Digital Futures: How should higher education prepare?

Professor Linda Price

University of Bedfordshire, UK; Lund University, Sweden; Open University, UK

The changing world

By 2050 there will be 9 billion people to feed, clothe, transport, employ and educate

Current population is 7.5 billion: the estimate for 2019 was 7.2 billion

5 billion, 2/3 of the world's population, are connected by mobile devices, (GSMA)

By 2020, almost 75% of the global population will be connected by mobile devices

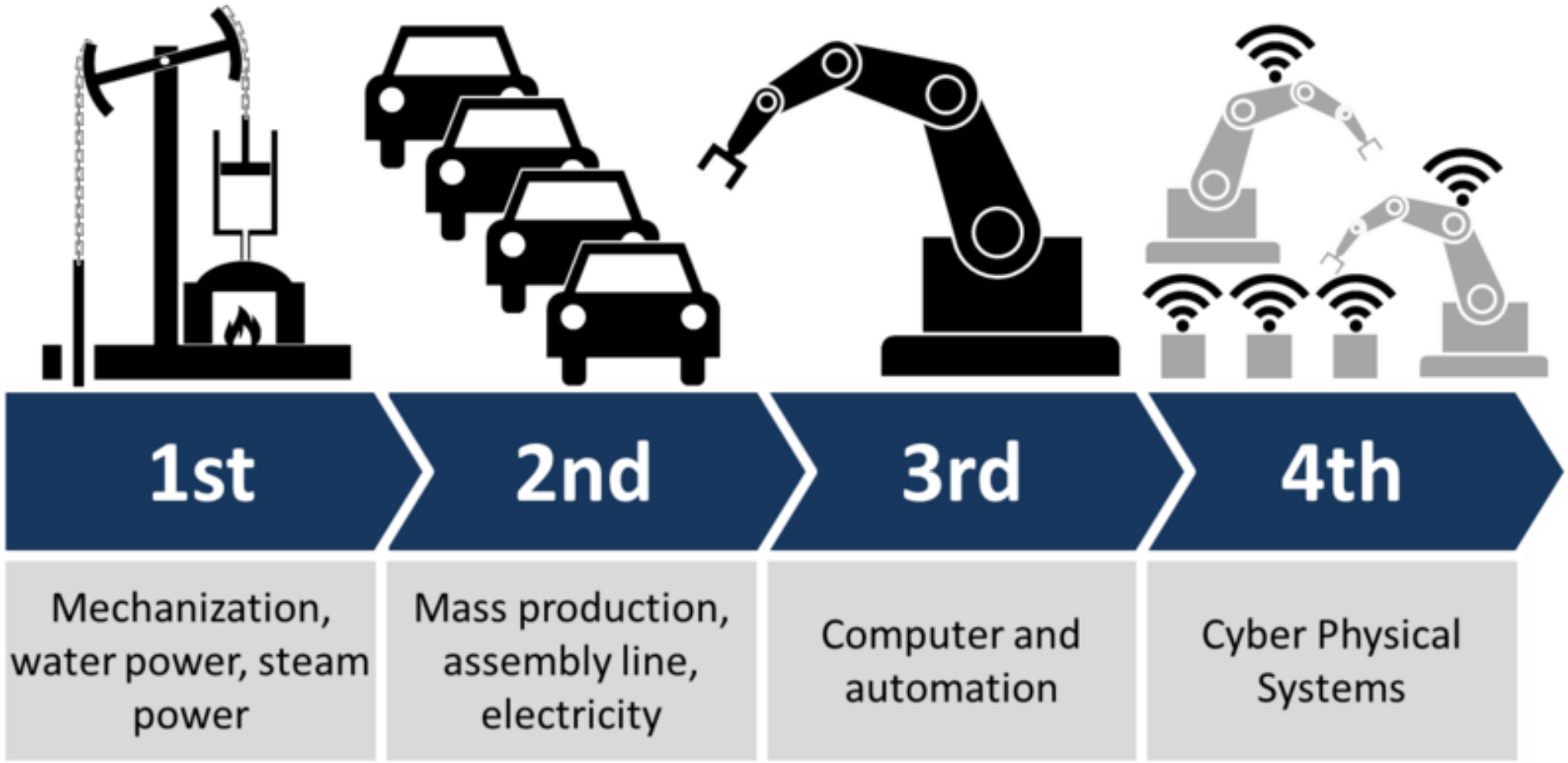
Challenges

- Limitless consumption for things
- Warming the climate
- Overspending financial resources
- Requiring more fresh water
- Increasing income inequality
- Diminishing other species

- Billions are at the “bottom” of the economy
- Rampant youth underemployment in many countries
- The forecast is for billions to remain stuck for their whole lives.

Dan Abelow, Imagine A New Future: Creating Greatness for All,

4th Industrial Revolution



https://commons.wikimedia.org/wiki/File:Industry_4.0.png

What will the 4th industrial revolution bring?

- artificial intelligence
- genome editing
- virtual reality
- robotics
- 3-D printing

- rapidly changing the way humans create, exchange, and distribute value
- will profoundly transform institutions, industries, and individuals.
- It will be guided by the choices that people make today

It will be shaped by how we invest in and deploy these powerful new technologies.

Changes that are upon us…

airbnb

UBER

“We have always had a fear of new technology, even as far back as the industrial revolution, but those fears have been largely unfounded, so why is it different now?

Well, it’s the speed in which technology has come to the fore. The risk factor we are dealing with is on a grand economic; political and social level.”

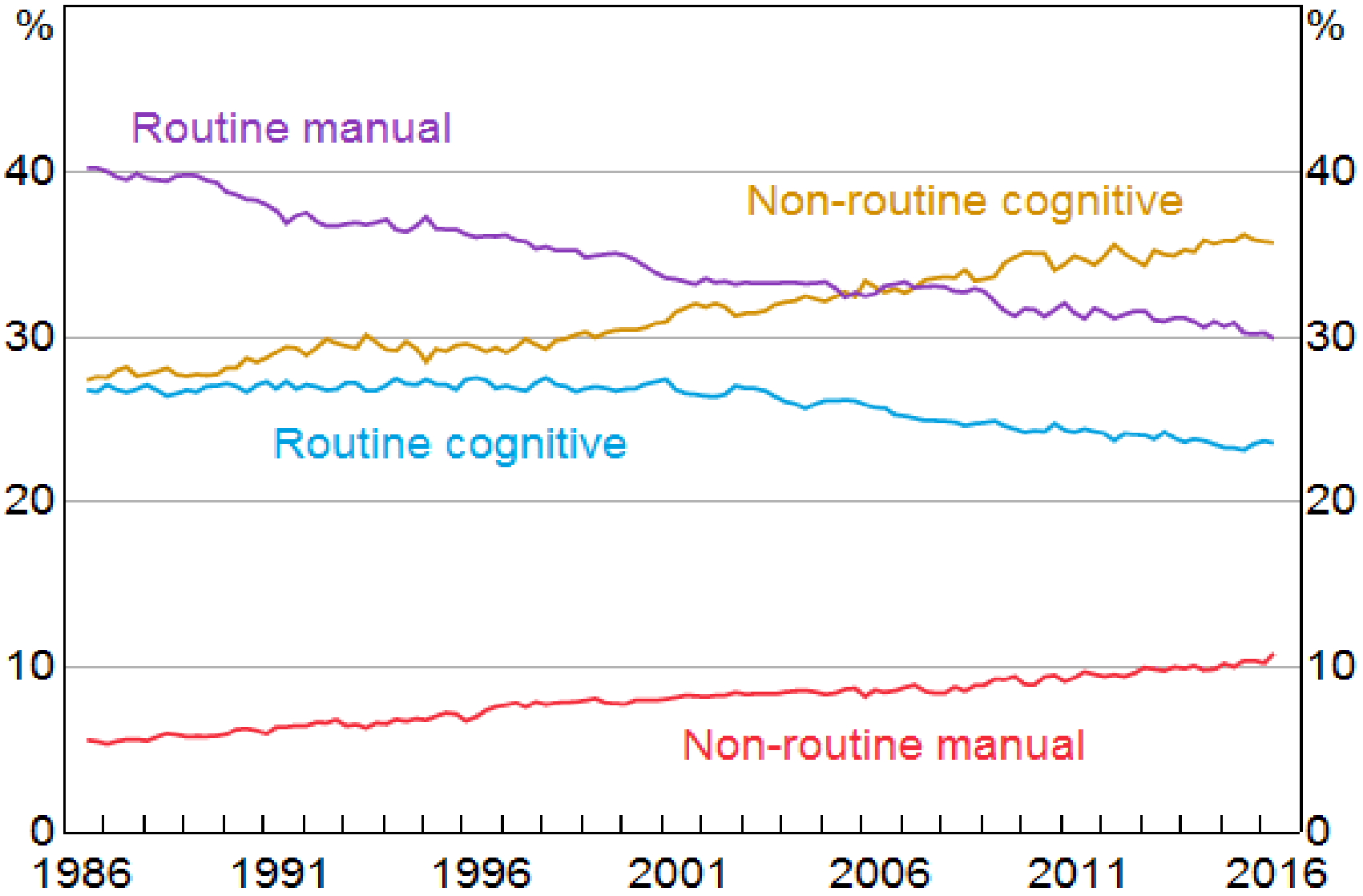
Dr Reuben Abraham, CEO of Think-Tank the IDFC Institute, speaking at Global Education and Skills Forum (GESF) in Dubai, 2018

Are we ready for the future?

Are our students ready?

Employment by Skill Type*

Per cent of total



* Non-seasonally adjusted

Sources: ABS; RBA

Can technology help in educating our students for the future?

Lack of a well-established body of evidence of TEL transforming HE

Concerns about the quality and validity of some research and evaluation studies in TEL (Price and Kirkwood, 2014)

‘“Notoriously sloppy” and “brimming over with lazily executed ‘investigations’ and standalone case studies, while also tolerating some highly questionable thinking” (Selwyn, 2012, p. 213).

…technologies have often been used ‘regardless of whether or not they are pedagogically effective’ (Beetham & Sharpe, 2007, p. 3), (Johnson, Adams Becker, Estrada, & Freeman, 2014)

https://pixabay.com/illustrations/technology-future-3393230/

Teaching and learning with technology research

Efficiency

(instructionist/ teacher-centred)

Increasing flexibility and access

Increasing student engagement

Improving assessment and feedback

enhancement

Developing skills

Reinforcement or revision

Promoting reflection upon learning and personal development

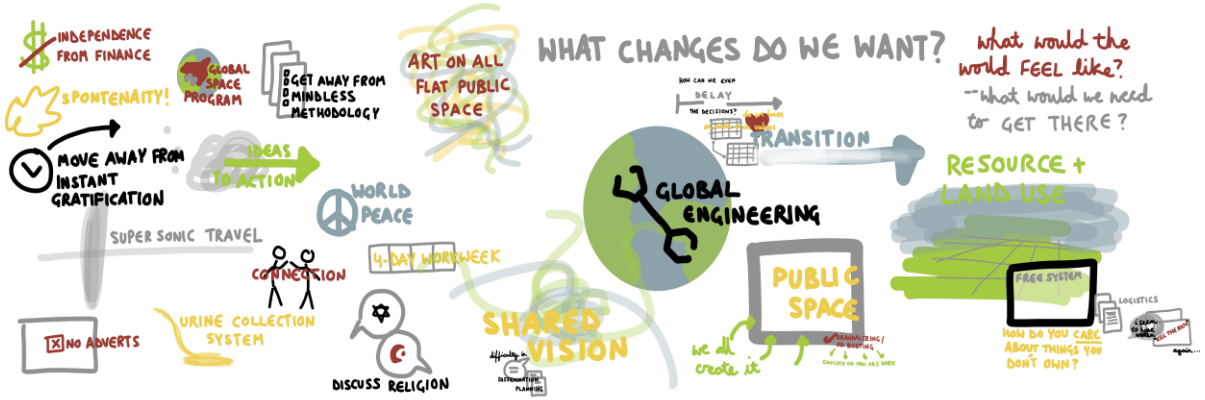
Supporting interaction with peers and collaborative work

Supporting links between theoretical and practical aspects

Transformation (learner-centred)

Preparing students for their careers/personal lives

(Price and Kirkwood, 2014)



TRANSFORMATION

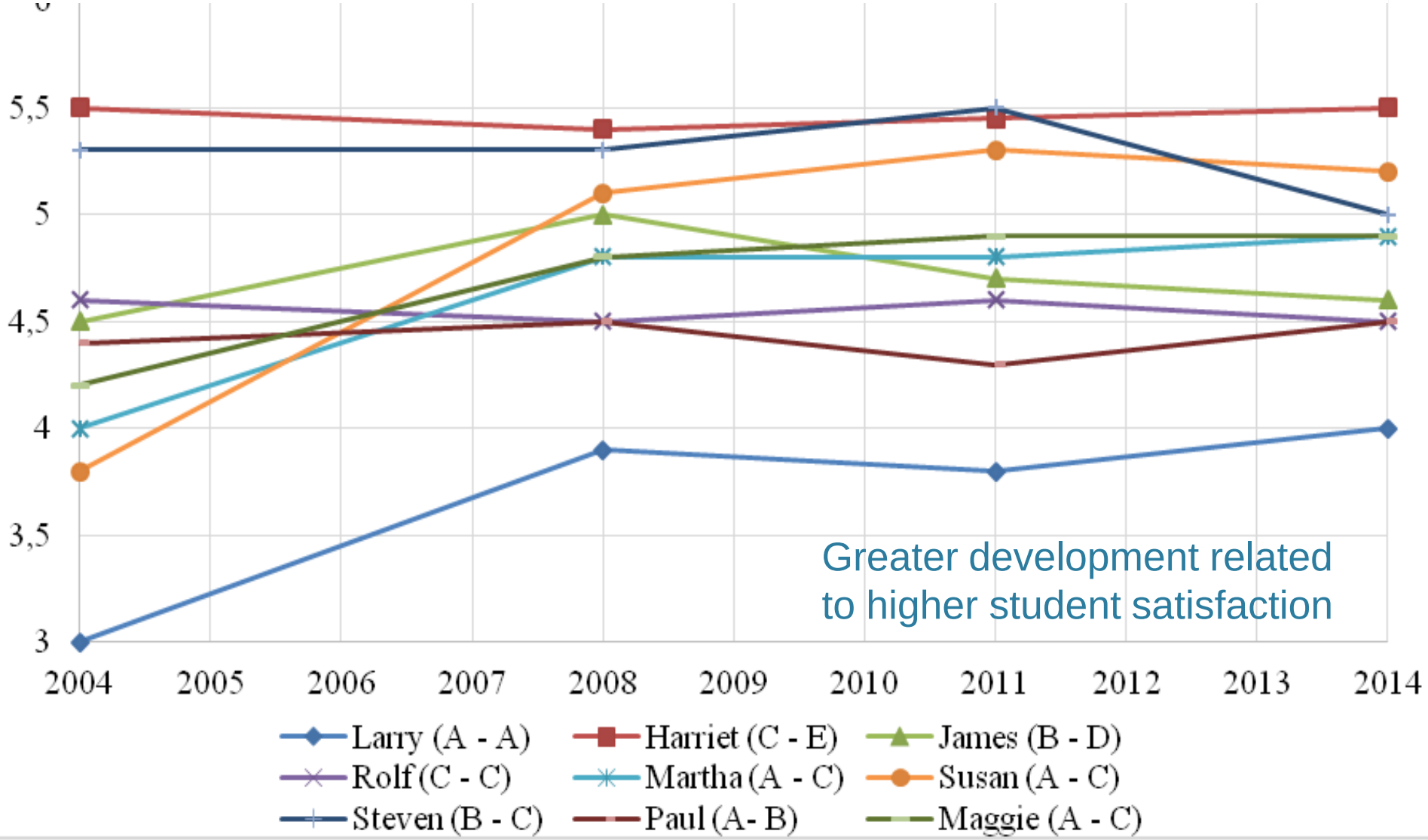
…deeply rooted in what we conceive a transformation to be (Price and Kirkwood, 2013)

…and that is deeply rooted in what we conceive teaching and learning to be

…and what we conceive teaching and learning with technology to be (Englund, Olofsson and Price, 2017).

https://commons.wikimedia.org/wiki/File:Transformation_at_Future_Perfect.jpg

Teacher conceptual development and student satisfaction



(Englund, Olofsson and Price, 2016)

Differences between student and tutor conceptions of effective tutoring

- Adapted version of Gow and Kember's questionnaire, measuring two broad *orientations:* knowledge transmission and learning facilitation.
- 602 Tutors and 457 Students responded (49.7% response rate)
- Tutors conceptions of tutoring varied by discipline: students did not.
- Students yielded an additional **career-oriented** conception
- Tutors yielded two additional conceptions: **knowledge-oriented** and **impersonal.** (Jelfs, Richardson and Price, 2009)
- An early study showed that students perceive good tutoring as a pastoral activity – not just a cognitive one. (Price, Richardson, Jelfs, 2007)

So what's the problem?

- Gap between research reported and practice
- Busy disciplinary 'teaching' staff have difficulty translating research back into practice
- Demonstrating the influence of research on educational improvements is challenging

Why do we have a gap?

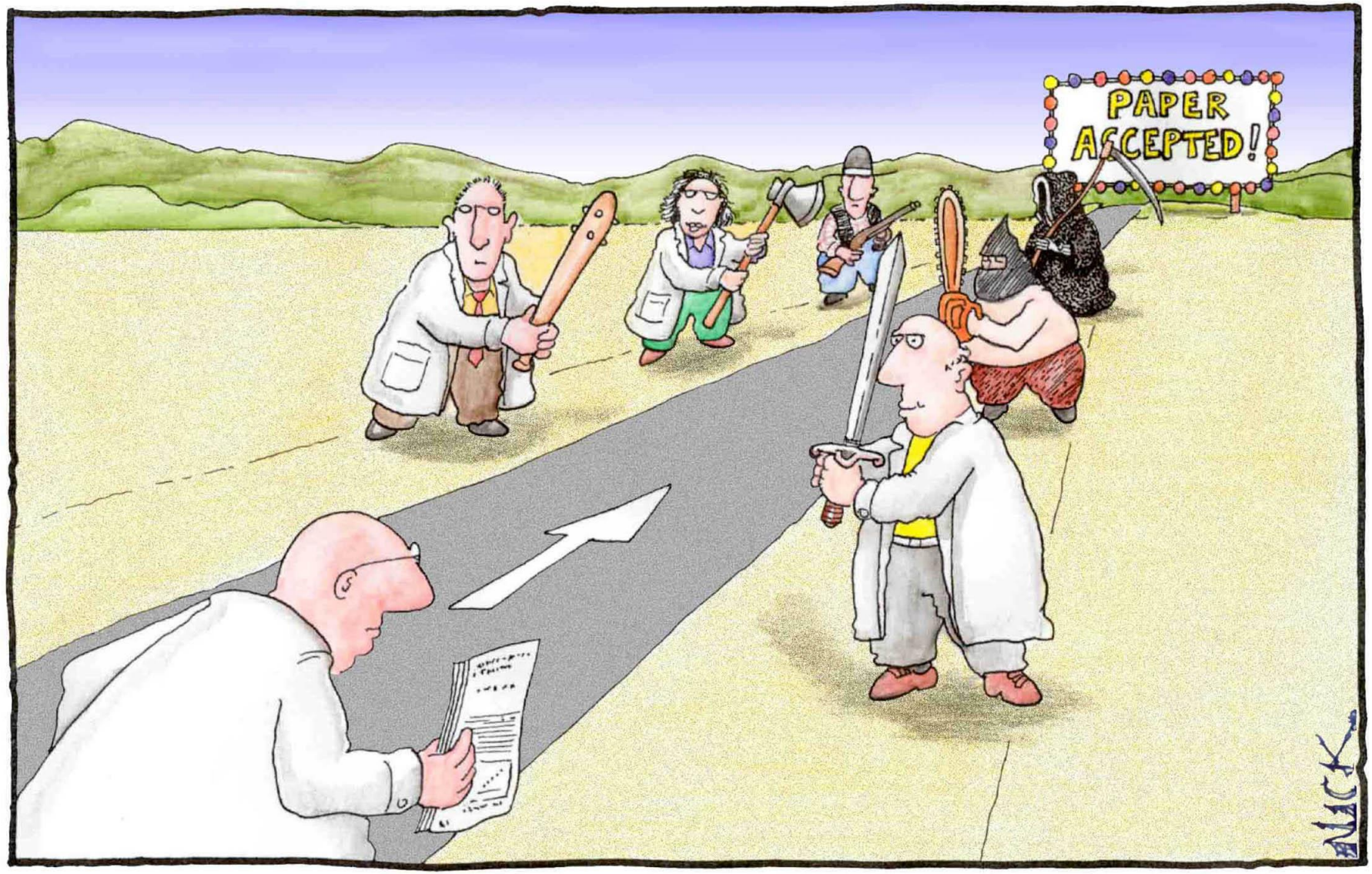
1980’s and 1990’s

Some critics identified this era as a new “corporatization of the university.“

Well-paid positions were rarer, replaced with poorly paid positions.

There was a greater pressure to publish as there was prestige for the university – and research funding

Why do we have a gap?



Most scientists regarded the new streamlined peer-review process as ‘quite an improvement.’

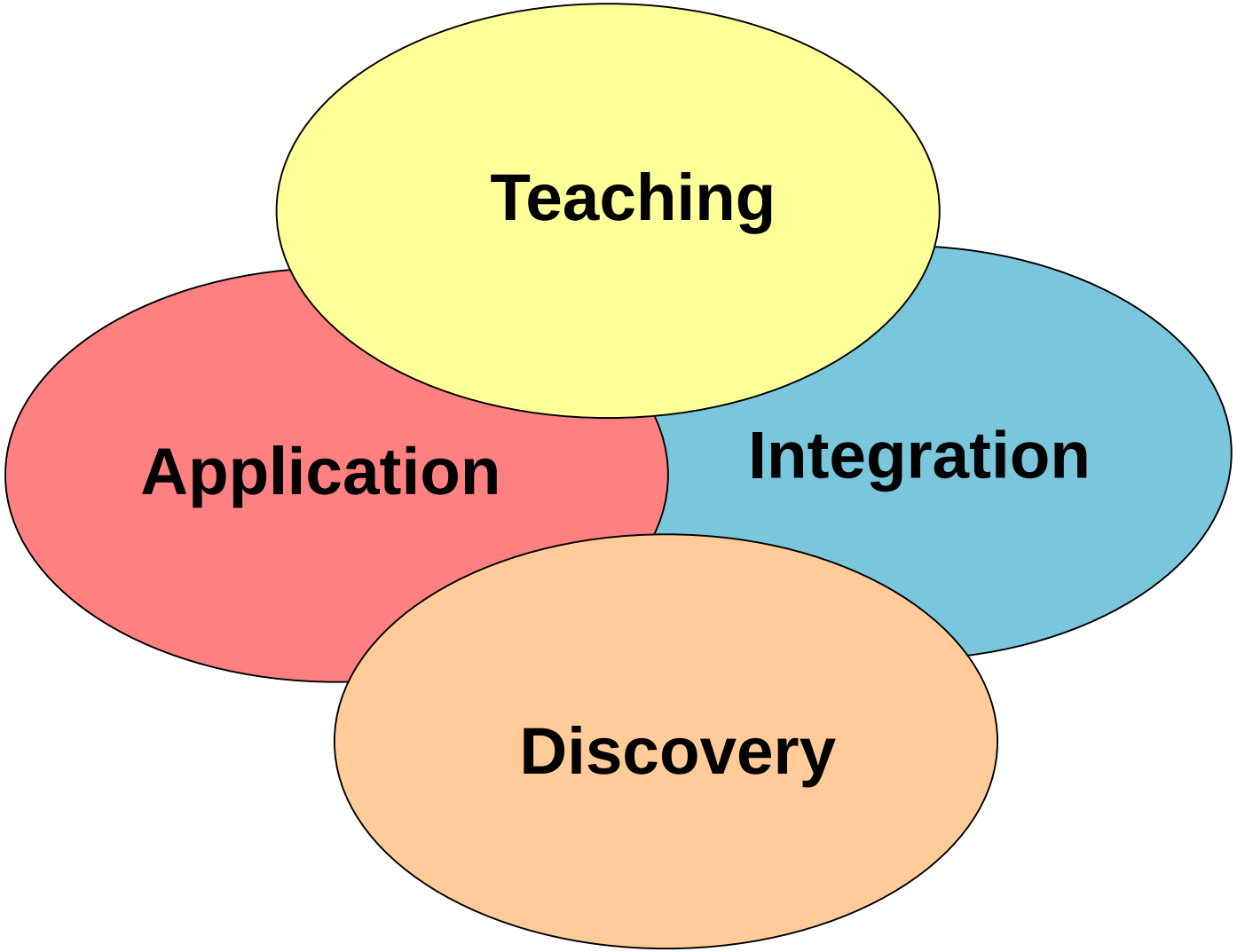
The Rise of the Scholarship of Teaching and Learning

Against this backdrop Ernest Boyer wrote his seminal work on *Scholarship Reconsidered: Priorities of the Professoriate.*

concerned that….

- different facets of scholarship were seemingly undervalued
- the function of a ‘scholar’ had become viewed as conducting and publishing research such that research came first followed by teaching.
- He attempted to ‘define’ or ‘redefine’ scholarship - articulating the full range of activities that professors (academics) engage in.

Scholarship: Boyer's Perspective



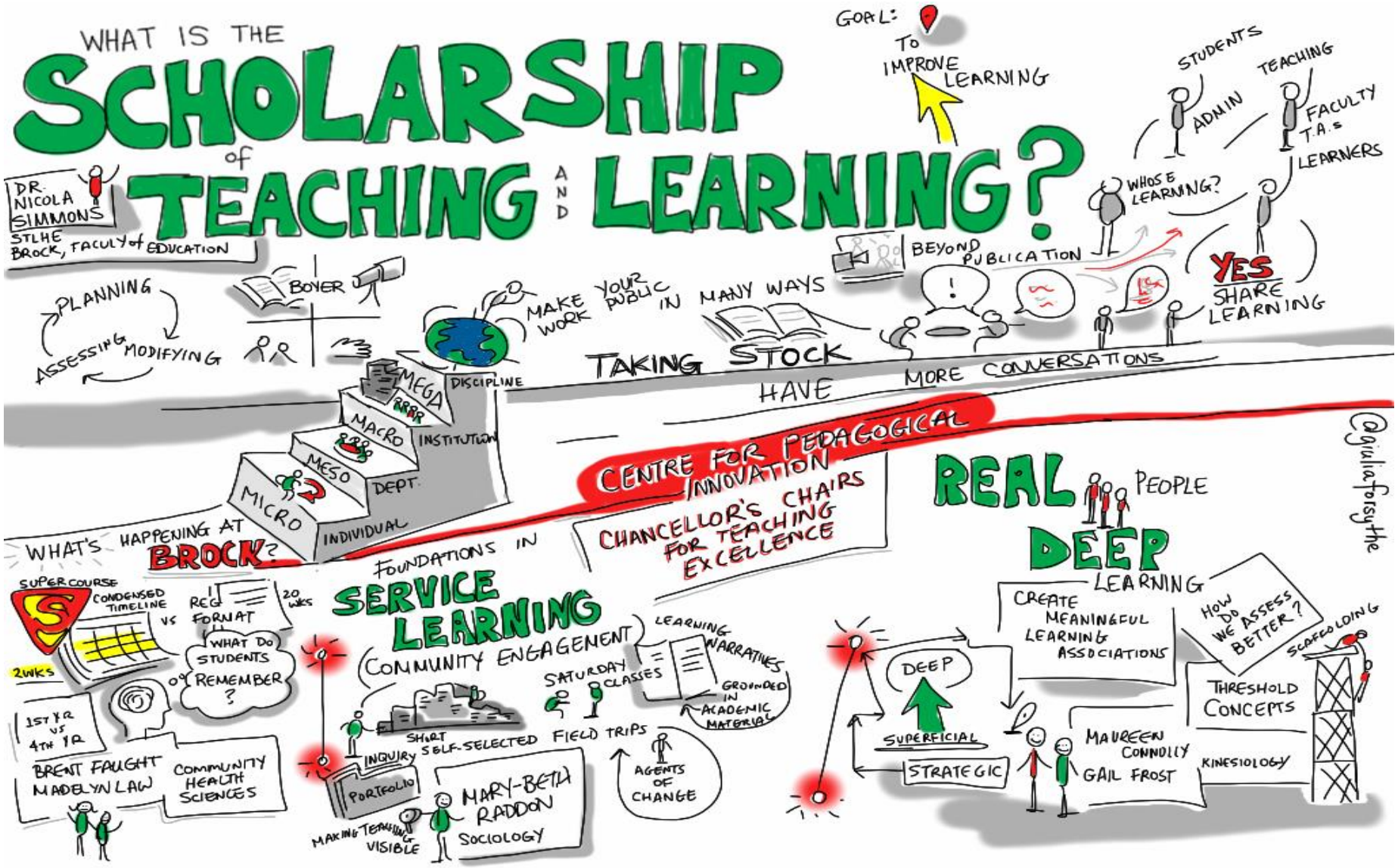
However, as Boyer states…

“…let’s also candidly acknowledge that the degree to which this push for better education is achieved will be determined, in large measure, by the way scholarship is defined and, ultimately rewarded.”

The Scholarship of Teaching and Learning

- SoTL movement sprang out of Boyer's Scholarship (of Teaching) work around 1999.
- What constitutes SoTL?
  - it should be ***public***,
  - susceptible to ***critical review and evaluation***, and
  - accessible for ***exchange and use by other members of one's scholarly community***."
- Not the same as excellent teaching

Brew, 1999; Clegg, 2008; Darling, 2003; Draeger & Price, 2011; Hutchings & Shulman, 1999; Kanuka, 2011; Kreber & Cranton, 2000; Richlin, 2001; Trigwell & Shale, 2004).



Nicola Simmons, Brock University, Canada

Critics of SoTL

“I will urge ISSoTL to pay more attention to contextual variables in its research… so that readers can be aware of the potentially limited range of applicability of the findings, and to be more cautious about claiming generalisability…

I will also urge the adoption of a more theoretically based approach to pedagogic research, because theory tends to enable wider generalisability than does atheoretical data...”

Graham Gibbs, ISSoTL 2010

The problem with Educational Research

Is the purpose of educational research to advance the field of **educational research** or to advance **educational practice**? (Entwistle, 2019)

Perkins (2003) argues that while researchers may believe that conclusions based on their explanatory theories will provide useful guidelines for improving educational practice, such a theory is

> ‘really a very abstract principle at great remove from practical action; [it is] less of a map than a maze, [having] too many steps, too many concepts, [and being] hard to remember, hard to use. The advice is not lean, pointed, and energizing enough to focus our efforts well. The language of real change needs **not just explanatory theories**, **or even action theories**, but **good action ‘poetry’ that is simple, memorable, and evocative**’. (pp. 213–214)

Tensions between SoTL and ER

….“whereas educational research has traditionally been the province of faculty in schools or departments of education, or education specialists in some disciplines, the scholarship of teaching and learning invites involvement by faculty across the full spectrum of research specialties and fields”.

Huber & Hutchings (2006, p. 30)

Shulman was accused “of contributing to the bastardization of the field by encouraging faculty members who were never trained to conduct educational or social science research to engage in studies of teaching and learning in their fields.” Shulman, (2011, p. 5)

SoTL “has resulted in work which is low in quality, lacks theorisation and often fails to draw on, or even acknowledge, a substantial existing body of relevant literature on teaching in higher education” Macfarlane (2011, p.128)

“SoTL is anti-intellectual and located in a narrow neoliberalism” Boshier (2009, p.13)

Comparative study of perceptions of ER and SoTL

- Empirical Study
- Interview-based viewpoints
- From new and experienced educational researchers (9) and SoTL scholars (10)

Conducted with colleagues in Lund University, Sweden

Findings

"My main intention is to contribute to knowledge growth. And knowledge advancement, and theory advancement. And, spread that knowledge on as broad a scale as possible." (EdRe4)

"I just want to understand things better. I want to see what explains something and what is the effect of something, so there is a researcher dimension." (EdRe1)

"It will inform my practice. It will inform my own teaching... the beauty of my understanding of SoTL anyway is that you don't need to divide it out by discipline…. I can flip it around and use it in my context." (SoTLn4)

"the SoTL literature would be aiming to enhance the quality of student learning, or the quality of teaching… There's a more explicit agenda of quality enhancement." (SoTLe5)

"I think that in educational research you should not rush too quickly to the practical improvement of education." (EdRe4)

"In the scholarship of teaching and learning, it's much more focused on the application. […] It should drive practice." (SoTLe4)

Findings

SoTL

- Main aspiration is to change practice
- With immediate effect on student learning and teaching
- Goal is the development of students and teaching practice

ER

- Researchers tend to be the initial beneficiaries
- ER community’s aspirations appear to be more confirmatory of their own collective knowledge base
- The immediacy of the impact on practice is somewhat secondary or implicit

Can SoTL and ER be reconciled?

Entwistle (2019) distinguishes between explanatory theories and action theories.

- **Educational researchers** may be focusing on **explanatory theories** where the indirect object is to add to the literature and to validate models in certified areas
- **SoTL proponents** may be focusing on **action theories**, where the indirect object is the improvement of student learning

(Larsson, Mårtensson, Price and Roxå, in press)

So how can SoTL and ER work together to impact teaching and learning with technology?

An Example from Kingston University

SoTL Principles

- Clear Goals
- Adequate Preparation
- Appropriate Methods
- Significant Results
- Effective Presentation
- Reflective Critique (Glassick et al., 1997 p.36)

Clear goals – what did we want to achieve?

- **Consistency** – students should always be able to find relevant information and find it in the same place
- **Coherency** – learning designs should reflect current research on good practice and the institutional policies and initiatives
- **Transparency** – students should be clear on expectations and assessment criteria in order to learn more effectively
- **Accessibility** – all materials should be accessible to students regardless of their particular situation

Preparation – a position paper for approval

- Vision for Technology Enhanced Learning
- Technology Enhanced Learning Defined
- VLE Aims
- Learning Design Principles

http://www.thebluediamondgallery.com/handwriting/v/vision.html

Reverse engineering research for practice

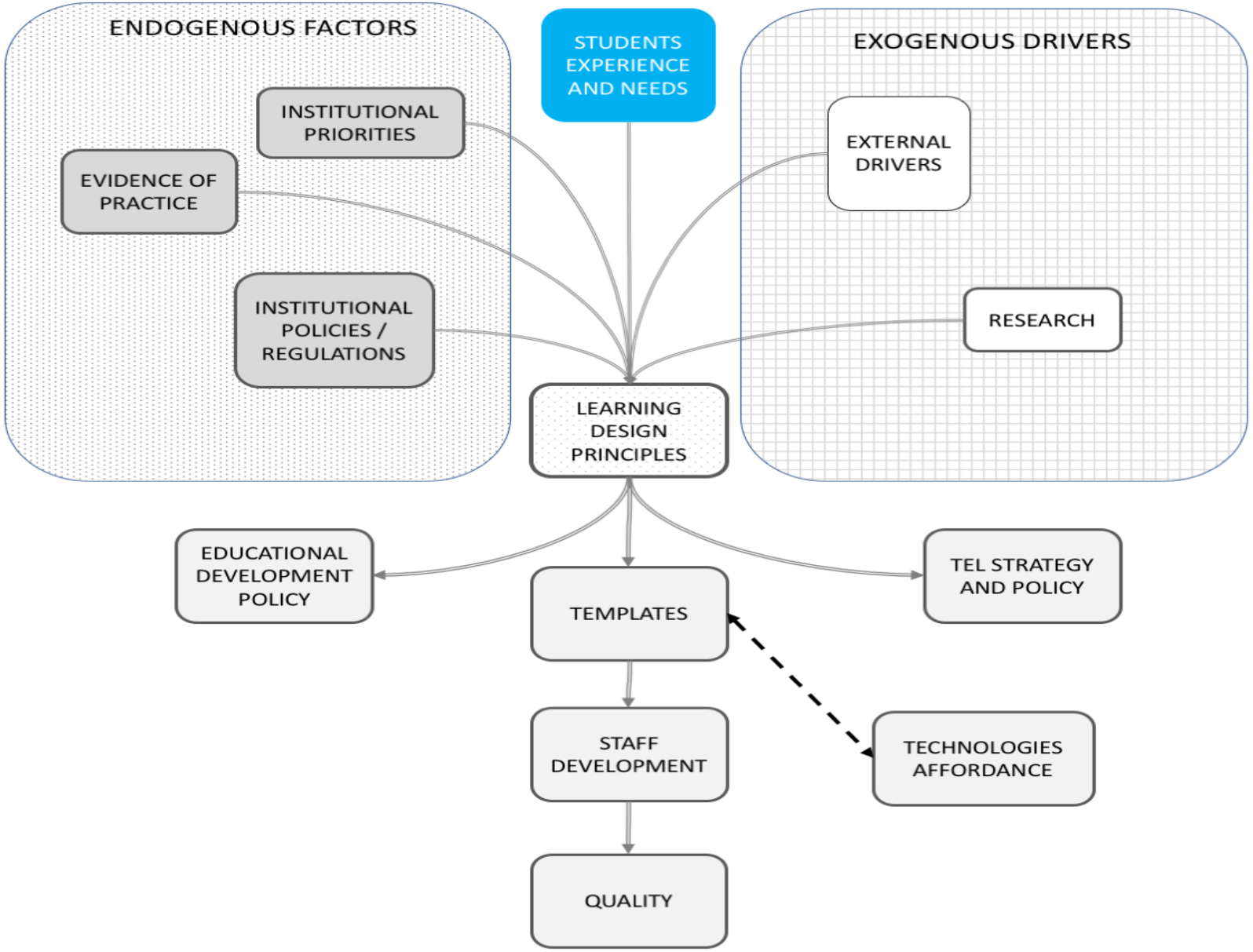
The challenge

- Disciplinary academics have difficulty in putting T&L research back into practice – big job to train them in this
- Sometimes they don't know how to apply institutional policies to innovations

Building on the research

- Synthesized the research and institutional policies into learning design principles (linked with Strategy, UKPSF, UDL, EDI, EADTU, University Strategic Objectives)
- Developed the design principles into guidance
- Developed the guidance into templates that academics could populate
- Developed pedagogical pointers to help students know what to do

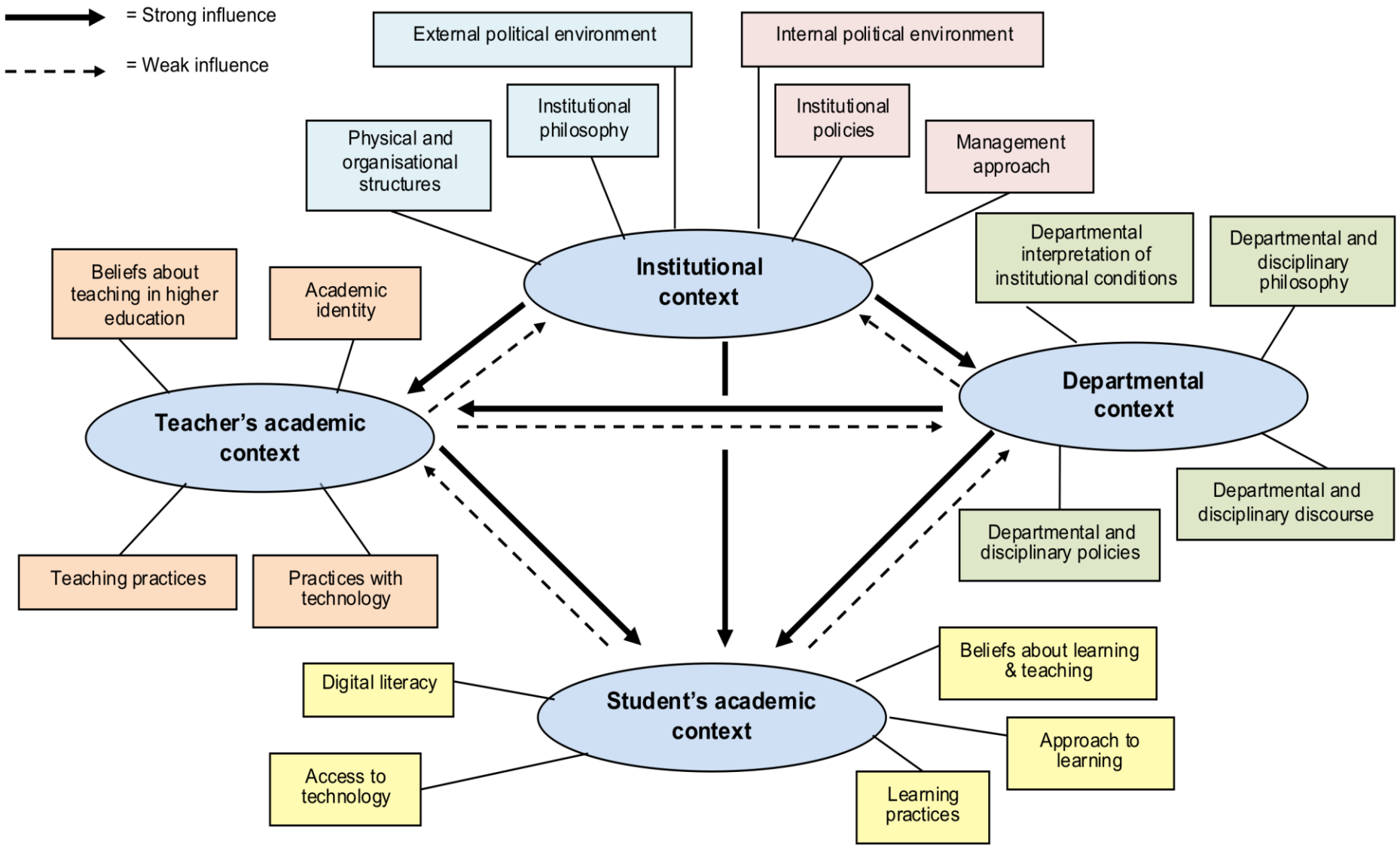
SoTL as an actionable framework



The Impact

- Students reported higher levels of satisfaction and pleasure learning in the new VLE
- NSS scores rose in Overall Satisfaction and Assessment and Organization of Materials
- Kingston rose in the Guardian University League Table rankings, from 81 to 48 in two years

Transformation - adopting a holistic approach



(Kirkwood and Price, 2016)

Back to the future…

- Design learning that enables students to develop key skills for the future.…
- Challenge conventional thinking about ‘how’ to create learning environments – fit for the future
- Adopt a SoTL approach and incorporate relevant research, so we are focused on real and tangible changes to teaching and learning
- Provide staff development focused on effective teaching and learning with technology

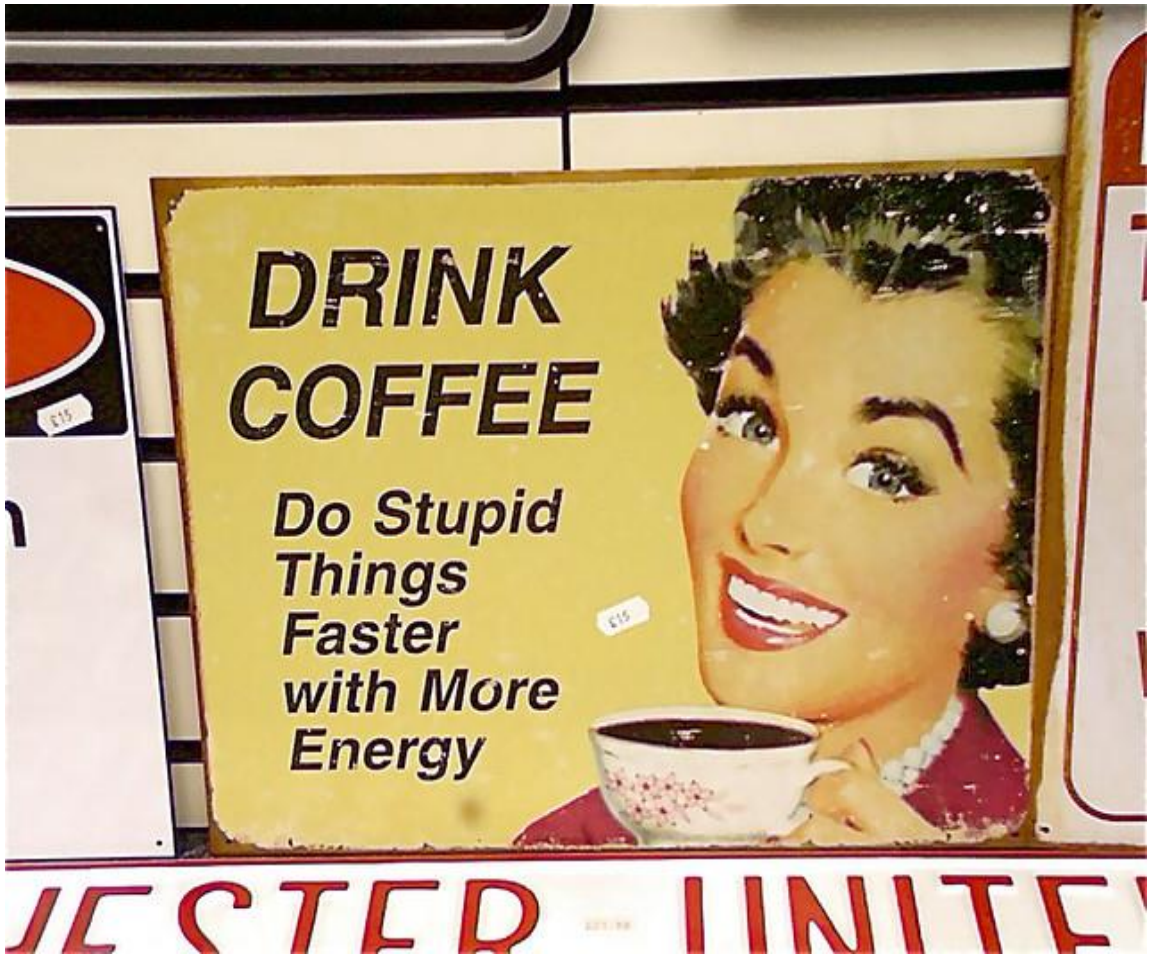
Change the discourse about the value of higher education

Beliefs about TEL?

Doing the same old thing – but faster?

Doing things better?

Or doing better things?



The difficult lies not in the new ideas but in escaping from the old ones.

(John Maynard Keynes)

Thank you for listening

Professor Linda Price
e: Linda@price-home.com
t: +44 (0)7809 142523
s: mlindaprice