Graduate education for a 21st century university

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Qatar University - November 2014
VT Graduate School
a place and space for graduate education
21st century university ... a social institution

with responsibility to a global society
and to change
For institutions to be successful, change must be both intentional and continuous

American Council on Education, 2001
“Deep, radical and urgent transformation is required in higher education. The biggest risk is that as a result of complacency, caution or anxiety the pace of change is too slow and the nature of change is too incremental. The models of higher education that marched triumphantly across the globe in the second half of the 20th century are broken.” p. 5, 2013
“…. will require changes in graduate education, with greater emphasis upon the integration of the disciplines and their applications to societal issues.”

Duderstadt, 2001
Opportunity

- Universities and Graduate Schools - confluence of generations
- Graduate Schools – responsive, integrative, interactive, inclusive & innovative strategies
- Graduate Dean - architect of graduate communities and change
Graduate school....

- create a space and place
- build graduate communities
- power to convene
- responsibility for change
- lead transformation
for the future scholars, teachers, scientists, artists, leaders..

global citizens
## Changing Metaphors in Higher Education

<table>
<thead>
<tr>
<th>Industrial Age</th>
<th>Knowledge Age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Place</strong></td>
<td><strong>Home, Work, Local Center</strong></td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td><strong>7 days x 24 hours</strong></td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td><strong>Modules/Domains</strong></td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td><strong>Outcomes-based</strong></td>
</tr>
<tr>
<td><strong>Provider</strong></td>
<td><strong>IHE, Publishers, Software Developers</strong></td>
</tr>
</tbody>
</table>

Adapted from NASULGC NewsLine, July/August 1998
New University

• From teaching to learning organization
• From passive students to active learners
• From faculty-centered to learner-centered
• From solitary learning to interactive, collaborative learning
• From classroom learning to learning communities
• From linear, sequential curricula to hyperlearning experiences
New University

• From credit-hour or seat-time credentialling to learning assessment
• From just-in-case learning to just-in-time learning to just-for-you learning
• From student or alumnus to lifelong member of learning community
• From campus-based to asynchronous to ubiquitous learning opportunities
“We are moving from an economy and a society built on the logical, linear, computer-like capabilities of the Information Age to an economy and a society built on the inventive, empathic, big-picture capabilities of what’s rising in its place, the Conceptual Age.”

-- Pink, 2005
Conceptual Age
not just function but also design
not just argument but...
not just focus but also ...
symphony
not just logic but also ....

empathy
seeing things differently - the unobvious
challenges for a 21st century university
today’s rapidly evolving context...

technology
six years ago.....
an app
... was something one sent to colleges
a tweet
...was the sound made by a bird
a cloud
was actually a cloud
today .....
and more everyday
How professors are using social media
blogs
Twitter
websites
wikis
podcasts
YouTube
Facebook
academy of today

vs

learning/learners of tomorrow
"Those who have been required to memorize the world as it is will never create the world as it might be."

-- Judith Groch
dis-enthral  tyranny of common sense
RX FOR EDUCATION

The traditional structure of medical education is undergoing a transformation from internal and external pressures alike. Old paradigms are giving way to fresher approaches.

IN
Applying knowledge
Problem solving
Dialogue
Facilitating
Critical thinking
Simulation
Teams
Hands on
Individualized learning
Self-directed learning

OUT
Regurgitating facts
Rote learning
Lecture
Telling
Memorizing
Observation
Sole practitioners
Passive listening
One-size-fits-all
Top-down learning
defining

posing

problem

solving
“Scale-up” settings for active learning that integrate case studies as the method to learn content.
A large “Scale-Up” classrooms, similar to this UVA med school example, can address large lecture hall formats are changing the model for undergraduate curriculum and teaching in the sciences and engineering.
What You Need to Know About MOOC's

We'll be updating this page regularly. Please check back for updates.

Call it the year of the mega-class.

Colleges and professors have rushed to try a new form of online teaching known as MOOC's—short for "massive open online courses." The courses raise questions about the future of teaching, the value of a degree, and the effect...
UNIT 5-CLASS 2: CO-LEARNING & AUTHORITY
HOW TO FOSTER AND SUPPORT PEER LEARNING WHILE NEGOTIATING AUTHORITY IN A CONNECTED LEARNING ENVIRONMENT
21st century university
grand challenges

beyond a single discipline
questions at the interface

team science	
collaboration
interdisciplinary knowledge and understanding
I educated
T

educated
Adaptive innovators

π

educated
New Biology for the 21st century
complexity of nature and society
power and innovation of new technologies
methods, techniques and knowledge
flexibility in organizing graduate education
reconsider priorities and practices of graduate education
learning, unlearning and relearning across disciplines

Transformative Graduate Education

Enhance the preparation and better equip VT graduate students with knowledge and skills for meaningful and relevant contributions as citizens in the 21st century.
Transformative Graduate Education

Preparation Future Professoriate (PFP)

Career Professional (PFPro)

Graduate Education Development Institute (GEDI)

Citizen Scholar Engagement (CSE)

Citizen Scholars

Knowledge

Leadership

Scholarly Inquiry

Responsibility

Technology, diversity, interdisciplinary, ethics, & global

DePauw 2003
Transformative Graduate Education

Knowledge
- complement academic disciplines
- interdisciplinary

Scholarly Inquiry
- ethics & scholarly integrity
- communicating science
- advising
- expectations for graduate education

Leadership

Responsibility

Technology, diversity, interdisciplinary, ethics, & global

DePauw 2003
Transformative Graduate Education

- Knowledge
  - Alpha Epsilon Lambda (AEL)
  - Interdisciplinary Research (IDR)
  - Graduate Student Assembly (GSA)

- Leadership
  - teaching/learning
  - engagement
  - research
  - mentoring

- Scholarly Inquiry

- Responsibility

- Technology, diversity, interdisciplinary, ethics, & global

DePauw 2003
Transformative Graduate Education

Career Professional (PFPro)

Knowledge
- Graduate courses

Leadership
- Workshops
- Seminars

Scholarly Inquiry

Responsibility

Technology, diversity, interdisciplinary, ethics, & global

DePauw 2003
Transformative Graduate Education

Knowledge

Leadership

Citizen Scholar Engagement (CSE)

Scholarly Inquiry

Citizen Scholars

Responsibility

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DePauw 2003
Transformative Graduate Education

GEDI

Graduate education development institute - Learning Technologies

Knowledge
- contemporary pedagogies
- digitally enhanced learning
- graduate courses
- graduate certificate

Leadership

Technology, diversity, interdisciplinary, ethics, & global

Scholarly Inquiry
- Responsibility

DePauw 2003
Transformative Graduate Education

Preparing Future Professoriate (PFP)

Knowledge
- graduate certificate

Leadership
- graduate courses
- global perspectives

Technology, diversity, interdisciplinary, ethics, & global

DePauw 2003
Transformative Graduate Education

Preparing Future Professoriate (PFP)

Career Professional (PFPro)

Graduate Education Development Institute (GEDI)

Citizen Scholar Engagement (CSE)

Citizen Scholars

Knowledge

Leadership

Technology, diversity, interdisciplinary, ethics, & global

Scholarly Inquiry

Responsibility

DePauw 2003
Graduate Courses & Certificates

- Preparing the Future Professoriate (3)*
- PFP: Global Perspectives (3)
- GTA Workshop (1)
- Contemporary Pedagogy (3)*
- Cognition and Learning (2)
- Library Research Skills (1)
- Interdisciplinary Research in Science & Engineering (3)
- Citizen Scholar Seminar (3)
- Preparing Future Career Professional (3)
- Industrial Professional in Science & Engineering (3)
- Ethics and Responsible Conduct of Research (1)
- Diversity and inclusion for a global society (3)
- Communicating Science (1-2)
- International Research (3)
Center for Communicating Science renamed in honor of Alan Alda

Stony Brook University’s Center for Communicating Science has been renamed in honor of Alan Alda, the renowned actor, director and writer who has made communicating science to the public an art form. The announcement was made at the Stars of Stony Brook Gala.
universities are changing
technology
access and cost
fundraising
branding, marketing, and more
social media
research and teaching
professional preparation
engagement
techn transfer, IP
alumni
access and cost
Access and equity
Knowledge, networks and nations
Global scientific collaboration in the 21st century

International collaborations
Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5

By Members of the 2005 "Rising Above the Gathering Storm" Committee; Prepared for the Presidents of the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine
dynamic and global economic challenges

transdisciplinary opportunities

urgent and formidable societal challenges

dated policies and structures
widen access and increase capacity
develop distinctive research portfolios
vibrant university environment
strengthening the links between teaching and research
focus on doctoral education - career opportunities
enhance research capacity and new knowledge
promote talent development
a clear internationalization strategy
quality culture and transparency
importance of partnerships
promoting dialogue … ensures impact on society

Aarhus declaration -
2011
Education: Rethinking PhDs

Education: The PhD factory

What is a PhD really worth?

Fix the PhD

Reform the PhD system or close it down
The Path Forward: The Future of Graduate Education in the United States

Universities

Employers

Policy makers
GOOD PRACTICE ELEMENTS IN DOCTORAL TRAINING
transformative knowledge to drive social change

social responsibility
The world beyond 2015
Is higher education ready?
six questions
NMC Horizon Report 2014 Higher Education Preview

technology in education
higher education is changing around the world
the future is ours
challenges and opportunities inspire the faculty of tomorrow
Questions?

Thank you