INFORMATION LITERACY IN THE AGE OF ALGORITHMS

Student experiences with news and information, and the need for change

EXECUTIVE SUMMARY

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This report is the result of a national research effort exploring how much U.S. college-age students know about the way in which internet giants like Google, YouTube, Instagram, and Facebook work, and by extension, how they affect society. Amidst the daily flood of digital news, memes, opinion, advertising, and propaganda, there is growing concern about how these popular platforms, and the algorithms they employ, influence our lives, deepen social divisions, and foment polarization, extremism, and distrust. This work builds on a decade of research from Project Information Literacy surveying the information habits of college students in an increasingly digital world. It examines how students conceptualize and navigate a volatile and ever-changing information landscape, and proposes programmatic ways to prepare them to contend with this new reality. In this yearlong investigation, supported by the John S. and James L. Knight Foundation, The Harvard Graduate School of Education, and the School of Library and Information Science at the University of South Carolina, researchers conducted 16 focus groups with 103 undergraduates and interviews with 37 faculty members to collect qualitative data from eight U.S. colleges and universities from across the country.

This self-described "pivot generation" born before the 24/7 connectivity of social media, has come of age aware, cautious, and curious about the implications of the current information landscape. Deeply skeptical, many of these students are conditioned to do research for themselves rather than deferring to experts or major news outlets. They understand that "free" platforms are convenient but also recognize they harvest massive amounts of personal data to target ads and influence what content they see. Most, though not all, know that data-driven platforms, if left unexamined and unchallenged, threaten representative democracy and the cultivation of informed and engaged communities. Together, these findings reveal a growing global epistemological crisis. As many students assert their authority as learners and first-time voters, educational and media organizations need to do more to teach "algorithm literacy" within and beyond formal education. Ultimately, journalists and media organizations need to check the unchecked power of algorithms and the social problems they expose and exacerbate for students, faculty, and society.

Four detailed research takeaways are presented in this report, supporting four recommendations to key stakeholders: educators, librarians, administrators, and journalists at a time when algorithmic literacy is more important than ever. To explore the implications of this study's findings, a small group of prominent thinkers in education, libraries, computer science, and media studies, convened to discuss the implications of this study's findings, have contributed brief reflections.

Four Research Takeaways

1. **College students have an ambivalent bond with algorithm-driven platforms.** Today's students are aware of the workings of algorithms that track their interactions and often seem "creepy," but feel a simultaneous indignation and resignation to the powers of an unregulated media environment. As one student astutely put it, "It's a horrible, totalitarian hellscape, but it's kind of the best we can reasonably expect."

2. **Students use defensive practices to protect their privacy.** Many learned privacy protection strategies from their peers, not from their teachers, and read across different content producers to get the full story and break out of news bubbles. Yet, students were largely unaware of ways their own schools used platforms that aggregate their personal data or how widely algorithms are being used for automated decision-making.

3. **Trust is dead for many students, and skepticism lives.** Students who grew up with the internet had acquired smartphones, social media accounts, and a certain cynicism about the reliability of the World Wide Web. Yet, most did not find the heuristics they learned in school and the critical thinking skills practiced in college either useful or relevant when trying to make sense of the volume of information they encounter in their daily lives.

4. **Discussions of algorithms rarely make it into the classroom.** Faculty expressed deep concern about algorithms, but very few raised these concerns in class. Instead, they encouraged students to seek out peer-reviewed research and analyze texts critically, relying on tradition while worried that our information landscape was changing in ways they found difficult to understand.

Recommendations

1. **Use peer-to-peer learning to nurture personal agency and advance campus-wide learning.** Students were eager to learn about technology, but did not think their instructors were up to speed, opening up the potential for involving students as co-designers of learning experiences. Faculty and librarians, too, can learn from one another as they build their own knowledge and develop ongoing learning partnerships.

2. **The K-20 student experience must be interdisciplinary, holistic, and integrated.** Students in our focus groups described their exposure to information literacy and critical thinking from elementary school through college as haphazard, inadequate, and disconnected. More must be done to make information literacy instruction coherent and holistic, which will require the formation of local and national alliances across disciplines and educational levels, to better coordinate and update information literacy and critical thinking instruction.

3. **News outlets must expand algorithm coverage, while being transparent about their own practices.** It takes solid reporting from news organizations to counter the narratives of helpless resignation we heard from both students and faculty. At the same time, media organizations need to be much clearer about what information they collect, how they use it and with whom they share it.

4. **Learning about algorithmic justice supports education for democracy.** Behind their veneer of sophisticated cynicism, students in our focus groups became energized when discussing the impact of algorithms on society. Opportunities to introduce learning about algorithmic justice can be found throughout the curriculum and in programs that link higher education to the broader community. ❖