Do performance indicators measure outcomes of education?

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Introduction: The context

The current focus in higher education on quality, and the current interest in using performance indicators are reflections of the context in which higher education is operating.

That context can be characterised in terms of a period of significant change and adjustment. Universities have been challenged by a series of dilemmas. It has been a period of significantly increased participation in the final year of secondary education leading to increased demand for higher education from school leavers. In parallel there has been an adoption of more flexible entry provisions to address issues of equity and access, leading to increased demand for access to higher education from groups other than school leavers. And the prevailing economic conditions have reduced the availability of alternatives to higher education. They have also changed patterns of demand for courses. The current downturn in demand for Education courses at but one example.

This increase in demand and the resulting increase in higher education places has occurred in an environment of general economic constraints, reducing resources and increasing competition for scarce resources. Partly as a result of these resource constraints, and partly also because of the perceived slowdown of change in universities, there have been persistent and increasing calls for improved efficiency and public accountability in all aspects of higher education.

This has been reflected in pressure for the development of many objective and systematic procedures for the evaluation of universities, and for systematic monitoring of the performance of universities and the higher education system as a whole.

There has been accelerating change toward more formal, routine and quantitative approaches to evaluation of higher education. The focus has been on monitoring performance and productivity to assist institutions to improve their efficiency and accountability.

Some key developments

It is important to acknowledge some of the recent milestones which have influenced the way in which performance indicators are currently viewed.

1. The Review of Efficiency and Effectiveness in Higher Education (CTEC, 1986) marked a significant advance in government pressure for visible progress in establishing systematic mechanisms for performance appraisal of higher education institutions. To that extent, the approach approved has been largely at the discretion of the institution, institutionally, predominantly subjective, confined essentially to single institutions with inadequately defined central data systems giving little basis for comparability.

2. The Discipline Review of Engineering (Williams 1988) which reported in 1988 systematically attempted to define and apply a range of input and performance indicators for higher education institutions, which to some degree covered the major functions of higher education in professional discipline areas.

3. The Green Paper (Commonwealth of Australia 1987) marked a strengthening of government policy on institutional evaluation and performance appraisal. That paper provided in specific terms that institutional performance in its various forms be quantitatively assessed and that this assessment should have some influence on institutional funding. The paper explicitly stated the Government's intention "to fund on output and performance". Importantly, there was an acceptance that performance indicators needed to be acceptable to both institutions and the Government.

The need for performance indicators acceptable to both institutions and the Government points to the likelihood of further demands on the higher education statistical information base. (Commonwealth of Australia 1987, p.42)

4. The AVCC/ACDP Working Party on Performance Indicators was appointed jointly by AVCC and ACDP in response to these proposals in the Green Paper. This joint working party attempted to define what they saw as "a proper context" in which performance indicators should be used.

The joint working party sounded some warnings in those terms to enthusiastically embrace performance indicators:

"Something resembling a Carga Cult terms to have grown up around the notion of performance indicators, so that all manner of powers and vices are ascribed to them and expectations are aroused that by collecting and using them great benefits will miraculously result." (AVCC/ACDP 1989, p.1)

In their report of December 1988, they proposed that "a proper context" for the use of performance indicators be established by a policy agreed by institutions:

- the best manner of assessing performance is by the judgement of knowledgeable and independent people, and that
- an agreed set of indicators will form part of the material available to those conducting the review. (AVCC/ACDP 1988, p.4)

They went on to try to identify a range of possible indicators which would be acceptable to both institutions and the Government. They proposed that in selecting performance indicators among the things that should be kept in mind were:

- indicators should be clearly related to the institution's prime functions and objectives
- indicators should cover as many of the institution's prime functions and objectives as possible
- indicators should form a coherent set
- indicators are of greater significance when considered in groups than singly
- as few indicators as possible should be used
• indicators should be valid, reliable and verifiable
• indicators should be defined and collected in a uniform and agreed fashion
• trends in indicators over time are likely to be more significant than comparisons at a particular point in time

The Government welcomed this initiative and in the White Paper encouraged the development of performance indicators along the lines proposed by the Joint Working Party.

5. The White Paper (Commonwealth of Australia 1988) stated
The Government supports the development of a funding system that recognises the quality of teaching and research and the achievement of mutually agreed goals. It intends to develop funding arrangements that take into account a range of output, quality and performance measures.

It also stated
As soon as practicable, indicators which are agreed to be useful and appropriate will be added to the Commonwealth’s general funding arrangements for higher education.

It also gave some indication of the scope of performance indicators it had in mind.

The range of indicators to be developed should cover such issues as student demand and course completion rates, quality of teaching and curriculum design, research, staff provision, library resources and other measures of academic staff productivity in important aspects of research, publication, consultancy and other professional services. Indicators of performance against equity goals and measures of organisational efficiency should also be included in this process. (Commonwealth of Australia 1988, p.86)

6. The Trial Evaluation of Performance Indicators in Higher Education (Lennie 1991), funded by DEET, investigated a range of indicators, and recommended definitions of such indicators based on their analysis. In addition, the Research Team recommended, inter alia:
• the collection and analysis of data required to generate the proposed measures, in order to develop reliable performance indicators that would enable people to compare the performance of universities.
• the annual publication of summary data on these indicators, with appropriate explanatory details.
• further research and development of performance indicators in higher education.
• studies on the links between educational input and output measures.

In its report it distinguished:
Indicators of Institutional Context
• Performance Indicators of Teaching and Learning
• Research Performance Indicators - Research and Professional Services Participation and Social Equity Indicators

It recommended that further work needed to be undertaken in the development, piloting, performance and the achievement and comparison of performance of universities should be monitored, named research, and equity and participation.

7. DEET has funded subsequent studies in these areas.

The Higher Education Council report on Higher Education: Achieving Quality (Higher Education Council 1992) recommended a national structure to invite universities to participate in a regular review and audit of their mechanisms for monitoring and improving the quality of their outputs.

8. The Government responded by setting up a Committee for Quality Assurance in Higher Education, with the following Terms of Reference:
provide public advice on the condition of quality in the higher education system. In doing this it may:

1. invite universities to participate in a regular review and audit of their mechanisms for monitoring and improving the quality of their outcomes, and:
   (a) examine portfolio samples by universities showing what they have planned, developed and considered;
   (b) evaluate whether they have assessed the effects of their policies and procedures, including summaries of their own assessments of their performance;
   (c) conduct interviews and visits as appropriate; and
   (d) see existing, nationally-based, data.

2. Recommend direct to the Minister on the allocation of the specially designated funds to universities to recognize achievements demonstrated by the effectiveness of policies and procedures as demonstrated through evaluation of assessment of the quality of their outcomes.

With an annual allocation of $76 million in prospect, institutions found the invitation irresistible. Nothing focuses the mind as much as the prospect of additional funding, and the fear of being excluded from the designated Quality.

The result has been the expenditure of a great amount of effort as institutions attempt to collect data which will convince the constituents that they can demonstrate that their expenditure is also being properly rewarded. There are concerns that various levels of aggregation are appropriate for different performance indicators or whether there may be a dimensional issue.

The University of Melbourne, for example, has concluded that various levels of aggregation are appropriate for different performance indicators if they are to be meaningful. These include:
• institution
• AOU (Australian Universities' Association)
• discipline
• award
• discipline
• Field of Study

For each performance indicator, an appropriate level of aggregation in reporting and data of needs to be determined. There is a fine balance to be struck between the aggregation of data which is not comparable across the groups being aggregated will lead to a reduction in meaning. On the other hand, excessive division of data into minute groupings tends to lead to excessive amounts of data and to data of low reliability because it is based on very small numbers.

The quality of basic data
The set of performance indicators must not focus on a few representative areas, nor should it focus on areas in which data is more readily available in preference to those in which data is relatively difficult to get. Often the latter are the most important. The set of performance indicators may not be equally appropriate in all areas of a university’s operations. It is also important that performance indicators directly measure the performance concerned, and that the infidelity of indirect measurement is minimal.

A related issue arises if an external agency defines the set of performance indicators to be used. This situation has the potential to distort the institution’s functional objectives toward those values and performances set by those externally imposed performance indicators. This is particularly the case if the agency is perceived to be powerful, influential, or likely to reward performance as measured on those indicators.

Purpose: For using performance indicators
It is important that performance indicators be agreed upon by all those involved. The purpose of the performance indicators is so that there is agreement on the purposes for which the indicators are to be used. The indicators should be used for purposes that are for the benefit of an organization, for its own ends, and for the benefit of its stakeholders. The purpose of the performance indicators is to be agreed upon by the organization and its stakeholders.

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