EAB

Scaling Learning Innovations

From Early Adopters to Campus-Wide

Academic Affairs Forum

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The Education Advisory Board (EAB) is a division of The Advisory Board Company, the leading provider of comprehensive performance improvement services for the health care and education sectors—including research and insights, business intelligence and analytic tools, management training, and consulting support. Drawing on over three decades of experience, The Advisory Board Company is privileged to serve a membership of more than 3,500 organizations, including preeminent hospitals, health systems, and universities, all sharing a charter "above commerce" and an unyielding insistence on continual improvement.

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The Academic Affairs Forum is a member-based organization that provides best-practice research and market intelligence for provosts and vice presidents for academic affairs.

We offer our members expert advice and innovative strategies for tackling their most pressing issues, tested and proven to work by their peers at other institutions across the country. Rather than reinvent the wheel, our members benefit from the learning of thousands of other colleges and universities facing the same challenges.

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Supporting Members in Best Practice Implementation

Resources Available Within Your Membership

This publication is only the beginning of our work to assist members in scaling learning innovations. Recognizing that ideas seldom speak for themselves, our ambition is to work actively with members of the Academic Affairs Forum to decide which practices are most relevant for your organization, to accelerate consensus among key constituencies, and to save implementation time.

For additional information about any of the services below—or for an electronic version of this publication—please visit our website (eab.com/aaf), email your organization's dedicated advisor, or email research@eab.com with "Academic Affairs Forum 'Scaling Learning Innovations' Request" in the subject line.

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Throughout the publication, this symbol will alert you to any corresponding tools and templates available in the Toolkit at the back of this book. These tools are also available on our website at eab.com.

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Our website includes recordings of webconferences walking through the practices highlighted in this publication. Forum experts are also available to conduct private webconferences with your team.

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Advancement Forum

Breakthrough-practice research and data analytics to help maximize philanthropic giving and support institutional goals

Community College Executive Forum

Strategic advice for chief executives to improve student success outcomes, win future enrollments, and build sustainable college enterprises

IT Forum

Research and advice for CIOs on leveraging information and technology to further the higher education mission

Business Affairs Forum

Research and support for chief business officers in improving administrative efficiency and lowering costs

Enrollment Management Forum

Best practice research and analytics to support enrollment managers as their scope of responsibilities expand

Student Affairs Forum

Research for student affairs executives on improving student engagement and perfecting the student experience

COE Forum

Breakthrough-practice research and market intelligence to help universities grow continuing, professional, and online programs

Facilities Forum

Best practices and executive networking to elevate space forecasting, utilization, and service quality

University Systems Forum

Research for system leaders to understand the challenges faced by systems and institution-level best practices

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Academic Affairs Forum

Strategic advice for provosts and deans on elevating performance in teaching, research, and academic governance

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Performance Technologies

University Spend Collaborative

Business intelligence and price benchmarking to help colleges reduce costs of purchased goods and services

Academic Performance Solutions

Data analytics service to help academic leaders identify opportunities to improve resource allocation and efficiency

Student Success Collaborative–Campus

Academic advising platform and predictive analytics for four-year schools to identify and intervene with at-risk students

Student Success Collaborative–Navigate

Student onboarding and academic planning platform for community colleges to enhance student persistence and on-time graduation

Top Lessons from the Study

Changing the Campus Conversation on Teaching and Learning

Introduction

Innovations in teaching and learning have proliferated in recent years. Faculty members across colleges and universities have gone beyond the traditional lecture to test out a range of alternative pedagogies. Their experiments include both technology-enhanced solutions, like flipped classrooms and videoconferencing, and non-technological methods, such as team-taught interdisciplinary courses and peer instruction.

The current momentum in learning innovations stems from advances in online education and the massive open online course (MOOC) movement of recent years. For many instructors, teaching online was not only the first time that they used technology in the classroom, but also the first time they sought the help of the teaching and learning center or an instructional designer when planning their courses.

Despite growing enthusiasm for learning innovations, many faculty members still face barriers to adopting new techniques. Career incentives for tenure-track faculty typically prioritize research over novel teaching techniques. Even in instances where learning innovations attract noticeable support, strategies for assessing the success or failure of experiments rely too heavily on student evaluations, which can cast a negative light on rigorous teaching strategies. In addition, too few faculty members connect with the on-campus resources that can support their efforts to innovate.

Institutional Barriers to Adoption[1]

5% Of faculty say they would be adequately rewarded for learning innovations

12% Of faculty say they have the time and resources to develop learning innovations

8% Of faculty say their institutions' leaders are effective in supporting changes in instruction

Harnessing Grassroots Activity

Every campus contains a host of faculty innovators and early adopters who pursue novel teaching strategies, regardless of the risks. These individuals span the breadth of academic disciplines and use a variety of approaches to augment traditional teaching methods.

While innovators and early adopters teach at every college and university, too few academic leaders can claim to know who they are and what techniques they're trying. Pioneering faculty members often operate in isolation, out of view of administrators. In many cases, their own faculty colleagues don't know about the learning innovations they're using in their courses. This knowledge gap hampers the spread of high-impact techniques.

Academic leaders' unfamiliarity with faculty innovators leads to missed opportunities and higher levels of risk associated with investments in learning innovations. Without mapping innovations on campus, academic leaders cannot bring the best teaching strategies to bear on the areas of campus that most need them, such as courses with high drop/fail/withdrawal (DFW) rates. At the same time, when academic leaders seek to direct more resources to a learning innovation, they cannot be sure that it will be replicable across disciplines.

1) FTI Consulting, US Postsecondary Faculty in 2015, The Bill & Melinda Gates Foundation, 2015.

Top Lessons from the Study (cont.)

Changing the Campus Conversation on Teaching and Learning

To surface more faculty innovators, administrators have made it easier for creative instructors to come forward and get the support they need to experiment. Easy-to-use instructional grant applications lower the navigational complexity of accessing resources. The ease of applying for support entices more faculty members to come forward with instructional innovations. At the same time, reducing the size of grants allows academic leaders to support a larger number of exploratory projects.

Leaders can mine and analyze institutional data to detect which instructors are using breakthrough pedagogical techniques. Data such as learning management system (LMS) activity, grades across instructors for a single course, and grades in the next course in a sequence can all point administrators to classroom practices that other faculty members should emulate.

Academic leaders must also ensure that they gather enough information about instructional pilots to make well-informed investment decisions. Generating proofs of concept from pilot projects allows institutional leaders to proceed confidently and lay a strong foundation for scale.

Reducing the Risk of Adoption

Even as a growing number of faculty express interest in exploring nontraditional pedagogies, adoption remains meager. Awareness far outstrips adoption in most classrooms. Hesitation persists for both technological and non-technological learning innovations.

Professors Know About High-Tech Teaching Methods, but Few Use Them

Technique	Not Familiar	Familiar but haven't tried	Tried	Adopted
Clickers and other real-time feedback	11%	**64%**	10%	12%
Interdisciplinary team-teaching	13%	**63%**	12%	10%
Hybrid courses	8%	**58%**	11%	20%
Fully online courses	9%	**57%**	7%	24%
Online collaboration tools	9%	**56%**	12%	20%
Experiential or service learning	14%	**49%**	13%	23%
Flipped classroom	6%	**47%**	17%	29%

Adoption lags because faculty members worry about three types of risk they incur by adopting learning innovations: pedagogical risk, technological risk, and social risk. Many instructors believe that even the best-tested techniques will not work if they try to use them in their classes (pedagogical risk). They fear that the technologies at the heart of these innovations will break, disrupting the flow of their teaching (technological risk). Lastly, they worry that their colleagues may judge them for exploring what some see as "frivolous" teaching strategies (social risk).

Top Lessons from the Study (cont.)

Changing the Campus Conversation on Teaching and Learning

The Three Key Types of Adoption Risk

Pedagogical Risk

What if it doesn't work?

Professor integrates active learning into her class. Students fail to engage productively.
As a result, the pace of learning slows.

Technological Risk

What if it breaks?

Professor purchases student-response clickers and builds lessons around them. The clickers malfunction en masse mid-lecture.

Social Risk

What if my peers disapprove?

Professor moves lectures online and uses class time for peer instruction. Colleagues doubt effectiveness and reputation suffers.

To overcome pedagogical risk, institutions should arrange for uninitiated instructors to shadow experienced faculty members who can demonstrate the effectiveness of learning innovations in action. Instructors who have never before used an innovation visit their colleagues' classes, review course materials, and enroll in a structured orientation program supported by veteran innovators.

Academic leaders can combat the fear of pedagogical risk by allowing faculty members to engage in limited, low-stakes test runs of alternative pedagogical techniques. Rather than asking faculty members to redesign whole courses in a new format, academic leaders create spaces where faculty members can innovate in a single class meeting. Success in this format leads many faculty members to consider more comprehensive redesigns.

Technological risk can be mitigated by providing targeted information technology (IT) support to increase comfort with new tools. Staging committee work on digital channels and using computer upgrades as incentives to complete IT training increase faculty members' baseline digital fluency. At some institutions, intensive IT support accompanies technology-enhanced teaching initiatives to ensure positive experiences and encourage word-of-mouth adoption.

Academic leaders can overcome the social risk of innovation by empowering faculty advocates to reward their colleagues' instructional experiments. For example, faculty senate committees often choose winners in redesign grant programs. The competitive nature of these programs incentivizes participation from a broad range of faculty members.

Channeling Efforts to Priorities

To truly impact student learning, academic leaders must channel successful innovations to where they are most needed on campus. Gateway, bottleneck, and high-DFW courses especially stand to benefit from alternative pedagogies.

Structural barriers often impede the spread of learning innovations to high-need areas. In many cases, outmoded scheduling protocols, room assignment systems, and departmental funding models undermine academic leaders' efforts to increase adoption in crucial courses.

Top Lessons from the Study (cont.)

Changing the Campus Conversation on Teaching and Learning

Innovations at Scale Encounter Structural Constraints

Critical Courses	Effective Practice	Structural Constraint
Gateway Courses Few students pass major prerequisites on first attempt	*Self-Paced Learning* Students master course content at their own pace, increasing success	*Time* Standard schedule ill-suited to self-paced learning
Bottleneck Courses Demand exceeds capacity, resulting in progression delays	*Hybrid Courses* Instructional capacity increases while space needs decrease	*Space* Hybrid courses prevent others from using space, even when not in use
High-DFW Courses Meager course success rates add time to degree and derail progression	*Active Learning Redesigns* High-touch learning boosts at-risk students' performance	*Funding* One-off financial incentives raise concerns about sustainability

Academic leaders overcome structural barriers by introducing flexibility into course schedules, pairing non-overlapping courses together in the same classrooms, and reinvesting redesign savings back into the department that undertook the effort. These strategies reduce navigational complexity for faculty members who want to opt in to learning innovations. They also provide powerful incentives to tip the balance in favor of new approaches to teaching and learning.

Sustaining What Works

The lack of career rewards for learning innovations hamper widespread adoption. At many institutions, the dictates of tenure and promotion discourage interested, entrepreneurial faculty members from pursuing their ideas for alternative pedagogies.

Changing the reward system more broadly will require creating new faculty roles, systematizing assessment of innovative classroom practice, and realigning promotion and tenure expectations. These strategies have just begun to be implemented, however, and it is too early to evaluate their impact. Yet they hold the potential to meaningfully shift the academic culture at their institutions and elevate learning innovations to a position of primary importance in faculty careers.

Introduction

The Changing Ecosystem of Innovation

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Misreading Innovation in Higher Ed

Reductive View of Change Sees Only Inertia

Is Innovation Absent in Higher Ed?

"[Higher education is] one of the most sclerotic sectors of the U.S. economy, one so shielded from the need for improvement that its biggest innovation in the past 30 years has been to double its costs and hire more administrators."

— The Atlantic

"When I re-engaged with higher education after a 20-year absence in the private sector, I felt like Rip Van Winkle: The generations were different, but the landscape remained the same."

— Ann Kirschner, CUNY Dean

"At most higher ed institutions, you'd be hard pressed to see anything 'disruptive' going on…. Fundamental transformations of the higher educational model are still the exception, not the rule."

— Jonathan Mott, Learning Objects

"Instructional design is found by many to define the sacrosanct concept of education…. This 'handcrafted' approach, while highly valued by some, fails to capture potential efficiencies and economies of scale."

— McKinsey & Company

Many commentators believe that colleges and universities lack an innovative streak. Media outlets in particular have attached strongly to this narrative, criticizing higher education's growing costs and alluding to a lack of progress in their service to students. Even some deans and academic leaders have aired their grievances publicly over a perceived absence of innovation.

This presumed inertia has led to a flurry of activity from education technology companies that seek opportunities to revolutionize a centuries-old sector. Management consulting and other business services firms have also set their efficiency-seeking sights on bringing greater rigor to the educational enterprise.

A Profusion of Innovation

Institutions Across Segments Experiment with Curriculum and Delivery

Public Four-Year

- Accelerated Degree Pathways
- iAMSTEM Active Learning Redesign
- Adaptive Learning in First-Year Math
- Alternative Classroom Designs

Private Four-Year

- Competency-Based Education
- Course Modularization
- Prior Learning Assessment
- Mobile Video Course Demonstrations

Canadian Four-Year

- Entrepreneurship Incubators
- Competency-Focused Syllabi
- Teaching-Stream Faculty Rank
- Active Learning Lecture Software

Public Two-Year

- Open Course Library
- Predictive Academic Analytics
- Employer Curriculum Collaborations
- Student-Centered Developmental Math

These critiques, however, overlook the flurry of activity that has occurred at colleges and universities across the past few years. Faculty, staff, and academic leaders are capitalizing on the typically decentralized, entrepreneurial structure of their institutions to pioneer new approaches to student learning.

Experiments have ranged widely. They include new approaches to course sequencing, such as accelerated degree pathways; redesigned spaces for student learning; the use of now-ubiquitous mobile devices in the service of instruction, through mobile video course demonstrations; and alternative models of faculty employment.

The diversity of these innovations belies the claims of higher education's critics that the sector is prone to inertia and allergic to change.

Focused Campaigns Catalyze Progress

Executive-Level Support and Funding Aims to Move the Dial

Harvard Initiative for Teaching and Learning

Harvard University

$40M for classroom redesigns and project seed funding

Educational Innovation

University of Wisconsin-Madison

Grants and support for active learning, master's launches, and technology

Third Century Initiative

University of Michigan

$50M for student learning, global challenges, interdisciplinary research, and learning analytics

Provost's Challenge

Portland State University

$3M for online education, digital instruction, and technology solutions for student success

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University Innovation Alliance

Consortium of 11 public research institutions aiming to pilot and scale high-impact practices

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Some institutions go beyond discrete experiments to launch broader innovation initiatives. Institutional leaders judge these initiatives to have such great revolutionary potential that they often dedicate millions of dollars in funding to support faculty members who come forward with proposals for changing curriculum, delivery, and program offerings.

These initiatives are noteworthy for their commitment not just to innovation, but to scale as well. Programs such as the University of Wisconsin's "Educational Innovation" and Portland State University's "Provost's Challenge" complement the seed funds they extend to entrepreneurial faculty and staff with detailed plans for

taking the best ideas and institutionalizing them. These colleges and universities recognize that a successful pilot is just the first step in ushering in transformative practice.

Recently, 11 public research universities went even further in their commitment to surfacing and scaling innovative approaches to education. These institutions organized themselves into a consortium that they call the University Innovation Alliance. The Alliance aims at the entire life cycle of innovation, from ideation to evaluation to replication at another institution.

The Unexpected Benefits of MOOC Mania

Moving from MOOCs to the Core

MOOCs Not Disrupting...

- Institutions not granting credit for MOOCs to students not enrolled and not paying tuition

- Outside of computer programming, MOOC performance not leading directly to job offers

- Vast majority of MOOC students already have baccalaureate degree

- Faculty not leaving the institution to pursue MOOCs full-time

...But Leading to a Revitalization of Teaching Practice

- Experimentation with accelerated content and condensed course timelines

- Willingness to develop online content for future hybrid courses and flipped classrooms

- Prioritization of learning outcomes over knowledge transfer in course development

> "At Duke, [MOOCs have] revitalized the notion of pedagogic innovation, in a way that's *spilled out of the online space and into the regular classroom*…. There's a lot of unexplored power that can be harnessed."
>
> – Sally Kornbluth, Provost
> Duke University

The pace of change on college campuses has picked up in recent years. While in some respects institutions of higher education have always been amenable to change, the experiences many faculty members are now having with online instruction have shifted their attitudes about what can and should be done in a classroom.

The roots of this trend reach back to the last decade, when many institutions started investing heavily in online education. As more faculty members signed up to teach their courses online, they began to seek out, often for the first time, the aid of instructional designers and staff from teaching and learning centers to help with curricular design and delivery.

Over the past few years, online instruction has attracted even more attention through widely publicized MOOC experiments. While many predictions about MOOCs' disruptive potential have fallen short, the courses nevertheless have changed the way faculty members think about instruction. Broadly speaking, faculty members today are more willing to explore alternative formats, in-class technologies, and outcomes-driven instructional techniques in their face-to-face courses. This change is thanks largely to the experiences faculty members are having, or seeing others have, in MOOCs.

Progress Still Evades Us on Student Success

Despite Investments, Key Success Indicators Still Lag

Five-Year Graduation Rates

52.5%   52.6%

2008   2015
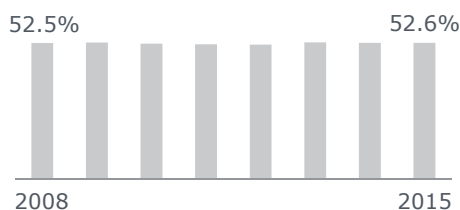
Investments in Student Success

- Early alert systems
- Attendance tracking
- Financial aid labs
- Emergency fund awards
- Student success centers
- *And many more staff-driven efforts*

The Faculty Role in Student Success

Enhance the Learning Experience

Evaluating and scaling high-impact learning innovations across courses and disciplines

Average first year student hours spent...

1

Advising Office

225

Classroom

Classroom Touch Points Underused in Retention Efforts

- Advisors have limited opportunities to monitor risk
- Classroom interactions position faculty to intervene

Faculty members' embrace of new, high-impact teaching methods couldn't have come at a better time. Despite growing urgency around student success, progress on key indicators continues to stagnate. Many observers believe that gains will remain elusive until academic leaders and faculty members work together to change how courses are taught.

Academic leaders at many institutions have invested heavily in student support services in recent years, yet they see few or no increases in retention and graduation rates. For some observers, this comes as little surprise. Most student success investments are directed outside of the classroom, where students spend the least amount of their time.

For many institutions, enhancing the learning experience holds the greatest potential for impacting student success. Students spend far more time in class with faculty members than with support personnel. The classroom is the one experience that all students have in common.

Yet at many institutions, the classroom remains the one area that student success initiatives overlook.

A Mismatch in Supply and Demand

Innovation Most Likely to Occur in Small Classes Where It's Least Needed

Eager, Creative Faculty

High-impact pedagogy in small, upper-division courses

> " I love seeing my students learn. I test out new things all the time in my senior seminars."

⚠ Effective practice focused solely on well-prepared students

Critical Courses

High DFW rates, little innovative teaching

> " We see far too many students fall through the cracks in intro courses."

⚠ High-need students get minimal exposure to innovative pedagogy

Reasons for Mismatch

- Faculty feel more ownership of boutique courses
- Stakes of failure are higher for courses everyone teaches

- Administrative roadblocks slow experimentation in intro courses
- Personal connection in small courses inspires commitment to innovate

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Increasingly, faculty members are willing and eager to test out new ways to align their instructional practices with student success goals. Unfortunately, many of these experiments are directed at the boutique, upper-division courses where interventions are least needed.

Faculty members take great pride in the small, signature courses that speak directly to their research interests. It's in these courses that they are most likely to test out a new instructional technique or mode of delivery. Yet it's also in these courses that students are already well prepared to learn.

Large introductory courses, on the other hand, attract many students who require intensive support to succeed. Alternative pedagogies hold the potential to provide this support. Yet for many faculty members, teaching these courses is a duty rather than a pleasure. They are less likely to "play" with their instructional models in these courses. Also, with so many students enrolled in introductory courses, and with so many of their colleagues monitoring outcomes, the stakes of what could be a failed pedagogical experiment are much higher. Many instructors refuse to take on that risk.

Source: EAB interviews and analysis.

Junior Faculty Most Likely to Innovate...

...But Pay Highest Opportunity Costs

Experiential Learning Cut Short by the Tenure Clock

1 Tenure-track faculty member conceives of innovative multi-course experiential learning pilot

2 Discusses idea with instructional designer who enthusiastically supports it

3 Abandons idea because tenure clock does not permit distraction from research

> **"**
>
> **Nothing for the Next Half-Decade**
>
> "I can't say I will have made any progress on this idea in three years. I'm on the tenure track. I have to focus on my research and the classes I'm already teaching. Yes, it's a good idea, but I don't have the time to do it for at least the next half-decade."
>
> *Business Professor, Public Research University*

No Rewards Means Lots of Risk

5% Of faculty say they would be adequately rewarded for learning innovations

12% Of faculty say they have the time and resources to develop learning innovations

8% Of faculty say their institutions' leaders are effective in supporting changes in instruction

Early-career faculty members are more likely to experiment with new pedagogical techniques than their late-career counterparts. Their digital fluency and lack of ingrained instructional habits leads them to regard their classrooms as learning labs. Yet the trade-offs they face stifle experimentation.

In many instances, early-career faculty with exciting ideas for learning innovations weigh the career costs of spending their time rethinking pedagogy against the research and service demands of their jobs. Often, they abandon their ideas to focus instead on the activities that tenure committees reward.

In addition, many non-tenure-track faculty members worry about the impact that a less-than-stellar instructional experiment will have on their job security. Even without research responsibilities, they frequently turn away from testing out learning innovations because they fear that trying something new and failing will lead to termination.

Student Evaluations May Reinforce Status Quo

When Expectations Are Upset, Scores Can Drop

Learning Innovations Jarring for Some Students

Technology-enhanced active learning redesign meant…

Course difficulty increased

Attendance expectations increased

Need for in-class engagement increased

Students' course evaluation scores decreased

But assessment showed students learned nearly ***twice as much***
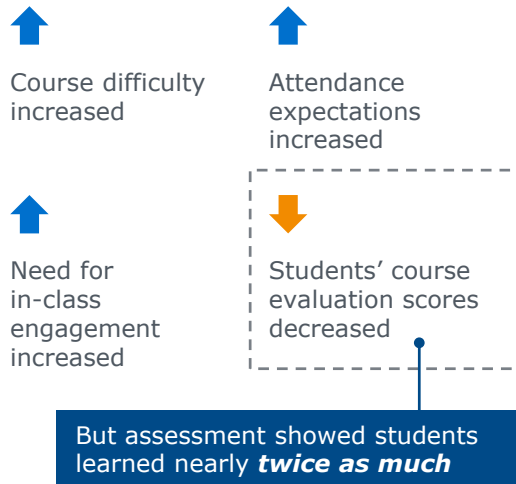
Grant-Funded Evaluator Saves the Day

"We had the foresight and the resources to budget an evaluator into the grant that supported the redesign. He was able to put together the data showing that the students were learning a lot more, despite their protests. But that first semester was rough. Students didn't expect it, and they made that known. Without the evaluator, the initiative might never have been able to take off."

Physics Professor,
Private Research University

The importance of student evaluations may also dampen enthusiasm for learning innovations. In many cases, students respond to course redesigns with negative evaluations, especially if the redesign entails higher required levels of engagement, effort, and critical thinking throughout the semester.

One faculty member who was consulted for this study related how a redesign he undertook yielded overwhelmingly negative reviews from students at the end of the semester. Those reviews would have undermined his experiment had he not budgeted in his redesign grant for a formal evaluator. The evaluator found that student learning outcomes increased significantly, which ensured that the instructional experiment would continue for years to come.

At many institutions, innovative faculty members do not have the benefit of grant-funded evaluators. The sole testaments to their experiment's success or failure are student evaluations. The likelihood that these evaluations will be negative lowers the likelihood that faculty members will try something new.

Strategies for Priming the Pump Fall Short

Teaching Center, Classroom Tech, and Seed Funds Make Few Gains on Scale

Resources to Support Learning Innovations

Teaching and Learning Center	**IT-Supported Classroom Tech**	**Instructional Seed Funding**
Offerings focus on cutting-edge pedagogy	Support unit equips classrooms with software and hardware for teaching	Faculty can apply for grants to support pedagogical experiments
But faculty members rarely visit it	*But faculty members are unsatisfied with them*	*But few faculty can access them*
1 in 5	**2 in 3**	**1 in 7**
Faculty use the Teaching and Learning Center for help with curriculum development	Faculty say they are not satisfied with classroom technologies provided by IT	Faculty applicants to innovation seed fund received grant funding to explore their ideas at a public research university

Academic leaders actively seek to mitigate the risks of undertaking an instructional experiment. They also seek to support innovative faculty members through positive means. Common strategies for supporting on-campus innovation include consulting with faculty through the teaching and learning center, equipping classrooms with the latest educational technology, and providing instructional seed funding grants and course releases.

Unfortunately, faculty members rarely use these resources, and those who do use them report feeling dissatisfied. At many institutions, academic leaders must contend with how to connect faculty members who want to experiment in their classrooms with the support that they need to do so.

Additional Resource: Campus Support Climate Survey

To access the resource, turn to p. 70 in the Learning Innovations Toolkit at the back of this publication.

Scaling Learning Innovations

From Early Adopters to Campus-Wide

The Learning Innovations Adoption Curve

Harnessing Grassroots Activity — *Reducing the Risk of Adoption* — *Channeling Efforts to Priorities* — *Coda: Sustaining What Works*

1 2 3 4
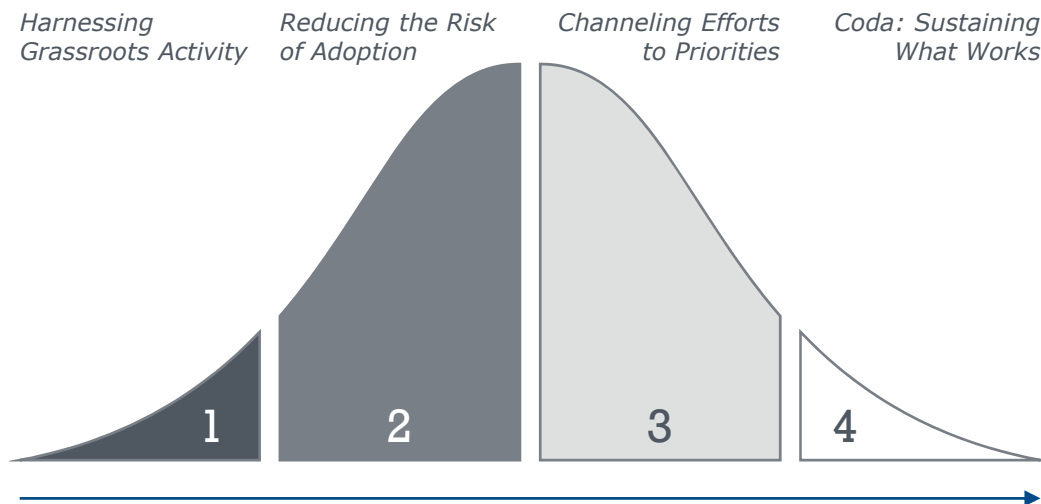
The rest of this study explores the barriers to surfacing faculty innovators and scaling their most successful experiments to where they are most needed on campus.

It begins with a look at the most entrepreneurial groups in the adoption curve, the innovators and early adopters. These individuals test out new instructional techniques regardless of the risks involved, but they are often unknown to academic leaders. As long as these innovators operate in the shadows, provosts and their teams cannot direct support to the most successful experiments.

The next group, the early majority, has a budding interest in learning innovations but remains fearful of adoption risks. Academic leaders who reduce the risk of adoption elicit rising participation in new instructional models.

This study's third section examines the structural barriers—such as scheduling, space, and funding—that prevent learning innovations from percolating up to the critical courses that most need them, including gateway courses, bottleneck courses, and high-DFW courses.

The study concludes with a discussion of the strategies some academic leaders are beginning to use to sustain what works by hardwiring career rewards for learning innovations.

eab.com

'Innovation': A Word with Many Meanings

What We Are, and Are Not, Addressing

This Publication's Focus

In-Class Technology Enhancements *(Small Tech)*	*Enterprise-Wide Technology Enhancements* *(Big Tech)*	*Alternative Pedagogies and Instructional Techniques*
• Flipped classrooms	• High-tech classrooms	• Active learning
• Active learning software	• Virtual reality and simulation centers	• Team-taught interdisciplinary courses
• LMS apps (e.g., adaptive release)	• LMS overhauls	• Peer instruction
• Global learning videoconferencing	• Multi-course adaptive pathing	• Experiential and applied learning

A Topic for Another Day

Program-Level Innovations

- Fully online programs
- Alternative credentials
- Digital badges
- E-portfolios
- Competency-based programs

The topic of earning innovations can be as broad or narrow as one would like. For the purposes of this study, learning innovations will comprise a range of technological alternations to curriculum and delivery. It will also include non-technological strategies for improving instruction, such as team-taught interdisciplinary courses and experiential learning.

This study does not focus on innovations at the programmatic level, such as alternative credentials and competency-based programs. For more information on the latter, please see the Academic Affairs Forum's publication, *Three Myths About Competency-Based Education*, available on eab.com.

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Harnessing Grassroots Activity

Surfacing and Supporting Innovators

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- Lower Threshold for Seed Funding
- Identify Innovation Outliers
- Generate Proofs of Concept
- Create a Tiered Pilot Framework

Innovators and Early Adopters

Setting the Pace for Pedagogy on Campus

Harnessing Grassroots Activity	Reducing the Risk of Adoption	Channeling Efforts to Priorities	Coda: Sustaining What Works

1   2   3   4

Committed to Classroom Innovation

Self-motivated	Eager to experiment	Dedicated to student learning	Tech-savvy

Breakthrough Practice Approach

1: Lower Threshold for Seed Funding	2: Identify Innovation Outliers	3: Generate Proofs of Concept	4: Create a Tiered Pilot Framework

Every campus has small populations of innovators and early adopters who eagerly embrace pedagogical breakthroughs. These individuals prioritize teaching among their diverse responsibilities, and they often turn to technology to enhance their approach to instruction.

To spur broader campus innovation, academic leaders must first identify and support these individuals while pressure-testing their ideas for replicability across disciplines.

Source: EAB interviews and analysis.

The Classroom as R&D Lab

Solutions to Critical Challenges Likely Already in Development

Innovators Test Unconventional Pedagogies

Biology professor

Developed **self-paced modules**

Psych professor

Designed a **hybrid course**
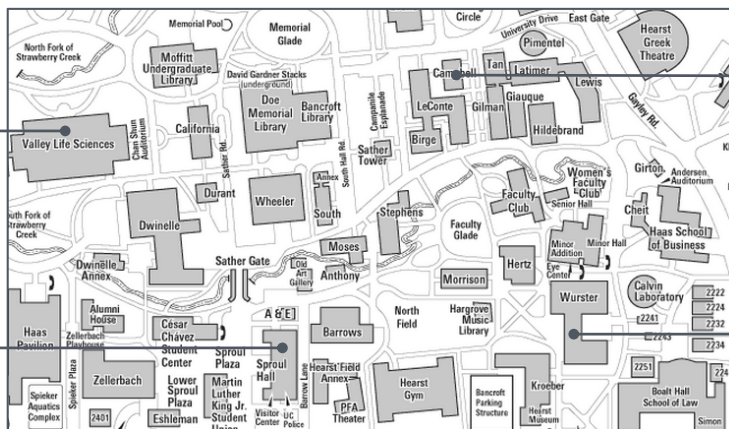
Chemistry professor

Trained **peer instructors**

Business adjunct

Built **experiential learning** into course

The Right Answer Is Hidden on Campus

"The solution to a lot of our problems is out there. It's in individual classrooms, helping small numbers of students. I just don't know which ones."

Provost, Private Master's University

Innovators and early adopters can be found all across campus. They are not restricted to any one discipline, and their innovations range from new approaches for course pacing and delivery format to strategies for engaging students and outside parties in instruction.

While they are plentiful at many institutions, innovators and early adopters are often overlooked by academic and other senior institutional leaders. Administrators have little role in instructional strategies, which means that they often have little knowledge of who at the institution uses breakthrough teaching practices.

Source: EAB interviews and analysis.

The Provost's Dilemma

Academic Leaders Struggle to Identify, Target, and Scale Best Ideas

Missed Opportunities

Cannot Surface Innovators

- Most creative faculty experiment in isolation, off leaders' radars
- Best ideas' shelf life lasts only as long as pioneering faculty's interest

Fail to Channel Efforts to Priorities

- Replicable innovations impact department of origin, not area of greatest need
- Instructional inequities emerge across disciplines

Investment Risk

Lessons from Pilots Unexamined

- Missteps and success stories fail to inform future investments
- Academic leaders struggle to distinguish what is truly replicable from other successful projects

Projects Advanced Recklessly

- Projects chosen based on presumed fit with institutional needs
- Administrators do not anticipate service needs before elevating projects

Without knowing what is working in classrooms across campus, institutional leaders cannot support learning innovations over the long term. In this climate, the best ideas persist only as long as the faculty owner continues to use them in her or his courses.

Academic leaders also struggle to direct resources to the most impactful learning innovations or stage campaigns to elevate adoption of new techniques.

Effective pedagogical models remain relegated to the courses where they first emerged, regardless of where they are most needed on campus.

Lastly, this knowledge gap about where learning innovations occur on campus means that academic leaders lack the necessary information to improve upon past pilots.

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Bringing Business Rigor to Pilot Elevation

Identifying and Advancing High-Impact Pedagogies

Surface and Channel Innovative Faculty

Cultivate a portfolio of creative, effective innovators

 1: Lower threshold for seed funding

 2: Identify innovation outliers

Reduce Risk of Investment Beyond Pilot

Evaluate pilot performance and fit with institution

 3: Generate proofs of concept

 4: Create a tiered pilot framework

Institutions that overcome these challenges use two primary strategies. First, they take deliberate steps to entice innovative faculty members to come forward with their ideas. They do so by making it easier to access support and resources and by using data to pinpoint where innovation may be happening on campus.
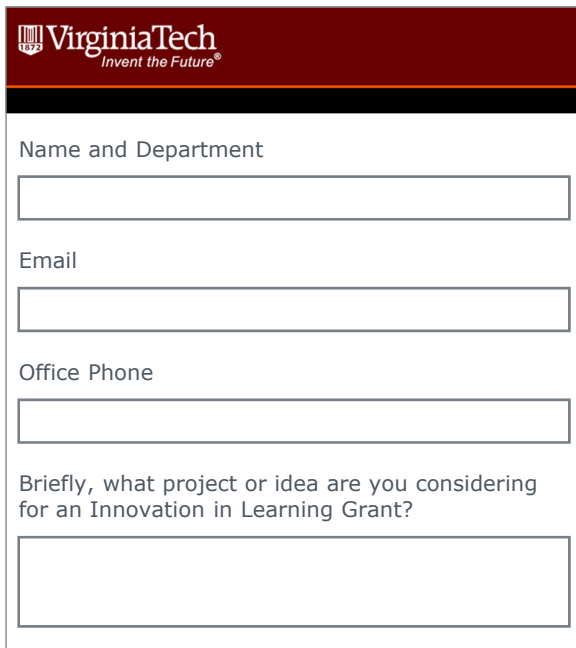
Second, they gather information on pilots so they can make informed decisions about where to invest institutional resources moving forward.

These two approaches allow academic leaders to map campus innovation, identify gaps, and pinpoint opportunities for scale.

Source: EAB interviews and analysis.

Pre-Seed Experimental Funding

Low-Complexity Proposal and Small Experimental Grants Drive Innovation

Low-Complexity Online Grant Application

Virginia Tech — Invent the Future®

Name and Department

Email

Office Phone

Briefly, what project or idea are you considering for an Innovation in Learning Grant?

Small-Dollar Sandbox Funding

Providing Small Dollar or Non-financial Support

- Average grant size in low thousands
- 20-30 projects currently in sandbox phase
- One-semester time frame for exploration
- Faculty initiate projects through walk-ins or online applications

> "We wanted to create the ability for anyone on campus to propose an early-stage exploration. We've always done this sort of low-threshold experimentation, but now we're using it to discover early on what we need to know to inform the next stage."
>
> *Dale Pike, Executive Director, TELOS*
> *Virginia Tech*

Virginia Tech has taken steps to ensure that more faculty innovators can access the resources they need to experiment in their classrooms. Academic leaders have done so by simplifying the process by which faculty members apply for funding. They have also better aligned the levels of funding with faculty needs.

Rather than ask faculty members to fill out a lengthy, complicated proposal form for instructional seed funding, administrators created a streamlined proposal that asks for little more than a brief description of the faculty member's idea. The low-complexity online grant application minimizes bureaucratic hurdles, thereby boosting faculty participation.

In addition, grants for learning innovations in the ideation phase of development have been lowered to the low thousands of dollars to ensure more faculty members can access them. With smaller grants, academic leaders can provide more faculty members with support from the fixed pool of funding

This dual strategy has helped academic leaders at Virginia Tech fill the pipeline of good instructional ideas so that, down the line, they can make informed decisions about which innovations to scale up.

Additional Resource: Seed Funding Application Audit

To access the resource, turn to p. 73 in the Learning Innovations Toolkit at the back of this publication.

Data Signals of Effective Teaching

UMBC Administrators Use LMS Analytics to Identify Innovative Faculty

AVP Zeroes In on High-Activity Courses

1 Isolates correlation between LMS engagement and grades

2 Searches for courses with high LMS activity

3 Interviews instructors of high-activity courses for best practices

Course	Hits	Hits per User
Principles of Accounting	**90,893**	**2,838**
Project Management Ops	32,642	1,632
Structured Systems Analysis	31,026	1,551

Accounting Instructor Uses Adaptive Release to Ensure Mastery

Pivot Tables Assessment

- Skill critical to course success
- Must pass to unlock course

Excel Model Project

Spreadsheet Analysis Assignment
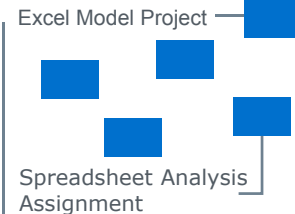
Early Results Show Lasting Effects

✓ 20% higher scores on final

✓ Higher than average GPAs in next course (3.37 vs. 2.76)

✓ Less than five hours course development time

At the University of Maryland, Baltimore County (UMBC), administrators actively sought out innovative faculty members, regardless of whether those individuals came forward of their own volition. Administrators did this by using the data signals of effective teaching to point them toward groundbreaking instructors.

UMBC's Assistant Vice President for Instructional Technology found that engagement on the LMS—from signing in, to clicking on links, to posting to discussion boards—correlated with improved learning outcomes. Knowing this, he decided to find courses that had the highest engagement levels, since the instructors of those courses might use effective teaching practices to entice their students to learn more.

When he sorted course listings by engagement levels, he found a Principles of Accounting course whose instructor used a breakthrough pedagogical technique. The technique, known as adaptive release, involved flipping a switch in the LMS to prevent students from advancing to higher-order concepts until they mastered the fundamentals.

This technique brought with it impressive learning gains and improved performance in the next course after Principles of Accounting.

Additional Resource: Innovation Analytics Process Map

Source: EAB interviews and analysis.

Leveraging Innovators to Drive Change

Institutional Change Begins with Exceptional Instructors

Emulating Positive Outliers

"My approach is to use data to identify positive outliers, then tap into my PR background to spread the word. It's much easier to get people to change if they want to emulate something good."

John Fritz, AVP Instructional Technology
UMBC

76
Classes using adaptive release capabilities in LMS (spring 2014)

112
Classes using adaptive release capabilities in LMS (spring 2015)

Other Signals of Innovation

• Course evaluation scores

• Grades compared to other sections

• Grades in next course in sequence

• Undergraduate research submissions

• Library check-ins by course

Recognizing that adaptive release could be a powerful tool regardless of the course, administrators at UMBC recruited the instructor of the Principles of Accounting course to spread the word across campus. The instructor participated in a number of workshops and brown bag lunches for faculty members interested in instructional innovation, and his example was profiled in reports and promotional materials that were distributed across campus.

Word of mouth has led to an uptick in courses using adaptive release. Over a one-year period, use of the technique grew by 47%.

Additional Resource: Campus Innovator Identification Guide

To access the resource, turn to p. 78 in the Learning Innovations Toolkit at the back of this publication.

Source: EAB interviews and analysis.

The Perpetual Pilot Problem

Institutions Lack Structures for Targeting Efforts and Scaling Up Successes

No Meaningful Assessment of Pilots

Faculty don't provide insights into replicability of projects outside of departments of origin

Instructor applies for funding, tests technique

Another instructor wants to replicate same technique

No Support for Scaling Up

Unconventional practices attract support only as pilot projects; they lack the type and amount of resources necessary for scale

---

Pilots as an End Unto Themselves

"We've done a great job creating a culture of innovation on campus. If a faculty member wants to test out a new idea, he can apply for a pilot grant. If another faculty member wants to replicate it, she can also pilot it. **Our pilot system is very strong**."

Provost, Public Research University

Even when academic leaders identify faculty members who are using high-impact instructional techniques, they rarely take the steps necessary to make sure that they help spread adoption to other parts of campus.

In too many instances, learning innovations get stuck in pilot mode. This is due to the fact that little meaningful assessment is done of successful (and unsuccessful) pedagogical experiments. Also, the one-size-fits-all funding model for learning innovations means pilots that perform exceptionally well during the testing phase cannot access the resources necessary to evolve further.

At many institutions, this means that a "culture of innovation" extends only so far as an initial pilot phase. The best ideas have no infrastructural support for moving toward scale.

Source: EAB interviews and analysis.

Linking Funding to Assessment

Tiered Stipends Incentivize Evaluation at Saint Mary's College of California

Course Assessment

What strategies worked well?
Which did not?

_____

What tech needs went unmet?
What tools were most useful?

_____

How could staff better support this
sort of activity?

_____

Two-Part Redesign Stipend

Attends Redesign Workshop → **Completes Assessment of Delivery Method**

$350

$150

Assessment Request Alone Rarely Enough

✖ May elicit low completion rates or incomplete information

✖ May be completed haphazardly due to apparent unimportance

≈100%
Near universal completion of assessments after course redesign

The first step in combatting this challenge is to consistently collect useful assessments—or proofs of concept—from faculty innovators.

At Saint Mary's College of California, faculty members who participate in a summer "tech camp" are asked to submit an assessment of their experiences using the innovation that they've explored during the program. This assessment focuses on lessons that administrators can share with future faculty adopters. This information can also inform their planning and support protocols moving forward.

Recognizing that many faculty members may deprioritize assessment, administrators at Saint Mary's delayed part of the stipend that faculty participants receive until after they complete the assessment. This strategy has brought with it near-universal compliance with assessment requests.

Additional Resource: Pilot Assessment Question Bank

To access the resource, turn to p. 79 in the Learning Innovations Toolkit at the back of this publication.

Source: EAB interviews and analysis.

A Hub of Scholarly Inquiry

University of Michigan's LED Lab Assesses Innovation to Rigorous Standard

Innovation Evaluation Process

Faculty member has an innovative instructional idea

↓

Learning, Education, and Design (LED) Lab

- Conducts research and publishes on learning innovations
- 2 full-time staff; 6 faculty and scholars; 13 graduate students
- Partners include IT, Center for Technology in Learning, library, and school of information
- *Current projects: gamified learning platform, predictive academic analytics, digital badges*

↓

Digital Innovation Greenhouse (DIG)

Incubator to explore and expand technology tools and innovative pedagogies

> **Pursuing a High Standard of Proof**
>
> "I want to make sure that, when we're doing these kinds of things at Michigan, we're investigating them in a scholarly manner that holds up to the sort of peer review that faculty members are used to…. There's a need today for provosts to support scholarly research to develop innovations so that we'll all be more confident of their impact."
>
> *Stephanie Teasley,*
> *Director of the LED Lab,*
> *Research Professor*
> *University of Michigan*

The University of Michigan has gone even further in embedding proofs of concept into learning innovations. The Learning, Education, and Design (LED) Lab that the university operates subjects learning innovations to rigorous testing, and researchers associated with the LED Lab submit their findings for peer review. This process helps elevate buy-in among the university's faculty, since it guarantees that learning innovations are generating the levels of proof that academics are used to seeing.

In recent years, the LED Lab has merged into the university's larger Digital Education Initiative, which has given learning innovations a pipeline to move toward greater scale. The most promising and impactful learning innovations can move seamlessly from a testing phase in the LED Lab to an incubation phase in the university's Digital Innovation Greenhouse (DIG). In the DIG, learning innovations receive the staff and financial support necessary to scale up.

Source: EAB interviews and analysis.

Gates Govern Elevation toward Scale

Virginia Tech Requires Buy-In from Affected Units Before Increasing Support

1 **Sandbox Projects**

2 **Pilot Projects**

- One-year evaluation and testing period
- 2 project managers provide support
- Key stakeholders assess impact on support functions, agreeing on share of one-time and ongoing funds
- Assemble pro-forma business plan: *How can the institution support this innovation?*

3 **Production Projects**

Institutional Implementation

- Roll out institution-wide
- Manage tech displacements
- Ramp up support

Sign-Off and Buy-In

Gate 1: Participation from key stakeholders

IT, teaching center, bookstore, library, facilities, etc.

Gate 2: Sign off from institutional leaders

Provost, chief business officer, VP for IT

Virginia Tech has similarly established a process for elevating successful pilot-stage learning innovations to higher levels of support and funding. The institution's tiered pilot framework begins with the pre-seed experimental funding discussed earlier. Projects that prove successful in that phase move to a formal pilot phase, where they receive higher levels of funding and more staff support. From there, projects that would benefit the institution as a whole move into an implementation-focused production phase.

Importantly, no project can advance through the tiered pilot framework without getting sign-off from key stakeholders. Prior to moving into the pilot phase, impacted on-campus units must agree to come to the table and participate in planning during the pilot phase. In addition, projects cannot move into a production phase without approval from the provost, chief business officer, and the VP for IT.

Source: EAB interviews and analysis.

Partnering with Your Most Creative Instructors

Strategies for Getting the Most from Innovators and Early Adopters

Harnessing Grassroots Activity

Surface Innovative Faculty

1. Eliminate administrative barriers to accessing seed funding

2. Reduce the size of seed grants, but extend them to more faculty members

3. Use data to identify effective instructors and isolate best practices

Reduce Risk of Investment

4. Assess replicability of learning innovations outside departments of origin

5. Require sign-off from affected campus units prior to elevating pilots

6. Intensify funding and support for best-in-class innovations to bring to scale

Academic leaders overcome the knowledge gaps associated with the beginning of the innovation adoption curve by surfacing innovative faculty and by reducing the risk of further investment in successful learning innovations.

These strategies allow academic leaders to make informed decisions about which learning innovations to scale up across the institution. They bring a more measured, strategic approach to the serendipitous process of instructional innovation.

Source: EAB interviews and analysis.

EAB

Reducing the Risk of Adoption

Lowering Opportunity Costs

2

- Arrange Faculty Teaching Shadows
- Facilitate "Try Before You Buy" Tests
- Integrate Tech Trainings into Faculty Routines
- Provide Just-in-Time IT Support
- Empower Faculty to Reward Innovative Peers

The Next Wave of Faculty Adopters

Early Majority Interested in New Strategies, But Fearful of Risks

Harnessing Grassroots Activity	**Reducing the Risk of Adoption**	Channeling Efforts to Priorities	Coda: Sustaining What Works
1	2	3	4

Halting but Real Interest in Innovation

Motivated by example	Conversant with technology	Hesitant to experiment	Divided between priorities

Breakthrough Practice Approach

6: Arrange Faculty Teaching Shadows	7: Facilitate "Try Before You Buy" Tests	8: Integrate Tech Trainings into Faculty Routines	9: Provide Just-in-Time IT Support	10: Empower Faculty to Reward Innovative Peers

For learning innovations to take root on campus, their reach must extend beyond faculty innovators and early adopters. Innovations must be picked up by the early majority of faculty, who are interested but hesitant when it comes to new pedagogical techniques.

These instructors are well positioned to try new approaches to teaching, though they may require more support and encouragement than their colleagues at the forefront of the adoption curve.

Source: EAB interviews and analysis.

Despite Growing Comfort, Hesitation Remains

Most Faculty Familiar with Innovations but Avoid Trying Them Out

A Growing Comfort with Tech-Enhanced Teaching

60%
Of faculty say the LMS is a critical tool to their teaching

78%
Of faculty have a growing interest in using tech in teaching

> **A Form of Empowerment**
>
> "Faculty are starting to see their own embrace of technology as a form of empowerment."
>
> *Matthew Rascoff,*
> *University of North Carolina*

C "**Professors Know About High-Tech Teaching Methods, but Few Use Them**"

Technique	Not Familiar	Familiar but haven't tried	Tried	Adopted
Clickers and other real-time feedback	11%	**64%**	10%	12%
Interdisciplinary team-teaching	13%	**63%**	12%	10%
Hybrid courses	8%	**58%**	11%	20%
Fully online courses	9%	**57%**	7%	24%
Online collaboration tools	9%	**56%**	12%	20%
Experiential or service learning	14%	**49%**	13%	23%
Flipped classroom	6%	**47%**	17%	29%

The ranks of the early majority grow every year. Recent data suggests that the number of faculty members who explore alternatives to traditional instructional models has increased, especially as technology has become a common part of the student experience and campus infrastructure.

Yet despite these faculty members' familiarity with technology-enhanced teaching and other learning innovations, the rate at which they adopt new approaches has stalled. With most learning innovations, a majority of faculty members know about the options available, but they have not yet tested them out in their own classes.

Why Don't More Faculty Teach with Technology?

Perceived Risks Deter Otherwise Willing Adopters

Pedagogical Risk

What if it doesn't work?

Professor integrates active learning into her class. Students fail to engage productively. As a result, the pace of learning slows.

Technological Risk

What if it breaks?

Professor purchases student-response clickers and builds lessons around them. The clickers malfunction en masse mid-lecture.

Social Risk

What if my peers disapprove?

Professor moves lectures online and uses class time for peer instruction. Colleagues doubt effectiveness and reputation suffers.

Recognizing the potential for change, many academic leaders have begun to ask why otherwise interested faculty members avoid new pedagogical techniques. The answer has to do with risk.

Three types of risk reduce early majority faculty members' enthusiasm for learning innovations. These instructors believe they face the pedagogical risk of an unfamiliar teaching method falling flat when they try to use it, regardless of how rigorously tested it is. They perceive a technological risk associated with employing fallible hardware and software in high-stakes classroom situations. Lastly, they fear the social risk that comes with the prospect of adopting a learning innovation that some of their most influential colleagues might disapprove of.

Source: EAB interviews and analysis.

Mitigating Perceived Risk of Adoption

Three Strategies for Recruiting the Early Majority

1 Demonstrate Effectiveness
(Pedagogical Risk)

6: Arrange Faculty Teaching Shadows

7: Facilitate "Try Before You Buy" Tests

2 Increase Confidence
(Technological Risk)

8: Integrate Tech Trainings into Faculty Routines

9: Provide Just-in-Time IT Support

3 Hardwire Social Rewards
(Social Risk)

10: Empower Faculty to Reward Innovative Peers

Highly effective academic leaders overcome these three types of risk by employing a variety of strategies. First, they take pains to demonstrate to uninitiated instructors the effectiveness of learning innovations and give them opportunities to test out new techniques before committing a whole course to them.

Second, they establish a technological safety net by augmenting faculty members' baseline confidence in technology and by mapping technological support to where and when it's needed on campus.

Third, they empower faculty leaders to reward classroom innovation through competitive, faculty-driven course redesign grant programs.

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Have to See It to Believe It

Shadowing Demonstrates Effectiveness to New Active Learning Instructors

Innovation in Brief

Tech-Enhanced Active Learning (TEAL) at MIT

- Intro physics courses had **DFW rates as much as 10 points higher** than other STEM fields (15% v. 5%)

- Courses with up to 800 students/150+ students per course redesigned for active learning

- Students sit at tables of 9, work collaboratively in groups of 3, take notes on visualizations

- DFW rates cut in half

- Student learning doubled on normed physics assessments

Physics Department Faculty Shadowing

Instructors paired with experienced faculty, attend class sessions to observe impact of active learning

Observe 3-4 Classes

Review Course Materials

Customize Curricula

Outcomes

Comfort with using technique

Confidence in effectiveness

New faculty successfully teach active learning course

The physics department at MIT overcame instructors' fear of pedagogical risks when they implemented a technology-enhanced active learning format for their introductory course. Instructors who are new to teaching in the format are asked to shadow their more experienced colleagues. They observe three to four classes during the semester before they take the reins of a course section so that they can see how the model plays out in practice.

New instructors also put their own touches on the curriculum so that it feels more relevant to their teaching style. They review the full flow of the course's materials and customize small parts of the curriculum.

This strategy has not only increased comfort with and confidence in technology-enhanced active learning in MIT's physics department, it has also allowed the department to scale the approach to every faculty member teaching an introductory course.

Source: EAB interviews and analysis.

Intensive Support for the Early Majority

Semester-Long Peer-Mentor Program at Purdue University Calumet

Orientation

- Two-day pre-semester session
- Intro to instructional design
- Technology basics
- Quality standards review

Online Institute

- Discussion board forums on each of three group workshop tactics
- Troubleshooting with fellow participants

Mentor Meetings

- Three two-hour one-on-one sessions
- Small group with one mentor and four mentees

Design Support

- Access to instructional design staff for pedagogical questions
- Support from graphic designers, tech staff, and student workers

Group Workshops

- Three one-day sessions led by instructional design staff
- Address basic course design, models for interaction, course facilitation

80% of online courses must be completed by end of semester	*Course release awarded to faculty participants*

At Purdue University Calumet, academic leaders have developed an even more intensive approach to faculty teaching shadows. Instructors who are new to teaching online courses participate in a series of structured activities and exercises designed to prepare them for the format. Peer mentors with prior experience teaching online courses support the instructors throughout the program.

The participation of veteran online instructors alleviates the uninitiated faculty members' fear of online education's risks. These expert teachers assure their untrained colleagues of the efficacy of the medium, and they draw upon the range of support programming to help teach them strategies for high-impact pedagogy in an online format.

Source: EAB interviews and analysis.

The High Stakes of All-In Redesign

Lack of Exit Strategy Often Deters Faculty

The Instructional Cliff

Once they hit "go," there's no turning back

No exit strategy in event of failure

First Day
of Class

*What if it's clearly not
working in week two?
Where do I go from there?*

> ### Innovative Pedagogy Is Inherently Challenging
>
> "I'll be honest, the most exciting instructional techniques aren't easy. You have to be 100% on if you're trying out active learning, or teaching a hybrid course, or the like. It's especially tough if it's your first time. A lot of faculty members recognize the stakes of getting it wrong, and they say, 'No thank you.'"
>
> *Director of Teaching and Learning Center, Public Master's University*

While faculty teaching shadows can alleviate many faculty members' concerns about pedagogical risk, some hesitations may persist due to the unwavering commitment many learning innovations demand of instructors.

For a faculty member to use active-learning, a hybrid format, or another all-in redesign, he or she must devote a significant period of time before teaching the course to redesigning the entire curriculum. Once the semester starts, the new course is delivered in the redesigned format from the first class meeting to the last. There are no half-measures when deploying many learning innovations.

The all-in nature of many redesigns creates high stakes for uncertain faculty members. If the course clearly does not work after two weeks in the new format, the instructor has no exit strategy.

This situation leads many faculty members who otherwise would pursue learning innovations to instead persist in their traditional teaching habits.

Medical Simulations as Course Modules

University of Toledo's Simulation Center Complements Instruction

Pamela Boyers, PhD
Fmr. Executive Director of the IISC
University of Toledo[1]

" *We've asked faculty to pick parts of their courses that they want to move into the simulation environment. We're doing it in steps so that faculty don't back away from too much too soon."*

IISC Simulator Room

Faculty Plan Modules Mid-Semester

Total Students Served in 2013-14 School Year

Faculty use simulation center mid-semester to reinforce learning
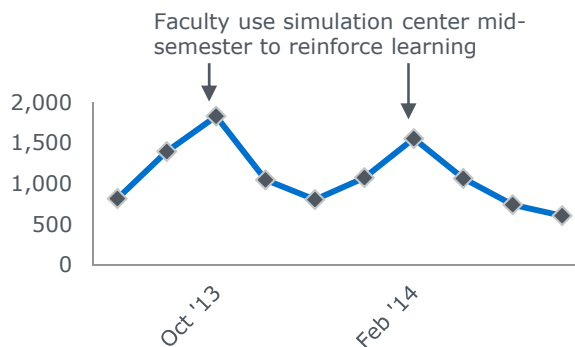
Growing Faculty Participation

Total Students Served June 2013, June 2014

June 2013	June 2014
1,148	1,505

At the University of Toledo, academic leaders sought to lower the stakes of learning innovations when they built an active learning simulation facility for medical education. The facility, known as the Interprofessional Immersive Simulation Center (IISC), allows faculty members to engage students in simulated medical situations in a variety of environments, including virtual reality.

Academic leaders recognized that asking faculty members to redesign their entire curriculum to suit this format would elicit resistance and hesitation. The change would be too immediate and extensive.

Instead, they asked faculty members to take discrete parts of their course and redesign them for the IISC. Faculty members responded by continuing to spend the opening months of the semester in their classrooms to build comfort and confidence before moving over to the IISC for simulation-based class meetings.

This strategy successfully increased faculty buy-in for the center. Thanks to faculty members' ability to test out this learning innovation before committing more fully to it, the IISC has seen usage surge in the past few years.

---

1) Currently Associate Vice Chancellor, University of Nebraska Medical Center.

A Space for One-Off Experiments

Virginia Tech's Incubator Classrooms Enhance Existing Syllabi

Shared Active Learning Space

VIRGINIA TECH

Moveable furniture   *No "front" of the classroom*   *Tech-enabled*

Instructors limited to 3-6 class sessions per semester in incubator classrooms

Fall 2015 – ECON 301

Date	Activity
Sep. 4	Lecture – The Market and Budget Constraint
Sep. 9	Lecture - Preferences
Sep. 11	**Active Learning** – Modeling Consumer Choice
Sep. 16	Lecture - Utility
Sep. 18	**Active Learning** – Utility in Consumer Choice
Sep. 23	Lecture - Choice

Intended Benefits

✓ Engage more faculty in experimenting with active learning

✓ Open the institution to new types of experimentation in pedagogy

Virginia Tech has taken a similar "try before you buy" approach to learning innovations. In their case, they focus this strategy on active learning spaces.

While the institution maintains a number of classrooms that allow faculty members to build whole courses around active learning, academic leaders have also chosen to set aside two classrooms for more limited experiments.

Faculty members can use these classrooms three to six times per semester for active learning modules. The classrooms are equipped with moveable furniture and a variety of technological tools, which gives the faculty members flexibility to experiment with various active-learning-based pedagogies.

Allowing faculty members to test active learning before dedicating their time and energy to an all-in redesign has created a wider pipeline of instructors who are interested in moving more fully toward the new model.

Source: EAB interviews and analysis.

Achieving Baseline Digital Fluency

Arizona State and Virginia Tech Develop Alternative Tech Training Models

Take It Out of the Classroom

Administrative duties are carried out on digital platforms, increasing comfort and fluency

- Virtual committees meet via social media discussion board
- STEM faculty collaborate digitally on grant proposals
- Digital Pedagogy Committee members share online best practices

Require Training for Upgrades

Faculty customize training to meet 12-credit requirement and suit own tech needs

12 credits required for computer upgrade

Fall/Spring Trainings

1-2 Credit Each
- Mini-workshops on key topics
- Faculty mix and match sessions

Summer Intensives

12 credits
- Two-day course redesign workshops

Implementation Projects

Variable Credit
- Faculty complete tech launch and share practices

Technological risk can also deter many early-majority faculty members. For many of these individuals, their lack of comfort and fluency with technology fosters the belief that they would not be able to teach in a technology-enhanced format.

At many institutions, technology trainings through the teaching and learning center or the IT unit aim to overcome these obstacles. Yet the faculty members who show up for these trainings are rarely the ones who most need them.

Academic leaders at Arizona State University and Virginia Tech have sought to increase faculty members' baseline digital fluency by exposing more of them to digital platforms and trainings. At Arizona State, important committee work occurs online, especially through social media platforms. As a result, faculty members who might never show up to a technology training learn to work fluently with digital tools.

Virginia Tech increased the allure of technology trainings by making them a requirement for a computer upgrade. Faculty members can complete 12 credits of training or an implementation project that will teach them how to be self-sufficient with digital teaching tools.

Source: EAB interviews and analysis.

'But What If It Breaks?'

Mount Holyoke's Just-in-Time IT Support Mitigates Technological Risks

Innovation in Brief

VP-50 Initiative

- Videoconferencing initiative to bring global perspectives into classroom
- Faculty connect with scholar-practitioners around the world
- Micro-grants incentivize participation

Sustainable IT Support Strategy

Identify Need
Faculty submit application detailing when they plan to use tech

Test Up-Front
IT staff test tech before class to minimize errors

Most problems surfaced and addressed in advance

Support During Class
Map staff support to identified need

Outstanding issues fixed as they arise

Faculty Participation in Videoconferencing Initiative

2011-2012	2014-2015
12	50
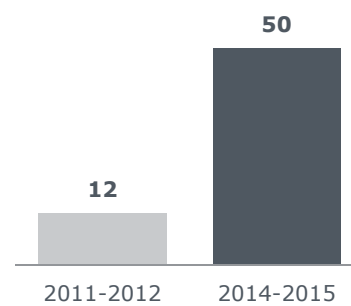
✔ Faculty confidence in videoconferencing as pedagogical tool grows

✔ Participation in VP-50 initiative increases as good experiences spread by word of mouth

Academic leaders at Mount Holyoke College sought to reduce the technological risk of learning innovation by mapping IT support to where and when it's needed on campus.

When the college launched its VP-50 videoconferencing initiative, administrators made sure to plan for ample technology support. They recognized that videoconferencing in classroom settings could malfunction, and that bad faculty experiences would dampen enthusiasm and buy-in for the program among instructors.

Rather than budget for around-the-clock on-call IT support, administrators sought to pinpoint where and when support might be needed. They asked faculty members to submit an application before using videoconferencing in their classes, which helped IT staff plan more targeted support.

After identifying the need for videoconferencing, IT staff tested the technology up-front. They conducted a trial run with the faculty member before class, which allowed them to surface problems in advance and avoid distracting delays during instruction. Lastly, they provided support during class to ensure a high-quality faculty experience that would lead to word-of-mouth recommendations among the faculty.

This strategy for building buy-in by reducing technological risk worked. Participation in the initiative has grown more the four times over since its launch.

The Social Risk of Innovation

Faculty Skepticism Dampens Early Majority's Enthusiasm

Online Commenters: The Faculty's Id

"Online programs only exist to make money. There's no good pedagogical reason to do them."

"I am suspicious of claims that there is a special trick that will turn things around in one semester."

"I don't think we can boil down the imparting of knowledge to a single technique."

Will my colleagues think I am foolish for trying this?

Will people judge me harshly if the results aren't stellar?

Is this just a shallow fad that I should ignore?

In addition to pedagogical and technological risk, early majority faculty members who wish to adopt a learning innovation face the social risk that their colleagues will disapprove of their instructional choices.

Though a growing number of faculty members express interest in alternative pedagogies and technology-based teaching tools, a small but vocal minority continue to oppose what they see as instructional fads. Many early-majority faculty members fear that they will elicit the scorn of this minority if they pursue techniques outside of standard practice.

A Social Reward for Innovation

Center for Teaching and Learning Partners with Faculty Senate

Austin Peay State University's Course Redesign Competition

CTL Administrators Formulate Criteria

Criteria include:

- Severity of academic problem
- Potential impact
- Whether proposal targets gateway course

Faculty Senate Picks Winners

- $65K budget
- 60% of proposals chosen on average
- Past winners include physical geology lab, intro to web development, and intro to public policy

Public Showcase Recognizes Winners

- Allows colleges to applaud redesigns
- Panelists share successes and best practices
- Participants guide others by highlighting barriers to implementation

---

Recognition Drives Innovation

"Faculty are competitive. When you put a competition in front of them, they want to win. When you tell them they need to redesign a course because it's part of their job, they'll probably do it, but if it's competitive, they'll do a bang-up job."

Loretta Griffy, Director, Center for Teaching and Learning
Austin Peay State University

Administrators at Austin Peay State University flipped the social calculus of learning innovations on its head. They did so by empowering faculty members to reward their colleagues for innovative course designs.

When Austin Peay's Center for Teaching and Learning (CTL) decided to promote course redesigns, they set aside funding to use as incentives. While the CTL's staff developed the criteria for selecting redesign grant recipients, they asked the faculty senate to select grant recipients.

Empowering the faculty senate to lead the redesign charge shifted the social equation of learning innovations. Faculty across departments worked to out-compete each other for the grants, which were awarded on a competitive basis to about 60% of applicants. Staff in the Center for Teaching and Learning also encouraged the celebration of innovators by staging a public showcase that profiled successful redesigns. As a result, thoughtful course redesigns became something that faculty members celebrated rather than denigrated.

Additional Resource: Course Redesign Selection Criteria

To access the resource, turn to p. 80 in the Learning Innovations Toolkit at the back of this publication.

Source: EAB interviews and analysis.

The Next Wave of Adopters

Strategies for Recruiting a Critical Mass of Faculty

Reducing the Risk of Adoption

Pedagogical Risk	Technological Risk	Social Risk
1 Arrange for new adopters to shadow experienced practitioners	**4** Tie incentives like computer upgrades to completion of trainings	**7** Empower faculty members to reward peers for innovations
2 Broker semester-long mentoring relationships between faculty	**5** Engage faculty members in casual tech trainings outside of workshops	**8** Design faculty grant programs around collegial competition
3 Create opportunities for limited "test runs" of unfamiliar techniques	**6** Track and target support to upcoming uses of educational technology	**9** Publicly showcase most effective pedagogical redesigns

Many more faculty members express interest in learning innovations than adopt them. This early majority steers clear of new pedagogical techniques due to the risks they believe will come with adoption.

Academic leaders that reduce these risks see upticks in participation. They focus their sights primarily on pedagogical risks, technological risks, and social risks.

By doing so, they build a broad base of faculty support and precipitate many more experimental approaches to teaching all across campus.

Source: EAB interviews and analysis.

EAB

Channeling Efforts to Priorities

Aligning with Institutional Initiatives

3

- Build Withdrawal Redirect Courses
- Design Shell Courses
- Arrange Complementary Hybrid Room Assignments
- Reinvest Departmental Cost Savings

Where Innovation Is Most Needed

Student Success Pain Points Too Often Evade Effective Course Design

Harnessing Grassroots Activity	Reducing the Risk of Adoption	**Channeling Efforts to Priorities**	Coda: Sustaining What Works
1	2	3	4

Critical Courses

Gateway Courses	Bottleneck Courses	High-DFW Courses

Breakthrough Practice Approach

11: Build Withdrawal Redirect Courses	13: Arrange Complementary Hybrid Room Assignments	14: Reinvest Departmental Cost Savings
12: Design Shell Courses		

Many academic leaders take an interest in scaling learning innovations due to their potential for alleviating student success pain points. These pedagogical techniques can have an outsized impact on the gateway, bottleneck, and high-DFW courses that so often bedevil provost's efforts to make significant headway in student success initiatives.

Yet in too many cases, innovative teaching fails to spread to the courses on campus that most need it. At some institutions, provosts and their teams are taking steps to better align learning innovations with institutional aims.

Source: EAB interviews and analysis.

eab.com

What Got You Here Won't Get You There

Nature of Investments and Support Changes When Approaching Scale

Incent Individual Innovators

Remove Structural Barriers to Scale

Difficulty

Mitigate inefficiencies in room assignments for hybrid courses

Recalculate departmental funding models to incentivize course-wide redesigns

Reconfigure course scheduling to allow for widespread alternative delivery

Target forward-thinking faculty across the institution

Reduce risk to individual adopters

Provide many one-off seed fund grants

Scale of Innovation

Innovation most often occurs spontaneously and at the individual level. Faculty members who wish to test out a new pedagogical technique often do so of their own volition. Similarly, learning innovations' early-majority adopters exercise significant autonomy in choosing when and where to deploy a novel approach to teaching.

For these individual innovators and adopters, provosts most often use a strategy of targeted incentives and supports. They establish seed funding programs, proactively surface faculty innovators, and reduce the risk of wider adoption. Often, they do so with little concern for which faculty members avail themselves of these resources and which courses they redesign.

As institutions move past the early majority and start to consider how learning innovations can impact high-priority student success goals, academic leaders must shift from a strategy of individual incentives to one of structural alterations. At some institutions, provosts and their teams have looked anew at course scheduling, room assignments, and departmental funding models as levers they can use to effect large-scale change in how departments innovate in their most critical courses.

Source: EAB interviews and analysis.

A Mandate to Innovate

Urgency of Student Success Problems Demands New Approaches

Critical Courses	Effective Practice	Structural Constraint
Gateway Courses	*Self-Paced Learning*	*Time*
Few students pass major prerequisites on first attempt	Students master course content at their own pace, increasing success	Standard schedule ill-suited to self-paced learning
Bottleneck Courses	*Hybrid Courses*	*Space*
Demand exceeds capacity, resulting in progression delays	Instructional capacity increases while space needs decrease	Hybrid courses prevent others from using space, even when not in use
High-DFW Courses	*Active Learning Redesigns*	*Funding*
Meager course success rates add time to degree and derail progression	High-touch learning boosts at-risk students' performance	One-off financial incentives raise concerns about sustainability

Three types of courses frustrate provosts' student success efforts: gateway courses, bottleneck courses, and high-DFW courses.

A range of learning innovations hold the potential to reduce the student success problems plaguing these types of courses, though a few innovations in particular stand out. Self-paced learning helps students in gateway courses master key concepts that are critical to future success in their majors. Hybrid courses increase instructional capacity, minimizing bottlenecks. Lastly, active learning redesigns engage learners more fully and improve learning outcomes.

Before academic leaders implement these innovations in perennially problematic courses, they must contend with structural barriers that impede the systematic, strategic spread of learning innovations. In particular, scheduling protocols undercut efforts to implement self-paced learning, outmoded room assignment systems minimize the efficiency gains of hybrid courses, and funding models insufficiently reward innovative departments for active-learning redesigns.

Source: EAB interviews and analysis.

Adding Time to Degree

Gateway Courses Disproportionately Impact Two Types of Students

Early Withdrawal

Students withdraw after drop period, preventing registration in other classes

Fall Semester

Student drops course

Withdrawal Deadline

No credit gained for remainder of semester
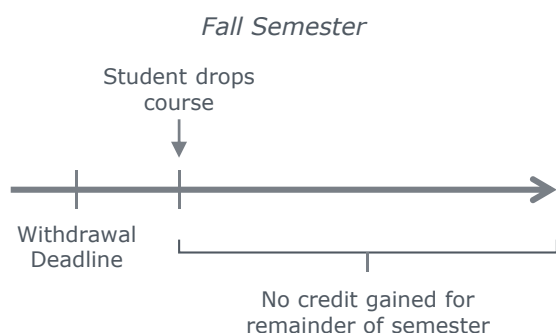
Needed: Accelerated course alternative

Developmental Coursework

Students enroll in developmental modules, but scheduling impedes timely completion

Student places into modules 2, 4, 7, and 9

Module 2	Module 4	Module 4	Module 4
Completes after week 2	*not available*	*Does not complete*	*Repeats Module 4*

4 Weeks 8 Weeks 12 Weeks 16 Weeks
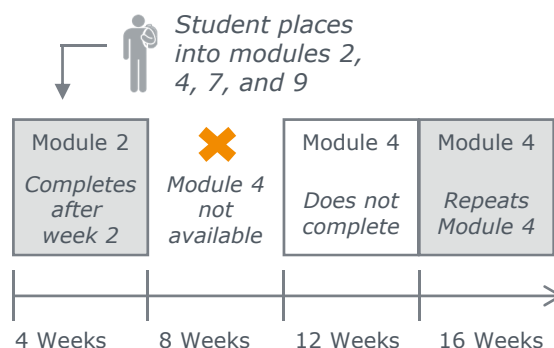
Needed: Flexible module scheduling

Gateway courses are those that students must pass to progress onto the rest of their program of study. In too many gateway courses, high attrition rates add time to degree and ultimately lead many students to withdraw.

Two types of students struggle with gateway courses. Students who withdraw prior to completing the course but after the add/drop deadline lose the possibility of course credit for the semester and risk impacting their financial aid eligibility. In addition, developmental students who are unprepared for college-level coursework have trouble navigating the developmental modules that a growing number of institutions schedule into rigid, four-week mini-semesters.

For both of these types of students, rigid course scheduling minimizes success rates. Tightly demarcated 15-week semesters and four-week mini-semesters do not prove conducive to the pace students must take to get course credit and progress to the rest of their program of study.

Alternatives to the Semester

Alabama's Redirect Courses Allow Students to Stay on Track

Advisors notify at-risk students of "redirect" option

THE UNIVERSITY OF
ALABAMA®

Traditional 15-Week Course

Add/Drop Deadline

Proactive registration not allowed

3-Week Registration Period

Online 10-Week Course

Course prioritization: High-demand prerequisites, general education courses, and introductory pre-med courses

Benefits

✓ Students avoid losing financial aid eligibility

✓ Doesn't use valuable classroom space

✓ Keeps students on track for graduation

To reduce the pressure that rigid scheduling put on early withdrawal students, the University of Alabama created withdrawal redirect courses. These accelerated, online courses allow for maximal self-pacing, helping students move through course material in an amount of time that's more conducive to their needs and learning styles.

Administrators manage demand for withdrawal redirect courses by taking a staggered approach to publicity. Before the university's add-drop deadline, the courses are not advertised around campus to preserve seats for students who will ultimately need them. After the add-drop deadline, administrators put up flyers for the courses in commonly trafficked student areas and in advising offices.

While it can be difficult to match instructor supply with last-minute student demand each term, department chairs have been relatively successful at predicting the most likely withdrawal candidates and appropriate online alternatives, drawing on a supply of available faculty able to teach courses with high enrollment. Also, some faculty inevitably fall short of their intended course load each term due to under-enrollment or scheduling changes and are eligible for reassignment to withdrawal redirect courses.

Source: EAB interviews and analysis.

Self-Paced Modules Within One Shell

Rolling Modules into Traditional Semesters Prevents System Meltdown

Shell Course Combines Multiple Modules of Varying Length

Student places into modules 2, 4, 7, and 9 →

Developmental Math
4 Credits

Individualized Pacing

Module 2 ▸ Module 4 ⟶ Module 7 ⟶ Module 9

| 4 Weeks | 8 Weeks | 12 Weeks | 16 Weeks |
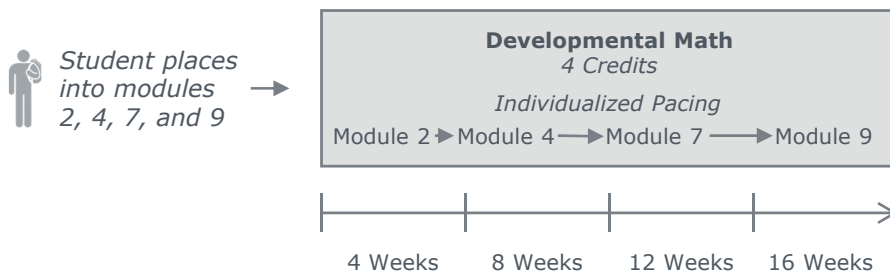
Creating Method from Madness 〞

"We drove the registrar (and really the entire student services division) crazy the first year of our modular redesign. Shell courses avoid the logistical nightmare of enrolling students in a million mini-semesters."

Math Department Chair, Community College

Institutions that serve many developmental students institute self-paced learning by developing "shell courses." Shell courses group multiple four-week mini-semesters into a single 16-week semester. Students progress through one-credit developmental modules at their own pace across the semester.

Due to their flexible nature, shell courses overcome the scheduling challenges of self-paced learning. They allow students to progress through fundamental concepts at their own pace without running up against the confines of mini-semesters.

Smarter Space Use Eliminates Bottlenecks

Complementary Room Assignments for Hybrid Courses Maximize Efficiency

The Empty Space Dilemma

Inefficient Space Use in Hybrid Courses

September						
Su	**Mo**	**Tu**	**We**	**Th**	**Fr**	**Sa**

California State University **Northridge**

CSUN's Complementary Scheduling Solution

Eliminating Bottlenecks

September						
Su	**Mo**	**Tu**	**We**	**Th**	**Fr**	**Sa**

Course meets in person in assigned space

Students complete asynchronous coursework; *assigned space left empty*

⊘ **Registrar blocks off room for hybrid courses even when class doesn't meet**

Course meets in person in assigned space

Another hybrid course with complementary schedule meets in same space

Students complete asynchronous coursework

Academic leaders who wish to make big moves into hybrid course design must contend with outmoded room assignment protocols. Hybrid courses use classroom spaces irregularly, yet the registrars at many institutions continue to assign hybrid courses to classrooms as if they convened in person two or three times every week.

Since many hybrid redesign initiatives aim to alleviate bottlenecks by freeing up instructional capacity, these space inefficiencies pose serious threats. Classrooms that could be used to educate more students instead sit empty while the hybrid courses assigned to them work asynchronously or meet through digital channels.

At California State University, Northridge (CSUN), academic leaders have sought to alleviate these persistent bottlenecks by taking a complementary scheduling approach to hybrid courses. The registrar at CSUN pairs hybrid courses in the same classrooms whose planned in-person meetings do not overlap. This strategy results in greater space utilization and fewer course bottlenecks. Academic leaders at CSUN report that this hybrid strategy could allow them to greatly increase enrollment in the coming years without building any additional classrooms.

Additional Resource: Complementary Hybrid Scheduling Planner

To access the resource, turn to p. 81 in the Learning Innovations Toolkit at the back of this publication.

Financial Realities Reinforce Business as Usual

Redesign Costs and Lack of Financial Rewards Slow Change

Costs Mount for Course Redesigns
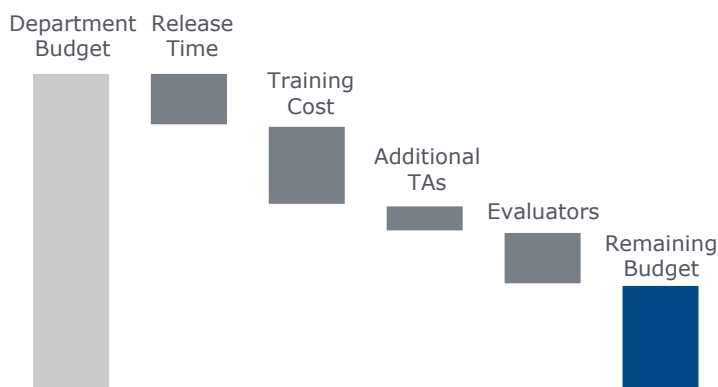
> " Even when we offer to provide grant funding to cover redesign costs, department chairs and their faculty don't see enough benefit because we recapture long-term cost savings. There's no real incentive for changing."
>
> *Provost, Private Master's University*

Innovation in Brief

Course Redesign Initiative at University of Maryland

- Administrators aimed to reduce instructional costs
- UMD system provided matching funds to institutions up to $20k
- Faculty redesigned courses by collapsing sections, flipping classes, including supplemental instruction, and planning active learning modules
- Redesigns resulted in an average savings of 38% on instructional cost per student

High-DFW courses stand to benefit from active learning redesigns. Active learning has been shown in many cases to increase student learning and reduce the number of students who do not successfully complete a course.

Yet for many departmental leaders, the costs associated with active-learning redesigns render them unsustainable endeavors. Departments must allocate release time to faculty members to redesign high-DFW courses, train instructors to deliver course content in the new format, hire additional TAs and, in some cases, pay evaluators to assess redesign outcomes. Departmental budgets can buckle under these cost pressures.

Of course, many institutions provide upfront stipends to support one-time redesign costs. While stipends can alleviate short-term concerns, they provide few long-term financial incentives for departments to change.

When the University of Maryland system undertook a system-wide active-learning redesign, academic leaders began with a $20,000 stipend to mitigate upfront costs. But they went further to ensure that departments shared in the cost benefits of active learning in the long term.

Source: EAB interviews and analysis.

Reinvested Savings Incent Redesign

University System of Maryland Lets Departments Keep Recaptured Costs

100%

71% FROSTBURG STATE UNIVERSITY

70% UNIVERSITY of MARYLAND EASTERN SHORE

Range of Cost Savings/ Avoidance

53%

12%

0%

Faculty Time and Adjunct Funds Freed Up

- Focus faculty time on research and other high-return activities

- Expand new course development

- Reallocate budgeted adjunct funds to other purposes

$1.8M
Total cost savings and avoidance across 57 courses

100%
Efforts sustained past 2-3 year design and implementation period

7% pt
Average drop in DFW rate (e.g., from 20% to 13%)

Academic leaders at the University of Maryland system engineered powerful financial incentives for redesigning courses by reinvesting cost savings and cost avoidances in the departments that undertook the projects. Cost savings and avoidance for the redesigns ranged as high as 71%. These savings came primarily in the form of faculty time and instructor demand, since the redesigned courses served many more students with the same instructional resources. Across 57 redesigned courses, the cost savings and avoidance amounted to $1.8 million.

Faculty members within the redesign departments directly benefited from these cost savings and avoidance. Rather than the provost's office recapturing

these resources, they stayed within the departments. Permanent faculty members who were no longer needed to teach high-DFW courses could direct their efforts on teaching upper-division courses or to their research. In addition, department leaders found that they were able to reduce deficits in adjunct budgets, since they had less need for additional instructors.

The combination of long-term cost savings and student success gains rallied departmental support for the redesigns. All of the redesigns continued past the initial design and implementation period. Across all redesigned courses, DFW rates fell by an average of 7 percentage points.

Source: EAB interviews and analysis.

High-Priority Course Redesigns

Strategies for Enabling Innovation Where It's Most Needed

Channeling Efforts to Priorities

Smart Scheduling

1   Create self-paced modules for gateway courses

2   Schedule modules in flexible blocks of time to ensure mastery

3   Enroll developmental students and students who withdraw late

Complementary Room Assignments

4   Convert bottleneck courses into a hybrid format

5   Identify hybrid courses whose meetings occur on non-overlapping days

6   Schedule these complementary courses in the same classroom

Effective Incentives

7   Redesign high-DFW courses to improve outcomes and generate cost savings

8   Allow departments to retain faculty lines and adjunct savings

9   Encourage departmental leaders to reinvest savings in high-return activities

As innovation spreads across campus, academic leaders must consider how to channel it to critical courses in need of high-impact pedagogies. They can do so by tackling structural barriers to learning innovations. By implementing smart scheduling protocols, complementary room assignments, and effective financial incentives for departments, academic leaders smooth the path for learning innovations to access the areas of campus where they are most needed.

Shifting the Focus to Systematic Change

Strategy for Critical Priorities Differs from Early-Stage Seeding and Scaling

Incent Individual Innovators		Remove Structural Barriers
Innovative early adopters, regardless of discipline	**Target Participants**	Instructors and units offering high-priority courses
Experimental "pre-seed" funds and small pilots	**Financial Investment**	Course redesign cost savings retained by units
Troubleshoot problems, connect with resources	**Support Activities**	Reconfigure key structural elements of institution
Surface techniques and methods that should be developed and replicated	**Institutional Goals**	Immediate impact on learning outcomes, retention, and progression to degree

Institutions that successfully foster a culture of innovation do so by taking a bifurcated approach. Academic leaders at these colleges and universities focus on incentivizing individual innovators to promote innovation among the institution's most entrepreneurial faculty. At the same time, they look beyond the individual to focus on structural barriers to innovation's spread. Removing these barriers allows the highest impact pedagogies to percolate up from the first classrooms that test them to the areas of campus that most suffer from student success problems.

EAB

Sustaining What Works

Prioritizing Innovation in the Academy

4

- Rethink Promotion and
  Tenure Strategy

Ensuring Sustainability in the Long Term

Moving Learning Innovations to a Position of Value in Academe

Harnessing Grassroots Activity	Reducing the Risk of Adoption	Channeling Efforts to Priorities	**Coda: Sustaining What Works**
1	2	3	4
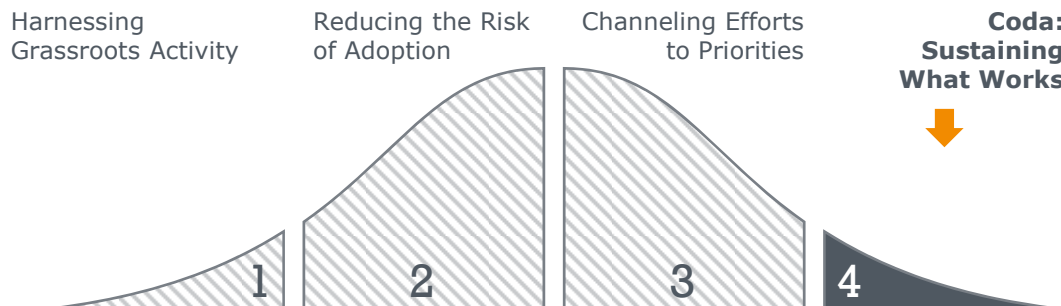
Challenges to Self-Perpetuating Innovation

Lack of Career Rewards	Primacy of Scholarship	Assessment as Afterthought	Academic Freedom Impeding Reform

Breakthrough Practice Approach

15: Rethink Promotion and Tenure Strategy

Faculty members who wish to prioritize pedagogy often encounter the reality that their careers may suffer if they spend too much time on classroom innovation. The lack of career rewards and the primacy of scholarship at many institutions engender an environment in which learning innovations take a back seat to research and, in some cases, service work. Even for teaching-focused faculty, the potential for negative career outcomes after failed experiments stifles ingenuity. The stakes are simply too high to try something new.

Academic leaders and their teams identify the career ramifications of spending time on learning innovations as the biggest impediment to scale.

Critics Question Tenure's Research Focus

But Powerful Forces Combine to Preserve Status Quo

Media Says Teaching Is Undervalued...

C — **Engaging Students Requires a Renewed Focus on Teaching**

WSJ — **Sure, Professors Like Tenure, But Does It Help Students?**

A — **The Forgotten Student: Has Higher Education Stiffed Its Most Important Client?**

" College professors are neither trained nor rewarded for excellence in the classroom. Incentive structures and university culture reinforce other activities, such as research, service on committees, and graduate education."

...Yet Challenging Trade-Offs Persist

Research Funding Takes Precedence
Provosts want to promote good pedagogy, but research dollars come first

Faculty Face Time Trade-Off with Scholarship Demands
Learning innovations impinge on faculty obligations to pursue cutting-edge scholarship

Academic Leaders Cannot Dictate Tenure Guidelines
Tenure committees resist mandates to assign less weight to research

Academic leaders are not the only ones who have observed a tension between teaching and career advancement within higher education. A number of media outlets have recently drawn attention to the issue. *The Chronicle of Higher Education, The Wall Street Journal*, and *The Atlantic* have all published critiques that allege the academic career ladder does little to incent effective instruction or directly improve student outcomes.

While provosts and their teams recognize these problems, they face challenging tradeoffs that complicate efforts at reform. At many institutions, research funding carries outsized weight, and shifting faculty workloads in favor of teaching would imperil the institution's financial sustainability. Even at institutions that take in few external research dollars, scholarship responsibilities often occupy a disproportionate amount of faculty members' time. Lastly, administrators rarely have the leverage they would need to change the way that tenure committees make career decisions.

Source: Berman R, "Engaging Students Requires a Renewed Focus on Teaching," *The Chronicle of Higher Education,* September 2014; "Sure, Professors Like Tenure, but Does It Help Students?" *The Wall Street Journal,* July 2015; McKenna L, "The Forgotten Student: Has Higher Education Stiffed Its Most Important Client?" *The Atlantic,* April 2012; EAB interviews and analysis.

Strengthening the Teaching-Tenure Link

Institutions Recently Rethinking Research-Centric Career Rewards

New Approaches to Providing Career Incentives for Learning Innovations

New Faculty Roles

Northwestern University and the University of Denver established a career ladder for instructional faculty

Teaching Practice Dossiers

The University of Alabama requires all faculty members to submit an annual tenure review assessment dossier detailing instructional practices

Revised Tenure Guidelines

The University of Michigan compiled new tenure guidelines to reward innovative teachers and committed mentors

Although no institution has discovered a "silver bullet" to alleviate these pressures, colleges and university leaders are experimenting with new approaches to promotion and tenure that put learning innovations back at the center of the academic enterprise. Some institutions have developed new faculty roles that are dedicated to teaching and have the job security necessary to test out learning innovations without fear of termination. Others have built teaching practice dossiers that faculty members must populate with records of their innovations in the classroom. The most ambitious approach involves revising tenure guidelines to gently guide tenure committees toward rewarding learning innovations.

What Would You Build With a Blank Slate?

Faculty Careers at University of Minnesota-Rochester

> " *The bad news at the beginning was that we had no faculty. The good news was that we had no faculty."*
>
> *– Stephen Lehmkuhle, Chancellor*
> *University of Minnesota-Rochester*

Design Faculty

- **Tenure-track**
- One per discipline
- Develop curricula and instructional methods
- Conduct and publish learning research

Student-Based Faculty

- **Not tenure-track, but eligible for promotion**
- Focused on instruction and guiding students' learning
- Team-teach courses with design faculty

Tenure Criteria

"…faculty who are recognized leaders in the area of student learning at the postsecondary level; who develop and implement cognitive models for student learning informed by research; and who disseminate research that is recognized by peers to **advance knowledge in the scholarship of learning**."

Promotion Criteria

"…a track record of exceptional teaching…. The development of course materials including in-class lessons, homework, assignment criteria, grading mechanisms, and online resources…. Implementing **pedagogical strategies to support UMR student learning research**…"

The strategies on the previous page were developed within the context of a traditional faculty model. As such, they are constrained by tradition and by institutional expectations of the role of the faculty.

One institution that has had the opportunity to define the role of tenure anew is the University of Minnesota-Rochester (UMR). UMR was founded in 2009, and one of the first tasks of the new university's inaugural administration was to assemble a faculty. When institutional leaders did so, they designed a model that did much more to reward instructors who engage in bold instructional experiments.

UMR has two faculty tracks, both of which carry career rewards for learning innovations. Design faculty are tenure-track positions. The individuals who serve in these roles can attain tenure only if they test out new instructional models and publish research on their effectiveness. In contrast, student-based faculty are not tenure-track, but they are eligible for promotion. These individuals serve in more traditional instructional positions, but even they are rewarded through promotion for implementing new approaches to teaching and learning that the design faculty build.

Additional Resource: Alternative Tenure Requirements Sample

Scaling Learning Innovations

From Early Adopters to Campus-Wide

1   **Harnessing Grassroots Activity**

Surfacing and Supporting Innovators

- Identify innovative faculty
- Reduce risk of investment

Reducing the Risk of Adoption   **2**

Lowering Opportunity Costs

- Demonstrate effectiveness of alternative pedagogies
- Increase confidence in technology
- Hardwire social rewards

3   **Channeling Efforts to Priorities**

Aligning with Institutional Initiatives

- Create smart scheduling practices
- Prioritize complementary room and facility assignments
- Provide effective departmental incentives for course redesigns

Sustaining What Works   **4**

Prioritizing Innovation in the Academy

- Reconsider the role of innovation in promotion and tenure
- Document learning innovations and explore new instruction-focused roles

This study has focused on the challenges associated with surfacing and scaling learning innovations. It has looked at strategies that academic leaders use to identify the most entrepreneurial faculty members on campus and learn all they can about their innovations. It has explored how provosts and their teams reduce the risks that early majority faculty face in adopting learning innovations, as well as how they realign the structural components of their institutions that impede adoption of learning innovations in critical courses. Lastly, it has investigated alternative career rewards that effectively incentivize learning innovations among faculty hoping to attain tenure or be promoted.

With these lessons as guidance, provosts and their teams can move boldly to build a culture of transformative pedagogy on campus.

EAB

Learning Innovations Toolkit

Resources to Manage Change on Campus

- Campus Support Service Climate Survey
- Seed Funding Application Audit
- Innovation Analytics Process Map
- Campus Innovator Identification Guide
- Pilot Assessment Question Bank
- Course Redesign Selection Criteria
- Complementary Hybrid Scheduling Planner
- Alternative Tenure Requirements Sample

Campus Support Service Climate Survey

Many provosts seek to support faculty innovators through campus services. These services typically include a center for teaching and learning, a faculty-facing IT unit, and an instructional seed funding program.

Unfortunately, faculty members at many institutions report feeling dissatisfied by or disengaged from these services. Instructors either find that units designed to assist them fail to meet their needs, or they never take the opportunity to leverage them for pedagogical innovation.

The climate survey below can be adapted through an online or print survey tool and delivered to faculty members to gauge their attitudes toward campus support services. Provosts can use the results to publicize overlooked services and adjust service offerings to meet innovators' needs.

Center for Teaching and Learning

How many times during the past two semesters did you visit the Center for Teaching and Learning?

| Once | Twice | Three Times | Four Times | Five Times | More than Five Times |

How positively would you rate your experience with the Center for Teaching and Learning's services?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Lowest | | | | | | | | | Highest |

How likely are you to recommend the Center for Teaching and Learning to one of your colleagues?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Lowest | | | | | | | | | Highest |

What new services would you like to see the Center for Teaching and Learning offer?

_____

_____

What changes to existing services would you like to see the Center for Teaching and Learning make?

_____

_____

How did you hear about the Center for Teaching and Learning?

_____

_____

Source: EAB interviews and analysis.

Campus Support Service Climate Survey (cont.)

IT Support Unit

How many times during the past two semesters did you visit the IT support unit or request a consultation with an IT staff member?

Once   Twice   Three Times   Four Times   Five Times   More than Five Times

How positively would you rate your experience with the IT support unit's services?

1	2	3	4	5	6	7	8	9	10
Lowest									Highest

How likely are you to recommend the IT support unit to one of your colleagues?

1	2	3	4	5	6	7	8	9	10
Lowest									Highest

What new technologies would you like to see the IT support unit offer?

_____

_____

How could the IT unit better support your classroom technology needs?

_____

_____

How did you hear about the IT support unit?

_____

_____

Campus Support Service Climate Survey (cont.)

Instructional Seed Funding Program

Did you submit a proposal for instructional seed funding in the past two semesters?

Yes   No

If you did not, did you consider submitting a proposal?

Yes   No

If you considered submitting a proposal but did not, why did you decide not to?

_____

_____

If you did submit a proposal, did you receive funding for your instruction idea?

Yes   No

How satisfied are you with the experience of submitting a proposal for instructional seed funding?

1	2	3	4	5	6	7	8	9	10
Lowest									Highest

What changes could be made to improve the instructional seed funding program?

_____

_____

How likely are you to recommend to a colleague that they submit a proposal for instructional seed funding?

1	2	3	4	5	6	7	8	9	10
Lowest									Highest

Seed Funding Application Audit

At many institutions, faculty members with ideas about how to innovate in their courses can request instructional seed funding to support a redesign. Yet the navigational complexity of the application can discourage all but the most committed faculty members from completing the process.

The resource below guides administrators through an audit of their instructional seed funding process and surfaces pain points and other bottlenecks that faculty members might encounter as they attempt to secure resources to explore a learning innovation.

Publicity

1. In what locations is the seed funding program advertised (e.g., departments, Center for Teaching and Learning, IT office)?

_____

2. Through what channels and platforms is the program publicized (e.g., IT website, Center for Teaching and Learning newsletter, print flyers, institutional social media accounts)?

_____

3. What language is used in the advertisements? Does the language convey a sense of exclusivity or inclusivity—that is, would the average reader assume that instructional seed funding is open to everyone with a good idea, or only to a small selection of the best ideas?

_____

Academic leaders should adopt a multi-channel publicity strategy that targets the locations and platforms that faculty members pay the most attention to. Print materials should combine with digital announcements to ensure maximum faculty awareness. Program leaders should issue frequent calls for proposals (at least once a semester).

The language proposals use should tend toward inclusivity. Instructional seed funding ideally supports learning innovations at the ideation stage. Supporting a diverse range of projects allows academic leaders to better evaluate which pedagogical techniques work best for the institution's student body and which could be replicated in other disciplines.

Application or Proposal Template

4. How many fields must faculty applicants fill out?

_____

5. From whom must the faculty applicant receive sign-off or sponsorship before submitting a proposal?

_____

6. How detailed a description must faculty members provide to receive funding? How long must this description be?

_____

Seed Funding Application Audit (cont.)

> *Seed funding applications should strive for simplicity. They should ask for the minimum amount of information necessary to evaluate the strength of an applicant's proposal. Academic leaders may choose to limit the application to three fields—name, contact information, and a brief description of the proposal. Doing so will increase the number of completed applications and give academic leaders more proposals from which to choose.*
>
> *Applicants should not be required to obtain sign-off from institutional stakeholders at this early stage of development. In addition to creating a burdensome logistical requirement, mandatory sign-off forces institutional stakeholders to render a judgment on learning innovations before seeing the outcomes of classroom experiments.*
>
> *The minimum length for proposal descriptions should not exceed 300 words.*

Grant Size

7. What is the current average size of seed funding grants? How much total funding is budgeted for grants?

   _____

8. How many more grants could be awarded given the average grant size and the current level of funding?

   _____

9. Is the size of grants meant to support a full-scale implementation of an idea (larger grants) or the early exploratory phase of learning innovation development (smaller grants)?

   _____

> *At the initial stages of instructional seed funding, grant sizes should not typically exceed the $1,000-$3,000 range. These grants should be used for projects that last for one semester or less. They should support exploratory work rather than full-scale implementation.*
>
> *Academic leaders should award larger grants only to early-stage projects whose results are outstanding. Allocating too much funding to projects in the ideation stage risks committing resources to innovations that will quickly prove infeasible, while depriving high-impact ideas of further funding down the line.*

Project Diversity

10. How many different departments are represented among seed funding recipients across the course of a semester? An academic year?

    _____

11. Which departments are overrepresented among seed funding recipients? Underrepresented?

    _____

12. Which departments are most in need of course redesigns or novel instructional approaches?

    _____

Source: EAB interviews and analysis.

Seed Funding Application Audit (cont.)

Seed funding should demonstrate equity across departments. While some disciplines may lend themselves more naturally to instructional innovation, all fields of study stand to benefit from new technologies and delivery models.

Academic leaders should develop a one-, three-, and five-year plan for innovation across departments. They should identify those departments that would benefit most from learning innovations. Encouraging faculty members in these departments to pursue instructional seed funding can lay the groundwork for more widespread innovation in later years.

Innovation Analytics Process Map

Institutional data sets can point academic leaders toward innovative faculty members. Metrics such as learning management system (LMS) activity, grades across sections, and student evaluation scores hint at faculty members' engagement with their students and commitment to breakthrough pedagogical practices.

At many institutions, academic leaders struggle to access and make meaning of these metrics. The process map below will provide guidance for how to choose metrics, centralize data, and use the findings to spread effective instructional techniques across campus.

1 **Choose Metrics**

Academic leaders must first decide which indicators can best surface innovative instructors. The list below, while not exhaustive, contains a diverse range of data points that could help identify outliers.

Metric	Description	Advantages	Disadvantages	Typical Data Owner	Difficulty of Access
LMS Activity	Student engagement online, including sign-ons, clicks, discussion board posts, etc.	Offers a highly granular look into student engagement and learning	Overlooks faculty members who do not integrate LMS assignments heavily into their courses	Central IT	Low
Student Evaluation Scores	An aggregation over time of rankings that students submit for their instructors	Students can speak to what works and what doesn't work for their own learning	Students may react negatively to increased instructional rigor, skewing results	Departments	Medium
Grades Across Course Sections	Average student performance across faculty members teaching the same course	Provides insight into differing instructional practices for the same control course	Faculty members may object to comparisons to peers; higher grades may be an indication of less rigorous assessment instead of stronger instruction	Registrar	Medium
Grades in Next Course in Sequence	Average student performance after students complete an initial course	Paints a more complete picture of long-term learning gains from an initial course	Requires sophisticated statistical analyses to perform regression; data may be difficult to access	Registrar, Departments	High
Library Check-Ins	Average library check-ins per student; average time spent in library per student per week	Highlights subtle but revealing form of student engagement and course rigor	Data may be wholly inaccessible for some institutions	Library, IT	Very High

2 **Centralize Data**

After identifying promising metrics, academic leaders must bring them together in one central database for processing. Often, data exists in a number of repositories across campus, and academic leaders must work with key stakeholders in those units to share data.

Innovation Analytics Process Map (cont.)

3 **Explore and Analyze Data**

Once the data is centralized, academic leaders must analyze it to surface innovators. Often, this requires the help of data scientists, statisticians, or computer science experts. Academic leaders can turn to the following individuals for assistance with the project:

- Computer science or statistics faculty
- Graduate students
- Undergraduate student workers
- Administrative staff with computer science expertise

> *Note: If the data is clean and well-organized, academic leaders may be able to manipulate it without assistance in Excel or another spreadsheet program.*

4 **Recruit Innovation Ambassadors**

The last step in using data to surface and spread innovative classroom practice involves engaging pioneering faculty members to spread the word about their instructional techniques. Academic leaders must reach out to these individuals to recruit them as ambassadors. Center for teaching and learning staff and other administrators must then plan events at which faculty members can proselytize their innovations.

Sample Email Scripting

Dear [FACULTY MEMBER],

I hope this message finds you well. I've recently heard through the grapevine that your [COURSE] has seen some fantastic student learning results. I'd love to find some time to learn more about what you're doing in the classroom.

In particular, I'd be interested to think through how your ideas could be an example from which your colleagues could take inspiration. Would you be interested in participating in upcoming teaching and learning workshops and brown bags? I look forward to discussing this idea more with you.

Sincerely,
[NAME]

Idea-Sharing Strategies

- Teaching and learning panels
- Brown bag lunch presentations
- One-on-one or group syllabus consultations
- Instructional practice webinars
- Alumni magazine profiles
- Departmental meeting presentations
- Teaching and learning center showcase event
- Printed learning innovation case study

Campus Innovator Identification Guide

Every institution has innovative instructors who employ high-impact pedagogical practices in their classrooms. The first step in scaling alternative pedagogies across the institution involves identifying faculty members who experiment with new techniques.

The guide below helps academic leaders identify pioneering professors and assess the value of their instructional innovations for the institution as a whole.

Instructor Name	Course Title	Learning Innovation	Description of Learning Innovation	Replicable in Other Disciplines?
John Smith	Economics 101	Flipped classroom	Students watch video lectures and complete readings before class; class time spent workshopping applied problems	Yes, especially the sciences, math, computer science

Source: EAB interviews and analysis.

Pilot Assessment Question Bank

Rigorous, thoughtful assessments ensure that innovations can move beyond a pilot phase. To replicate successful strategies in other courses and departments, academic leaders must generate proofs of concept and lessons learned from the initial trials by using evaluation tools.

The results of assessment can inform academic leaders' efforts to bolster and support particular learning innovations while simultaneously smoothing the path for other faculty members who wish to use the same techniques in their classes.

Pedagogical Techniques

What strategies worked well? Which did not?

_____

Which students performed best in this format? Worst? Which attitudes, skills, and competencies did each exhibit?

_____

How would you change your instructional strategies if you were to offer the course in this format again?

_____

Technology Use

What technological tools were most useful?

_____

What tech needs went unmet?

_____

Would you use technology more or less next time you offered the course? Which technologies would you prioritize?

_____

Administrative Support

In what ways did administrative or central staff support you in developing and delivering this course?

_____

Where did you feel staff offered too little support? Too much support?

_____

What would you like to see changed about the way staff supported this course?

_____

Source: EAB interviews and analysis.

Course Redesign Selection Criteria

Course redesigns have the potential to meaningfully inflect student learning outcomes. At many institutions, course redesigns have brought drops in DFW rates and improvements in student performance in subsequent courses.

At Austin Peay State University, academic leaders encouraged faculty members to redesign courses through a redesign grant competition. Proposals that met the criteria below received support from the institution's Center for Teaching and Learning.

	Exemplary (3 Points)	Satisfactory (2 Points)	Needs Improvement (1 Point)	Inadequate (0 Points)	Score
Description of Course Redesign	Clearly articulates the goals and full realization of redesign implementation	Adequately describes the goals and methods of implementation	Poorly describes the scope of the redesign project	Lacks meaningful description of project goals or scope	
Academic Problem Addressed	Substantial room for improvement in student success (DFW rate > 30%)	Room for improvement in student success (DFW rate > 20%)	Limited room for improvement in student success (DFW rate < 20%)	No meaningful impact on student success (DFW rate < 10%, enrollment < 20)	
Description of Pilot Phase & Objectives	Clearly articulates the pilot phase and project objectives	Adequately describes the pilot phase and project objectives	Poorly describes the pilot phase and project objectives	No description of pilot phase or discussion of objectives	
Timeline and Project Management	Clearly articulates timeline, team deadlines, and individual responsibilities	Adequately describes project timeline and delegation of responsibilities	Limited discussion of project timelines and distribution of labor	No discussion of timelines, deadlines, or individual roles	
Formative Evaluation Methods	Clearly articulates how the applicants will assess student learning during the pilot phase	Adequately describes plans to assess student learning during pilot phase	Limited discussion or lack of formal plans to assess student learning during pilot phase	No discussion of assessment of student learning	
Summative Evaluation Methods	Clearly articulates how the applicants will demonstrate effectiveness of new course design and pedagogy	Adequately describes how applications will demonstrate effectiveness of new course design and pedagogy	Poorly describes mechanisms for evaluation of redesign impact on instructional effectiveness	No provided assessment or evaluation plans for redesign effectiveness	
High-Priority Course	This course is required of all students at the institution	The course is required for a certain major or fulfills a common Gen Ed requirement	The course is a common course selection for a given major	The course serves a specialized student population with limited enrollment	
Impact	Course incorporates a proven, high-impact instructional practice	Course utilizes a proven instructional technique within a new field or specialty	Course incorporates an experimental instructional method with significant merit for experimentation	Course incorporates methods unlikely to succeed or poorly matched to proposed outcomes	

Source: Austin Peay State University; EAB interviews and analysis.

Complementary Hybrid Scheduling Planner

Hybrid courses bring with them efficiency gains in space utilization, since they require classroom space less often than fully in-person courses. Yet many institutions fail to realize those efficiency gains because they continue assigning hybrid courses to classrooms as if they met in person as often as regular courses.

Institutions that pair hybrid courses with complementary schedules in the same classroom are better able to maximize space utilization. The guide below will help academic leaders and registrar staff determine which courses have non-overlapping space needs.

For instructors: Please mark an X in the boxes below for the days you plan to have your course meet in person.

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

For registrar staff: Compare hybrid instructors' completed grids to determine which courses have non-overlapping space needs. Assign these courses the same classroom space.

Alternative Tenure Requirements Sample

At the University of Minnesota-Rochester, tenure-track "design faculty" must fulfill a research requirement to obtain tenure. Rather than focusing primarily on a field of study, their research must focus first and foremost on student learning.

This alternative tenure model, while unusual among higher education institutions in North America, is gaining currency as student learning outcomes grow in importance and learning innovations gain traction across the professoriate.

**Excerpt from University of Minnesota Rochester's
"Center for Learning Innovation Departmental Statement"**

B. Research

The primary research of the probationary faculty member should make significant contributions to advance the field of inquiry of student learning, especially as it pertains to the understanding of principles and concepts in the life, physical, social, and quantitative sciences and the humanities. The secondary research area must be associated with the faculty member's disciplinary/content area. The purpose of the participation by the probationary faculty member in a secondary research area is to assure currency in a disciplinary field and content area.

The primary research program of the probationary faculty member may be evaluated by:

- The publication of scholarly works in refereed, disciplinary or interdisciplinary journals;
- The significant participation in extramurally funded, peer-reviewed research;
- The highly favorable evaluations of grant proposals that were either funded or not funded because of lack of funding by the grant agency;
- The presentations of research results at scientific meetings; and
- Strong extramural letters of recommendation from prominent peer researchers who attest to the high quality of research contributions and the impact and the leadership of the probationary faculty member in the field of student learning.

The standards for research productivity for all probationary faculty will be uniform. The frequency of research publication will be evaluated within the context of the quality of each publication, by its comprehensiveness, by the importance of its contribution to fundamental questions surrounding student learning, and by the time required to obtain results.

Faculty should seek venues to communicate their research results that will lead to a national or international reputation. This may be accomplished by publishing some research findings in journals with a broader readership or high visibility, or by presenting at conferences that attract participants from the broader community.

Collaborative work is encouraged, and it is recognized that senior authorship will be less frequent in multi-authored studies than for more independent research. Faculty involved in collaborative work must explain their role in multi-authored publications and are encouraged to take a leadership role in some of the multi-authored publications.

Also, in recognition of the collaborative nature of research in student learning, lead-PI status by a probationary faculty member on collaborative grants is not required. However, if all grants of the probationary faculty are collaborative, the faculty member should have played a major role in some of the collaborative grants.

The secondary research program of the probationary faculty member may be evaluated by:

- Attendance at disciplinary-based conferences;

- Participation in multi-investigator research projects; and

- Participation in disciplinary-based workshops.

The probationary faculty member must provide evidence that he or she has been actively engaged with their content area of expertise in ways that assure an understanding of the current trends and practices in the disciplinary area.

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