwin De Rooij, and Alexander Schouten, "Online Proctoring: Privacy Invasion or Study Alleviation? Discovering Acceptability Using Contextual Integrity," In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, 2023, 1–20.

28. Maina Korir, Sharon Slade, Wayne Holmes, Yingfei Héliot, and Bart Rienties, "Investigating the Dimensions of Students' Privacy Concern in the Collection, Use and Sharing of Data for Learning Analytics," *Computers in Human Behavior Reports* 9 (2023): 100262.

29. Ibid.

30. Kathleen Creel and Tara Dixit, "Privacy and Paternalism: The Ethics of Student Data Collection," MIT SERC, 2022.

The approach to privacy as CI is a useful tool to evaluate privacy concerns and violation of modern sociotechnical systems. In contrast to approaches that define privacy through the lens of different dichotomies such as private versus public, personal versus nonpersonal, and governmental versus individuals, the CI theory focuses on the contextual factors involved in the analysis.

Governing Knowledge Commons

The governing knowledge commons (GKC) framework provides further structural underpinnings, by conceiving knowledge commons as shared governance arrangements around knowledge and data resources, such as student data or smart public spaces.³¹ Each governance parameter is structured according to the attributes, aims, conditions, modal logic, and consequences that comprise a hierarchy from strategies, as the weakest institutions, to norms to rules, as the strongest, most enforced institutions. Given the adaptive nature of such structural descriptions, it can be applied to many types of resources, including issues of privacy. Notably, the CI framework integrates with the GKC by deconstructing the attribute parameter into information sender, subject, recipient, and type.³² The fifth CI parameter, the transmission principle, is reciprocally deconstructed and further illuminated via the other GKC parameters (depicted in Figure 1).

The example strategy, norm, and rule represented in Figure 1 represent the synthesis of policy language from universities and platforms regarding academic integrity and proctoring software to exemplify how this hierarchy of institutions applies to the context. Research on academic integrity and emerging technologies has highlighted how radically platform policies transform universities' action, even when they are in tension with established norms about academic integrity, thereby creating a gap between levels of governance.³³

31. Jones and McCoy, "Reconsidering Data in Learning Analytics"; Brett M. Frischmann, Michael J. Madison, and Madelyn Rose Sanfilippo (eds.), *Governing Smart Cities as Knowledge Commons* (Cambridge: Cambridge University Press, 2023).

32. Yan Shvartzshnaider, Madelyn Rose Sanfilippo, and Noah Apthorpe, "Contextual Integrity as a Gauge for Governing Knowledge commons," *Governing Privacy in Knowledge Commons* 220 (2021): 220–244.

33. Madelyn Rose Sanfilippo, Noah Apthorpe, Karoline Brehm, and Yan Shvartzshnaider, "Privacy Governance not Included: Analysis of Third Parties in Learning Management Systems," *Information and Learning Sciences* 124, no. 9/10 (2023): 326–48.

Contextual Integrity	Sender	Subject	Recipient	Information Type	Transmission Principle				
Strategy	6 parameter strategy								
	Proctoring Software Provider	Student	Learning Analytics Start-up	Facial Geometry and Sentiment	To develop new analytic tools	At the discretion of Proctoring Company			
Norm	7 parameter norm								
	TA	Student	Instructor	Evidence of cheating	To ensure compliance and academic integrity adherence	When administering final exams	Is required		
Rule	8 parameter rule								
	Proctoring Software Provider	Student	Instructor	Testing integrity compliance scores	To ensure compliance and academic integrity adherence	When administering final exams	Is required	To pass remote exams	
GKC	Attributes			Aim	Condition	Modality	Consequence		

FIGURE 1 The GKC-CI framework as applied to educational data flows

Figure 1 thus provides an example of a salient strategy, norm, and rule in this context. Although the norm in question, regarding exam proctoring by Teaching Assistants (TAs) in face-to-face situations, illustrates a traditional educational norm around academic integrity, it is in contrast with both the illustrated strategy and rule, as students and instructors widely agree to its appropriateness. The norm is well established and reflects long-standing consensus. The emerging strategy and new rule, included in Figure 1, reflect the administration of exams via third-party software and highlight how technology transforms institutions. Both are inherently antinormative when considering the impacted population and their emerging consensus regarding the intrusiveness of proctoring software, in stark contrast with university administrator, IT, and vendor perspectives.

We draw on the integrated GKC-CI framework, which leverages both the GKC and CI concepts to structure our analysis of privacy governance as intended and in effect, as well as privacy expectations.³⁴ We incorporate the GKC's descriptive analysis of decision-making and extended community members into the examination of actors involved in the information exchange (sender, subject, recipient), as prescribed by CI. Further, we situate our inquiry both with respect to CI's definition of context—"structured social settings characterized by canonical activities,

³⁴ Shvartzshnaider et al., "GKC-CI"; Frischmann et al., *Governing Smart Cities as Knowledge Commons*; Helen Nissenbaum, *Privacy in Context: Technology, Policy, and the Integrity of Social Life* (Stanford, CA: Stanford University Press, 2009).

roles, relationships, power structures, norms (or rules) and internal values (goals, ends, purposes)"—and GKC's notion of *action arenas*.³⁵ At a high level, an action arena refers to a scenario or setting within which members of a community interact around a recurring challenge. These are problem spaces within particular contexts at a particular point in time. In this case, we consider not only the broad context of education but also the more specific connotations of distance and hybrid learning in higher education, further recognizing the interactions between stakeholders on individual campuses and the exchange between local action arenas and broader trends currently in the United States.

Research Design

Our study investigates the tactics used in activism and/or protests surrounding novel educational technology controversies. We conduct a content analysis of relevant subreddits that address recent contentions at US colleges and universities to develop a typology of privacy-related activist tactics among college students. The methodological choice to employ Reddit data for such a purpose builds on recent literature exploring subreddits as sites of norm formation, as well as sources of data regarding political activity.³⁶

We employ the GKC-CI approach in coding for content analysis, to guide the interpretation of results, and to structure our communication of key privacy action arenas around assessment integrity in higher education. Drawing on the GKC-CI framework, we closely examine how students collectively negotiate around inappropriate exogenous institutions impacting their data and themselves.³⁷ We leverage these details to differentiate between institutions as *strategies, norms, and rules*. This common framework across data sources and methods also helps facilitate comparisons, such as between student expectations and current practices, as well as between state educational privacy laws, platform practices, and specific debates identified at particular universities.

35. Nissenbaum, *Privacy in Context: Technology, Policy, and the Integrity of Social Life*; Frischmann et al., *Governing Knowledge Commons*.

36. De Candia, Sara, Gianmarco De Francisci Morales, Corrado Monti, and Francesco Bonchi. "Social norms on reddit: A demographic analysis." In *Proceedings of the 14th ACM Web Science Conference 2022*, pp. 139–147, 2022.; Proferes et al., "Studying Reddit."

37. Shvartzshnaider et al., "GKC-CI."

The GKC-CI lens helps us to better understand the perception of appropriateness and legitimacy of information flows. We are notably interested in unresolved action arenas and disagreement over governance in effect, as evidenced by student protests, pointing toward governance failures and externalities that must be addressed to establish trust in this context. We also draw on the literature regarding privacy harms and activism, as well as activism more broadly to understand the nature of roles and tactics associated with particular action arenas. Further details about this taxonomy are presented in Table 1.

TABLE 1 Codebook: Concepts Describing the Roles, Concerns, and Approaches/Tactics Associated with Student Activism Regarding Educational Technology Privacy

Category	Concept	Definition	References
Roles	Student	A person who attends a school, college, or university to study	Chew et al. 2018
	Instructor	A person who instructs at a school, college, or university; primary role is as educator, practitioner, or researcher	Cohney et al. 2021
	Administrator	An actor who is responsible for management, decision-making, or leadership within an academic organization	Buller 2015
	Vendor	Supplier that sells products or services	Jung et al. 2021
	Organizer	A person or group that plans, arranges, and supervises an event or activity	Rothman 1974
	Advocate	A person who publicly supports or recommends a particular cause or policy	Roßteutscher 2002
	Ally	A person or group that cooperates with or helps another in a particular activity	Sieben 2021
	Opposition/adversary	A person or group that is an opponent in a conflict or dispute	Rucht 2004
Concerns	Privacy	The appropriate flow of personal information in a specific context	Nissenbaum 2009
	Surveillance	Monitoring of behavior or information for the purpose of information gathering, managing, or directing	Fuchs 2011
	Assessment	The evaluation and judgment of the nature or ability of a person	Newton 2007

(Continued)

TABLE I Codebook: Concepts Describing the Roles, Concerns, and Approaches/Tactics Associated with Student Activism Regarding Educational Technology Privacy (*Continued*)

Category	Concept	Definition	References
	Control	The power to exercise restraining or directing influence over a person or group	Ouchi and Dowling 1974
	Transparency	Open and easy for others to see what actions are performed	Meijer 2009
	Harms	The array of physical, economic, reputational, psychological, autonomy, discrimination, and relationship harms associated with privacy infringement	Citron and Solove 2022
	Boundaries	Social differentiation between in- and out-group members, contributing to fracturing, fragmentation, exclusion, etc.	Earl 2006
Approaches and tactics	Petition	A formal written request signed by supporters, appealing to authority with respect to a particular cause	George and Leidner 2019
	Crowdsourcing	Practice of obtaining needed services or content by gathering contributions from the general public who submit their data via the internet	Estellés-Arolas and González-Ladrón-de-Guevara 2012
	Obfuscation	The action of making something obscure, unclear, or difficult to understand	Brunton and Nissenbaum 2015
	Norm formation	The process by which consensus is developed in order to produce new or modified norms	Friedkin 2001
	Informating	The process by which behaviors, processes, and interactions are documented as information	Valenzuela 2013
	Opinion expression	Communication of an individual's preferences, perceptions, or experiences	Valenzuela 2013
Other	Information flow	Describes a complete or incomplete data sharing arrangement in terms of Information sender, information subject, information recipient, information type, and transmission principles	Nissenbaum 2009
	Participation	Behaviors and communication reflecting engagement in social processes	Piškur et al. 2014

Following the completion of a full Institutional Review Board (IRB) review (addressing the sensitivity of student privacy interests and assurances that we would not evaluate student activism at our own institutions), we collected threads discussing stakeholder concerns from subreddits associated with college, university, and student privacy-specific subcommunities. To locate appropriate subreddits, two researchers created a list of twenty-five keywords based on news coverage and prior work on student privacy. Key-words included student-specific concerns (e.g., student privacy surveillance, eye-tracking, assessment, and cheating), as well as individual platforms (e.g., Honorlock, Proctorio, and Zoom). A total of thirty-four subreddits were collected. We then used the Python Reddit API Wrapper (PRAW) to capture text from public posts, in the order that they were posted to maintain structure among threaded replies (documenting engagement and collective action development) without collecting usernames or other associated metadata.

We conducted a thematic content analysis of 798 total posts to identify tactics used in student activism on these issues, compare approaches across universities, and refine our codebook. Our codebook (Table 1), which was developed *a priori*, draws both upon surfaced themes regarding roles, approaches, and tactics, and upon conceptual frameworks from the literature review. This is a solid theoretical foundation for this research based on established methods.³⁸ The codebook includes four high-level categories that describe the role of the poster, articulated concerns, student activism approaches, and tactics to mitigate concerns. Codes from Table 1 were applied at the level of posts; multiple codes from each category were applied in tandem, when applicable, and some posts were not coded at all, given the lack of relevance to our inquiry. For example, we did not apply codes regarding all observable roles to each post; we only applied codes about roles when a role was apparent in the post text. Although all posts were anonymous, many posts did categorically self-identify as a current student or an alumni who graduated in a particular year. Coding was guided by expressed content. Similarly, concerns, approaches, and tactics were identified based on what information was provided in the post. For example, if someone wrote about starting a petition or attending a committee meeting to advocate for change, we coded that as “petition” or “opinion expression,” respectively.

38. Noel Pearse, “An Illustration of Deductive Analysis in Qualitative Research,” in *18th European Conference on Research Methodology for Business and Management Studies*, 2019, 264; Michael Williams, and Tami Moser, “The Art of Coding and Thematic Exploration in Qualitative Research,” *International Management Review* 15, no. 1 (2019): 45–55.

We co-coded content to appropriately assess interrater reliability and employ formal concept analysis to assess the validity of our coding concepts. Iterative coding and discussion were needed to reach sufficient agreement across all posts. The third and final round of co-coding led to Krippendorf's scores of 0.76–1.0. Final definitions and supporting references for all conceptual codes are also presented in Table 1. We consolidate this analysis in a typology of privacy activism approaches, as well as a discussion between the rules and practices imposed by universities, in contrast with grassroots development of norms.

The final structured coding results were analyzed comparatively for relative prominence, overall distribution, and overlap in codes. Although results are not interpreted quantitatively, our analysis in the next section highlights broad patterns and prominent themes in coding.

Analysis

Guided by our research questions on strategies for student privacy activism, we organize our results into two subsections. First, we describe the roles played in debates and activism around student privacy. Second, we highlight student strategies and approaches or tactics to address privacy concerns. Our analysis takes care not to identify individual students or social media users, given the sensitivity of these issues. Instead, our results are presented with respect to thematic coding and paraphrasing around key comments and concerns. This aligns with general approaches among the population studied to protect the identities of student activists and those posting; anonymity was key to uninhibited discussion on Reddit. A key finding from this study aligns with historical work on activism: privacy and anonymity are key to increasing participation and the production and sharing of knowledge around activism and privacy.

What Roles Do Students and Other Stakeholders Play When Acting on Privacy and Surveillance Concerns about Digital Assessment?

Students and their interests dominated the discussion forums analyzed; as many self-sorted into roles of organizers and advocates, they moved beyond data subjects, to collectively coordinate to achieve more desirable privacy outcomes. Many student concerns emphasized in the various approaches draw attention to student privacy concerns and the intersectionality of

privacy issues. Among the most prominent coding patterns for student concerns were (1) the intrusiveness of proctoring software and other digital forms of surveillance amid pandemic education at a distance and (2) how these burdens fall disproportionately on students from low-income households, multigenerational families, and diverse cultural backgrounds. Further, expectations of baseline compliance with proctoring tools did not align with many of these students' living situations. Figure 2 presents a barplot depicting the totals for mentioned Roles, Approaches, and Concerns. The role of "Opposition" stands out with the maximum number of mentions, while the role of Organizer is mentioned the least. The posts feature mostly Opinion expression, with a smaller number of posts related to Petitions. Not surprisingly, in the posts we analyzed the main concerns were about Assessment, Privacy, and Surveillance. Interestingly, only a small fraction of posts mention Transparency.

Still other forums explored the mental health impact of intrusive surveillance and mandatory proctoring tools. Some of these discussions were tentative in nature, highlighting the desire of those who posted to remain anonymous and their discomfort at raising the challenges, while others were overtly angry. They described sobbing uncontrollably through the duration of their exams, due to a combination of stress about the assessment

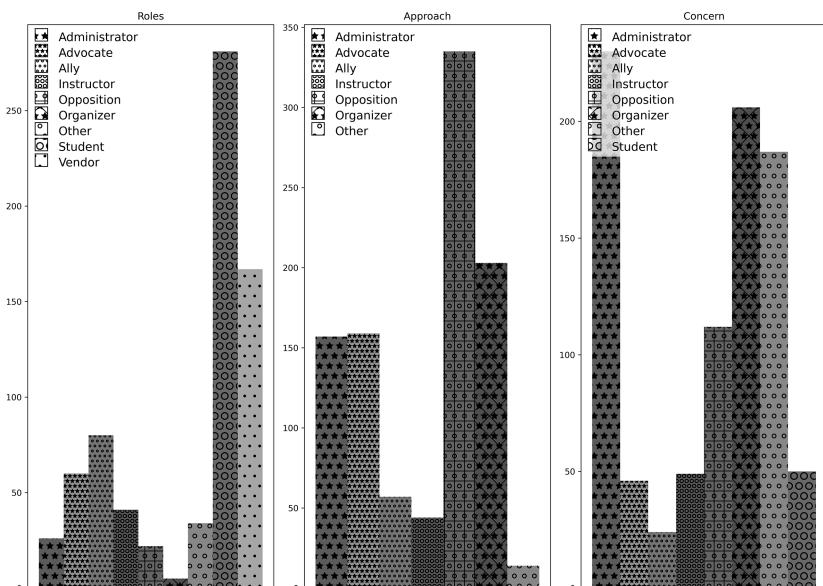


FIGURE 2 Prevalence of roles, approaches, and concerns among student privacy discussions

itself and the privacy violations they were experiencing, and amplified by added emotional strain in knowing that those tears or any shaking of their body would likely trigger automatic flags of their exam and heightened scrutiny.

These concerns emotionally and volumetrically dwarf the technical and administrative interests that are articulated in these threads, which are likely more visible in other data. Yet those few posts that come from university-affiliated accounts or are moderated on university subreddits demonstrate starkly different interests stemming from fears that virtual coursework and assessments cannot possibly be as legitimate as their offline counterparts, thus leading decision-makers to turn to more Orwellian and intrusive means of control and monitoring. They assert rules and policies, insisting this is in the best interest of the university to maintain degree integrity and reputation. Many point to their peers and argue these are best practices. Few acknowledged the trade-offs in ways that seemed aware of the costs or burdens to students.

Figure 3 presents a heatmap of the intersection of codes pertaining to concerns and those associated with different roles. Most posts that expressed privacy concerns came from students, followed by students' concerns regarding assessment and surveillance.

Opposition and adversary roles overlapped significantly with those who held formal roles as university administrators and vendors. Many of the posts from officially designated accounts associated with universities disclosed the job titles and responsibilities of those posting, in tandem with commentary on the official policies of the university, school,

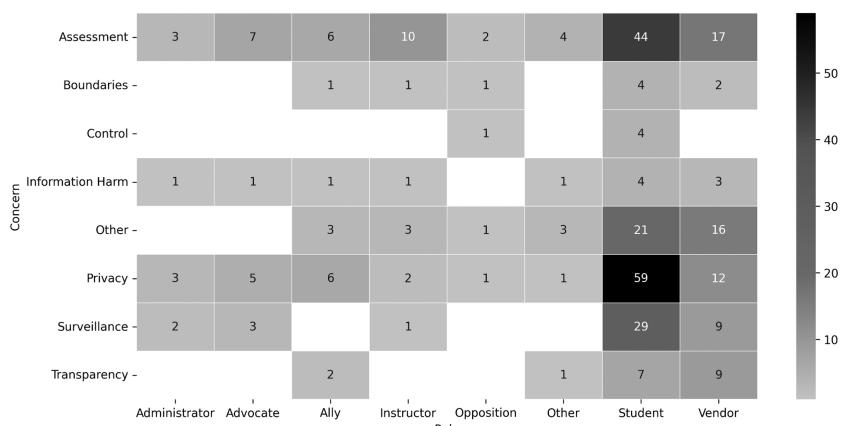


FIGURE 3 Concerns among different roles in student privacy activism

or department about proctoring software and technologically mediated monitoring of students' academic integrity compliance. It is notable that many of these posts appeared in subreddits associated with specific universities, as opposed to subreddits more generally aligned with college student experience and/or student privacy concerns. In campus-specific subreddits, it was not uncommon to find active moderation of posts advocating for activism or sharing information about the obfuscation of surveillance techniques. In each of these instances, there were official posts explaining why the now-missing post was removed and sharing the relevant policy language justifying that moderation activity. However, many of these policies limited restrictions to currently enrolled students, as self-identified by posters. Posts by users who identified as students at other universities or alumni were often allowed to remain, indicating that moderators interpreted such claims at face value.

Alumni thus served one of the more complicated roles in these discussions. By and large, when included in discussions, alumni support student interests and aid in collective action. However, drawing attention to these issues in such a way as to grab the attention of alumni was not always simple. Once alumni did enter the conversation, they walked a delicate balance between drawing attention to specific students, sharing critical information about privacy and cyber security to support obfuscation of surveillance and student autonomy, and clearly and carefully asserting their status as alumni in every post. An almost formulaic style of post was observed from alumni; in the form of "I am an alumni of X university and graduated in X year. If I were still a student, this is what I would do." We also observed posts from alumni as allies, in which it was clear they had lurked in other discussions or been exposed to student concerns on other channels but were starting entirely new threads on good privacy and security practices for students.

Alumni were not the only allies observed; instructors often assumed this role as well. Complexity of instructor profiles, roles, and preferences was prevalent in the discussions analyzed, both when they were engaged as direct participants and when they were merely a topic of discussion. Instructors—including graduate student teaching assistants, adjuncts, lecturers, and faculty—were much more likely to participate in these discussions when they supported students. Few instructors who promoted proctoring software were observed within these conversations, though many discussions emphasized the use of this software at the discretion of the instructor rather than as a mandate from their department or university.

Yet individual preferences among instructors were rarely the determining factor in whether the software was used; much more often, decisions about academic integrity were made by university administrators or by collective decision-making processes of many faculty. Indeed, we observed a number of posts from self-identified instructors who lamented being asked to intrude on their students' privacy in this way and offered advice or support to student activists. A few posts used language emphasizing that it brought them "no joy" or made them feel "morally bankrupt," but were forced. Some instructors and allies spoke of their refusal to use technologically mediated or algorithmic mechanisms to assess academic integrity, often indicating that they needed to redesign their courses to evade requirements. Some of these examples align with practices of un-grading or radical pedagogy.

What Are the Modes of Student Activism that Emerge in Response to Privacy Infringements in Online Assessment?

Many threads analyzed focused on the approaches and tactics students could leverage to act upon their concerns. For example, there was significant discussion of activism strategies and mechanisms. Given the diversity of interests and unresolved action arenas around student privacy and sociotechnical assessment integrity, both locally and nationally, how students engage in collective action to negotiate privacy norms and technology governance is also diverse. Although petitions have proven especially successful, spanning many universities, other means of drawing attention to these issues to establish appropriate data and privacy practices in the assessment include protests, legal action, lobbying faculty senators, op-eds, creation of advocacy organizations, coordinated obfuscation, crowdsourcing and knowledge-sharing campaigns, and direct appeals to educators.

Coding of tactics also revealed that many threads emphasized the need to draw attention to student concerns via media, procedural governance, and direct interventions with decision-makers. A scaffolding emerged in which posters urged others to first ask for alternate accommodations or question decisions to use proctoring software in individual classes, then escalated to encouraging their peers to argue for a change to department chairs, deans, provosts, or other administrators. In some cases, these efforts were successful; yet, in many other cases, they were not, which is when students would turn to petitions, student papers, or other more attention-grabbing means of demonstration or to draw media scrutiny.

These examples also often required collaboration and coordination among students to ensure success. For example, one subreddit debated whether petitioning for changes most people want or all the changes advocated by students would be more effective; another subreddit thread focused on how student concerns were dismissed at a committee meeting, because they all wanted different things, leading them to strategize how they could work together. That latter thread was updated to indicate their success.

Further, there were threads that explored options students may have to evade proctoring software or other intrusive means of academic integrity assessment, including camera on requirements or third-party plagiarism detection integrated with learning management systems. Options identified often included the use of virtual machines, multiple devices, and leveraging of accommodations or policies intended to support students around technical difficulties or with devices that did not meet the latest specifications. Regarding the latter strategy, the creativity with which students successfully argued to instructors that their devices could not support the computationally intensive proctoring software, or they did not have webcams, both when that was true and when it served their privacy interests was notable. Discussions of these approaches were much more common in subreddits generally aimed at student experience or student concerns, in comparison to subreddits associated with specific campuses.

Discussion

In this section, we discuss findings with respect to both research questions. We also explored implications beyond these questions, analyzing the status of student privacy governance, illustrating approaches toward balancing trade-offs, and ongoing governance challenges.

Roles in Debates over Student Privacy

Students played important roles as advocates and organizers, not merely discussing norms and expectations, but shaping dialogue about educational technology governance and organizing their peers to impact privacy and governance. Drawing on descriptions of alumni and instructor support presented in the Analysis section, coordination with nonstudent actors as allies was important to approaches and tactics to protect student privacy and articulate student interests with respect to proctoring software

and digital transformations of academic integrity processes. Coordination with allies at *other* universities served to be the most effective at the level of technical obfuscation. These approaches and tactics depended fundamentally on the perceived safety of anonymous Reddit threads.

Approaches and Tactics Regarding Student Privacy

Two notable strategic patterns emerged in our results: (1) collective knowledge production to support workarounds and (2) coordinated influence campaigns to draw attention or produce policy or procedural changes.

First, workarounds to protect privacy, while operating within proctoring and learning analytic systems were a key focus of knowledge formation and sharing in these discussions. Collaborative knowledge production around this topic drew many to the subreddits analyzed and illustrated coproduction of information resources and community, as typical of a knowledge commons, though quite distinct from other educational knowledge commons previously studied.³⁹ This pattern evidenced in coding is qualitatively supported by students' desires to obfuscate and the value they placed on their privacy and safety.

Second, many students wanted to engage in efforts to influence change but found that without coordination and cooperation with their peers, their efforts were disregarded or competed with one another for attention. The efforts that were successful required students to work together and align their requests and activities, even when their preferences did not perfectly align. They recognized that they were better off with some changes, rather than continued surveillance via educational technologies; collective action forced administrators to see that student data could not merely be taken for granted, as previous research shows are often the case.⁴⁰

Privacy Governance Outcomes

Content analysis illustrates how the polycentric nature of governance, stemming from many centers of decision-making, serves to shape both

39. Kyle M. L. Jones and Chase McCoy, "Privacy in Practice," In *Governing Privacy in Knowledge Commons*, Madelyn R. Sanfilippo, Brett M. Frischmann, & Katherine J. Strandburg (eds.) (Cambridge, UK: Cambridge University Press, 2021): 98–120.

40. Kaiwen Sun, Christopher Brooks, Abraham H. Mhaidli, Florian Schaub, and Sonakshi Watel, "Taking Student Data for Granted? A Multi-stakeholder Privacy Analysis of a Learning Analytics System," in *EDM 2018 Workshop on Policy and Educational Data Mining*, 2018.

student privacy and student activism around privacy. We note disparities between graduate, alumni, and student activists in voicing concerns regarding student privacy practices. Compared to student activists, recent graduates and alumni significantly have more freedom of expression and opportunity to raise concerns over proctoring and student privacy practices. This is mainly due to what seems to be a systematic failure of institutions governing examination protocols and academic integrity in aligning associated governance with established educational context norms.⁴¹ Yet, there is some evidence of effective resolution of conflict, with successful instances of collective action to stop the use of invasive proctoring tools.

In our analysis, we identify top-down and bottom-up patterns of governance regarding privacy and participation in dialogue around privacy or privacy activism.

With respect to top-down patterns, specific action arenas largely fell into this category, including privacy, transparency, and content moderation as informal, but enforced governance of participation and informing. We found it particularly notable that content moderation had such a significant impact in shaping activism in intended and unintended ways. Not only were university subreddit moderation policies key to intersections between alumni and allies as roles, but these policies also triggered when activists needed to relocate to other platforms that provided more safety and/or were more decentralized, such as Discord. Discord notably had the benefit of less transparency and more control to promote the privacy and safety of student activists and was signaled many times as the perceived correct place for discussions to continue.

With respect to bottom-up patterns by which governance is produced or refined, strategies for coordination among roles, actors, and institutions emerged. Such coordination reflected common values and mutual recognition of the window of opportunity. Cross-institutional coordination was especially important in comparing governance and knowledge-sharing approaches regarding privacy activism from university to university. This coordination was strategy driven and required negotiation among participants. Notably, in a form of metagovernance, this was also the primary mechanism by which norm formation processes were visible in our dataset. Coordination among a wider pool of stakeholders, shaped by

41. Paul Prinsloo and Sharon Slade, "Student Data Privacy and Institutional Accountability in an Age of Surveillance," in *Using Data to Improve Higher Education*, 195–214 (Leiden, Netherlands: Brill, 2014).

knowledge-sharing strategies and the power of numbers in collective action, attempted to ascertain what is normatively appropriate in this summer urging action arena.

Trade-offs Regarding Student Privacy

In analyzing privacy and governance, as contested by student activists and their allies on Reddit, numerous trade-offs regarding academic integrity systems, practices, and policies were evident in stark relief, crossing many campuses. Trade-offs were evident at three levels: (1) competing norms, (2) tensions between norms and rules, and (3) value tensions.

First, at the micro level, there were competing norms regarding privacy generally, protesting privacy, protesting assessment and integrity, validity, and the legitimacy of challenging established norms in education. From discussions, it is clear that the introduction of new technology into the assessment integrity processes of higher education has greatly challenged existing norms and introduced wedges between actors and their specific roles as they work to revise or reconcile norms.

Second, there are significant tensions between student norms and university decisions reflecting the rules determined by university administrators and practices encoded by vendors. This is not merely a difference in perspective or a disagreement between groups. Rather, the discussions analyzed indicate the degree to which technologically mediated assessment of academic integrity violates CI, establishing transmission principles that are inconsistent with reasonable expectations of privacy and with traditional educational norms around academic integrity. Given the changes in technology and the introduction of new actors into these information flows, in the form of vendors with significant incentives to treat students as consumers and extract valuable data, there is an overwhelming perception that the rules on the books and the rules in use are antinormative and inappropriate.

Third, the ever-popular trade-off between privacy and security was debated widely among students and other actors in these threads. One of the most visible places this trade-off was debated was with respect to the popular perception of Honorlock as malware. The popular assumption that privacy must be sacrificed to achieve collective safety or security was challenged in these discussions, as students found arguments as to the security risks of Honorlock to be more efficacious and powerful with respect to IT staff or faculty with any cyber security expertise. Their opponents

continue to raise this trade-off, equating academic integrity with security, at the collective level, despite demonstrable harm to individuals.

Ongoing Governance Challenges

Despite some clear patterns that indicate functional governance to support activism on anonymous platforms such as Reddit, the existence of these threats themselves speaks to the ongoing governance challenges around student privacy, academic integrity, educational technology, and the intersection of platform politics and institutional arrangements. This latter point deserves perhaps the most attention in our analysis, as the inherent platform politics associated with educational technologies are increasingly part of the institutional arrangements experienced by students regarding informating, crowdsourcing, and traditional educational assessment. This speaks to the treatment of students as educational consumers and data for institutional assessment. The introduction of new technologies into higher education, as well as education more broadly, challenges existing norms that were already in flux, given shifts in attitudes that come with matriculation and new freshmen on campus. The real challenge is not only to establish good governance and alignment with contextual norms but to determine what those norms are and should be given all of these dynamics, and then to find ways to enforce them. It is not enough for universities to stop mandating the use of proctoring software if it is still permissible tacitly or explicitly for instructors to continue their use. Contracts must be ended.

Conclusions

In examining the results and analysis of this study, we observe two key themes that speak to broader implications. First, student autonomy must be centered and respected in higher education. Second, increased digital surveillance via assessment integrity and emergent educational assessment significantly challenged student autonomy, legitimacy of governance, and trust of educational institutions.

We call for future research in this area to better identify and establish appropriate norms for student data in higher education. Our work demonstrates changing norms related to issues of academic integrity, in alignment with the emerging body of research on issues of trust, transparency, and responsibility around educational technology and student privacy.

As modern educational contexts blend privacy, technology, and academic integrity, further research on these issues can ground better decision-making, design, and policy moving forward.

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