Funding of Engineering Teaching in UK Universities

Prof Helen Atkinson FREng
Head of Mechanics of Materials
University of Leicester

Background

- Increasing pressure on finances
- How much does it really cost to teach an engineering undergraduate (well)?
- Physics and Chemistry reviews already in public domain

Review by Royal Society of Chemistry (Jan 2006)

- Based on 8 Depts. with range of RAE scores
- Transparent Approach to Costing (TRAC) methodology
- Publicly funded teaching
- Non-publicly funded teaching
- Publicly funded research
- Non-publicly funded research (industry)

Key findings of RSC review

- All 8 depts. in deficit in 2002-3
- Deficits under all headings
- Deficits major contributing factor in closures/threats of closure
- 80% chemistry income from publicly funded teaching and research. Therefore, (they argue) chemistry peculiarly sensitive to extent that public funding formulae adequately reflect full costs of delivery
- Chemistry expensive subject to teach (fume cupboards)/lab. Supervision
- 'Not clear these high relative costs fully reflected in current formula for funding of teaching used by HEFCE'

Other findings of RSC review

- High space per FTE academic staff (physics using more international/central facilities)
- Chemistry (like other disciplines heavily dependent on Research Council funding) suffering from failure to fund at FEC level
- Industry not paying FEC of its research

RSC review contd.

- -Growth makes position worse
- +Variable fees may help
- +HEFCE review of teaching funding (will the relativities change?)
- +FEC by research councils
- +Increase in Funding Council research grants
- Note: 5* is not sufficient to avoid an overall deficit

IOP review (April 2006)

- 10 depts. Same methodology
- All depts. showing a deficit (16-45% of income)
- 'Average deficit on publicly funded teaching….a significant uplift in HEFCE grant would be required.'
- 'Need to identify what scope there might be for improving financial position within constraints that flow from IOP recognition'
- 'In 2003-4, physics not in as poor a position as chemistry'
- Age and condition of labs such that in medium term will need major investment

EPC Position

- EPC working group on 'costs and funding'
- EPC and ETB set up a joint group (co-chaired by myself and John Morton) to commission a study of the funding of teaching of engineering
- Not feasible to distinguish between different branches of engineering
- We represent the whole university sector and the whole of the UK

Consultants' Study

- JM Consulting (experts on the HEFCE methodology)
- Four 'typical' institutions (would have liked to do more!) representing the whole range from research intensive to teaching intensive
- None are 'outliers' in terms of costs

Methodology

- Face-to-face not questionnaire
- TRAC and TRAC (T)* in comparison with management accounting information and HEFCE allowance (£6134)
- Note that TRAC 'locks in' historic underfunding

*TRAC(T) excludes: costs of international students, short courses, non-subject related factors eg. widening participation, foundation degrees, London weighting)

Questions on:-

- Department's activities, structure, strategy and disciplines
- Size and nature of taught provision
- Institutional view of department and its sustainability
- Costs and funding
- Methods of managing within the funding envelope
- What resources are required to provide high quality provision over a number of years i.e. the sustainability of teaching?
- Balance of UK/EU and international
- Effect of the fee increase

Outcome

- Full Report published Feb ’08
- http://www.epc.ac.uk/publications/meetings/presentations.php?id=26
- Sent to ministers, HEFCE, institutions et al.

Observed Trends

- Less hands-on, more virtual
- Reduction in space allocation
- Growth in overseas student numbers
- Higher student-to-staff ratios
- Increasing teaching hours with less time for staff development
- More intensive use of equipment and facilities
- Less frequent equipment updating
- Insufficient time to develop new programmes

Potential Effects on Students

- Restricted innovation
- Increasing project group sizes
- Reduction in research activity which informs teaching
- Challenges for new lecturers as they try to develop their teaching and research capabilities whilst holding down increasing teaching load
- Run-down of equipment

Key Findings

- Sector mean Subject-FACTS is £6967 (cf. allowance of £6134…14% increase needed to match sector mean)
- New level of variable fee income not able to offset cost inflation
- Essentially, overseas students are cross-subsidising the home provision
- For long term sustainability, Funding Council needs to address the imbalance between the resources for, and needs of, engineering teaching in HE

EPC View

- Engineering particularly vulnerable because of its dependence on overseas students (bring hundreds of £M into UK economy every year)
- If the overseas market falters, the home provision is at risk.
- To maintain the overseas (and indeed home) recruitment we need to maintain quality
- We not only need to address the deficit (and maintain current quality) but also innovate to 'Educate Engineers for the 21st Century'

In summary:

- If we only consider HEFCE funded teaching, a significant number of departments are running at a deficit
- HEFCE needs to address this.