Catching the Knowledge Wave?

Jane Gilbert
Catching the Knowledge Wave?
The literature predicts that our **secondary** and **tertiary** institutions will undergo major **change**

- they will be **managed** very differently

- they will be **physically** different

- student **learning** will be organised differently

- **teachers work** will be very different...
All institutions will

- be multi-campus entities
- offer multi-layered, modularised learning programmes
- function as learning ‘brokers’ - matching students with whoever/whatever can best meet their learning needs
- work closely with other agencies and community organisations
They will have ...

**integrated cross-curricular** programmes that will develop students’ skills in:

- **thinking** learning and **problem-solving**
- **working collaboratively** in **teams**
- **creativity ingenuity** and **innovation**

All this will happen in an **ICT rich** environment...
BUT...

something missing here ...

very little being said about

KNOWLEDGE

i.e. what students need to learn

WHY IS THIS?
The Knowledge Society – What is it?

A paradigm shift
Totally new ideas about

- what knowledge *is*
- how it *develops*
- how it is *used*
- who owns it …
The Knowledge Society – What is it?

‘Knowledge’ societies

- No longer rely on the exploitation of natural resources.
- **KNOWLEDGE** is *the key resource* for economic development.
The Knowledge Society – What is it?

“The generation, application and exploitation of knowledge is what drives modern economic growth.

Most of us make our money from thin air: we produce nothing that can be weighed, touched or easily measured.

Our output is not stockpiled at harbours, stored in warehouses or shipped in railway cars.

Our children will not have to toil in dark factories, descend into pits or suffocate in mills. They will not hew raw materials or turn them into manufactured products.

They will make their living through creativity, ingenuity and imagination.”

KNOWLEDGE has a NEW MEANING

How did this happen?
The shift FROM the modern - or Industrial - age TO the post-modern - or Knowledge - age is a paradigm shift equal in significance to the pre-industrial → industrial age transition.
Result of **interaction** between many different factors - e.g.

- *crisis* in traditional **capitalism**
- **globalisation**
- major *social* and **economic** changes massive expansion in **knowledge**
- new **ICTs**
  - if it’s not digitisable, it’s not knowledge...
  - web-based, multi-media technologies
Knowledge is no longer linked to truth but to ‘performativity’ - what it can do and to innovation.
Manuel CASTELLS

Knowledge in the Knowledge Society’ is:

- dynamic, fluid, generative, something that causes things to happen;
- no longer an object or a ‘thing’ that is codified into ‘disciplines’, but more like energy
KNOWLEDGE

- is a **process**, *not* a ‘thing’
- *does* things
- *happens* in *teams*, *not* in individual ‘experts’
- can’t be ‘**codified**’ into ‘**disciplines**’
- develops on an **as-and-when needed basis**
- develops to be **replaced**, *not* stored.
LEARNING:

- involves **generating** knowledge *not storing* it;
- is primarily a **group** - *not an individual* - activity;
- happens in ‘**real world**’, problem-based contexts;
- should be ‘**just-in-time**’, not ‘just-in-case’;
- needs to be à **la carte**, not **en bloc**.
MINDS

are not ‘containers’ or ‘filing cabinets’
- to STORE knowledge ‘just in case’:
  they are RESOURCES
  that can be CONNECTED to other resources
  in order to GENERATE NEW KNOWLEDGE
But - wait a minute......

These ideas challenge the foundations of our education system...
WHAT ARE ITS FOUNDATIONS?
set out a model education system

>a stable, secure, ‘just’ society

Plato’s education system was designed to develop the qualities needed in ‘philosopher kings’ (society’s watchdogs or guardians)
Plato’s system was knowledge-centered

The mind is best developed by exposing it to the **best** and **greatest** knowledge.

Plato’s curriculum was based on knowledge chosen **not** because it is ‘**useful**’, but because it **develops the mind** - **in particular ways**.

Plato’s model is the basis of the **traditional ‘academic’ curriculum**.
Mass education relatively recent
two quite different purposes:
i. human resource needs
   of the economy
ii. equal opportunity

many important conflicts
THE ‘PRODUCTION LINE’ MODEL

- students are ‘processed’ in ‘batches’ (year groups)
- all ‘processed’ at the same rate
- pre-set curriculum ‘delivered’ to all in ‘bite-sized’ pieces in a pre-set order
- aim is to produce a standardised, quality ‘product’
- ‘products’ easily sorted according whether or not they meet the quality control standards
One size fits all

- the traditional **academic curriculum** is the **quality control** mechanism - used to **sort** students
- many are **rejected** - and allowed to **drop off** the production line
For most of 20\(^\text{th}\) century this seemed OK to most people

- system gave everyone ‘the basics’
- higher education rationed to those with ability

- very low unemployment
- plenty of low-skill jobs for the production line’s ‘rejects’ ...

THIS IS NO LONGER THE CASE
ALSO
it has produced some important **splits**

<table>
<thead>
<tr>
<th>'academic' discipline’s needs</th>
<th>vs</th>
<th>‘applied’ knowledge learner’s needs</th>
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<tr>
<td>discipline’s needs</td>
<td>vs</td>
<td>the <strong>economy</strong>’s needs</td>
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<td>vs</td>
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<tr>
<td>rigour</td>
<td>vs</td>
<td><strong>inclusiveness</strong></td>
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<tr>
<td>‘universal’ knowledge</td>
<td>vs</td>
<td>‘local’ knowledge</td>
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<tr>
<td>elitism</td>
<td>vs</td>
<td>access to knowledge for <strong>all</strong></td>
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these need to be PUT BACK TOGETHER
educational debate is often split
- protagonists forced to take one of two positions
- no robust middle ground....

often unproductive...

If we allow these splits to persist, we will not be able to prepare students well for life in the Knowledge Societies of the future...
EVERYONE needs the kind of knowledge and skills traditionally only provided in ‘higher’ education

EVERYONE needs ‘academic’ and ‘applied’ knowledge

HOWEVER: they need more than this...
To participate in the **Knowledge Age**, people need to:

😊 know about knowledge
  - how different knowledge areas ‘**work**’
  - what **assumptions** underpin each knowledge area
  - how people working in a knowledge area **generate** and **justify** new knowledge

i.e. a **systems** - or **meta** - level understanding of a knowledge area is **just as important** as knowing its detailed facts
They need to:

- go beyond mastering existing knowledge
- be able to do things with knowledge (once they have it)

‘Performativity’ (aka innovation) = the ability to

- take elements from one knowledge system
- put them together with elements from another knowledge system
- re-arrange these elements to do something new…

→ focus on investigations, generating new knowledge

- long before their formal ‘apprenticeship’ is completed.
They need the ability to:

😊 communicate their knowledge
- to a wide range of audiences
- in a wide range of contexts
- on their own and as part of a team

e.g. - presenting the results of their investigation
- contributing their expertise to a multi-disciplinary team
- coaching a sports team
The answers are already out there.

some examples…

- **Critical literacies** and/or the new ‘**multiliteracies**’ (Lankshear & Knobel 2000)

- **Narrative-based pedagogies**

- ‘**Real’ research** projects (Bereiter 2002)….
Whatever, it will be important to...

- avoid **standardised** approaches
- encourage **diversity** and **multiple** pathways
- avoid using ‘academic’ knowledge to **sort** people

We need new **post**-Industrial Age metaphors...

- **systems** or **networks** - *not* production lines
- **clades** - *not* clones
Further reading


