

**INSPIRE
EVOLUTION:
INCREASING
FACULTY
TECHNOLOGY
USE IN
HIGHER
EDUCATION**

BARNES & NOBLE
COLLEGE



UNDERSTANDING FACULTY AND CLASSROOM TECHNOLOGY

THE NEED FOR DIGITAL EVOLUTION ON CAMPUS

As an increasing number of digital natives arrive on campus each year, the need for deeply integrated learning technology in higher education grows more urgent.

Students born after 1995, known collectively as Gen Z, have never known life without smartphones. For them, social media is home. The cultural gap between these newcomers and anyone reluctant to bring technology into the classroom is widening.

Faculty are students' No. 1 contact with academic authority on campus. Without strong relationships between faculty and students, educational institutions founder.

If instructors cannot speak the same language as their digitally-native students, they cannot easily fulfill their duties as teachers. Students become disengaged and fail to prioritize learning.

Ongoing development and growth in campus technological culture is necessary if schools are to remain connected to those they serve.

The practical reasons for college and universities to increase education technology usage are many. To start, digital course material options like OER can lower student costs significantly. Digital courseware can boost academic achievement with increased engagement.

But the pragmatic benefits are just the beginning.

Without ongoing development in classroom technology, educational institutions will alienate young people. It will become much harder, if not impossible, to prepare students to be leaders in the future workforce and informed citizens in their communities.

Yet, despite administrative encouragement, some faculty still hesitate to integrate technology into their teaching practices. Others remain naïve about how great an impact it has on their understanding of the world.

For most faculty, academic freedom is paramount. To them, clear boundaries between politics, business and curriculum are an essential component of higher education teaching and scholarship.

Though administrators sympathize, calls for academic freedom can create a bind. It's essential for university leaders to encourage ongoing technological development. However, it's just as important to do so without threatening cherished academic ideals.

CHANGE IN FACULTY USE OF TECHNOLOGY

Fortunately, research shows that the number of faculty who avoid classroom technology is declining.

Nearly half of all teachers in higher education have now taught at least one course online, according to the 2018 Inside Higher Education (IHE) Survey of Faculty Attitudes on Technology. The number of those with online teaching experience increased from 30 percent in 2013. This suggests greater willingness to experiment with non-traditional classroom approaches.

Meanwhile, a full 85 percent report that they "always" use the school's learning management system (LMS). Only a decade ago, many teachers and administrators still avoided using an LMS. Now, this technology has become a steady feature of academic culture. Though some teachers may not maximize LMS use — with online discussions, quizzes or integrated eTexts — it's clear that most are communicating important information about grades and syllabi digitally.

FACULTY TECHNOLOGY SHOWS PROMISE

30%

reported they had taught an online course in 2013

41%

reported they had taught an online course in 2018

72%

of those who taught online courses said it improved their teaching

85%

reported they "always" use the campus LMS

Source: IHE and Gallup

FACULTY REMAIN SKEPTICAL ABOUT DIGITAL INNOVATIONS

Despite promising trends, some faculty members still show reluctance to further their use of innovations like courseware and online assessment. A third of teachers have used digital courseware before, but many have a negative view of digital assessment or testing data.

Nearly half (43 percent) said that digital assessment data did nothing to improve their teaching. A full 59 percent of surveyed teachers said that they believed campus initiatives with digital assessment data were done primarily for the sake of pleasing “outside parties.”

In addition to doubts about digital assessment, faculty express skepticism about the cost-saving potential of digital course materials. Even though more than eight in 10 say they believe textbooks are too expensive, a majority believe digital innovation has not solved this problem. Nearly two-thirds said they believe administrators and vendors exaggerate digital cost-savings.

However, the data also reveal that faculty who have experience with vetted, academically-centered digital courseware and assessment take a more positive view. Such software is usually developed in collaboration with digital course designers, people with a masters or PhD in designing online curricula.

Over 90 percent of faculty who have worked with digital course designers report having a positive or very positive experience, according to the IHE survey.

INSPIRING MORE TECH USAGE AMONG FACULTY

It's critical for administrators to find ways to encourage increased use of classroom technology. However, data suggest administrative initiatives with faculty support will be the most effective. Enthusiasm among faculty for new tools will facilitate implementation and help the entire school's digital culture evolve.

One effective route for administrators is to find areas for discrete intervention that have a wide-ranging impact. If university leaders target areas that faculty would already like to see change, they can build on that interest and inspire faculty to ensure the implementation succeeds.

Most faculty would agree that lowering student costs and increasing academic achievement are excellent goals. Interventions in the realm of course materials and courseware can have a positive impact on both. By

FACULTY VIEWS OF DIGITAL COURSEWARE, COURSE MATERIALS AND ASSESSMENT

30%

of faculty use or have used digital courseware

92%

of faculty who have worked with digital course designers report a positive or very positive experience

83%

believe course materials are overpriced

65%

believe administrators and vendors exaggerate the cost-saving potential of digital course materials

Source: IHE and Gallup

This data suggests that faculty with experience using courseware or digital assessments will be open to further opportunities to integrate technology into their teaching practices. Most would also like to see the cost of course materials go down. Those who remain unexperienced with innovations, however, are likely to voice suspicion, particularly if the recommendation comes from a vendor or administrator.

targeting these two areas, administrators can introduce gradual changes to the academic culture.

As teachers acclimate to the new technology, research suggests they will see its academic potential. As positive word-of-mouth grows about digital innovation, so will the campus digital culture.

FACULTY INFLUENCERS: EARLY ADOPTERS

Administrators who want to see digital development on campus can also look to other campus stakeholders for

assistance. Two campus cohorts influence faculty most: peers and students.

The IHE survey reports that one-third of faculty consider themselves “early adopters” of new educational technologies. These faculty peers can help administrators initiate positive change. Early adopters like to experiment. They stay alert to opportunities for curricular innovation, and they enjoy the learning process involved in discovering how best to use technology successfully. That makes them ideal leaders in the movement to improve campus digital culture.

Administrators can support these early adopters in a number of ways that will help spread enthusiasm about classroom technology. They can offer mini-grants for adoption of electronic resources and courseware. They can ask early adopters to head committees, and they can promote positive word-of-mouth about their teaching and curricula within and among departments.

In the IHE survey, nearly half of respondents said there was not enough meaningful dialogue about digital assessment on their campus. Early adopters can formalize and lead these discussions.

Administrators can also establish ongoing communication with faculty early adopters. Because of their interest in finding new classroom technologies, these instructors are likely to be aware of the latest innovations. Administrators can encourage them to report regularly about their latest findings. If early adopters are given a place in the spotlight

on campus, they will become the people faculty associate most with development in digital culture. The growth of digital integration will itself become an expression of academic freedom.

More than 30 percent of faculty consider themselves ed-tech “early adopters.”

— IHE and Gallup

THE ROLE OF STUDENT PERCEPTIONS

Committed teachers tune into ongoing verbal and nonverbal feedback from students about whether they are, in fact, learning. Test scores provide critical information about how well students understand key concepts. One-on-one conversations and student evaluations fill in the gaps.

If faculty hear directly from students that a lecture, text or technology has helped them learn, they usually aim to build on that success. Likewise, when they hear that students find an element of their pedagogy confusing, they often consider a new approach.

It's critical for administrators who want to enrich their campus digital culture to have insight into student perceptions about technology and learning. When teachers know that a request for increased classroom technology comes directly from students, they're likely to pay attention.

More than **9 in 10** faculty who have worked with digital course designers report a **positive or very positive experience**, according to Inside Higher Education.

UNDERSTANDING STUDENTS AND EDUCATIONAL TECHNOLOGY

BARNES & NOBLE COLLEGE STUDENT LEARNING DATA

With the goal of better understanding whether student achievement can benefit from increased classroom technology use, Barnes & Noble College surveyed more than 500 graduates and undergraduates at over 700 partner schools.

Questions focused on three areas that education technology can affect dramatically: classroom experience, testing and feedback from teachers. BNC asked whether students believed their campuses made sufficient use of technology, whether students wanted more classroom technology, and whether they believed the kinds of tests and feedback they can receive from digital courseware helps them learn.

HOW MUCH TECHNOLOGY DO STUDENTS WANT IN THE CLASSROOM?

- 23% of students believe classroom technology use at their school is insufficient
- 60% believe increased classroom technology at their schools will improve their learning experience.

The data suggest that although schools are meeting many students' expectations, they could utilize classroom technology in ways that further student achievement.

HOW STUDENTS VIEW TESTING AND TEACHING WITH COURSEWARE

A promising innovation in classroom technology involves pairing courseware with OER. Implemented wisely, it can save students money and increase academic success.

Some faculty object to the kinds of digital assessment courseware provides. They fear learning will suffer if multiple choice tests and numerical feedback replace written exams. However, data suggest that students believe they learn best from the very sort of tests and feedback digital courseware offers.

At least two-thirds of surveyed students said they learn best from multiple-choice tests. More than half said that short answer tests help them learn. Short answer tests, which ask students to respond to questions with one or a few words can also be integrated successfully into courseware.

The toughest kind of test to integrate into digital courseware would be a written exam or in-class essay. Yet, only about 20 percent of surveyed students said they learned best from written exams. Such tests also add to faculty workloads: they typically take longer to review and grade.

Meanwhile, nearly nine out of 10 students had experience with auto-graded quizzes. Over half of them said the digital quizzes improved their learning experience "somewhat or a lot."



TESTS STUDENTS FIND MOST EFFECTIVE FOR LEARNING

- 63% of students said multiple choice tests are the most effective in helping them learn
- 54% said short-answer tests are the best at helping them learn
- 21% said in-class essays are most effective in helping them learn

WHAT KIND OF FEEDBACK FROM TEACHERS HELPS STUDENTS MOST?

Data suggest that faculty concerns about numeric feedback from courseware-integrated tests are not entirely misguided. Students like to receive verbal and written responses from teachers. Fewer than five percent say they learn most from receiving only numeric feedback on tests.

However, only 15 percent say that verbal or written feedback on its own is most effective in helping them learn. Rather, an overwhelming majority of students say they learn best from a combination of numeric and written or verbal feedback.

STUDENT FEEDBACK PREFERENCES

- 80% of students said a combination of numeric and verbal or written feedback on tests is most effective in helping them learn
- 15% said that written or verbal feedback on its own helps them learn most
- 4% said numeric feedback like points or percentages helps them learn most

Such data confirms what many campus early-adopters have likely discovered through experience. Digital courseware complements teaching and curricula. It does not replace personal interaction. It gives teachers more time for the personal attention they want to offer students while significantly enhancing the college learning experience.

Faculty who eschew digital testing because they do not believe numeric feedback helps students may be ignoring a critical factor in student achievement. Numbers alone are not enough for students. But feedback that lacks a numeric component may hamper learning just as much.

More than **8 in 10** students said that they benefit most from a **combination of numeric and verbal or written feedback**. Only 13 percent said they learned best from verbal or written feedback on its own.

MAKING A POWERFUL IMPACT ON CAMPUS DIGITAL CULTURE

THREE DISCRETE, POWERFUL DIGITAL INTERVENTIONS

A successful campus tech culture is constantly evolving. That doesn't mean teachers and administrators must institute every new trend. However, it is critical for all campus stakeholders to engage in ongoing dialogue about new options that can ensure the institution stays connected to its student population.

Fortunately, small changes introduced regularly through faculty early-adopters can have a powerful impact on the campus culture without threatening academic freedom.

1. Enhanced OER

When it comes to maximizing the potential of Open Educational Resources, free digital course materials, campuses face two obstacles: the complexity associated with finding relevant work and the need to ensure students have high-quality, peer-reviewed materials. Those problems haven't disappeared, but the industry has begun to address those difficulties in ways that may inspire faculty who once rejected OER to reconsider.

Companies have begun developing OER-centered products and services in collaboration with teachers and educational scholars. They use peer-reviewed OER textbooks as a base for the development of courseware and curricula that increase student engagement and streamline adoption. The result is what's called enhanced OER.

These additions to otherwise free resources come with a fee. However, the total cost of the curricular package is a fraction of what students would typically pay for publisher-created course materials, especially those with digital components.

What's more, faculty who favor print texts over digital now have a choice with enhanced OER: Rice University's OpenStax, one of the most reputable purveyors of OER, now offers peer-reviewed print introductory textbooks in a variety of disciplines. Again, the non-profit charges a small fee for print copies. But the total cost of, say, a print Physics 101 OER book might be as little as \$20. A new print textbook from a traditional publisher can cost students more than \$400.

Eliminating faculty bias against OER

In a way, OER is hardly new. Teachers turned to cost-saving course material distribution techniques like photocopies

FACULTY VIEWS OF OER

47%
said quality OER materials were too hard to find

47%
said that there were not enough OER materials available in their discipline

40%
said that none of their colleagues used OER

Source: Babson Research

long before the internet became a dominant force in higher education. However, the very familiarity of the idea — offering students free reading materials to enhance their learning experience — may give faculty an outdated view of their potential.

A 2017 study from the Babson Research Group showed that despite an increase in faculty's awareness of OER, many still view it as problematic. Nearly half told Babson that they did not adopt OER because it too hard to find quality materials. The same number said there were not enough materials available within their discipline. Meanwhile, 40 percent said that none of their colleagues used OER.

It's critical to raise awareness among faculty that, in the last decade, the course material industry has begun addressing concerns about the complexities involved in finding and implementing quality OER. To be sure, OER is not what it was in the days of the photocopied classroom packet. But it's also not what it was just a few years.

As educational companies increasingly draw on OER — in print and digital formats — as a foundation for curriculum development, a greater number of resources will appear in classic disciplines.

When these companies combine the OER texts with courseware, auto-graded quizzes, videos and tests, they enhance student engagement with the material and lower the total cost of education dramatically. Such innovations make it much simpler for faculty to find excellent OER within their discipline and find material that is vetted and peer reviewed.

When faculty incorporate enhanced OER into their classrooms, they accomplish several goals at once. They significantly reduce student course material costs. They build on established ways of learning digital natives bring to the classroom, and they can easily complement their written and verbal feedback with numeric grades or percentages, creating the combination that students say helps them learn the best.

The best enhanced OER is assembled by scholars educated in digital curriculum design. They often work in collaboration with teachers and disciplinary experts to design courses that individual faculty can adapt to their needs.

While faculty some faculty might initially be suspicious of outside interference, the IHE data suggests that they will find collaboration with digital curriculum designers highly satisfying

2. Inclusive access

Inclusive access course material programs help students attain affordable texts before classes begin, which, in turn, facilitates academic achievement. The programs typically incorporate digital course materials into other educational costs. Students are given the chance to opt in or out of a course material charge, and they can be charged on a per credit, course, per department or per institution basis. Once they opt in, they have immediate access to their required texts.

Because sales are guaranteed, publishers will cut prices on individual titles as much as 40 percent or more. This provides students with substantial financial relief. Some inclusive access programs boast sell-through rates as high as 98 percent.

Resources that promote successful implementation

Campuses that have successfully implemented inclusive access typically maximize the flexibility of programs and start gradually, perhaps with a single course or two, then an entire department, then perhaps an entire school. In addition, they draw on services from independent companies rather than work directly with publishers. This

has two great advantages: First the independent companies offer services that streamline inclusive access implementation. They handle price negotiations with publishers, ensuring students receive the best possible rate, and they manage the work of finding, ordering and distributing the materials. That allows campuses to direct priorities to the classroom and student success and eliminate the need for additional workers to handle the process.

A faculty early-adopter makes an excellent candidate for someone to lead the evolution from traditional course material fulfillment to inclusive access. As these faculty influencers adopt inclusive access and report their successes to committees and peers, an increasing number of faculty will want their courses considered for inclusive access. They will not only trust the process, but possibly seek out ways to become involved.

Inclusive access also streamlines faculty workloads. When a large percentage of students start class without required materials, faculty have to juggle course priorities while waiting for students to acquire the texts they need to complete homework assignments, tests and papers. When students arrive in class on day one with materials in-hand, faculty can proceed with their planned course schedule.

In the IHE survey, faculty expressed doubt survey about how much some digital course materials might lower costs. However, over 40 percent said they were impressed with the promise of inclusive access.

More than 40 percent of faculty said they believed inclusive access programs increase student achievement while lowering student costs.

— IHE

3. Faculty-focused adoption tools

The right faculty course material adoption tool can ensure faculty have greater awareness of OER and inclusive access. It can also ensure that faculty learn about new materials and technologies from people they trust: their peer group.

For administrators, the benefits of an excellent digital adoption tool are numerous. First, such software offers robust reporting on rates of submission and adoption that

have an impact on student costs. This increases faculty accountability for their role in keeping the total cost of education low. It also allows administrators to directly address areas that may be problematic with data that communicates the problems clearly.

A strong tool will include a variety of features that simplify course material acquisition and distribution for all campus stakeholders. A button that permits “one-click re-adoption,” for instance takes multiple steps out of the process of renewing textbook orders while encouraging faculty to submit their orders early. The earlier faculty adopt, the more students are likely to save, but early adoptions give students earlier access to cost-saving options like used books.

A smarter approach to course materials

In the past, faculty mostly learned about new textbooks from conversations with one another or publishers, who send new titles for review hoping faculty will adopt. Faculty would then write the selected ISBN down on a piece of paper and pass it on to the department secretary, or whoever had been placed in charge of submitting adoptions to the campus bookstore.

High-quality digital adoption tools do more than streamline that process. They create a digital repository of course material wisdom. This increases faculty awareness of digital courseware options and simplifies price comparison. What’s more, digitally-facilitated interaction with peers gives faculty greater insight into how best to utilize the materials and courseware in their own classroom.

A high-quality digital adoption tools gives faculty access to a broader peer group. It connects faculty to other teachers who have used similar texts and lets them engage in ongoing dialogue about how new materials might enrich their pedagogy.

With an excellent digital adoption tool, faculty are not limited to considering the handful of titles they’ve received in the mail or heard about from others in their department. They can build on one another’s experiences online, find out what saves students the most money and what texts and courseware have led to the best student outcomes.

The implementation of such a digital adoption tool lays the groundwork for a vast improvement in the campus technological culture. It can advance administrative initiatives in the best possible way: by inspiring faculty to initiate change themselves

THREE TAKEAWAYS FOR INCREASING FACULTY TECHNOLOGY USE

1. Successful implementation of any classroom technology requires faculty buy-in.
2. Administrators should consider a phased approach to implementation, drawing on faculty adopters to lead the changes and educate peers about the advantages of digital innovations.
3. Targeted interventions in the areas of digital course materials, courseware and adoption technology can have a powerful impact on a school’s academic culture.

**FOR MORE INFORMATION ABOUT ENHANCED OER, INCLUSIVE ACCESS
OR FACULTY-FOCUSED ADOPTION TOOLS, CONTACT:**

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WORKS CITED

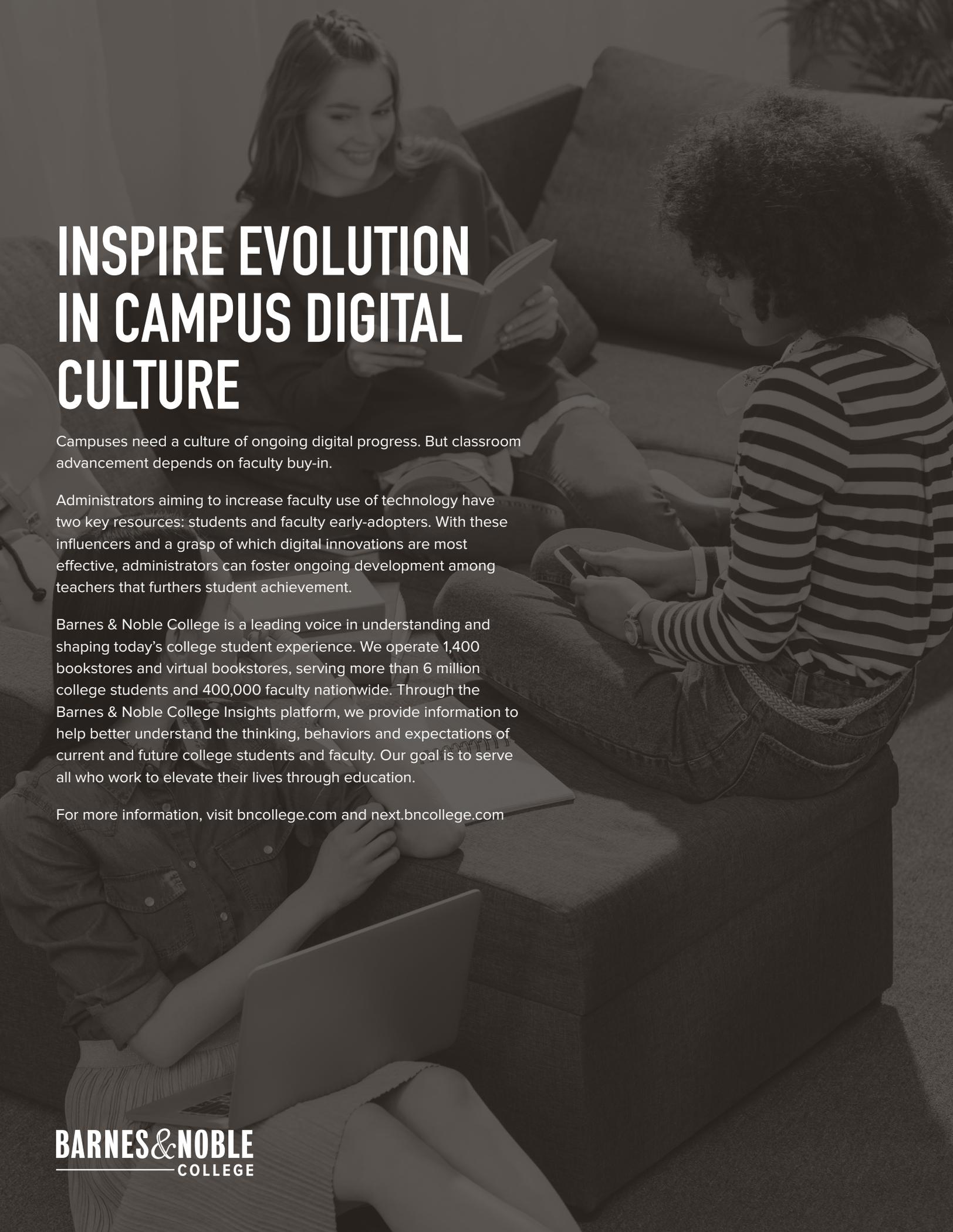
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INSPIRE EVOLUTION IN CAMPUS DIGITAL CULTURE

Campuses need a culture of ongoing digital progress. But classroom advancement depends on faculty buy-in.

Administrators aiming to increase faculty use of technology have two key resources: students and faculty early-adopters. With these influencers and a grasp of which digital innovations are most effective, administrators can foster ongoing development among teachers that furthers student achievement.

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