Constant Change: The Challenging Context of The 21st Century

George L. Mehaffy
24 April 2014
McAllen, Texas
In fifty years, if not much sooner, half of the roughly 4,500 colleges and universities now operating in the United States will have ceased to exist.

Technology
Changes
Everything
Think about the impact of technology:

On journalism… Rocky Mountain News

On photography Kodak

On the music business…

On the book publishing/selling business…

The Long Tail.
Chris Anderson (Hyperion, 2006)
One of technology’s impact on business: store closings

Abercrombie and Fitch 180 By 2015
Barnes and Noble 223 Over 9 years
Aeropostale 175 Next few years
JC Penney 33 By mid-2014
Radio Shack 1,100 Just announced
Staples 225 By 2015
Sears 500 Going Forward
Family Dollar 370 2014

http://247wallst.com/special-report/2014/03/12/retailers-closing-the-most-stores/
Robert Darnton

Four Great Information Ages

- Invention of Writing, Mesopotamia, 4,000 BC
- Moveable type
- Mass steam-powered presses, Industrial Age
- Internet, after 1993

Are we vulnerable to disruption?

Christensen and Eyring argue that disruption comes from cheaper and simpler technologies that are initially of lower quality. Over time, the simpler and cheaper technology improves to a point that it displaces the incumbent.

The Innovative University. Clayton Christensen and Henry J. Eyring. 2011
The challenge is enormous. We have a confusion of purposes, distorted reward structures, limited success, high costs, massive inefficiencies, and profound resistance to change.
Clay Shirky ---
“The biggest threat those of us working in colleges and universities face isn’t video lectures or online tests. It’s the fact that we live in institutions perfectly adapted to an environment that no longer exists.”

http://www.shirky.com/weblog/2014/01/
The greatest challenge to our survival and success is our inability and/or unwillingness to change.

Dungeons and Dragons: Prisoners of Our Own Beliefs; Tyrannized by Mythical Beasts
Churchill   House of Commons
“The Chamber should be oblong and not semi-circular; there should not be room for all its Members; it should be designed to preserve that intimacy of debate and discussion, freedom and sense of urgency and excitement…”


"We shape our buildings, and afterwards our buildings shape us.”

House of Commons (meeting in the House of Lords), 28 October 1943.
The Key Issue

How do we educate more students, with greater learning outcomes, at lower costs?
What should the 21st century university for the Rio Grande Valley look like?

(we’re only slightly more than 1/8 of the way into this new century, so let me describe some emerging characteristics of 21st century universities, not the final product)
Core Commitments
Commitment to be Stewards of Place

For this new university, a focus on citizenship preparation, P-12 education, health care, economic and community development, and internationalization.

AASCU will publish a second and third volume in the Stewards of Place series in May 2014.
Commitment to Access

Mission Statement: Arizona State University

“measured not by who we exclude, but rather by who we include and how they succeed”

“I don’t think the taxpayers of Florida voted to tax themselves to build a university that their children could not attend.”

John Hitt, President
The University of Central Florida (UCF)
A commitment to ACCESS: Multiple entry points

Make every effort to get students into the university:

• early college programs in high school
• summer preparatory academies
• testing in 11th grade and using 12th grade for remediation, etc.
• community college pathways

And then make sure they succeed!
And challenge old assumptions: who’s college ready?

A simple example: college mathematics

Are students not prepared?

Or are we the ones who are not ready?

Carnegie Foundation for the Advancement of Teaching: Statways and Quantways
Commitment to the Right Incentives

What counts in the new university?

What really matters?

What are the metrics of success?

Who gets rewarded / recognized?
Success for Low Income Students

In 2011, the graduation rate:

With fewer than 20% Pell students: 79%
21 - 40% Pell students: 56%
41 – 60% Pell students: 42%
above 60% Pell students: 31%


Percentage of 24 Year Olds with College Degrees

<table>
<thead>
<tr>
<th></th>
<th>1970</th>
<th>2011</th>
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<tbody>
<tr>
<td>Top-income quartile</td>
<td>40%</td>
<td>70%</td>
</tr>
<tr>
<td>Bottom-income quartile</td>
<td>6%</td>
<td>10%</td>
</tr>
</tbody>
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http://www.nytimes.com/2013/09/29/magazine/freebies-for-the-rich.html?_r=0
Perverse Incentives

Cardiac surgeons turned away the sickest and most severely ill patients after adopting performance-based health report cards.

Health disparities widened among White, Black, and Hispanic patients after introducing physician report cards.

Comparing Teaching Effectiveness: Tenure and Non-Tenure Faculty

Academic performance, 8 cohorts of freshmen: 15,662 students, from fall 2001 to fall 2008.

Taking a course from non-tenure track faculty members:
  • Increases the likelihood that a student will take another class in the subject
  • Increases the grade earned in that subsequent class
  • Produces the greatest gains for weakest students

Northwestern University Study
http://chronicle.com/article/Ad-juncts-Are-Bet-ter/141523/
Commitment to Student Success

A set of studies by AASCU, Ed Trust, and the National Association of System Heads (NASH)
Commitment to Reducing Costs

- Time to Completion
- 120 hours for all majors
- Reducing bottlenecks in completion
- Charging out-of-state for 30+ credits beyond graduation requirements
- Intrusive advising and early remediation
- Flat rate for summer courses
Commitment to Learning Outcomes

• New Tools  \((CLA, CAAP, and MAPP)\)

• New Organizations  \((NILOA, New\nLeadership Alliance, etc.)\)

• New Initiatives  \((Degree Qualifications\nProfile DQP)\)

• New Pressures  \((Academically Adrift)\)

• New Expectations  \((business, parents and\nstudents, government, accreditors)\)
What Learning Outcomes?

What are the key work attributes of the 21st century?

--- Solving unstructured problems
--- Working with new information
--- Carrying out non-routine tasks
--- Complex communication
--- Expert thinking

Commitment to Rethinking Status and Prestige

Our institutions were created as teaching institutions, instead of learning institutions.

Key Changes
Changes in Academic Structures

- Multiple-institutional Courses
- Course (set of competencies)
- Credit Hour (based on seat time)
- Semester (unlike Facebook)
- Curriculum (interdisciplinary, community-linked)
- Degree (competency, certificates, etc.)
- Capstone Courses/Experiences
Changing Administrative Practices

- Outsourcing
- Campus Consolidation and Expansion
- Strategic and Corporate Partnerships
- Contingent and Flexible Workforce
- Alterations in Benefits
Changing Administrative Structures

- Organization design for optimal student outcomes
- Multidisciplinary units
- Units organized around problems, not disciplines
Changes in Physical Space

• Classrooms
• Library
• Bookstore
• Office Space
• Campus
Changes in Student Services

One example: Coaching

### Percent First-Year Student Retention (2006 - 2011)

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td>Latino</td>
<td>65%</td>
<td>70%</td>
<td>72%</td>
<td>78%</td>
<td>84%</td>
<td>81%</td>
</tr>
<tr>
<td>First Generation</td>
<td>52%</td>
<td>69%</td>
<td>72%</td>
<td>75%</td>
<td>79%</td>
<td>81%</td>
</tr>
<tr>
<td>Low Income</td>
<td>69%</td>
<td>70%</td>
<td>74%</td>
<td>75%</td>
<td>79%</td>
<td>83%</td>
</tr>
<tr>
<td>Overall</td>
<td>65%</td>
<td>67%</td>
<td>71%</td>
<td>76%</td>
<td>78%</td>
<td>79%</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Increase 2006 - 2011</th>
<th>Points</th>
<th>Percent</th>
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<tr>
<td></td>
<td>16</td>
<td>25%</td>
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<tr>
<td></td>
<td>29</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>22%</td>
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Source: CSUMB University Factbook, CSUMB Office of Institutional Assessment and Research
Changing Faculty Work and Culture

Faculty will work in a networked world --- in a collaboration of faculty, other experts, and students across time and space.

“As individuals we will have to abandon that sense of ourselves as independent actors and agents.”

As you build a new medical school, the comparison of the work of physicians and university faculty members is striking:

http://www.newyorker.com/reporting/2012/08/13/120813fa_fact_gawande?currentPage=all
In medical education, Darrell Kirch describes “An Emerging Culture for Health Care”

1. Hierarchal to Collaborative
2. Autonomous to Team-Based
3. Competitive to Service-Based
4. Individualistic to Mutually Accountable
5. Expert-centered to Patient-centered

Focus on Innovative Teaching
Flipped Courses

The “flipped” course. You do homework by watching lectures. You go to class to work on problems together.

Khan Academy: 2,400 videos covering everything from arithmetic to physics, finance, and history. Khan lessons viewed by more than 4 million people a month.  

http://www.khanacademy.org/
Open Learning Initiative (OLI)
Carnegie Mellon University
http://oli.web.cmu.edu/openlearning/index.php

Team: content specialist
cognitive scientist
instructional designer
graphic designer

OLI-Statistics students learned a full semester’s worth of material in half as much time and performed as well or better than students learning from traditional instruction over a full semester.

http://oli.web.cmu.edu/openlearning/publications/71-effectiveness-statistics0
Science Classes

The Carl Wieman Science Education Initiative

Three strategies:
1. Reducing cognitive load
2. Addressing beliefs
3. Stimulating and guiding thinking

http://www.cwsei.ubc.ca/

Experiment produced two times the learning outcomes
Math Emporiums

“Higher Education’s Silver Bullet” Carol Twigg
http://www.changemag.org/Archives/Back%20Issues/2011/May-June%202011/math-emporium-full.html

3 Keys To Success:
1. Interactive computer software
2. Personalized on-demand assistance
3. Mandatory Student Participation
Blended Courses

Blended (hybrid) courses combine fact-to-face classroom instruction with online learning and reduced classroom contact hours (reduced seat time)


SRI Study

Ithaka Study
Broad Course Re-Design

George Kuh  *High Impact Practices*

- First-year seminars and experiences
- Common intellectual experiences
- Learning communities
- Writing-intensive courses
- Collaborative assignments and projects
- Undergraduate research
- Diversity/global learning
- Service learning, community-based learning
- Internships
- Capstone courses and projects


Prior Learning and Competencies

Prior Learning Assessments:
Council on Adult and Experiential Learning (CAEL)

New Competency-based Degrees:
Southern New Hampshire University
Northern Arizona University
Western Governor’s University

Competency-based Hybrid Degrees

Badges: Khan Academy
Mozilla
Pearson

Certifications: Cisco
CLA
PEARSON
Personalization

The capacity of software and systems to tailor course materials, learning processes, and approaches to the unique circumstances of individual learners.

- Individual characteristics
  - Learning style
  - Memory decay
  - Pacing
- Obstacles or misunderstandings
70 New Personalization Providers

- Adapt Courseware
- A New Spring
- Cerego Global
- Cogbooks
- Jones and Bartlett Learning
- Knewton
- Loudcloud Systems
- McGraw-Hill Learnsmart Advantage Suite
- Open Learning Initiative
- Quantum Simulations
- Smart Sparrow

Learning to Adapt. 2013
http://edgrowthadvisors.com/research/
In a world of constant change, it seems to me that you must:

• Embrace change

• Challenge every practice

• Provide a safe environment for experimentation and failure
This is not simply a difficult moment for higher education: it is the dawn of a very different era. The institutions that will succeed—indeed, thrive—in this era will be those that constantly innovate.
So what will the future bring for UT – Rio Grande Valley?

Many of the people in this room will help shape that answer.
Further Readings:

