Forestry Education in Australia: People change, does education?

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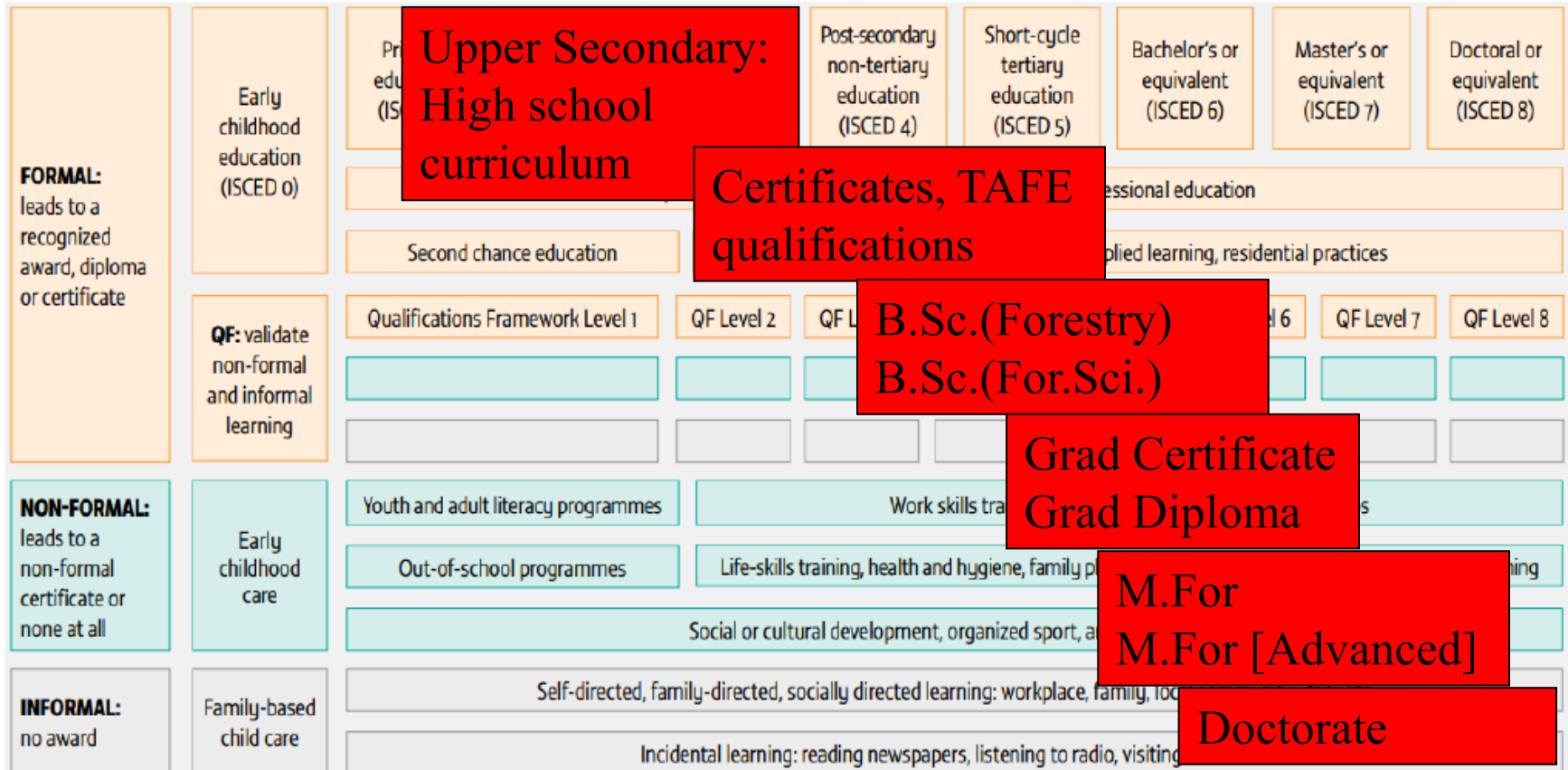Cris.Brack@anu.edu.au

Value of education

	Individual/family	Community/society
Monetary	Higher probability of employment Greater productivity Higher earnings Reduced poverty	Higher productivity More rapid economic growth Poverty reduction Long-run development
Nonmonetary	Better health Improved education and health of children/family Greater resilience and adaptability More engaged citizenship Better choices Greater life satisfaction	Increased social mobility Better-functioning institutions/service delivery Higher levels of civic engagement Greater social cohesion Reduced negative externalities

Source: World Bank 2018, Table 1.1

Not just one level of education

The image shows an education levels framework chart (UNESCO 2016, Figure 1.1) with the following structure:

Rows (left side categories):
- **FORMAL:** leads to a recognized award, diploma or certificate
- **NON-FORMAL:** leads to a non-formal certificate or none at all
- **INFORMAL:** no award

Columns across the top (ISCED levels):
- Early childhood education (ISCED 0)
- Primary education (ISCED 1)
- Upper Secondary
- Post-secondary non-tertiary education (ISCED 4)
- Short-cycle tertiary education (ISCED 5)
- Bachelor's or equivalent (ISCED 6)
- Master's or equivalent (ISCED 7)
- Doctoral or equivalent (ISCED 8)

Formal education rows include: Second chance education; professional education; applied learning, residential practices

Qualifications Framework Level 1, QF Level 2, QF Level 3... QF Level 6, QF Level 7, QF Level 8

QF: validate non-formal and informal learning

Non-formal rows: Youth and adult literacy programmes; Work skills training; Out-of-school programmes; Life-skills training, health and hygiene, family planning; Social or cultural development, organized sport

Informal (Family-based child care): Self-directed, family-directed, socially directed learning: workplace, family, local; Incidental learning: reading newspapers, listening to radio, visiting...

Red overlay labels:
- Upper Secondary: High school curriculum
- Certificates, TAFE qualifications
- B.Sc.(Forestry) B.Sc.(For.Sci.)
- Grad Certificate Grad Diploma
- M.For M.For [Advanced]
- Doctorate

But even more: Great Expectations

Education is recognized as the fundamental tool to promote the transformative behavioral change necessary to address contemporary environmental and sustainability challenges… (D. Yao Mfor)

But there are some who disagree

The aim of public education is not to spread enlightenment at all; it is simply to reduce as many individuals as possible to the same safe level, to breed a standard citizenry, to put down dissent and originality (H.L. Mencken)

Anyway, numerous studies have shown that knowledge alone is poorly correlated with pro-environmental behaviour (e.g. Carmi et al. 2015, Heeren et al. 2016).

…"we want is more learning in schools and less activism in schools"

Sometimes problem is too "big"

- (P.Nykeil M.For) The management of wicked problems requires new forms of thinking that escape the limitations of the conventional Western Scientific Tradition…

- …Several new forms of thinking have evolved over the past few decades, with different strengths, but only **transdisciplinary thinking** goes far enough to address wicked problems…

  - develop critical worldview, encompassing critical thinking, multiple perspectives, complexity and reflexivity.

  - communicate that worldview to others, including complexity and stakeholder engagement

  - accept and integrate multiple worldviews to generate new insights

Multiple views

- **Student : Academic : Student : Academic…**
  - **Master : Apprentice : Master : Apprentice…**
- **Individual : society:…**
  - **Gender**
  - **Age**
- **Nation to Nation**
- **Dynamic**

From and to students

- New technologies to teach about/with/for:
  - Information Technology, fibre based industry, energy, industry, geographic information systems (GIS), cheap micro-sensors
- Increasing demand for vocational and just-in-time education;
- "Edutainment"
- Internationalization
- Call for greener economies

Nation to Nation – world views

FINANCIAL REVIEW

— Exclusive

Education exports are worth $28 billion a year, nearly 20pc more than we thought

Tim Dodd
Education Editor

Oct 8, 2017 — 6.30pm

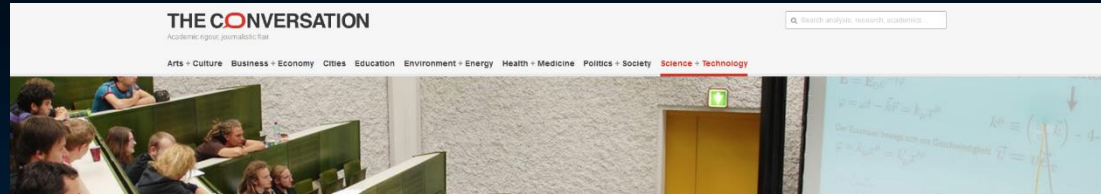Australia's third largest export, education, is worth far more than we thought.

After a major data adjustment the Australian Bureau of Statistics (ABS) has pushed what was already a record $23.6 billion in annual education exports in 2016-17 up to $28 billion, a 19 per cent increase in value.

The revision also affects ABS data on tourism exports, which have been revised from $18 billion to $21.6 billion in 2016-17. As a result the total value of service exports in 2016-17 has leapt from $73.5 billion to $81.6 billion.

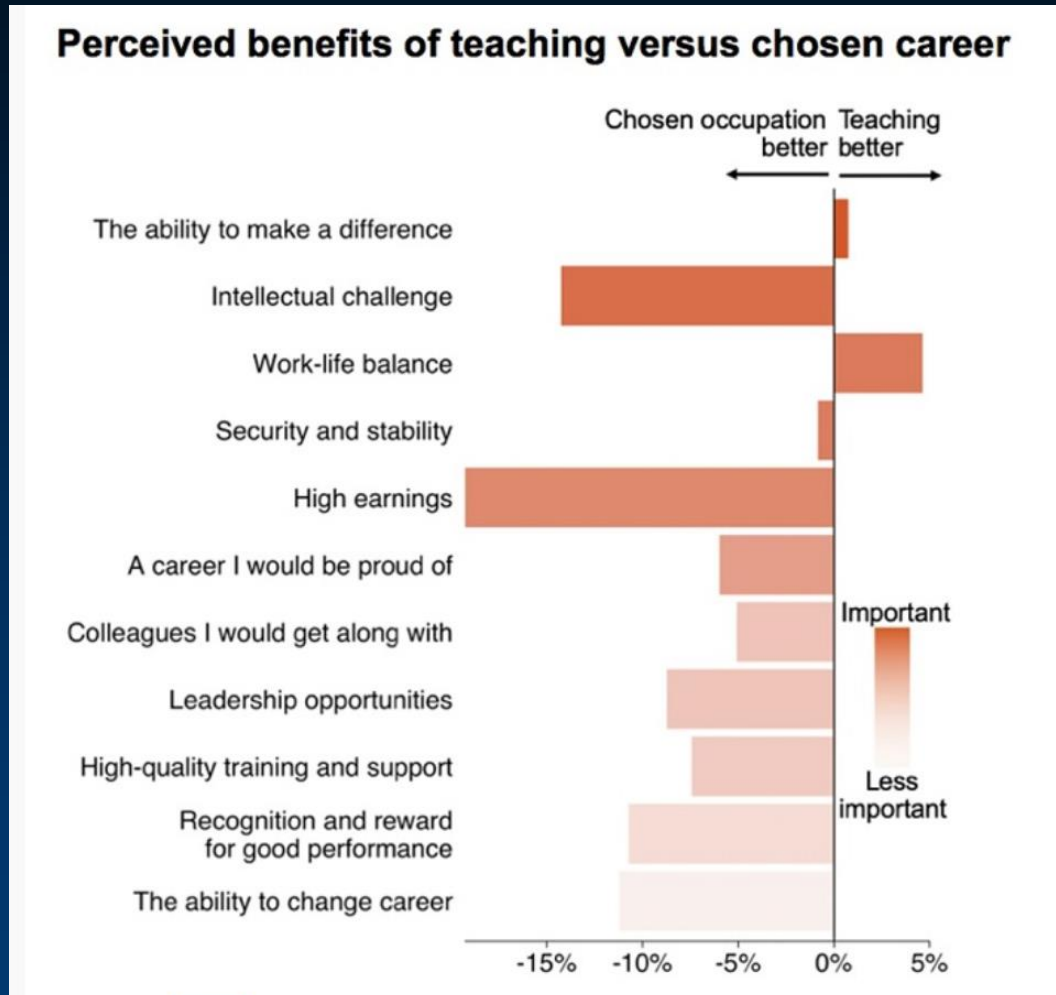# Pedagogy evolves

- **Readers -> Textbooks -> Overhead Projectors and slides ->** Powerpoints   Always something happening;
Internet enabled -> Sim   Always dynamic and colorful
Enhanced Reality ->

- **Individuals -> Teams ->**   I came to your lectures… yours were fun
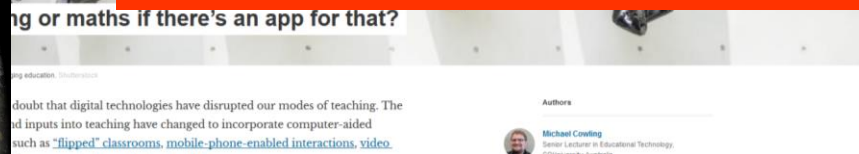
Here's how to get our top students to become ~~teachers~~ foresters

Perceived benefits of teaching versus chosen career

https://www.abc.net.au/news/2019-08-26/why-high-achieving-students-reject-teaching-careers/11447172

Brack, IFA 2019.

12

So, where to…

- **The solution to every important problem we have contains a spot where a tree should be (The Brack Mantra)**

- **Our education system must help us find that spot; and ensure the trees are there; and contribute throughout their entire life-cycle**

- **We need more pro-forestry citizens/students**

- **It'll take more than one type of learning institution or world view to make that happen.**