Re-imagining the university

cultivating 21st Century, agile learners

Preamble

Our Past context

A gentle reminder on re-imagining the university

As Ernest Gellner once observed, with characteristic pithiness, ‘we cannot divest ourselves of our conceptual clothing’. ‘The imagination has not only our socio-psychological circumstances to overcome but it has also to overcome the discursive conventions of the age.’

Imagining the University (2015) Ronald Barnett

then

The Big Shift Happened
21st C infrastructure: no stability in sight driven by continual exponential advances in computation...

Social, Work & Learning Practices evolve around new technologies

20th C infrastructure 70 yrs
S-curve
stable over decades.

21st C infrastructure
rapid set of punctuated jumps for the next 20-40 years

Yesterdays best practices are rapidly becoming outmoded.

Rapid set of punctuated jumps for the next 20-40 years

Context setting for today’s world

How we come to learn and explore has really changed.

“In the future, it seems, there will be no fixed canons of texts and no fixed epistemological boundaries between disciplines, only paths of inquiry, modes of integration, and moments of encounter.”

Carla Hesse:
Prof of History
We have new tools and new ways to absorb

A personal retrospective

Cray 2 Supercomputer (late 80s)
Costing millions of dollars
Where so many of my own intuitions, beliefs and practices were honed.
(and I am not alone – here!)

Cray 2 Supercomputer (late 80s)
But in comparison to what our students all carry

iPhone 5s about 20 times faster

Do we now have the imagination to rethink how we come to discover/know/build when our tools are 10,000 times more powerful.
And are we prepared to continually master new practices in both our research and pedagogical techniques year after year after year?

Computational Design: optimize shapes using concepts from biological evolution.

Evolving Materials In Silico

One can imagine many different 3D shapes…

Genetic Algorithm
Millions of Evolutions

Initial Structure: Random
Final Structure: Emergent Order
And let’s not forget the core of the academy

Perhaps the old library

Revisiting the Bodleian Library

But now with a new kind of magic

Hunt Library at NCSU

Where thinkers, dreamers and doers can come together to seek solutions to the grand challenges facing this world. …offers spaces custom-built for collaboration, equipped with cutting-edge tools to make concepts concrete. We’ve invested in immersive, large-scale visualization technology to create canvases that measure up to your ambition.

Students at work in the iPearl Immersion Theater
Large scale visualization in the Immersion Theater

Large Scale Visualization in the Creativity Studio

The power of visualization to help us experience, explore and learn.

Diffusion tensor MRI of a brain rendered in a 3d immersive space – CAVE

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This used to cost millions but now a few thousand.
(when now was 2005)

And now (this year) new Immersive environments.
Blending the physical & virtual worlds

Microsoft HoloLens
Oculus Riff

$640 – amazon

From millions to thousands to hundreds

Hmmm…
Tools for immersive learning

From $millions to $thousand to $hundreds.
New learning possibilities, galore, from leveraging their affordances to connect & probe.

But, jsb, to what end???
BUT WHAT ARE WE AIMING AT?

Learning dimensions

content ----> can be taught
skills -----> can be mentored
dispositions ----> can be cultivated
And this is where context really matters

Dispositions of an entrepreneurial learner.

› Always, questing, connecting, probing.
› Deeply curious and listening to others.
› Always learning with and from others.
› Reads contexts as much as content.
› Thrives outside of the formal curriculum

We need new practices & spaces for cultivating these dispositions.

Might we try a simple inversion of the system

Old way: course with lab/studio
New way: lab/studio with courses

which generates the need for micro/meso courses to support it, grounding students in relevant theories, practices & tools in situ.

My own micro epiphany a few years ago at MIT around OCW and new ways to learn.
Where learning becomes
contextual
participatory
collaborative
peer-to-peer
peer-to-master

Now let's go one step further
What would happen if we
turned the university inside out
(A thought sketch)

What if we moved core course content to the
outside as resources to be used.
And research is the center of all learning
(undergraduate & graduate)
Scientific Research
Humanities Research
Engineering Research
Basic and applied Research
Research through Design
Research creates the context
for the pull of content

And learners
craft their own pathways,
通过 a rich ecology of
learning experiences,
courses, micro-courses,
studios in world-building,
tools, tools, tools.
for making & for doing research
on campus & off.

A rich ecology is already emerging:

MOOC’s +
flipped classrooms
Justice Course,
M. Sandel
Minerva
HASTAC
M. Sandel

H. Wills
Reality Ends Here
Lovine
Young
Academy
Carly
The Unv. 2033
HASTAC
MINERVA

Bennington
Festival of Wit
A. McDowell
world building
studios
Bioethics
humanities
studio (GU)

It’s about the imagination

Socratic Method Scales
even more
TogetherLearn

Michael Sandel’s Justice course at Harvard
What we need to do for our students:

**Cultivate a resilient mindset**

In our students – an ability to change, adapt, re-conceptualize and engage in deep listening with humility in an act-reflect loop.

In other words

Empowering them for agency by instrumentalizing their imagination for real world effect.

Cultivating the Imagination through a blended epistemology

- **homo sapiens** man who knows
- **homo faber** man who makes
- **homo ludens** man who plays

**A Personal Belief**

In a world of exponential change

Imagination reigns supreme

Welcome to the Imagination Age

where the arts, humanities & sciences fuse creating a new kind of alloy.

And where

USC/LA could dominate

Stanford/ Silicon Valley
In the pursuit of simplicity and elegance – the next wave where art helps technology master complexity


World building (think Minority Report) 
Tools/scaffolds to imagine with

Georgetown University 2033 
Research libraries 2033 
Lead by Ann Pendleton-Jullian (apj)

Reality Ends Here:  
http://reality.usc.edu/how-to-play/ 
The Academy and the Garage:  
http://iovine-young-apply.usc.edu/the-program/  
Civic Imagination:  

More on ARL and world building and systems of action:  

ARL = Association of Research Libraries – World Building  
http://www.arl.org/about/arl-strategic-thinking-and-design#VNULU3F-5p