Faculty Views on the Teaching Tools of Tomorrow

How digital textbooks and tech innovation impact professors' work
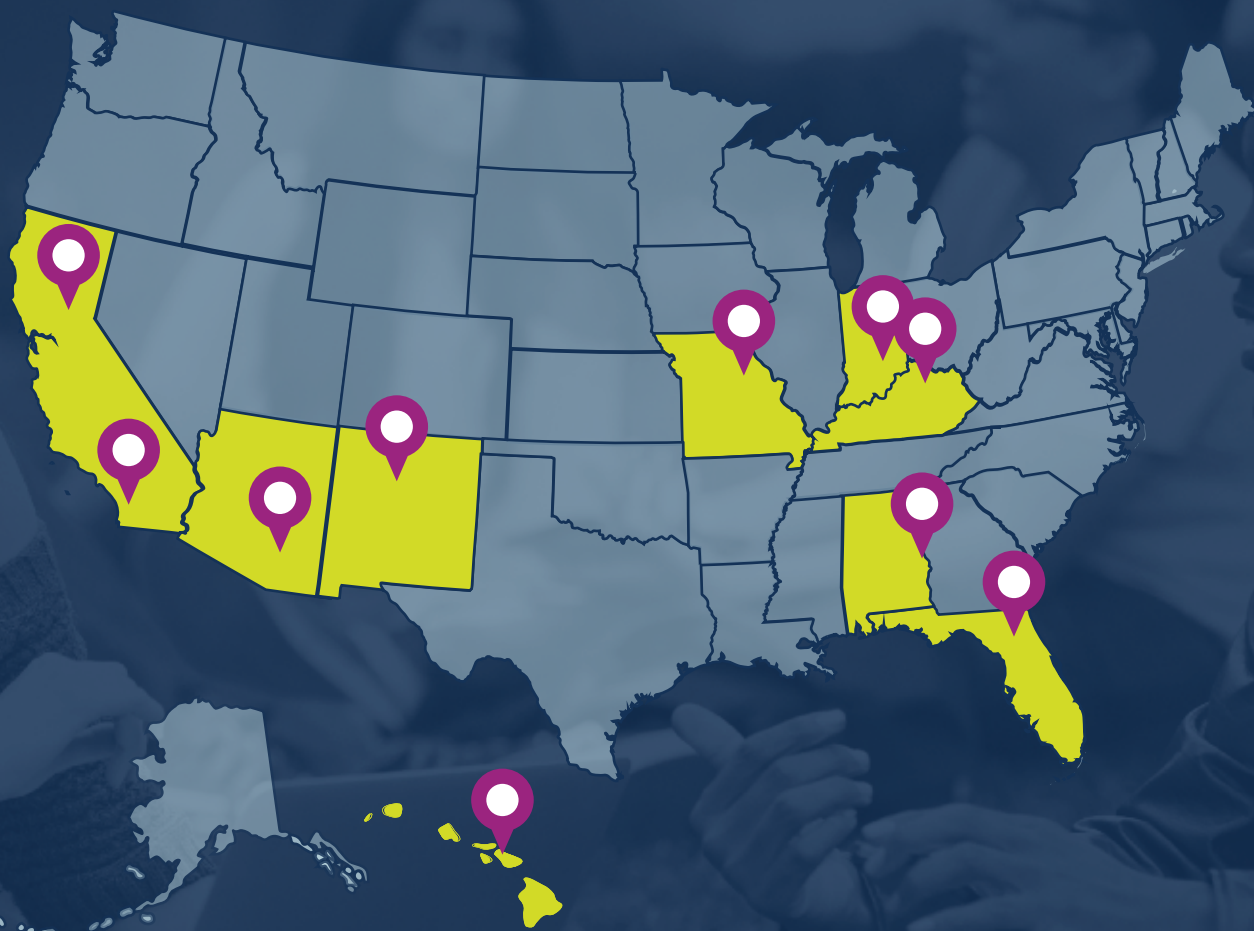
Since 2015, nearly 500 institutions have used Pearson Inclusive Access to help drive down the overall cost of a degree.

These programs provide millions of students access to the affordable, high-quality digital content and learning technology they need on the first day of class. To date, participating universities reported their students saved more than $150M.

The partner schools included on this map have each saved their students at least $1M through their Inclusive Access options.

Based on data reported by participating institutions

pearson.com/million-dollar-club

UC**DAVIS**
UNIVERSITY OF CALIFORNIA

THE UNIVERSITY OF
NEW MEXICO

AUBURN
UNIVERSITY

UNIVERSITY *of* HAWAI'I

University of Missouri

INDIANA UNIVERSITY

KENTUCKY STATE
UNIVERSITY
Inspiring Innovation. Growing Leaders. Advancing Kentucky.

UF|UNIVERSITY *of*
FLORIDA

THE UNIVERSITY
OF ARIZONA

SAN DIEGO STATE
UNIVERSITY

Cover: iStock

D igital and online innovations have altered how the world engages with information and text, and few institutions have experienced these changes more profoundly than colleges and universities. Yet in many ways, higher education continues to wrestle with how to embrace new tools and modes of communication while maintaining the centuries-old traditions of teaching, learning, and research that are at its heart.

One of the ways this issue plays out on campus is how professors choose, assign, and use textbooks and other course materials. Publishers, technology companies, and education nonprofits are developing a widening range of digital resources and classroom tools. They potentially offer cheaper textbook options, open new avenues for instructors to engage students, and provide an ability to curate materials that are more individualized for classes.

But instructors remain mixed about the new alternatives and opportunities. A survey commissioned by *The Chronicle of Higher Education* of faculty members reveals that faculty do not seem enamored of digital textbooks and emerging teaching tools. Only half of the respondents report they are "satisfied" or "very satisfied" with current digital course materials and tech-enhanced methods. And, critically, opinion on whether digital options improve teaching and learning is evenly divided.

This report examines faculty attitudes about digital textbooks, innovations in teaching tools, and new models to access course materials. The survey findings underscore that while technology will change higher education, adoption by professors and college instructors of new approaches to classroom traditions will be incremental.

The survey was commissioned by *The Chronicle* with support from Pearson. The survey, which was conducted by Maguire Associates in June 2018, includes responses from 606 instructors and faculty members at four- and two-year institutions. It also draws from expert opinions and previous *Chronicle* reporting.

The Evolving Textbook

Most faculty continue to choose the textbooks for their classes, with academic quality and cost to students as key factors in those decisions. Digital options are not widely preferred, but opinions differ based on discipline and the type of college where a professor works.

Digital Teaching Tools

Along with digital textbooks, there's a growing number of tech-enabled classroom tools faculty can adopt. But the survey found skepticism of their benefits to teaching and learning and that many respondents don't plan to use them in the future.

New Models

Two new ways to access textbooks and course materials have emerged: inclusive access and open educational resources, or OER. These approaches have yet to catch on widely among faculty, but the survey suggests that some of the problems these models seek to solve, like the high price of textbooks, are important to professors.

rofessors are, inherently, a hetero-geneous group. Those interviewed for this report stressed the difficul-ty of generalizing about teaching and technology preferences. In addition, the mission and type of a college or university affects an instructor's approach to a course.

"What works at New York Uni-versity in one class might not work very well for Kennesaw State or the University of Toledo in a class at the same topic, simply because the students are coming from dif-ferent perspectives," says David R. Johnson, assistant professor of higher education leader-ship at the University of Nevada at Reno.

Yet the *Chronicle* survey suggests some broad, if divided, opinions among faculty about technological innovation within higher education, the textbook industry, and the classroom.

Forty-two percent of respondents said that their college or university fosters tech innova-tion to a large or very large amount. A higher percentage (56 percent) said such changes were more modest, and 2 percent said innova-tion was nonexistent.

The impact of changes and innovations outside of higher-education institutions also had mixed views.

HOW MUCH DO YOU BELIEVE YOUR COLLEGE FOSTERS TECHNOLOGY INNOVATION?

Not at all · A small amount · A moderate amount · A large amount · A very large amount

2%

| 10% | 46% | 31% | 11% |

In recent years, textbook publishers have experimented with digital approaches to improve their products and their bottom lines. But most faculty seem minimally affected by the changes in the industry.

When it comes to adopting tech to innovate their own teaching, instructors seemed unenthusiastic about the available tools. Almost half (47 percent) said they had no plan to try any of 11 emerging technologies to support teaching or tech-enabled classroom redesigns. They included blended/hybrid courses, learning analytics, clickers, and open-access materials.

As college leaders, faculty innovators, and publishers seek to tap technology to improve course materials and classroom teaching, they will need to keep these and other factors in mind. What's evident from *The Chronicle's* survey findings is that however sophisticated, new technologies offer no silver bullets to pedagogical challenges. Making the most of innovations in textbooks and related materials will require tailoring a strategy to a college's specific needs, while preserving the faculty's role in choosing academic material and approaches.

TO WHAT EXTENT HAVE CHANGES IN THE PUBLISHING INDUSTRY AFFECTED YOU AS AN INSTRUCTOR?

■ Not at all   ■ To a limited extent   ■ To a moderate extent   ■ To a great extent
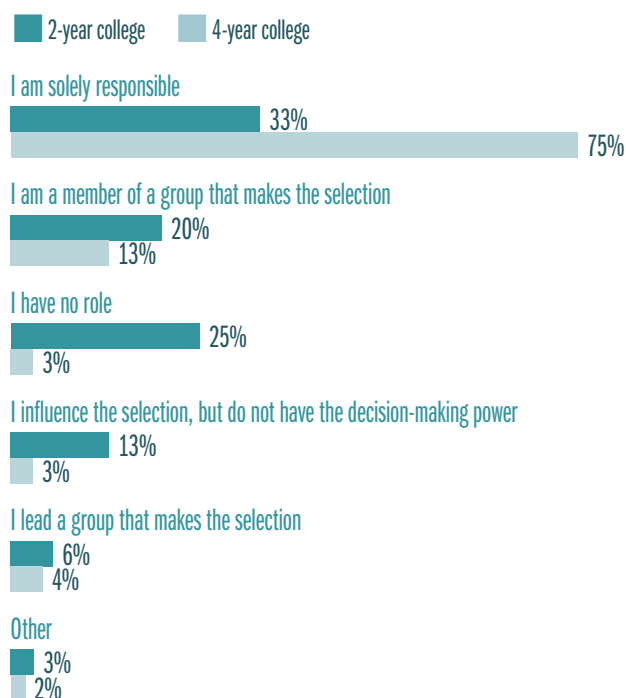
| 19% | 41% | 26% | 14% |

The Evolving Textbook

Textbooks have been an educational staple for centuries. Today, they remain a key part of college courses, but within a shifting digital landscape, what they look like and how they will be used in the future is uncertain.

One academic tradition that appears to not have changed is the faculty responsibility to choose what textbooks to use. According to the survey, individual professors, especially those at four-year colleges, most often are the sole person picking the materials.

While professors are still most likely the only person choosing educational materials, the factors that influence such decisions maybe shifting. Professors seem to have become more aware of how colleges costs — tuition, fees, and other expenses — can affect students. Sixty-six percent of faculty said lower-priced course materials would have a positive effect.

The cost of textbooks, especially print ones, may in fact directly impact a student's academic success. Difficulty paying is likely a key reason why nearly a third of respondents in the survey

WHAT ROLE DO YOU PLAY IN SELECTING THE TEXTBOOKS FOR YOUR COURSES?

■ 2-year college ■ 4-year college

I am solely responsible
33%
75%

I am a member of a group that makes the selection
20%
13%

I have no role
25%
3%

I influence the selection, but do not have the decision-making power
13%
3%

I lead a group that makes the selection
6%
4%

Other
3%
2%

said students never or rarely buy their course materials. Other research backs this up. A 2016 survey of students in Florida, most of whom attended two-year colleges, found that two-thirds avoided purchasing educational material because of the cost.

When making decisions about what textbooks to assign, however, professors overwhelmingly cite the relevance to the course. "We all have to be concerned about cost," says Eric Fredericksen, associate vice president of online learning and associate professor of educational leadership at the University of Rochester. "But I think it can't be the sole driver in decisions."

While the textbook maybe a core teaching tool, professors vary widely in how they use it and what they look for in one.

Johnson, at the University of Nevada at Reno, currently teaches only graduate students and doesn't assign textbooks, preferring to direct students toward scholarly books and articles. "The issue for many faculty is that they're not written by prestigious experts because they're not very highly rewarded," he says. "While it varies from field to field, it would be somewhat rare to see the biggest names or even the highly popular names within a discipline as authors on a textbook."

Others assign textbooks to a course so that students can refer to them but rely on their own teaching materials in class. Rhett Allain, associate professor of physics at Southeastern Louisiana University, points out that textbooks are for students, not instructors. "I pick the textbook that I think should help them. But I'm not using it, they are," he says.
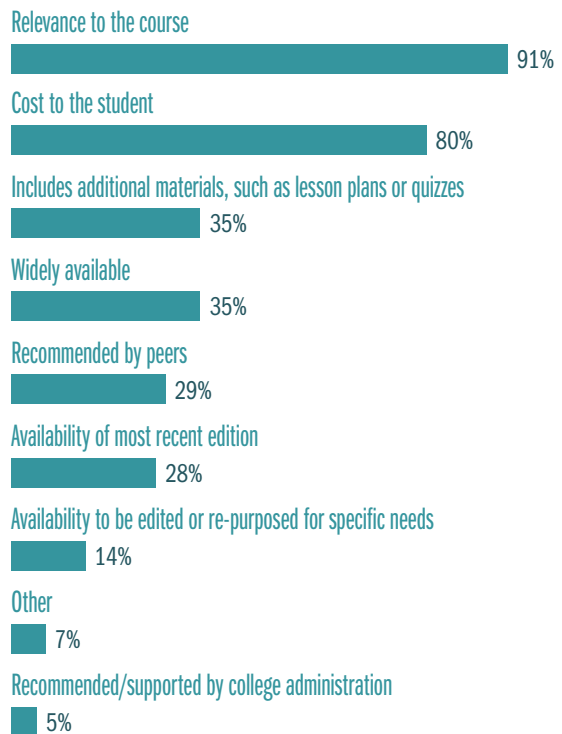
Indeed, when it comes to the type of textbook — hard copy versus digital — that students purchase and use, the survey found that many instructors let students make the choice.

While a small percentage of respondents said they preferred students to use digital texts, that doesn't mean professors aren't using them. Slightly more than half of respondents (52 percent) said they use digital textbooks and the tools they offer in their courses.
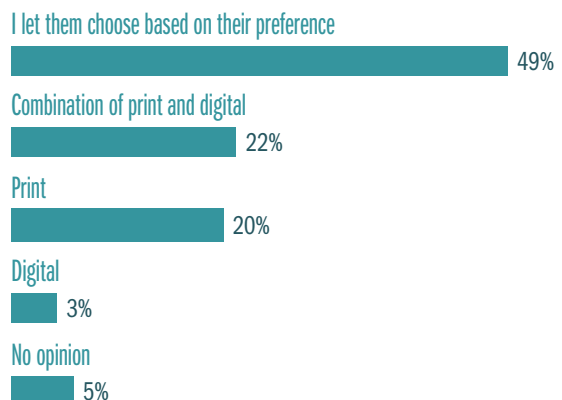
That usage varies greatly by discipline, with those in the field of mathematics most likely to use the tools, and humanities, the least likely.

For James Lang, traditional books — or at least anthologies — are a key element in

WHAT FACTORS INFLUENCE YOUR DECISIONS REGARDING WHICH TEXTBOOKS TO ASSIGN?

Relevance to the course
91%

Cost to the student
80%

Includes additional materials, such as lesson plans or quizzes
35%

Widely available
35%

Recommended by peers
29%

Availability of most recent edition
28%

Availability to be edited or re-purposed for specific needs
14%

Other
7%

Recommended/supported by college administration
5%

WHAT TYPE OF TEXTBOOKS DO YOU PREFER STUDENTS TO USE?

I let them choose based on their preference
49%

Combination of print and digital
22%

Print
20%

Digital
3%

No opinion
5%

pedagogy. Lang is a professor of English and director of the Center for Teaching Excellence at Assumption College, a private liberal-arts college in Massachusetts. He notes an enduring fondness for physical books among literature professors, most of whom loved reading in childhood.

But, more pragmatically, he questions the wisdom of bringing devices into the classroom because of their tendency to distract students. In addition, he says it is important for professors to encourage appropriate use of online content. If he asks students simply to Google a poem on their iPads they might access copyrighted material for free. "I don't want to be facilitating that," Lang says.

Lang is no Luddite, though. To engage students, he uses polling devices and concept-mapping tools, among other tech-friendly approaches.

Aside from disciplines, practice also diverges for faculty at four- and two-year colleges. Sixty-three percent of respondents who te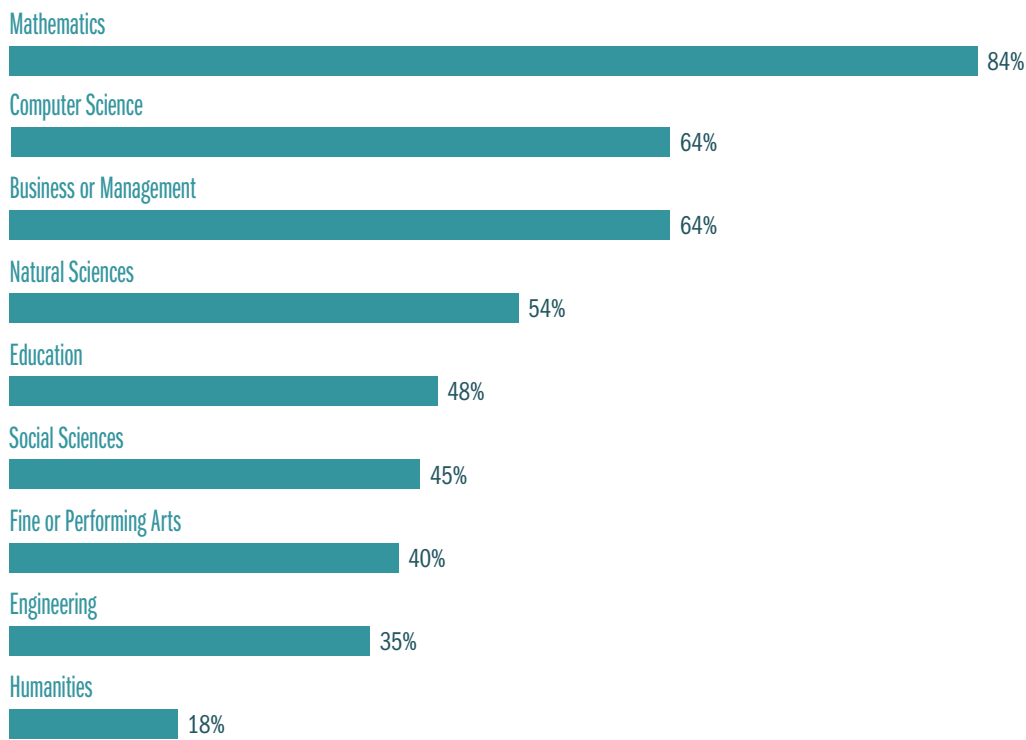ach at community colleges say they use e-text-books and tools in their course compared with 49 percent for those at four-year institutions.

Professors at institutions where research takes priority may be slower to adopt such tools because of misaligned incentives — they are rewarded to publish, not teach. Meanwhile, instructors at community colleges, which often serve adult and other nontraditional students, face different pressures. New tools offer not only potentially cheaper (or free) access to learning material but also content that students can peruse anywhere and at any time.

Kate Jordahl is director of strategic planning and operations for the California Community Colleges' Online Education Initiative. She also worked at Foothill College, in Los Altos Hills, for 20 years as a professor of photography. Although initially skeptical, she realized that digital materials were the best way to serve her students. Such content offered instant access and flexibility, and could be tailored to the needs of a class.

And there were other benefits. Rather than

DO YOU USE ANY DIGITAL TEXTBOOKS AND TOOLS IN YOUR COURSES?

Mathematics
84%

Computer Science
64%

Business or Management
64%

Natural Sciences
54%

Education
48%

Social Sciences
45%

Fine or Performing Arts
40%

Engineering
35%

Humanities
18%

only presenting the work of experts, the tools could display students' efforts as well, sending a subtle message that they could do it, too.

> ## "It's not just looking at a textbook, a static thing created by an expert, and seeing an example of whatever skill it is that they're trying to learn."

Jordahl asked students in her photography class to share photos each week and to comment on the work of classmates using technical language they had learned. She does the same.

"It's not just looking at a textbook, a static thing created by an expert, and seeing an example of whatever skill it is that they're trying to learn. They're sharing their own work, and then I do the same," Jordahl says. "So it becomes very interactive."

Jordahl suggests that digital textbooks allow professors to model how to navigate the online world, where social media like Twitter, Snapchat, and Facebook are the dominant sources of information. "They skim Twitter, they skim news sites, and they're seeing just this kind of surface experience," Jordahl says. "When I was taking courses on how to be a

James Lang, an English professor, says some humanities instructors may be skeptical of digital textbooks.

better online teacher, it's something that I became aware of. In the beginning of the class, I wanted to print out every single page and sit and read it. I had to actually teach myself to read in that deeper way even though it was on a screen."

Digital Teaching Tools

D igital textbooks can be more than just an electronic replica of the hard copy. They allow for teaching enhancements, such as highlighting or notes from an instructor, to be embedded within them. There also can be links to additional resources online and ways to interact with students — polls or quizzes, for instance — housed within the book.

These options are part of a growing array of digital and electronic tools instructors can use. But as these options grow, professors do not appear overly pleased with the benefits.

In the survey, only slightly more than half said they were satisfied with the digital course materials and methods they use in teaching.

When asked about which technology and teaching innovations they might use in the

HOW SATISFIED ARE YOU WITH THE CURRENT DIGITAL MATERIALS AND METHODS YOU USE IN YOUR TEACHING?

Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied

1%

| 11% | 36% | 45% | 6% |

TO WHAT EXTENT DO YOU THINK DIGITAL TEXTBOOKS AND COURSE MATERIALS IMPROVE TEACHING AND LEARNING?

■ Not at all　■ To a limited extent　■ To a moderate extent　■ To a great extent

16%	45%	27%	13%

next five years, almost half said they would not use any.

The survey may obscure some of the experimentation going on because professors don't necessarily endorse one approach for all circumstances. They prefer to pick and choose among the options available and to tailor that choice to the needs of a particular class.

The University of Rochester's Fredericksen points out that what matters is not a particular tool but the extent to which digital materials improve teaching as a whole. "Faculty want a good learning environment for their students, but they probably don't care so much about a very specific tool versus another," he suggests. "They want something that

> ## "Faculty want a good learning environment ... but they probably don't care so much about a very specific tool."

will be hopefully easy for them and their students to use, that's reliable, and most importantly, in alignment with what they're trying to do with their instruction."

One reason for a reticence about embracing new tools may simply be time constraints. There are increasing demands on faculty, requiring them to serve their community or undertake administrative tasks. The survey showed that faculty who want to use innovative tools need to spend time mastering them first.

Faculty interviewed for this report spoke of the trade-off involved in learning about new tools and technologies. After the initial scramble to put courses together, professors have what they need in place. "You might tinker with it a little bit over time," Johnson says. "My sense is that people develop courses to a point where they're well-oiled machines, and they don't mess with them a whole lot."

Hesitancy towards digital innovation may be generational. Younger faculty may be more inclined to test out new things. Johnson, who is 41, says it's visible on campus. "You see people walking around — everybody's got their phone on the palm of their hand, and their head down. This is how people are engaged with the world almost in an addictive way. There are generations now growing up with social media, iPads, and things of that nature."

But younger faculty may also feel more pressure to publish or struggle with their teaching load than their older counterparts.

Overall, it's hard to draw too many trends from different generations. Senior faculty may seem less inclined to welcome new tools than those starting out, but that's not always the case.
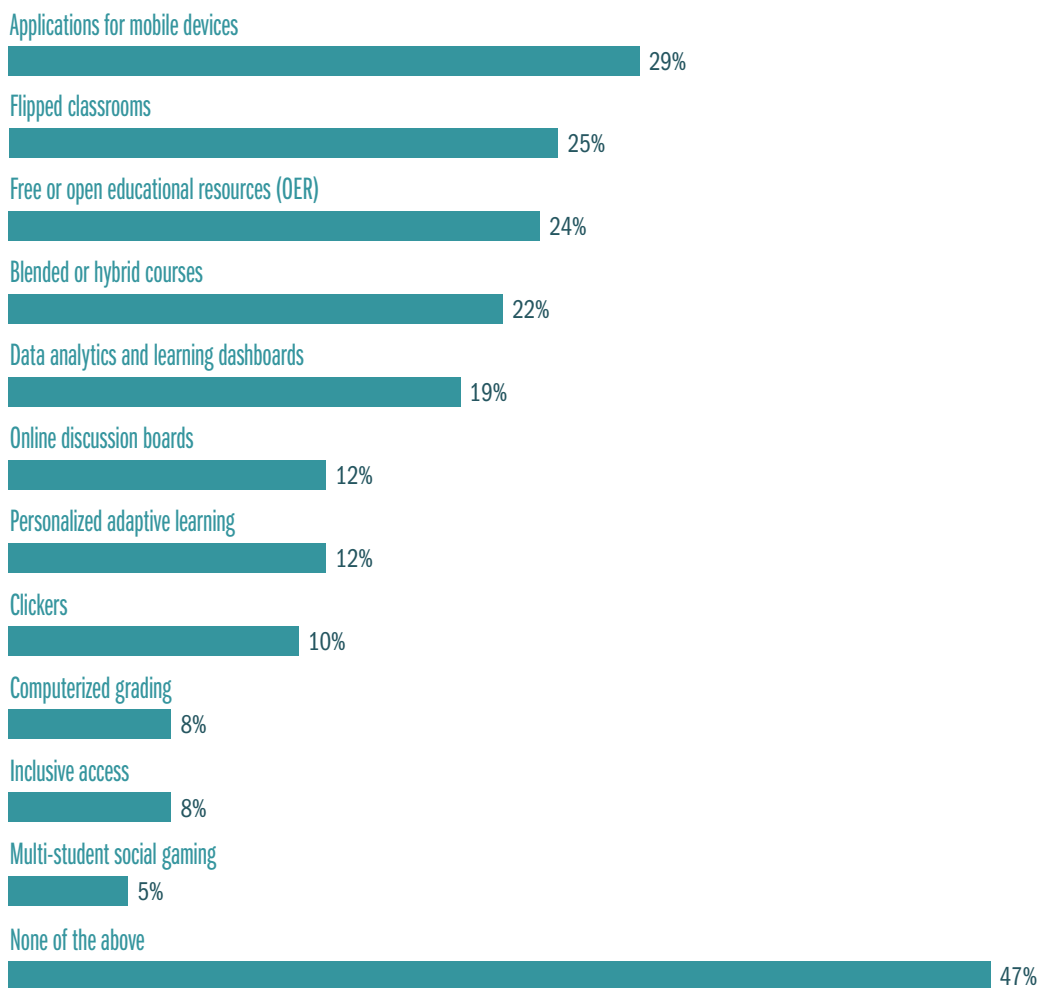
Jordahl, who leads Foothill College's innovation efforts, has 20 years' teaching experience.

Una Daly, director of the Community College Consortium for Open Educational Resources, says differences between senior and junior professors have dwindled over the past four years. At community colleges, learning-management systems are common, and faculty are expected to publish course information online. "There's a lot more comfort with that," Daly says.

Much depends on the institutional support faculty receive. For Fredericksen, roles like his are increasingly key — where a point person who is part-faculty and part-administrator acts as a champion for digital innovations on campus, conducting research, offering training, and discussing with faculty how such tools can help them overcome certain pedagogic challenges. A background combining technological know-how and academic experience helps to win over skeptical faculty, Fredericksen says, and show how tech tools can become part of instructional design and used to improve teaching. This level of support is crucial in assisting busy professors. "There is a difference between thinking about IT support and technology support and thinking that if you've got those for faculty, then the faculty member is all set," he says.

DO YOU PLAN ON USING ANY OF THESE TECHNOLOGY INNOVATIONS IN THE NEXT FIVE YEARS?

Applications for mobile devices
29%

Flipped classrooms
25%

Free or open educational resources (OER)
24%

Blended or hybrid courses
22%

Data analytics and learning dashboards
19%

Online discussion boards
12%

Personalized adaptive learning
12%

Clickers
10%

Computerized grading
8%

Inclusive access
8%

Multi-student social gaming
5%

None of the above
47%

New Models

As the digital textbook and teaching tools evolve, so are the ways that professors and students can gain access to them. Two new models are inclusive access and OER.

Proponents say these both promise to reduce the cost of textbooks (in the case of OER they are ostensibly free), give students easier access, and can allow professors opportunities to enhance their teaching in different ways.

Yet the *Chronicle* survey suggested these developing models have yet to catch on widely in academe.

Inclusive access is a relatively new service provided by textbook publishers. Under deals with colleges or universities, the publishers provide digital materials for faculty to use. Textbook costs are bundled into college fees, which potentially allows for savings for students and gives them access to materials on the first day of class.

The approach seems to help assuage concerns faculty identified in the survey, such as how much students have to pay for books and making sure classes have timely access. But the model isn't that well known yet among respondents. More than half were unaware of it.

Similar to the split on the use of digital textbooks, community-college instructors were more likely than their counterparts at

ARE YOU AWARE OF INCLUSIVE ACCESS?

No   Unsure   Yes

11%

33%

56%
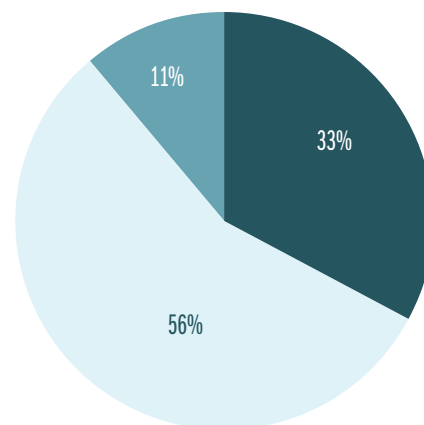
four-year institutions to have heard of the inclusive-access model.

Awareness of inclusive access will undoubtedly grow. But how much faculty will embrace it is an open question.

Respondents were mixed about the idea of deals made between college administrators and textbook publishers. The survey had similar findings for the idea of combining the cost of academic materials with tuition and student fees.

Given that professors deeply value their autonomy when making academic decisions, including selecting textbooks for their courses, institutional deals with publishers may seem like faculty are ceding control.

To navigate this conundrum, Indiana University created an inclusive-access deal with multiple publishers rather than a single company; these publishers already had most of the college's business. The program's materials are largely digital, though students can buy hard-copy versions if they wish (few do).

To win over skeptical faculty, the institution didn't put push them to the program; administrators made it opt-in, not opt-out. Bradley Wheeler, a business professor who is also the chief information officer at Indiana, says respecting academic choice was key. "That's why I'm still employed," he jokes.

Inclusive-access programs often founder when they challenge the status quo, Wheeler says. Institutions must make them central to their goals and ensure they are easy for students and faculty to use. At Indiana, given the choice to participate, many faculty did. In 2012, 202 professors used inclusive-access course materials, and by 2017 the number reached more than 1,300.

Compared with inclusive access, more faculty surveyed are aware of OER — almost 60 percent, according to the survey. But instructors also seemed somewhat skeptical of OER. *The Chronicle* survey found that 24 percent of respondents said they would use open resources in the next five years. When asked what has deterred them from using OER, 46 percent of faculty said that the materials were insufficient and 38 percent said they didn't
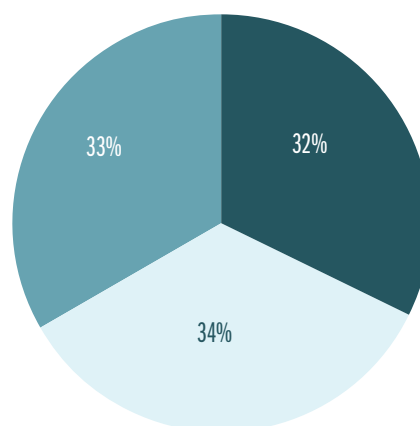
DO YOU SUPPORT COLLEGE ADMINISTRATORS WORKING WITH PUBLISHERS TO MAKE TEXTBOOKS AVAILABLE FOR STUDENTS?

No Unsure Yes
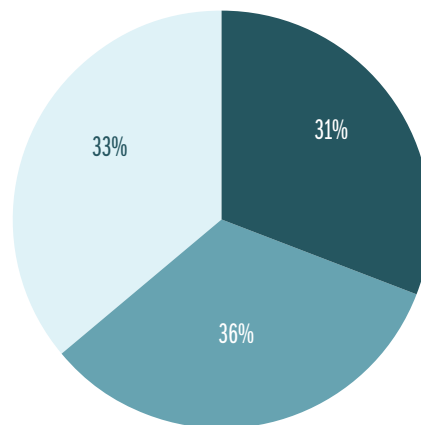
DO YOU SUPPORT BUNDLING THE COST FOR TEXTBOOKS INTO TUITION OR STUDENT FEES?

No Unsure Yes

know enough about open-access resources.

Skeptics in academe may be worried about

> "How can we make sure that the people who are producing that material get fairly compensated for the work that they put in?"

the philosophy of making work created by academics available for free. Lang, at Assumption, who has published five books, said OER

was a good idea overall but worried about the consequences. "I am aware there's a lot of intellectual work that goes into producing materials for students," he says. "How can we provide access to students or to researchers or scholarship or to the world to great material, but at the same time, how can we make sure that the people who are producing that material get fairly compensated for the work that they put in? I'm not sure yet whether we've figured that out."

What would it take for inclusive access and OER to become more widely accepted and known? The answer may simply be time. But as with other innovations, if colleges want their faculty to experiment with alternatives to traditional models, it helps to have a professor or staff member who is willing to advocate for them on campus. "Absent a champion who can engage various constituencies and work through them, the idea just dies," Indiana's Wheeler says.

The *Chronicle's* survey revealed mixed feelings in the academic community about the benefits of digital classroom tools and textbooks. But attitudes depend in part on what discipline a professor teaches and at what type of institution. Faculty members interviewed for this report also stressed that the choices instructors make depend on the nature of the material and the shape of the course. Rather than wholesale adoption of one or other approach, faculty are likely to adopt tools on a case-by-case basis.

Time and focus is also a factor. Learning how to use a new approach or tool takes effort. Adjuncts and junior professors may be struggling to handle a heavy teaching workload and the pressure to publish, while senior faculty have administrative responsibilities and again, the need to increase their publication record. Johnson, at the University of Nevada, says that innovations in design of textbooks are "just not high on the radar of many faculty." Change is coming to higher-education textbooks and tools but adoption will be incremental.

The *Chronicle* survey did suggest that teaching institutions like community colleges may lead the march towards innovation, driven by faculty interest and student sensitivity to costs. "We're always struggling with things like retention," Jordahl says. "The need for constant innovation, for me, seems kind of built into that paradigm."

Faculty Views on the Teaching Tools of Tomorrow is based on a survey of 606 instructors and faculty members at colleges and universities. Maguire Associates, of Concord, Mass., conducted the online survey for *The Chronicle of Higher Education* with financial support from Pearson. The data collection took place in June 2018.

> # There is no reason for any individual to have a computer in his home.

Ken Olson, president, Digital Equipment Corporation (DEC), 1977

Hindsight is 20/20

Innovative institutions are transitioning to digital delivery of course materials ensuring every student has access to essential course materials from the first day of class at an affordable price.

Let's stay on the right side of history.

Embrace the potential

Learn more about increasing access, affordability, and achievement through digital delivery at **pearson.com/inclusive-access**

It's your time.
Inclusive Access

Pearson

THE CHRONICLE
of Higher Education®

1255 Twenty-Third Street, N.W.
Washington, D.C. 20037

(202) 466-1000 | Chronicle.com