Aligning education, digital and learning space strategies: an ecological approach

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The first part of this talk will summarise outcomes from a set on in-depth interviews with senior leaders from across the Australian university system. Interviews were held with 54 leaders from 39 universities. In almost all cases, the person interviewed was responsible for shaping and implementing the educational, digital or space strategy: DVC(E)s, Chief Information Officers and Directors of Estates. I will use an analysis of this data to illustrate some of the issues that make it difficult to get good alignment between education, digital and space strategies. In the second part of the talk, I will outline an ecological approach to understanding some of the complex inter-relationships between educational activities and the digital and physical tools, resources and infrastructure on which those activities depend. This ecological approach has two main elements: (1) a shift of focus from product design to the co-design of services, and from the ‘student as managed customer’ to activity systems; (2) fostering participatory approaches to understanding local learning systems.

Peter Goodyear
Two main parts to the presentation

1. Interviews with university leaders shedding light on difficulties of integrating strategies

2. Educational ecology as an applied science: understanding and improving educational ecosystems
‘Ecology’ is a double-barreled term.

It both refers to systems in themselves that have an internal unity, the coherence of which could be threatened in some way, and also refers to a study of such systems in the world.

This dual headedness applies also to the university, for the university lives amid ecologies (they have real substance in the world) and also has helped bequeath the formation of ecology as an academic field of study (Barnett, 2018, 18, original emphasis)

1. Interviews with university leaders shedding light on difficulties of integrating strategies

2. Educational ecology as an applied science: understanding and improving educational ecosystems

The concept of ecology has a subtle ought-ness. If an ecosystem is found to be impaired, then one has a responsibility to help to restore it to good health. And so it is with the university. (Barnett, 2018, 8)


My work .. over the last 30 years or so

How do the key participants in teaching and learning in HE make sense of the challenges and opportunities?

Especially with the added complexities of:
- digital technologies
- active and collaborative learning
- new learning spaces
- light (or no) direct supervision


Aligning educational, digital and learning space strategies raises deep questions about the university itself, what university is for, what the campus is for, etc.

Doubts Complexity Risk

Photos by Mikael Kristenson Lucrezia Carnelos and Filip Bunkens on Unsplash
The spaces in which we teach and learn are changing. Technology is permeating physical spaces, augmenting and enhancing learning experiences. At the same time, mobile and pervasive internet-connected technologies create interfaces between virtual spaces and real-world phenomena and create data shadows of our actions in the physical world. These dynamics give rise to a growing presence of hybridity: the blurring of boundaries between distinct contexts of learning and activity, and the unexpected interleaving of experiences they engender.

Arguably, hybrid learning spaces drive a change that goes beyond the locus of learning. A hybrid pedagogy fundamentally rethinks our conception of place. Hybridity is multidimensional: it concerns the interleaving of formal and informal social structures of learning, the combination of physical and digital tools mediating each individual’s interactions with the world and society, and more.

Education systems are beginning to recognised the potential of hybrid learning spaces in promoting significant learning, and increasingly use pedagogical hybrid learning models. Recent work has begun exploring the nature of hybridity from an educational design perspective.
**Education(al) Strategy** – also known as Learning and Teaching Strategy

**Relatively new** and taking shape quite quickly

- The use of explicit education (L&T) strategies in universities is relatively new (early to mid 1990s in Australia & the UK)
- Originally understood and implemented in very diverse ways (Gibbs et al 2000)
- But now characterized by a great deal of convergence (policy sharing, benchmarking, national QA regimes etc)

**Purpose** of an education strategy is to:
- focus attention, harness activity and resources,
- galvanise people and processes into action,
- align internal systems, and raise awareness of external pressures

...all in order to achieve the education mission

Education Strategy

Is meant to help the multifarious members of the university co-ordinate some key parts of their work

help align the university’s deeper purposes and values with distinctive programs, intended graduate capabilities, course, curriculum and assessment designs compatible with the formation of those capabilities

establish desiderata for congenial learning environments

**intersection of education strategy and (complex integrated) learning spaces**

*where education strategy comes to land*

complex = material-digital-hybrid-nested & in flux


The Study: Semi-structured interviews with 3 kinds of leaders

Education leaders ≈ Deputy Vice-Chancellor (Education) DVC(E)

IT leaders ≈ Chief Information Officer (CIO)

Facilities leaders ≈ Director of Estates (DoE)

**Achieved Sample (approx. 50%)**

<table>
<thead>
<tr>
<th>Role</th>
<th>Count</th>
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<tbody>
<tr>
<td>DVCEs</td>
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<tr>
<td>CIOs</td>
<td>18</td>
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<td>DoEs</td>
<td>17</td>
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Interviewing Team

Nick Klomp
(formerly DVC Academic U Canberra; VC Central Queensland University)

Bruce Meikle
(formerly CIO University of Sydney)

Kenn Fisher
(Educational architect Woods Bagot & academic, U Melbourne)

Rob Ellis
(formerly Director of eLearning at The University of Sydney;
Dean L&T, Arts, Education & Law Group, Griffith U)
Semi-structured interview questions: DVCEs

1. What university-wide frameworks guide course design at your university?  
   [Note: ‘course design’ interpreted broadly, to include program, course and credential design.]

2. What do the changes and challenges arising in this area mean for university teachers and students?

3. What strategies exist in your institution to address these challenges?

4. What institutional impediments need to be overcome for an effective university teaching and learning system that supports innovative course design?

5. How are effective relations made between new course designs and integrated learning spaces?  
   [Note: ‘Integrated learning spaces’ - integrations of physical and digital spaces, tools, resources etc, with the aim of supporting more ‘seamless’ learning and teaching.]
Semi-structured interview questions: CIOs and DoEs

1. How would you define ‘learning space’? To what extent is that definition understood across your institution?

2. What strategies does your institution adopt to plan and develop learning space?

3. What can impede the effective development of learning space?

4. What things would you resolve to improve effective learning space innovation and planning?

CIOs generally took this to mean both digital and material
Thematic analysis of interview transcripts:
five emerging themes, aka ‘organisational elements’
Strategy readiness
(n=39 universities)

Capability and Alignment with other Organisational Elements
Three major problems in aligning educational strategy with (integrated/hybrid) learning space strategies

In the context of major projects, esp management & funding issues, CIOs and Directors of estates mention:

1. **Disputed ownership** (lack of clarity about the most relevant stakeholders – shared facilities; local use etc)

2. **Vague requirements** (insufficient detail to map education to space requirements; stakeholders rarely have language & concepts to clearly specify what is needed)

3. **Mistakes in structuring budgets**
Three major problems in aligning educational strategy with (integrated/hybrid) learning space strategies

- Budget
- Time
- Quality (fitness for purpose)

Slipperiness of language vs the concreteness of infrastructure

Structure of Budgets

- Easier to get capital for a one-off project than the recurrent funding needed to ensure it works & keeps working properly
- Central budgets for new capital devs vs delegated & uncertain recurrent budgets for e.g. professional development of teaching staff
Three major problems in aligning educational strategy with (integrated/hybrid) learning space strategies

“The problem is strategy development for learning space is not coordinated. So the university does have a vision 2020 for learning and teaching but that doesn’t specify the physical space. It talks about the activities they want for students and the academics to engage in in the future, but it doesn’t have enough detail to inform the spaces we build. It says we want more real world activities, and says we want less lectures and more collaboration-type activities, but it’s not sufficiently detailed to inform the development of learning space. The IT strategy also does not specify what physical spaces we have to provide”

(Director of Estates)
Language in organizational life

“A good part of the job, then, consists of ‘a constant interpretation and reinterpretation of events that constructs a reality in which it is difficult to pin blame on anyone, especially oneself’ ... This gives rise to the art of talking in circles. Mutually contradictory statements are made to cohere by sheer forcefulness of presentation, allowing a manager to ‘stake out a position on every side of an issue. Or one buries what one wants done in a string of vaguely related descriptive sentences that demand textual exegesis’ ... The intent of this kind of language is not to deceive, it is to preserve one’s interpretive latitude so that if the context changes, ‘a new, more appropriate meaning can be attached to the language already used. In this sense the corporation is a place where people are not held to what they say because it is generally understood that their word is provisional’

Nothing is set in concrete the way it is when you are, for example, pouring concrete.”

(Matthew Crawford, 2011, p139; with embedded quotes from Craig Calhoun and Robert Jackall)

Broader Summary of Problematic Areas

1. Quality Assurance (QA) x (Educational) Innovation
2. Professional development of teaching staff
3. Difficulty of integrating/aligning the planning/design of new courses (etc), IT and physical spaces: need for students to be able to move seamlessly between learning spaces
4. Problems in aligning strategy, governance, policy, management and funding
5. Funding and budgeting
6. Outcome measures x understanding processes that produce the outcomes
7. Lack of shared concepts and terminology – esp. in relation to implications of new educational designs for IT and built infrastructure
8. Difficulty of pinning down user requirements:

    Configuring the user: managed customer; stereotypes & averages;
    folk psychology of teaching & learning
Focus on outcome measures at the expense of explanations of process

In short, the leaders did not appear to have a shared explanatory model of the processes through which students’ activities lead to valued outcomes or how learning environments affect students’ activities.

The leaders and the institutional documents with which they worked referred, in one way or another, to the centrality of ‘the student experience’ and the importance of taking a ‘student-centred’ approach to planning. The first of these is generally operationalized through measures of student satisfaction, retention rates, and, down the track, graduate employment statistics. University staff at all levels have become accustomed to using such data to provide evidence of success. However, these outcome measures have taken on a pre-eminent position, not least in the absence of shared explanations of process.

Leaders express the need to improve performance by increasing the thresholds for target outcome measures. But the processes that lead to the outcomes remain mysterious.

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<tr>
<th>CIO</th>
<th>Valued Outcomes</th>
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<tr>
<td></td>
<td>Employer satisfaction (ESS)</td>
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<td>Employment</td>
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<td>DoE</td>
<td>Academic &amp; other graduate attribute outcomes</td>
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<td>Student experience; eval of teaching etc (SES)</td>
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<td>DVCE</td>
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If you want to improve an outcome, don’t spend your time thinking about the outcome itself. Spend your time improving the culture that produces the outcome.

Core challenge: understanding and (indirectly & partially) shaping learning environments & activity systems
Applied Educational Ecology

Concepts & methods for understanding and shaping local learning systems

Educational ecology is an applied science that studies and shapes learning systems. A learning system is a dynamic coupling of people and the multifarious resources on which they are drawing in order to learn.

People and environments change each other.
Educational Ecology as an Applied Science: four conceptual steps

- From product design to the co-design of services
- From ‘student as managed customer’ to activity systems
- Explaining how the university’s main activity systems function
- Ways and means:
  - Participatory approaches to understanding local learning systems
  - Building capacity; institutional infrastructure: Research-practice partnerships

“Student as managed customer” is from Bruce Macfarlane - Macfarlane, B. (2017). Freedom to Learn: The threat to student academic freedom and why it needs to be reclaimed. Abingdon: Routledge.


Other influential work from an ecological perspective


Educational Ecology as an Applied Science: 1

From product design to the co-design of services

- Design of e.g. specifications for assessment tasks; course web-pages; learning hubs – design of products to be handed over to the user
- Co-designed services – part-finished designs to be completed (co-produced) by students, teachers, others; education as a relational service


Educational Ecology as an Applied Science: 2

From ‘student as managed customer’ to activity systems

• Understanding process as well as outcome

• From manipulating correlates of outcomes to creating shared understandings how activity systems function

“The defining characteristic of a situative approach is that instead of focusing on individual learners, the main focus of analysis is on activity systems: complex social organizations containing learners, teachers, curriculum materials, software tools, and the physical environment.”

(Greeno, 2006, 79)


Educational Ecology as an Applied Science: 3

Explaining how the university’s main activity systems function

- Broadly applicable principles about ‘good learning’ (e.g. Schneider & Preckel, 2017)
- Local explanations

“... it is a mistake to presume that general laws are the only form of useful knowledge. Rather, ecology has been advancing significantly through the development of local causal mechanisms and approaches to testing for their occurrence in systems.”

(Hammer, Gouvea & Watkins, 2018, 14)


doi:10.1080/02103702.2018.1504887
Educational Ecology as an Applied Science: 3 (continued)

1. Activities within a university are enmeshed in (seven) much wider ecological zones (Barnett)
2. The university as a self-organising, self-improving system, noting that the capacities for self-regulation and self-improvement depend upon timely flows of actionable knowledge and the means to make and explain evaluative judgements about the quality of the educational work being done
3. Clearer recognition of the importance of materials and their properties: for a better understanding of how the physical (material, digital, hybrid) environment and its tools, artefacts, spaces etc function in educational ecologies.
4. Reimagining the acting and learning student: setting university discourse free from the limitations of individualistic folk psychology (and the 'managed student').

Educational Ecology as an Applied Science: 4

Ways and means:

Participatory approaches to understanding local learning systems

- Soft Systems Methodology (Checkland, Ison)
- Realist Formative Evaluation (Pawson & Tilley)
- Formative Interventions (Engeström)
- Participatory Design-Based Research (Bang et al)

Institutional infrastructure for educational ecology: Research-practice partnerships

- Models for sustainable investment in the capabilities needed to understand how local activity systems function and how to help improve them
- Real, on-going, trusting relationships between researchers and practitioners
- Proven mechanisms for sharing actionable knowledge


Key messages: recursiveness & defragmenting academic life

The value of recursiveness in approaches to analyzing and designing/producing complex (local) learning systems (students, teachers, leaders)

Strategies that resolve rather than exacerbate tensions (esp. between teaching, research & service), e.g.

• Connected Curriculum
• Students as Partners
• Learning to co-design relational services & epistemic environments


Key messages: Designing for learning; designing for change

National Centre for Student Equity in Higher Education

“The Best Chance for All”

Advancing Australia’s future depends on all its people, wherever and whenever they are, being enabled to successfully engage in beneficial and lifelong learning.

Contributing to: A fair, democratic, prosperous, and enterprising nation; reconciliation with Indigenous Australia; and cultural, civic, and intellectual life.

Achieved by: An inclusively designed system with multiple entry and exit points; proactive removal of barriers to participation; and tailored support where needed.

Accountable through: An integrated approach to measuring success at institutional and national levels to align performance with policy objectives.

"The goal should be for all Australians to be able to step in and out of tertiary education throughout their lives and to have the capability and confidence to navigate the ever-changing world of work. ... It is now imperative to genuinely engage with students as partners to find out about their needs, preferences and challenges."

Key messages: Designing for learning; designing for change

Students should be helped to develop the capacities needed to configure future environments for inquiry, learning, problem-solving, decision-taking and action.

These are part of what it means to be an autonomous lifelong, life-wide learner, a capable knowledge worker and a critical citizen.

Such a conception helps align thinking about learning activities and learning environments at each level in a university hierarchy. In its absence, there is a risk of serious conceptual discontinuities between (say) leaders’ strategic plans and students’ everyday experiences.


Thanks & follow up:

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