Guiding Academic Transformation:
The NMC Horizon Report and the ELI
Key Issues in Teaching and Learning

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transformation
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CONFERENCE SCHEDULE
How to Make Strategic Big Bets

College leaders searching for transformative change must avoid letting ambition — or caution — imperil their institution

By Lee Gardner | FEBRUARY 19, 2017
transformation
a **thorough** or **dramatic** change in form or appearance

*physics* the induced or spontaneous change of one element into another

*biology* the genetic alteration of a cell by introduction of extraneous DNA

*biology* the inheritable modification of a cell from its normal state to a malignant state
transformation
a thorough or dramatic change in form or appearance
and in substance

**strategic** in scope

**institutional** in implementation

requiring **cultural change**

bonus: can appear to be a **wicked problem**
Which of the 6 developments in educational technology will have the greatest impact at your institution?

- Adaptive Learning Technologies
- Mobile Learning
- The Internet of Things
- Next-Generation
- Artificial Intelligence
- Natural User Interfaces
Developments in Ed Tech

- **fast (<1 yr)**
  - Adaptive Learning Technologies
  - Mobile Learning

- **mid-range (2-3 yrs)**
  - The Internet of Things
  - Next-Generation LMS

- **long range (4-5 yrs)**
  - Artificial Intelligence
  - Natural User Interfaces
Which of these trends do you think is most important at your institution?

• Advancing Cultures of Innovation
• Deeper Learning Approaches
• Growing Focus on Measuring Learning
• Redesigning Learning Spaces
• Blended Learning Designs
• Collaborative Learning
Trends Accelerating Tech

**short-term**
- Blended Learning Designs
- Collaborative Learning

**mid-term**
- Growing Focus on Measuring Learning
- Redesigning Learning Spaces

**long-term**
- Advancing Cultures of Innovation
- Deeper Learning Approaches
Advancing Cultures of Innovation
Long-Term Impact Trends: Driving Ed Tech adoption in higher education for five or more years

Many thought leaders have long believed that universities can play a major role in the growth of national economies. Research universities are generally perceived as incubators for new discoveries and innovations that directly impact their local communities and even the global landscape. In order to breed innovation and adapt to economic needs, higher education institutions must be structured in ways that allow for flexibility while spurring creativity and entrepreneurial thinking. There is a growing consensus among many higher education thought leaders that institutional leadership and curricula could benefit from adopting agile startup models. Educators are working to develop new approaches and programs based on these models that stimulate top-down change and can be implemented across a broad range of institutional settings. In the business realm, the Lean Startup movement uses technology as a catalyst for promoting a culture of innovation in a more widespread, cost-effective manner, and provides a compelling model for higher education leaders to consider.

Overview
The Lean Startup movement was largely cultivated in Silicon Valley, the hub of technology innovation, with roots in higher education. Many graduates of Stanford University, for example, have become successful entrepreneurs because of the experience they gain developing business strategies through hands-on curriculum. Stanford alumni entrepreneurs are responsible for global revenue of $2.7 trillion annually. Similarly in the UK, the Cambridge University Entrepreneurs group has helped generate companies with approximately £100 million of investment over a 15-year period. In many ways, the career trajectory of graduates reflects the offerings of the institutions they attend, making it vital for universities and colleges to exemplify the principles they wish to foster in their students. Like startups, institutions are becoming structured in ways that allow them to constantly evolve, reflecting and pushing the boundaries of the global marketplace. This includes deviating from hierarchical decision-making processes to promote collaborative strategies and incorporate student voices.

The contemporary workforce calls for employees that are agile, adaptable, and inventive and universities and colleges are increasingly revamping their existing programs and creating new ones to nurture these key skills. In the US alone, the number of formal entrepreneurial courses in higher education has grown exponentially over the past two decades with nearly 25% of today’s college students aspiring to be entrepreneurs. While this trend has been materializing more gradually, the positive impact is evident. A study prepared for the European Commission revealed that in comparison with their peers, university alumni who engaged in entrepreneurial programs were able to secure jobs more quickly and were more confident in their abilities to innovate in the workplace and start new businesses. The Consortium for Entrepreneurship Education also cites major benefits for improving aspects of student attitude including self-awareness, self-management, and creativity.

In order to breed these progressive cultures, higher education institutions and their faculty must be equipped with proper strategies. In Poland, Kozminski University (KU), known for their leading graduate management program, found that a large pool of incoming students who had received undergraduate degrees elsewhere were not adequately prepared. As a result, KU launched an initiative to introduce entrepreneurship courses to 40 local non-business universities and train lecturers in other disciplines, such as engineering, agriculture, and art. Additionally, Harvard Business Review recommends that institutions work with industry leaders to integrate more experience-based learning. This notion is being increasingly embraced by universities around the world; San Jose State University, for example, recently partnered with Facebook to expose more young women to computer science with the long-term goal of boosting the company’s cybersecurity efforts.

Implications for Policy, Leadership, or Practice
The Innovation Policy Platform (IPP) asserts that universities should bolster entrepreneurship courses to attract and accommodate more students, while nurturing faculty that can meet high-quality teaching standards. Educators in these programs must understand the complex pedagogies that support more
Which of these challenges is the most pressing at your institution?

- Improving Digital Literacy
- Integrating Formal and Informal Learning
- Achievement Gap
- Advancing Digital Equity
- Managing Knowledge Obsolescence
- Rethinking the Roles of Educators
Challenges Impeding Tech

- **solvable**
  - Improving Digital Literacy
  - Integrating Formal and Informal Learning

- **difficult**
  - Achievement Gap
  - Advancing Digital Equity

- **wicked**
  - Managing Knowledge Obsolescence
  - Rethinking the Roles of Educators
Blending Formal and Informal Learning

Solvable Challenge: Those that we understand and know how to solve

As the Internet has brought the ability to learn something about almost anything to the palm of one's hand, there is an increasing interest in the kinds of self-directed, curiosity-based learning that have long been common in museums, science centers, and personal learning networks. These, along with life experience and other more serendipitous forms of learning, fall under the banner of informal learning, and serve to enhance student engagement by encouraging them to follow their interests. Higher education institutions have not yet been able to incorporate such experiences across their courses and programs at scale, though many experts believe that a blending of formal and informal methods of learning can create an environment that fosters experimentation, curiosity, and above all, creativity. In this sense, an overarching goal is to cultivate the pursuit of lifelong learning in all students and faculty. However, methods of formally acknowledging and rewarding skills both instructors and students master outside of the classroom are compounding this challenge.

Overview
In an age of video tutorials, open content, and social media, it is easy for people to find ways to learn and gain new skills anytime, anywhere. Informal learning recognizes that knowledge acquisition can happen in any given moment, no matter how casual the environment. A student can spend years practicing advanced graphic design techniques, for example, only to be relegated to introductory design courses when enrolled at a university. Most higher education institutions still exclusively speak the language of course credits, not incorporating prior informal experience as a placement factor. While the blending of formal and informal learning is an intriguing notion, it is hampered by the lack of scalable ways to qualify learning that happens beyond the classroom. Fortunately, UNESCO is setting a precedent, connecting informal learning outcomes to the goal of building societies of lifelong learners in their book Global Perspectives on Recognizing Non-formal and Informal Learning: Why Recognition Matters.

Although the burden initially appears to be on formal institutions to deeply consider how informal learning experiences fit in with course objectives and assessment, students must also better understand what characterizes beneficial informal learning resources. This intersection encompasses a potential solution; universities and colleges are well poised to play a bigger role in helping students discover and maximize credible digital tools and resources as they pursue their curiosities. Responses to the challenge can be easily mistaken for simply integrating informal opportunities, but the ultimate goal is to combine the two to achieve the best of both worlds. For example, an EDUCAUSE study revealed that even though students and instructors use mobile devices regularly, they still need technical, logistical, and pedagogical support from institutions to understand how to use them for learning purposes.

Solving this challenge requires institutions and employers to view informal learning in a positive light. Ongoing learning is particularly important for working professionals who must continuously gain new skills to advance their careers. Traditionally, this has translated into pursuing graduate degrees. The rise of micro-credentials or “nanodegrees” is disrupting this paradigm as online learning providers like Udacity and Coursera have partnered with businesses including Google and Instagram to help people informally further their education in areas such as mobile app development.

Increasingly, social media is also being leveraged to display these kinds of accomplishments. LinkedIn, for example, enables users to list any skills that could appeal to prospective employers; open badging integration through Credly allows the sharing of verified achievements, such as completing an online course in coding.

Implications for Policy, Leadership, or Practice
The European Commission has been instrumental in acknowledging the benefits of informal learning and setting policy precedents. Their report “Recognition of Prior Non-Formal and Informal Learning in Higher Education” describes an assortment of initiatives including Common European Principles for the Identification and Validation of Non-formal and Informal Learning and the European Guidelines for Validation of Non-formal and Informal Learning. Understanding societal changes and their impact on education is key
Which of the top 7 key issues is most important at your institution?

• Academic Transformation
• Faculty Development
• Assessment of Learning
• Online and Blended Learning
• Learning Analytics
• Learning Space Designs
• Accessibility and Universal Design for Learning
1. Faculty development
2. Academic transformation
3. Digital and information literacies
4. Accessibility and universal design for learning
5. Competency-based education (CBE) & Assessment for Student Learning
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Contact: Kelvin Thompson

Instructional designers, faculty, and students at the University of Central Florida discuss how using adaptive learning technology has enhanced teaching and learning in their online courses. For more information about personalized adaptive learning at UCF: dl.ucf.edu/adaptive.

California State University, Northridge

Contact: Hillary Kaplowitz

A key component to student success is practice. To help students master the material, biology professor Dr. Cindy Malone teamed up with coders and developers at CSUN to create the Elite Gene Team app. This app lets students study course material on their smartphone or tablet anywhere, anytime.

Pace University

Contact: Rachel Wildner

At Pace University we use ePortfolio to supplement learning.

Case Western Reserve University

Contact: Tina Oestrech

Case Western Reserve University (CWRU) is committed to providing students with active, powerful learning experiences. Working together with instructional designers, programmers, artists, and others, faculty and students are developing interactive learning experiences using the Microsoft HoloLens at CWRU’s Interactive Commons.

Emory University

Contact: Dana Smith Bryant, Ph.D

Emory University’s Next Generation LMS Transition Project: In support of our campus strategic goal, Enhancing the Student Experience, Emory explored next generation LMS features in 2015, which ultimately resulted in changing platforms after 12+ years. The university is currently in the midst of implementing a comprehensive LMS transition plan for all course sites by Fall 2017.

Western Washington University

Contact: John Farquhar
4 Key Questions

1. What problem were they trying to address
2. Why did you choose this technology
3. What change management or cultural leadership was needed
4. Impact of project
University of Central Florida, Personalized Adaptive Learning
Personalized Adaptive Learning Initiative

University of Central Florida
Baiyun Chen, Instructional Designer
Center for Distributed Learning, University of Central Florida
What problem to address?

• Improve student performance, success, retention
• Scale across disciplines among large-enrollment classes
• Explore teaching innovation
• Monitor progress of student learning
Why did you choose this technology or approach?

• Content agnostic: add instructor content
• Student pretest determines learning path
• System automatically adjusts remediation, acceleration and other content in chunks based on continuous assessments
• Extensive reporting on each student’s individual status
What change management or cultural leadership was needed?

- Strong leadership support
- Personalized self-paced student learning
- Guide on the side
- Course development support
What is the impact of the project?

• Project impact
  – 17 courses + 5 courses
  – 44 course sections
  – 2069 students

• Contact:
  – pal@ucf.edu
Case Western Reserve University, Rising To Next Level of Interactive Learning
Tina Oestreich
Sr. Director, Teaching and Learning Technologies

Case Western Reserve University
Cleveland, OH
From Active Learning to ActiveLearning+
Why did you choose this technology or approach?

• ActiveLearning+ fellows chose different technologies and approaches to solve challenges encountered in their classes
  – Adaptive learning
  – Specialized videos to bridge courses
  – Physical models of mathematical concepts
  – Augmented and virtual reality
What change management or cultural leadership was needed?

- ActiveLearning+ grants help to provide seed funding for faculty to explore new ways of creating educational resources and explore new teaching approaches.
- Faculty become champions of successful approaches and help to lead change.
Describe the impact of the project.
Oregon State University, Reimagining Learning Spaces: The Learning Innovation Center
Reimagining Learning Spaces

Oregon State University
Problem
UNIVERSITY GOAL

INCREASE RETENTION + GRADUATION RATES

ENHANCE LEARNING AND ENGAGEMENT AT OSU
+
ACCOMMODATE GROWTH OF THE STUDENT POPULATION
Leadership
PROJECT Mission

CREATE AN INSPIRING TEACHING LABORATORY FOR THE CAMPUS

PROMOTE ACTIVE LEARNING AND ENGAGEMENT ACROS S ALL ABILITIES AND AT ALL SCALES OF CLASS SIZES

ENHANCE INTERACTIONS AMONGST AND BETWEEN ALL USER GROUPS TO CULTIVATE VIBRANT COMMUNITY
## ACTIVE LEARNING – SPATIAL CHARACTERISTICS

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IN ORDER TO FOSTER COMMUNITY, THE NEW BUILDING SHOULD CONNECT

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<td>FACULTY TO STUDENT</td>
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WHAT DOES ACTIVE LEARNING LOOK LIKE?
Solution & Rationale
Classroom Seats Integrated Instructional Resource Center Offices/Facilities University Honors College Offices and Study Lounges

2145-2270

B UILDI NG PROG RA M – FORMAL LEARNING PROGRAM

14 honors

26-40 honors

29-42 IIRC
INFORMAL LEARNING – TYPES OF SPACES

- Alone
- Private
- Together
- Public
EXTERIOR CONCEPT – OCCUPIABLE FACADE

9'
11'
2'-8"
DESIGN CONCEPT

TYPICAL CLASSROOM LAYOUT

FORMAL LEARNING

TYPICAL CORRIDOR

FORMAL LEARNING

OSU CLASSROOM BUILDING CONCEPT

FORMAL LEARNING

INFORMAL LEARNING

INFORMAL LEARNING
INFORMAL LEARNING – INFORMAL LOOP

BREAK OUT ROOMS

INFORMAL LOOP

QUIET

BUZZING

BUZZING
INFORMAL LOOP – OCCUPIABLE FACADE
ARENA CLASSROOM
SMALL ARENA CLASSROOM
ARENA CLASSROOM PODIUM
THE GEOMETRY OF LEARNING

DO THE PHYSICAL CHARACTERISTICS OF CLASSROOMS CORRELATE TO LEARNING OUTCOMES AND TEACHING PRACTICES?
The Geometry of Learning: Executive Summary

What is it? The Geometry of Learning is a research framework designed to construct a large set of broad and deep knowledge about classroom learning spaces at Oregon State University (OSU).

What is the purpose? We are investigating whether and how physical characteristics of classrooms correlate to learning outcomes and teaching practices.

Why does it matter? Prior research shows that characteristics and conditions in classrooms do correlate to learning outcomes. If we identify these factors in OSU classrooms, we may plan to optimize the conditions for student success. Evidence-based findings about classroom values and learning will inform OSU’s ongoing investment in classroom redesign.

What is being measured? Factors potentially related to student success:
- Student daily seat locations.
- Student learning outcomes (e.g. clicker responses, course grade percentile, GPA).
- Student attitudes and self-reported conditions (e.g. qualitative survey).
- Classroom values (e.g. light, sound, angle of vision, proximity to instructor, mobility).
- Validation of clicker method of seat location.
- Faculty experiences and strategies for teaching-in-the-round.

How is it being accomplished? About 4,000 students in 29 participating class sections taught by 12 instructors from across the curriculum have consented to enter their seat locations at the start of each class session using clickers. A program of structured interviews with instructors, Tales from the Learning Circle, will constellate methods and experiences about innovative classrooms such as the LINC round rooms.
The Geometry of Learning: Tales from the learning circle: Executive Summary

What is it? Tales from the learning circle is a research project designed to collect qualitative data from instructors who have taught in the LINC classrooms-in-the-round (LINC 100, 200, 228). This study is part of our comprehensive research agenda, The Geometry of Learning.

What is the purpose? The primary objective of this project is to discover themes related to teaching-in-the-round in order to provide material for teacher preparation and to report as findings about these unique classrooms as learning spaces.

What is the focus of study? Our primary research question is: What is the impact of learning space conditions on instructor's concept, practice, and assessment in teaching?

Why does it matter? Teacher preparation is a major factor in student experience and teaching-in-the-round is an unprecedented challenge in higher education. Organizing descriptions and advice from experienced instructors will be a valuable preparatory aid. Analysis of this data provides OSU a basis for assessing what does and does not work in those learning environments.

What is being measured? We will measure descriptive and prescriptive responses from instructors based on their experiences of teaching-in-the-round.

How is it being accomplished? Qualitative methods (IRB approved) including structured interviews, focus groups, and surveys will be conducted among instructors who have taught-in-the-round. Qualitative coding and analytics will be employed to develop results.
Learning Innovation Center
Oregon State University