

# **Mr Gradgrind meets Jude the Obscure – what use is higher education to the economy?**

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# Inflection points

- Those points in time in which complexity, volatility and speed of change coincide to produce an unanticipated development

# Inflection points in university-level HE

- Massification (scale, cost, capacity, investment, quality)
- Information revolution (Wikipedia, MySpace, YouTube, Podcasts)
- Shanghai League Table (global competition for standing, reputation and national prestige)
- Tyranny of 'world class' (Scotland's world class HE sector)
- The private for-profit sector (USA, India, Malaysia etc.)

# Gradgrind

- “Now, what I want is, Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life...Stick to Facts, Sir!”

(Charles Dickens, *Hard Times*, 1854)

- But...which facts?

# Scottish higher education facts

- 5 million population
- 14 universities, 2 colleges of higher education, 2 art colleges, 1 conservatoire, 1 agricultural college, Open University
- 272,000 HE students (136,000 FTE)
- 46% higher education participation rate
- Saturation level?
- Competition?
- Leitch: 29%-40% graduate workforce
- Scotland: 16%-40% graduate workforce?

# The economic impact of HE

- Spend £1.919m
- Direct jobs 34,149
- Service sector exports (international students) £381m
- Student numbers 140,000 FTE
- 9% of UK population
- Scottish HE got 15% of patents against 10.5% for UK HE
- Increased productivity by graduates
- Key issue: effective allocation of resource

# Cost of universities

- Cost of one world-class research-intensive comprehensive university \$2bn
- Total Scottish spend on university education \$2bn
- SFC corporate plan: world-class HE system
- State investment in teaching and research:
  - ancient universities 3:2
  - 60s universities: 10:3
  - Post-92 universities: 20:1
  - Sector rates: 4:1
- No real change in ratios since 1993 but the world has changed
- Long-term stable investment is required to capitalise on research

(dti *Science and Innovation* 2006)

# The economic value of outputs and outcomes

- Graduates
  - Research
  - Knowledge transfer
  - Consultancy
  - Cultural engagement
  - Community outreach
  - Competitive workforce
  - Educated, productive population
  - Economic development
- outputs
- Educational outcomes
- 
- A diagram illustrating the economic value of outputs and outcomes. On the left, a list of nine items is presented. A large curly brace on the right side of the list groups the first six items under the label 'outputs'. A second, smaller curly brace on the right side groups the last three items under the label 'Educational outcomes'. The background features a faint, stylized image of a pen nib writing on a document with mathematical formulas.

# The Scottish economic context

- End of Scotland's primary and secondary industries
- End of mass manufacturing
- Limited rural economy
- Service-based economy
- EU expansion
- K-society (Leitch Review)
- India, China expansion
- GATS
- Ageing, shrinking population
- Post-screwdriver
- Post-inward investment
- Missing million

# Gradgrind: some more facts on Scotland

- Business start-up and sustainability/survivability low
- Business investment in R&D  $\frac{2}{3}$  UK and  $\frac{1}{3}$  US levels
- Entrepreneurial activity below UK average
- GDP growth lower than UK
- The share of value added from knowledge-intensive industries has not expanded and the gap with the UK has widened
- Scotland is the only part of the UK in which businesses of scale as a proportion of the total business stock have not increased since 1999

*(Towards a Smart, Successful Scotland, December 2006)*

# The skills agenda (Leitch Review, HM Treasury)

- Output per hour:
  - 30% higher in France
  - 10% higher in Germany
  - 10% higher in USA
- Demand for 'economically valuable' skills
- Business, not education sector, decides what is taught and delivered
- Need for platform skills, skills hierarchy, world-class high skills
- Skills not defined
- Skills sometimes used interchangeably with education outcomes
- No consideration of the nature of change in skillset in a changing economic context
- Gradgrind: "what I want is facts, facts alone are wanted in life"
- Leitch: "what I want is skills, skills alone are wanted in life"

# Oxford Review of Economic Policy

- Skills account for  $\frac{1}{5}$  –  $\frac{1}{8}$  of relative productivity
- Productivity associated mostly with physical capital and R&D
- Long term under-investment in R&D in Scotland
- Bulk of UK companies cluster in sectors of no or low R&D interest
- We could match international competitiveness on skills but never increase productivity
- And what about management?

# Role of universities

- Sir Peter Swinnerton-Dyer
- Sir William Stewart
- Sir Keith O’Nions
- Treasury
- Derek Bok
- Frank Rhodes

# What sort of university?

- “With the right long-term decisions, Britain can lead in some of the fastest growing and highest value added sectors – city and business services, education and health, creative and science based industries – once small, now one third of our economy and exports, soon a much higher share of jobs and wealth”

(Gordon Brown March 2006 in *dti Science and Innovation 2006*)

- “There is a compelling case for a significant increase in the number of funded places for postgraduate taught students at Masters...level. Scotland has only 8 per cent of the UK’s postgraduate taught students despite a 12 per cent share of the UK taught student population. This imbalance should be redressed to enable Scotland to compete on the basis of added value and innovation as recommended in the Cox Review of Creativity in Business”

(Universities Scotland 2007)

# Impact of HE in the regional economy - Abertay: new disciplines and applications

- World's first Masters in Software Engineering for Computer Games
- Europe's first Mechatronics degree
- Scotland's first:
  - Microsystems degree
  - Biotechnology degree
  - Masters in Bioinformatics
  - Computer Games Technology degree
  - Computer Arts degree
  - Coaching and Sport degree
  - Honours Nursing degrees (science-based: FT/PT)
- Only university in the UK to be accredited for both Computer Games and Computer Arts by Skillset

# Impact on regional economic development

- Highly employable graduates
  - Biotechnology
  - Software
  - Tourism/food
  - Electronics
  - Business
- Development of new industrial base for Dundee (Digital Media 2500 employees, 100m turnover, 350 businesses)
- Research centres of national importance (creative industries, environment and new business development)
- Dare to be Digital
- Add Knowledge – a new NCR?
- NCsoft
- French tax breaks

# Graduate skills

New pedagogy/new types of skills/new SME sector/new economies

- Confident thinkers
- Flexible collaborators
- Determined creators
- Challenging complexity
- Driving change
- Interdisciplinary working
- We have created an environment embracing student business, interdisciplinary research, UG/PG teaching, and University and other businesses
- Waterloo University, Canada/Republic Polytechnic, Singapore

# And the competition...

- “by 2020, India will have 200 million graduates and 500 million technicians”
- “If you keep doing the things you always did, then you keep on getting the things you always got”

(C.K. Prahalad, Distinguished University Professor of Corporate Strategy, University of Michigan, advising the President of India on the future of HE in India)

# National Knowledge Commission of India recommendations

- The creation of 1150 additional Indian universities by 2015 to match the authorisation of 1250 new universities in China in the last 3 years
- These universities should be more appropriately scaled and nimble, in other words, smaller, responsive to change and easier to manage

(India National Knowledge Commission, 12 January 2007)

# The questions

- Funding, funding, funding
- Research intensive vs. economically focused universities (the new economy)
- Fees (Sykes)
- Taxes
- Time to think about the nature of universities in the 21<sup>st</sup> century, the outputs we want and appropriate investment strategies

# Jude the Obscure

- “Moreover, he perceived that at best only copying, patching and imitating went on here; which he fancied to be owing to some temporary and local cause. He did not at that time see that medievalism was as dead as a fern-leaf in a lump of coal; that other developments were shaping in the world around him; in which Gothic architecture and its associations had no place”

- “He that will not apply new remedies must expect new evils: for time is the greatest innovator”

Francis Bacon (1561-1626)