Measures, metrics and methods: New approaches to capturing the impact of higher education

OECD IMHE international conference
Globally competitive, Locally engaged
Valencia September 2007

Ursula Kelly
University of Strathclyde

Context – Why measure?

• Increasing emphasis on contribution of higher education institutions to regional and national economies
• Driven by changing nature of global economy – development of 'knowledge economy'
• Desire to fully exploit the knowledge possessed by higher education institutions for the good of wider society
• Desire to see return on public investment
• Desire to have indicators for resource allocation purposes

UK desire for metrics

• Move towards metrics development relating to HE driven primarily by government
  – For resource allocation
  – For evidence of return on investment
  – General evaluation of efficiency and effectiveness
• Current measures not seen to be fit for purpose;
  – Because the readily available data focussed mainly on narrow and limited aspects of HEI activity - e.g. patents and licensing, no of ‘spin-off companies’ created
  – Because they do not capture links between interventions and desired outcomes ( e.g. increase in national competitiveness resulting from funding support for HEI – Business interaction)
• But are the right things being measured?

Terms, Definitions and Concepts

• ‘Third Task’
• ‘Third Stream’
• ‘Knowledge Transfer’
• Do they mean the same thing or different things?
• Based on assumption that Teaching and Research are ‘first and second’ and the ‘third task’ of external engagement can be separated from these
• ‘Knowledge transfer’ also has many different definitions and interpretations
What do we want to measure?

Comments from the 2006 ESRC Networks on HEIs and regional economies

• “What are the impacts? What do we want to measure? What is the impact of knowledge transfer on wealth generation and business?” UNITE Network

• “Despite the changing role of universities and the heightened pressure to engage with regional and local economies, appropriate metrics are lacking...Research metrics, such as patents and citation impacts, do not tell us much about the quality and value of these impacts...” The Embedded University Network

• “Lastly, there is a clear gap in the collection of many of the metrics that would be of use in further application of these studies especially at the regional level and the city-region level. In part this is due to a lack of full understanding of what metrics might be of use, in part due to the availability of patent and spillover data and partly to a lack of underlying theory within the area...” HERE Network

Terms, Definitions, Concepts

• Our work focuses on the role of the Higher Education Institution (HEI) and the capabilities of the HEI not ‘Higher Education’ in general

• We are also therefore focussed on developing ways to quantify the outputs of HEIs i.e what the HEIs actually produce

• Current difficulty with metrics development is the focus on outcomes

• Only metrics based on OUTPUTS can give meaningful performance indicators for HEIs

Outputs and Outcomes

Inputs: e.g. Staff time, IT support, space

<table>
<thead>
<tr>
<th>HEI Activities</th>
<th>HEI Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. organisation of all resources to enable lecture series Mathematics 101 to be delivered</td>
<td>e.g. Eight x one hour lectures of Mathematics 101 delivered</td>
<td>e.g. Student knowledgeable in mathematical principles</td>
</tr>
</tbody>
</table>

Other factors e.g. student willingness to attend lecture series

Other factors e.g. student ability to understand material (student absorptive capacity)

• Outputs are within the control of the HEI

Their outputs may contribute to outcomes

But outcomes also rely on other factors

Knowledge Transmission is an output of an HEI but Knowledge Transfer is an outcome, requiring the active involvement of other parties and ability to absorb the knowledge transmitted. Hence an HEI cannot be measured on its success in knowledge transfer as this is beyond its boundaries.

Towards the estimation of the economic value of the outputs of Scottish higher education institutions

• Initial pilot case study work 2004
• Methodology development report 2005 (available from: http://www.strath.ac.uk/projects/economicrole)

• Current pilot project (Completion date end October 2007) with application of methodology to 3 areas of activity:
  – cultural outreach
  – community outreach,
  – public policy advisory work

• Seeks to quantify and show how these areas of external engagement can be valued
### Cultural Outreach - SOME EXAMPLES

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Measurable</th>
<th>Possible Measures in natural Units</th>
<th>Possible ACCESSIBLE data Sources</th>
<th>Is this a free market price?</th>
<th>Possible Free Market price comparison</th>
<th>Rate Known?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallery Exhibitions</td>
<td>Yes</td>
<td>Number of Exhibits/Number of attendees</td>
<td>Gallery Records</td>
<td>no</td>
<td>no</td>
<td>Variable E3 - E14</td>
</tr>
<tr>
<td>Workshops</td>
<td>Yes</td>
<td>Number of Workshops/Number of Participants</td>
<td>Gallery Records</td>
<td>sometimes</td>
<td>no</td>
<td>Variable E20 per day per person</td>
</tr>
<tr>
<td>Ramshorn Theatre Performances</td>
<td>Yes</td>
<td>No of performances/number of participants</td>
<td>Theatre Records</td>
<td>yes</td>
<td>don’t know</td>
<td>Variable E7 - E20</td>
</tr>
<tr>
<td>Artistic Courses Provided</td>
<td>Yes</td>
<td>number provided/duration/ participants</td>
<td>Theatre Records</td>
<td>no</td>
<td>no</td>
<td>Use Price as is or A Commercial Equivalent if this exists</td>
</tr>
<tr>
<td>Tours undertaken</td>
<td>Yes</td>
<td>number/longevity/number</td>
<td>Theatre Records</td>
<td>yes</td>
<td>don’t know</td>
<td>Use Price as is or A Commercial Equivalent if this exists</td>
</tr>
<tr>
<td>Chamber Choir</td>
<td>Yes</td>
<td>No of performances/number of attendees</td>
<td>Director of Music</td>
<td>Some times</td>
<td>don’t know</td>
<td>At minimum Equal to payment of Musicians as per the ISM (1). Use price of commercial performance x Number attending if higher</td>
</tr>
</tbody>
</table>

### Performance Type

<table>
<thead>
<tr>
<th>Performance Type</th>
<th>Description</th>
<th>How many</th>
<th>average length</th>
<th>average attendance</th>
<th>Any charge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber Choir</td>
<td>Lunchtime recitals</td>
<td>usually one recital per month</td>
<td>45 minutes</td>
<td>20 - 25 people</td>
<td>none</td>
</tr>
<tr>
<td>Theatre Group</td>
<td>Evening perfs</td>
<td>6 per year</td>
<td>1 hour</td>
<td>20 people</td>
<td>£3 at door</td>
</tr>
<tr>
<td>2005/6 academic year perfs</td>
<td>Much ado about nothing</td>
<td>8 nights</td>
<td>2 hours</td>
<td>80 - 100</td>
<td>£10/5 conc</td>
</tr>
<tr>
<td>Anna Karenina</td>
<td>10 days</td>
<td>2 hours 15 mins</td>
<td>80 - 100</td>
<td>£15/3 conc</td>
<td></td>
</tr>
<tr>
<td>AN OTHER ETC</td>
<td>8 nights</td>
<td>1 hour 45 mins</td>
<td>60 - 70</td>
<td>£15/7 conc</td>
<td></td>
</tr>
</tbody>
</table>

### Permanent Exhibitions

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>NUMBER/OPENING LENGTH</th>
<th>As NO OF VISITORS</th>
<th>Estimated length of stay</th>
<th>Any change?</th>
<th>How much?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunter Man, Medic &amp; Collector</td>
<td>100/day over all</td>
<td>None</td>
<td>2 hour stay on any (Over all exhibits)</td>
<td>None</td>
<td>NA</td>
</tr>
<tr>
<td>The World of Dinosaurs</td>
<td>100/day over all</td>
<td>None</td>
<td>2 hour stay on any (Over all exhibits)</td>
<td>None</td>
<td>NA</td>
</tr>
<tr>
<td>AN OTHER Exhibition</td>
<td>100/day over all</td>
<td>None</td>
<td>2 hour stay on any (Over all exhibits)</td>
<td>None</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Temporary/Special Exhibitions

<table>
<thead>
<tr>
<th>2005/06 academic year</th>
<th>James Joyce Exhibition</th>
<th>8 weeks</th>
<th>30/day</th>
<th>45 mins</th>
<th>None</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN OTHER Exhibition</td>
<td>8 weeks</td>
<td>50/day</td>
<td>30 mins</td>
<td>Donation asked</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>AN OTHER Exhibition</td>
<td>3 days</td>
<td>1 hour</td>
<td>None</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other eg Degree Shows</td>
<td>Architecture</td>
<td>N/A year</td>
<td>1 open 3 days</td>
<td>15/day</td>
<td>20 mins</td>
<td>None</td>
</tr>
</tbody>
</table>

---

**ESRC Impact of HEIs on Regional economies initiative**

http://ewds.strath.ac.uk/impact

“The primary purpose of the initiative is to better understand the key economic and social impacts generated by HEIs in relation to the UK regions of Scotland, Wales, Northern Ireland and the regions of England…” ESRC Network Call


Nine projects selected, all starting in 2007 and lasting 1, 2 and 3 years.
Regional Competitiveness
1. Higher education Institution Knowledge and its impact on Regional Competitiveness (University of Sheffield: 2 Year project Ends May 2009)
2. Impact of Research and Innovation Networks on Regional competitiveness: The Role of HEIs (University of Manchester: 2 Year Project: Ends February 2009)

University- Industry relationships
4. Investigating business-university innovation linkages (Institute of Fiscal Studies and University of Bristol: 1 Year project. Ends April 2008)

STUDENTS AND GRADUATES
5. Students as catalysts of City and Regional Growth (University of Glasgow: 18 month project)
6. The Impact of Economics and Quality of Life on Graduate Flows and Subsequent Innovative Capacity of Cities in the UK (Institute of Employment Studies: 1 Year project)

SOCIAL IMPACT
7. Universities and Community Engagement: Learning with Excluded communities (University of Newcastle: 2 Year project)
8. Higher Education and Regional Transformation: Social and Cultural Perspectives (Open University: 2 year project)

OVERALL
9. The overall impact of HEIs on Regional Economies in the UK (University of Strathclyde: 3 Year project. Ends March 2010)