Who Teaches Accessibility? A Survey of U.S. Computing Faculty

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ABSTRACT

Industry demand for software developers with knowledge of accessibility has increased substantially in recent years. However, there is little knowledge about the prevalence of higher education teaching about accessibility or faculty's perceived barriers to teaching accessibility. To address this gap, we surveyed 14,176 computing and information science faculty in the United States. We received a representative sample of at least one response from 318 of the 352 institutions we surveyed, totaling 1,857 responses. We found that 175 institutions (50%) had at least one instructor teaching accessibility and that no fewer than 2.5% of faculty overall teach accessibility. Faculty that teach accessibility are twice as likely to be female, to have expertise in HCI and software engineering, and to know people with disabilities. The most critical barriers to teaching accessibility that faculty reported were the absence of clear and discipline-specific accessibility learning objectives and the lack of faculty knowledge about accessibility. Faculty desired resources that were specific to the areas of computing in which they teach rather than general accessibility resources and guidelines.

KEYWORDS

Computing education, accessibility, curriculum change

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1 INTRODUCTION

People with disabilities rely on a range of access technologies to interface with the digital world, including screen readers, text-to-speech, speech-to-text, and alt-tags for images on the web. However, software has to be designed to work these technologies. Because of this, many companies view accessibility as not only an essential component of software design, but also an essential component of their engineers' expertise. Consortia like TeachAccess (teachaccess.org), led by Yahoo!, Facebook, Microsoft, Google, and Adobe, represent this increased demand for accessibility knowledge, and are leading efforts to increase the number of computer and information science faculty teaching accessibility. In parallel, professional societies such as ABET have recently added accessibility into engineering design accreditation requirements.

Incorporating instruction on accessibility at scale requires two major elements: (1) methods for how to teach accessibility in computer science (CS) and related fields, and (2) large scale adoption and implementation of these methods by faculty. Most prior work has focused on the first element. For example, some have incorporated accessibility in software engineering courses [5,9,15], as part of introducing web development [8,12], or in HCI and design courses as a central component of design process [13,14]. Others have discovered that teaching accessibility also requires teaching empathy[2,10]. In the most comprehensive study to date, Putnam et al., summarized the practices of 18 faculty across 15 universities [11], documenting a range of pedagogies for teaching accessibility, including engaging with multiple diverse perspectives, and incorporating project-learning and creative approaches, such as field trips, guest speakers and videos. Others still aimed for more ambitious curricular change, developing four-year integrated curricula that span multiple courses [16] and investigated the importance of student and administration interest in sustaining accessibility infused programs in information and technology curriculum [3].

Although these pedagogical and curricular innovations are necessary, little work has investigated the second element to curricular change: faculty adoption. In fact, we know little about how much computer and information science faculty are teaching accessibility, and what barriers exist to more faculty doing so. Research on curricular change provides us some predictions. For example, theories of curricular change argue that change only comes through social and instructional discourse among faculty organically contributing to, and constructing, instructors' knowledge [1,7]. Additionally, Kezar and Eckel, in an examination of several institutions, determined that institutional culture could enhance or stymie curriculum changes [6]. These works suggest that large scale curricular change is not a matter of top-down decree, but one of fostering local change agents who are

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intimately aware of the culture of specific institutions and who can devise and implement strategies to work within them.

If these theories of curricular change are true, then a next step in increasing the prevalence of accessibility instruction is to discover:

- RQ1. Who is teaching accessibility?
- RQ2. What barriers do faculty see to teaching accessibility?
- RQ3. What factors predict who is teaching accessibility?

To answer these questions, we designed and disseminated a survey to nearly all computing and information science faculty in the U.S. In the rest of this paper we discuss our findings and offer recommendations for teaching accessibility at scale.

2 METHOD

In this section, we cover our inclusion criteria, sampling, survey instrument, and data collection and cleaning.

2.1 Defining and Recruiting Participants

We defined our population as faculty in computer science, information science and other interdisciplinary computing departments at 4-year universities and colleges. We chose this demographic because they are traditionally tasked with teaching many of the students who pursue careers in technology-based fields (we scoped studies of community colleges and coding bootcamps for future work). Because the survey was sponsored by AccessComputing [8] and supported by TeachAccess, and both organizations focus on technology access in the U.S., we targeted instructors and professors in the U.S. We obtained a full list of institutions by merging accredited computer science and engineering programs from Wikipedia and departments members of Computing Research Association. For Information Science programs we merged the Wikipedia list with the iSchool Caucus charter list updated in 2014.

We used Mechanical Turk to crowdsource contact information from publicly facing university websites. We gathered the site links for the faculty directory for each of department and college on the list above. We set up the Mechanical Turk task for two different workers to collect the contact information from the same website. For sites that listed more than 30 faculty names we split the list into two or three different tasks. We then matched the responses from the different workers and flagged the instances where there was a mismatch. In those cases, we checked the responses manually and compared it to the contact information on the website. This resulted in email addresses for 14,176 faculty.

2.2 Survey Instrument

Our survey began by asking "Do you teach courses that incorporate topics about accessibility?" We asked respondents about barriers they faced "incorporating accessibility topics in your teaching," and to indicate their agreement with the statement "Accessibility should be taught as part of computer science." We next asked their gender, years of teaching experience, and if the respondent had "colleagues, acquaintances, friends, or family with disabilities."

If the respondent indicated that they teach accessibility, we also asked "What accessibility learning objectives does your course cover?", "What readings are made available to students?", and "what pedagogies do you use to teach about accessibility?", providing a list of responses for each and an option for a free response. We also asked "In your course, how often do students interact with people with disabilities?", "How many years experience do you have teaching accessibility related topics?", and "How would you rate your knowledge of accessibility?" Finally, we asked whether the respondent identified as having a disability, and if so, which ones. Due to a design oversight, we did not ask all respondents this last question, only those that indicated they teach accessibility.

Table 1. Survey emails, responses, and response rates

First Launch	9,736	1,302	13.4%
Second Launch	4,207	547	13.0%
Third Launch	233	22	9.4%
Total	14,176	1,857	13.1%

We did several pilot tests with faculty in our home institution to gauge the clarity of the questions and the length of the survey overall. To encourage a high response rate, we aimed for a survey that did not take more than 5 minutes to complete. We used SurveyGizmo to create and distribute our survey, conducting several piloting rounds with SurveyGizmo to verify distribution and presentation ensured completion.

We emailed surveys to 14,176 instructors in three separate waves due to limits on how many emails the tool would send at once. We sent emails on Mondays, and a reminder email one week later to those who had not completed the survey, prompting them to start or complete the survey.

2.3 Data Collection and Cleaning

We received 1,857 full responses, for a response rate of 13%. We did not include partial responses because incomplete surveys did not have enough data for analysis of our research questions. Table 1 shows the distribution of surveys sent per launch, the number of full responses received, and corresponding response rates.

We downloaded all the survey responses and filtered out partial responses. Then, we merged the response with the respondent's institution name and its geographic location. Some faculty (45) responded "Yes" to "Do you teach courses that incorporate topics about accessibility?" but later responded "I do not teach courses that incorporate topics about accessibility." We counted these faculty as not incorporating accessibility topics in their courses.

3 RESULTS

3.1 RQ1: Who is teaching accessibility?

In this section, we describe who responded to the survey and then compare those who did and did not report teaching accessibility. We then discuss what faculty reported teaching.

The faculty who responded to the survey reflected CS departments broadly. Respondents had a range of experience, with 7.4% reporting less than a year of experience, 23.3% more than 25 years, and within this range, a mode of 10 years. Of all respondents, 72.6% identified as male, 23.2% identified as female, and 4.3% preferred not to indicate their gender (this proportion reflects the gender distribution reported in the 2016 Taulbee Survey: 79.4% men, 20.6% women). The geographic distribution of respondents included faculty from 48 states in the U.S., Washington DC and Puerto Rico, with a concentration of respondents in California (188), New York (187), Pennsylvania (126), and Michigan (101), which are four of the ten most populous states in the U.S. In total, we received at least one response from 318 out of the 352 institutions who received the survey.

Table 2. Gender identity and who teaches accessibility

	Female	Male	Non-Binary	Prefer not to say
All Respondents	23.2%	72.6%	0.3%	4.0%
Who Teach	37.6%	59.5%	0.3%	2.7%
Who Do Not	19.6%	75.9%	0.3%	4.3%

Table 3. Proportion of faculty who do and do not teach accessibility and who know someone with a disability

Relationship?	All	Teaches	Doesn't
No	27.1%	19.2%	29.1%
Yes, close family	23.9%	31.7%	21.9%
Yes, close friends	13.4%	21.6%	11.3%
Yes, personal acquaintances	30.5%	39.7%	28.2%
Yes, professional acquaintances	35.1%	50.9%	31.0%

Overall, 20% of faculty (375) responded "Yes" to the prompt "Do you teach courses that incorporate topics about accessibility?" These faculty represented 175 unique colleges and universities, and were dominated by University of Washington (21), Kent State University (12), Indiana University at Bloomington (11), Rochester Institute of Technology (11), University of Michigan (11), Carnegie Mellon University (10), University of Maryland, Baltimore County (9), University of Maryland, College Park (9), and University of Missouri (8), with 75 universities having at least 2 faculty teaching accessibility. Thus, with the caveat of not knowing the prevalence of faculty who did not respond to the survey, an estimate of the floor of the total number of computing and information science faculty in the U.S. teaching accessibility is at least 375 out of 14,176 of the faculty surveyed, about 2.6%, and at least 175 institutions out of 352 institutions, or 50%.

There were several notable differences between respondents who do and do not teach accessibility. For instance, Table 2 shows a greater proportion of those who reported not teaching accessibility also identified as male (75.9%), compared with those who identified as female (19.5%). The data show how those who teach accessibility identified (not how male and female declared they teach accessibility), thus, in looking at the proportions of those who reported teaching accessibility and identified as female or male, a significant proportion identified as female ($\chi^2(df = 1, N = 1856) = 54.597$, $p < 0.0001$), specifically, 37.6% compared with 19.6% who do not teach accessibility.

Across all faculty, nearly 73% knew someone with a disability. However, as shown in Table 3, those who taught accessibility were significantly more likely to report knowing someone with a disability ($\chi^2(df = 1, N = 1857) = 15.0$, $p < 0.0001$).

For respondents who reported teaching accessibility, we asked detailed questions about their experience with disability, what content they taught about accessibility, and what teaching methods they used to do so. Of those who reported teaching accessibility, 17% reported having a disability themselves, including 5.3% identifying as an older adult, 4.8% as having hearing impairments, 4.3% as having a physical or mobility disability, 2.9% as having vision impairments, 2.4% with a cognitive or learning disability, 2.4% reported having "other" disabilities, 1.9% as neurodiverse, and 0.5% as having motor impairments. Based on 2013 statistics from the U.S. Center for Disease Control and Prevention [4], these are lower rates of disability than in the U.S. population.

Of the 1,857 responses, 424 respondents included a description of their area of expertise. We counted each mention of a distinct specialization, as many faculty mentioned multiple areas of expertise. We categorized these according to the 2013 ACM Curriculum Guidelines "Knowledge Areas," ignoring case and minor differences in terminology. Based on this categorization, the top 5 areas of expertise across all respondents were algorithms and theory, machine learning, robotics, human-computer interaction, software engineering, and networking and communication. Of the 280 that reported teaching accessibility and described their expertise, the most common expertise was HCI (28%), with a long tail of software engineering, information assurance and cybersecurity, library and information science, computer science education and other applied areas of computing. Among the 984 that reported not teaching accessibility, the most common expertise was algorithms, theory, artificial intelligence, machine learning, and programming languages. Only 1.8% of those reporting HCI expertise reported not teaching accessibility. This suggests that those teaching about accessibility are faculty with expertise on human and social factors in computing.

Of those who taught accessibility, we asked what they taught and how they taught it. The majority of faculty taught a course with accessibility content once a year (55.5%), while 18.4% reported teaching once a semester or quarter, 13.1% reported teaching every other year and 10.1% taught accessibility less than every other year. Only 2.9% reported teaching more than one course per semester or quarter. Within a given course, respondents included accessibility as part of a lecture (31.7%), in a few classes (22.9%), or in at least one class (20.5%), whereas 16% included accessibility as an occasional informal class mention, and 8.8% included accessibility course-wide. Of those that taught accessibility, we asked respondents to judge their knowledge of accessibility; 10.7% reported "Not knowledgeable," 66.1% reported "Some knowledge," 18.7% reported "Knowledgeable," and 4.5% reported "Expert." Note that there were only 17 self-identified faculty experts in accessibility, and only three institutions had more than one (Rochester Institute of Technology, University of Maryland at College Park, and University of Missouri). The most common disabilities that faculty mentioned teaching about were vision (77.9%) and hearing impairments (46.1%). Next were physical/mobility (40.5%), older adults (40.5%), and motor impairments (35.7%). Fewer respondents reported teaching accessibility related to cognitive or (29.3%) learning disabilities (27.2%), or neurodiversity (13.5%). Only 1.8% reported "none of the above," which we interpreted as teaching about general accessibility related topics, such as web accessibility guidelines or heuristics, rather than focusing on specific disabilities.

Finally, drawing on reported objectives and pedagogies from related work [11], we asked respondents to indicate which objectives they focus on in their teaching. Table 4 shows that the majority of respondents focused on barriers to using technology design paradigms such as universal design and inclusive design. Table 5 shows that most faculty taught these learning objectives via lectures, in-class activities, and homework, with few using service learning or disability simulation exercises.

3.2 RQ2: What barriers exist?

Our second research question focused on barriers instructors encountered to teaching accessibility, regardless of whether they taught accessibility or not.

Table 4. Learning objective faculty reported teaching

Understand technology barriers faced by people with disabilities	66.1%
Understand design concepts: universal design, ability- based design, inclusive design, participatory design, etc.	65.9%
Engage with individuals from diverse populations appropriately	40.0%
Be able to evaluate web pages by accessibility standards and heuristics (e.g., W3C, WCAG)	36.5%
Be able to develop accessible web technologies (e.g., use of alt-tags, captioning videos, and describing images)	36.0%
Be able to employ design techniques: personas, paper prototyping, high-fidelity prototyping	35.2%
Understand legal accessibility regulations (e.g., Section 508, Americans with Disabilities Act, etc.)	31.5%
Understand the different models of disability (e.g., social, medical or legal models)	15.2%
Be able to develop with accessibility focused technical languages and tools (Apple's UI Accessibility Programming Interface, Android's Accessibility Events, Universal Windows Platform)	6.1%
Other	4.8%
None of the above	3.2%

Table 5. Methods faculty used to teach accessibility

Lectures and class meetings	95.9%
In-class activities	39.2%
Homework assignments	32.0%
Team projects	29.9%
Individual projects	17.9%
Simulation exercises	9.6%
Service learning, going to/seeking out organizations to work with	8.5%
None of the above	1.6%

3.2.1. Barriers. We asked faculty about a set of challenges identified in prior work [11] to incorporating accessibility in computing curriculum. As Table 6 shows, across all respondents, most reported the two main challenges were that accessibility was not a core part of their curriculum and that they did not know enough to teach it. Of those that already teach accessibility, expertise was not reported as a challenge as often, but curricular integration was still a central issue, as were the lack of resources such as textbooks and pedagogies for engaging students. Notably, few faculty (only 8.2%), whether they taught accessibility or not, believed a lack of demand in industry discouraged teaching accessibility. We performed a chi-square test comparing selection of each of the barriers between those who do and do not teach accessibility (see Table 6), finding that the two groups had largely different perspectives about all barriers except student and administrator awareness. The largest differences in perspectives was between having sufficient knowledge, textbook availability, and challenges engaging students: twice as many faculty who did not teach accessibility viewed these as significant barriers as those who did.

3.2.2. Accessibility as part of computing. To understand social and cultural factors that may influence whether respondents teach

Table 6. Barriers to teaching accessibility

	All	Teaches	Doesn't	χ^2
Not a core part of curriculum	52.3%	45.6%	54.0%	8.4**
Don't know enough to teach it	49.1%	26.1%	54.9%	99.3**
Lack of appropriate textbook	14.9%	24.8%	12.4%	32.6**
Lack of students and administrator awareness	14.1%	17.1%	13.4%	3.3
None of the above	13.5%	17.3%	12.6%	5.6*
Other	13.1%	12.0%	13.4%	
Lack of support for topics addressing real challenges for people with disabilities	13.1%	21.3%	11.0%	25.3**
Difficult engaging students	10.2%	19.2%	7.9%	36.3**
Lack of demand in industry	8.2%	11.5%	7.4%	6.7**
Difficult to recruit people with disabilities	7.2%	12.8%	5.8%	19.1**
All of the above	6%	2.7%	6.0%	11.2*

*$p < .05$, **$p < .01$

Table 7. Accessibility should be taught in CS

	All	Teaches	Doesn't
Strongly Agree	4.1%	42.2%	12.5%
Agree	42.6%	45.1%	42.0%
Neither Agree nor Disagree	29.9%	5.6%	36.0%
Disagree	4.8%	1.3%	5.7%
Strongly Disagree	4.1%	5.6%	3.7%

accessibility, we asked instructors to indicate their level of agreement with the statement "Accessibility should be taught as part of computer science." Table 7 summarizes the responses, showing that overall, there was either neutral or positive support for the topic, and that the only difference between those who do and do not teach accessibility was how strongly they believe it should be part of computing (Mann-Whitney U=159094, $p < .0001$).

3.2.3. What faculty need. To determine resources faculty perceived they needed, we asked them "If you wanted to incorporate accessibility into your curriculum, what resources would be helpful?" Because responses were open-ended, we inductively coded the responses, then developed axial codes to categorize themes. High-level codes that emerged were: connecting with or bringing people with disabilities into the classroom; having useful resources, like specific tools, technologies, guidelines, and problem examples; having access to curriculum building and curricular samples to use in specific courses; and faculty training and expertise.

Some did not see accessibility as relevant to their field, and desired arguments for relevance, as one respondent conveyed:

Appropriate lesson plans for different classes (algorithms, theory, intro programming). This should be taught across the CS curriculum,

not just in a specialty topics course. But, I feel that students and faculty feel that "it is not directly related to the curriculum" and so they don't incorporate it.

Faculty mentioned many specific gaps. Some desired teaching modules that could be picked up and easily integrated into specific courses without too much modification or customization per discipline. Others wanted textbooks that adequately address accessibility in computing, or sample material for lectures, assignments and projects, or guidance on how instructors can include accessibility related topics for specific sub-disciplines within CS (like algorithms or data structures). For example, this instructor desired materials that were customized to sub-topics they were teaching, not just overarching and general material:

I teach operating systems to an undergraduate audience. I am unsure if there are relevant accessibility topics at this layer of systems. If I am wrong, resources discussing accessibility in lower layers of the system would be very helpful!

The dearth of resources corroborates findings from Putnam et al. [11], but our findings offer more detail: responses reflected a lack of reliable examples or curricular modules that could be used to teach practical skills or within specific knowledge areas, including knowing which research papers (or finding any relevant to their area of expertise), or having relevant training or access to updated guidelines or best practices. Finally, some faculty suggested that the survey was asking the wrong questions because accessibility was not a relevant topic for typical courses in computing, except when teaching students with disabilities. For example, in the quote below, the respondent balked at the notion that the survey had the "presumption" that accessibility could fit within certain sub-disciplines of CS:

I'm unclear how the issue would be relevant for the courses I teach. Not everything has an accessibility dimension. This survey seems to start from a presumption that accessibility would be a sensible unit even in a course on databases, or theoretical systems. Well, I just don't see that as being the case, or as making a lot of sense, frankly.

Despite the outlook that accessibility is "not in my area" of CS, others acknowledged that this perception was a pervasive cultural view within CS. To that view, the idea was that things could change, if the discipline as a whole took on the "challenge" to change. One respondent identified barriers as bias:

Materials to motivate why a culture change in computing is needed to both broaden participation and address sources of implicit bias. The largest hurdle is the mindsets that currently pervades computing that is oriented towards financial bottomlines and achievable but incremental pursuits. Accessibility must be seen as a grand challenge for computing.

Finally, we note that some respondents thought the question was asking how to make courses accessible to students with disabilities, not how to include accessibility as part of course topics. To the former, it is unclear if respondents wanted training to know how to teach accessibly, or to know how to include accessibility in content. In either case, however, confusion indicates that respondents were unfamiliar with how CS-focused pedagogy ought to incorporate accessibility. Clarifying the distinction between the two appears to be another barrier to teaching about accessibility.

Table 8. Logistic regression predicting teaching accessibility, showing coefficients (B), standard errors (SE), chi-squared statistics (Wald), and odds ratios (OR) for each factor

Factor	B	SE	Wald	OR
Female	0.70	0.14	26.5	2.0
Accessibility is part of CS	0.76	0.08	94.1	2.1
Sufficient expertise	1.25	0.13	86.8	3.5
Knows someone w/ disability	0.39	0.15	6.5	1.5

3.3 RQ3: What predicts teaching accessibility?

Modeling which factors predict who teaches accessibility may reveal additional insights about what factors may be necessary for overcoming these barriers. In particular, our hypothesis was that the dominating predictive factors would be knowing someone who had a disability, knowing enough to teach it, believing it should be taught, and, based on our results to RQ1, that a faculty member was female. To test this hypothesis, we built a binomial logistic regression, predicting who reported teaching accessibility from each of the above binary and ordinal variables.

The model, shown in Table 8, was statistically significant ($\chi^2(4) = 277.6$, $p < 0.00001$), as were all of the factors ($p < 0.01$). The model explained 21.9% (Nagelkerke R^2) of the variance in reporting teaching accessibility topics and correctly classified 81.7% of the cases. Interpreting the odds ratios (OR) in the table, those who taught accessibility were 1.5 times as likely to know someone with a disability, 2.0 times as likely to be female-identified, 2.1 times as likely to agree that accessibility is part of computing, 3.5 times as likely to report having sufficient knowledge to teach accessibility.

While the factors included in the model have predictive power, they only explained a fraction of the variance, suggesting that other factors dominate whether faculty teach accessibility.

4 DISCUSSION

Our discoveries are as follows:

- About 20% of faculty reported teaching accessibility, representing 2.5% of all faculty surveyed.
- About 50% of responding institutions reported teaching accessibility in at least one elective course, and 75 institutions had at least two faculty teaching accessibility.
- There were only 17 self-described faculty accessibility experts in our sample, spread across 14 institutions.
- Of faculty who responded, those who teach accessibility are twice as likely to be female, to know someone who has a disability, to have expertise in accessibility, and to strongly believe that accessibility should be part of CS curricula.
- Nearly all HCI experts teach accessibility.
- Most faculty who teach accessibility teach it once a year, cover it in a class or two, and focus on barriers that people with vision, hearing, and mobility impairments face, and design paradigms for preventing these barriers.
- Most respondents believe accessibility should be taught in CS degrees, but see the lack of expertise and sub-area specific materials as key barriers.

These results paint a picture of knowledge of accessibility as scarce, teaching of accessibility as prevalent but shallow, but support for teaching accessibility among U.S. faculty as broad.

These discoveries are consistent with prior work on curricular change [1,7]: change ultimately comes from local change agents, and many of the 375 faculty who teach accessibility now are likely already acting as those agents, teaching about accessibility despite the lack of curricular and resource support. However, there were also hundreds of faculty in the sample who do not yet teach accessibility, but believe it should be part of computing curricula. Some of those faculty hold a latent capacity for curricular change that appears to be held back only by a lack of knowledge and resources. There is some evidence in our data that some faculty cultures may be ambivalent to accessibility, with sentiments that "Not everything has an accessibility dimension." This may explain the absence of accessibility learning objectives in computing standards, and therefore its absence in concrete computing curricula. This also illustrates, in the words of Kirk and MacDonald, that "instructional discourse is embedded in regulative discourse, suggesting an organic relationship that involves inextricable connection, constant change and mutual–although not necessarily even–adaptation" [7]. In other words, what computing faculty teach and what faculty believe they should teach co-evolve.

What will trigger this co-evolution? Our findings suggest that knowledge of accessibility, plus materials that integrate accessibility into specific sub-areas of CS, as key. The 375 faculty who teach it now likely acquired their expertise in classes, or in their research, but the hundreds of others who support teaching accessibility may not have a context in which to learn this knowledge. Our data show that the training and teaching materials should not be on general accessibility knowledge, but on specific sub-areas of computing and information science. Based on these findings, we recommend: (1) investigating how accessibility is relevant to theory, algorithms, architecture, artificial intelligence, graphics, networking, software engineering, robotics, data science, and other areas, for future computing education research and (2) creating materials and modules that incorporate accessibility in these specific sub-areas; (3) finally, devising ways to teach faculty how to incorporate modules to include accessibility in their teaching, empowering them as change agents in their institutions.

Our survey has several limitations. We sent surveys on the same day of the week (Mondays), but our inability to send all emails at the same time impacted who received solicitations first. Faculty who teach accessibility who recognized the survey authors may have been more likely to respond, leading to response bias. And, some individuals indicated they suspected the solicitations were inauthentic, which may have limited responses systematically.

Despite these limitations, next steps are clear: if current champions of accessibility want to increase the number of students who know about accessibility, the focus must be on how accessibility fits within computing curriculum and on promoting faculty learning about accessibility. Some concrete recommendations include:

- For institutions with no HCI researchers, hire HCI faculty who are almost certain to teach accessibility.
- Develop and disseminate materials at the course- and class-level that are discipline-specific.
- Devise scalable ways to teach faculty key accessibility concepts.

With a few strategic investments in these efforts, academia appears ready to teach accessibility. AccessComputing [8] is beginning to gather and implement some of these resources, but it will take a whole community to succeed at scale.

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