Performance Measurement in Malaysia's Higher Education

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As higher education utilises a considerable proportion of state spending, there is no escaping from close scrutiny on delivery and accountability. In facilitating the management of delivery of strategic outcomes, policies were adopted in ensuring higher education institutions were encouraged to measure performance. The Ministry of Higher Education (MOHE) implemented performance measurement and reporting systems for monitoring and evaluation in assessing the success of reform initiatives. By mid of 2012, public higher education institutions were expected conduct "self assessment and self-monitoring". This paper puts a spotlight on performance measurement in higher education, discusses on the factors that shape performance measurement, the role of performance measurement, the types of indicators in use, and the use and usefulness of performance measurement information.

INTRODUCTION

Higher education in Malaysia is evidently steered towards national interests (Morshidi Sirat 2009). The National Mission and 9th & 10th Malaysia Plans set out the country's vision in transforming Malaysia into a high-income knowledge-based economy by 2020. For higher education, these aspirations were expressed in the National Higher Education Strategic Plan (the Plan) 2007-2020. The Plan consists of three phases, was designed for a concerted reform for excellence in access and equity, research, teaching and learning, internationalisation, lifelong learning, and the management of higher education. With a dwindling budget, higher education institutions in Malaysia are expected find their ways to deliver excellence in meeting those demands with Ministry managing from an 'arm's length', similar to the 'State Supervision Model' (Rosa, Saraiva et al. 2005); and 'moving the public sector from maintenance management to more proactive management' (Ferlie, Pettigrew et al. 1996). Malaysia is progressively shifting from mono-central, traditional, administrator-controlled bureaucracies to poly-central sets of autonomous and management controlled agencies (Morshidi Sirat 2009).

The need to manage public service delivery and to evaluate higher education reform initiatives escalates the importance of education indicators and performance measurement. Higher education institutions across the country are now obliged to manage their business with measures. These measures were derived from strategic objectives cascaded from the Plan. Five years on, most higher education institutions have implemented structured framework to measure performance for both statutory reporting as well as internal management. This paper aims to explore performance measurement practice in Malaysia's higher education. The following sections discuss the role of performance indicators or educational indicators, illustrate the design and types of measures in use, implementation processes, and explore the use and usefulness of performance information.

PERFORMANCE MEASUREMENT IN HIGHER EDUCATION

The discussion on the design and the meaning of educational indicators gained momentum since 1970s[1]. The challenge of dwindling public funds in meeting diverse needs in most countries presses for greater accountability, quality and productivity in higher education, and this circumstance has brought about more pronounced use of performance indicators in higher education, which in turn led to the adoption of accountability reporting systems in most developed nations. Increased competition for public funds and demands for greater accountability[2] were said to be reasons for the use of performance indicators in higher education (see e.g. Lewis, Terumasa et al. 2001; Cave, Hanney et al. 2006; Sorlin 2007; Sukboonyasatit, Thanapaisarn et al. 2011). The major challenge of measuring and demonstrating accountability is troubled by the fact that there is no general consensus on what higher education should achieve and therefore be accountable for (Business-Higher Education Forum 2004; State Higher Education Executive Officers Association 2005).

The need for external reporting (in demonstrating accountability) calls for the establishment of an education information system. On one hand, this development promises more informed decision making; on the other hand raises the concerns for the unintended consequences of careless use (Glass 1970). In addition, the design of a common set of measures in allowing comparisons between institutions within each country (see e.g. the debate for a common set of measures in Japan. Lewis, Terumasa et al. 2001) and international comparisons on higher education as a whole across different countries (OECD 2011) continues to be a challenge.

Gooler (1975) discusses at length on the development and use of educational indicators. He defines education indicators as a set of "statistics that enable interested parties that enable public to know the status of education at a particular moment in timer with respect to some selected variables, to make comparisons in that status over time, and to project future status. Indicators are time-series statistics that permit a study of trends and change in education" (page 11-12). It was indeed a challenge in defining 'what we must know in education' as education continues to expand and transform over the last 50 years. Educational indicators were found to have evolved over time resulting limited standardised data gathered until 1990s

[1] Educational Indicators: Monitoring the State of Education. The 36th Education Testing Service Invitational Conference, New York.

[2] The concept of accountability is defined as the "answerability for performance" Romzek, B. S. (2000). "Dynamics of public accountability in an era of reform." International Review of Administrative Science **66**(1): 21-44.

; or the "obligation to report to others, to explain, to justify, to answer questions about how resources have been used, and to what effect" Trow, M. (1996). "Trusts, markets and accountablity in higher education: A comparative perspective." Higher Education Policy **9**(4): 309-324.

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which means tracking the pace of change was a difficult task and the ensuing international comparisons not always possible (OECD 2011).

PERFORMANCE MEASUREMENT IN MALAYSIA'S HIGHER EDUCATION

The use of indicators in higher education have developed and matured, though trailing behind governments the likes of Canadian or British, Malaysia has over the last six years (since the National Higher Education Strategic Plan 2007-2020 – henceforth 'the Plan'), is seen to be using indicators purposively. The Plan has initiated performance measurement movement within higher education institutions (HEIs) across the country. Similar to the British's introduction of performance indicators in higher education in the 1980's (Cave, Hanney et al. 2006), this evaluation practice stemmed from the push for greater accountability for tax payers' investments (Alexander 2000; Lewis, Terumasa et al. 2001).

From the perspective of the management of higher education, this paper details the exploration into performance measurement in Malaysia's higher education: what must professional educators and policy makers know about education? How would they know if education was successful? What do they do with the information they now have about education? Do educational institutions have the right processes and structure to support gathering of valid and reliable data? It is crucial to appreciate that the above-mentioned concerns brought about the need for differently structured processes and that these concerns were not disjointed but tightly connected and inter-dependent; and that the process of development and use of measures or indicators become apparent as an iterative cycle of learning (Nur Anisah 2009).

What we must know about education?

Gooler (1975) proposes the following three questions in guiding the examination on educational indicators:

1. What must be known about education?
2. What will be done with what is known?
3. How can we gather needed information?

In the search for "what we feel we must know about education" implies the need to design valid, reliable and usable measures. The simplification of 'what education is' into a few quantifiable indicators is not a straightforward process as education is a complex undertaking and to many it is all encompassing, which covers "all avenues of human experience"[3].

In the Malaysian context, what we must know about education would be the outcomes of higher education reforms, whether it has made a difference to the society. For this, a performance measurement system was structured supported by an online reporting system was put in place in 2008.

The seven strategic thrusts in the Plan, conceived based on what was thought to be vital in steering higher education towards national interests, i.e. Malaysia aims to achieve high-income knowledge-based economy by 2020. In 2008, 23 critical agenda projects were engineered to drive higher education institutions across the country to achieve those

[3] Gooler, 1975. The Development and Use of Educational Indicators. Page 14.

strategies. Attainments of higher education were measured via the indicators for each project.

At the ministry, a project management office (PMO) was established in 2008 to monitor and evaluate CAP performance. This office liaises with institutional project management office (iPMO) for performance reporting purposes. Each iPMO functions as a coordinator for implementation at their respective institution. iPMO coordinating data collection for each indicator; monitor performance for review purposes with senior officials in respective institution; and monthly reporting (online). An online system (ePMO at www.psptn.net) was developed to capture data across all 20 public institutions, operating as a platform for performance review using a traffic-light system as colour indicator for target achievements.

A survey (Nur Anisah 2011) reveals that 70% of public higher education institutions[4] have some kind of performance measurement set up in the last 5 years. Chronologically, that occurrence coincides with the launch of the Plan that saw policies adoption in providing a structure in requiring the demonstration of contributions towards the national agenda.

What do we do with what we know, and how do we gather needed data?

One major implication of the need to report on performance of projects and the use of indicators include the expectations on vice chancellors to have a strategic nuance or a strategic mind-set to management process (Nur Anisah and Shukran 2010). Making decisions ought to be 'more thought of (based on facts and figures) rather than 'muddling through'- the true intention of measuring performance. The introduction of indictors aims to facilitate leaders of higher learning institutions to think strategically and to develop the ability to relate major decisions to the bigger picture, particularly when the competitive landscape of higher education is changing (Spanier 2010).

From the same survey, 73% percent of higher education managers declare the use of performance information for improvements, while 64% for longer term planning. However, of these figures, only 48% rated the use of indicators as 'very effective' in supporting improvement efforts and 56% for longer term planning. In an attempt to explain limited effectiveness in the use of indicators in those aspects, the design and deployment of indicators are being examined in the following section.

Design and Deployment

Out of 23 CAPs, 13 were associated with HEIs while the remaining were assigned to the ministry. CAPs performance was monitored, initially using a total of 174 indicators with 89 associated to HEIs in 2008. The number of indicators in-use was substantially reduced by end of 2010 to a total of 107 with 72 associated with HEIs as the system progressively mature (refer Table 1). The KPIs in-use was periodically reviewed by the secretariat for relevance.

[4] A 45% response rate was achieved. N= 70 for a population of 119 consists of both private and public universities, community colleges, polytechnics.

No	Critical Agenda Projects	No of key performance indicators (2008)	No of Key performance indicators (2010)
1	Accelerated Programme for Excellence (APEX- USM) *	27	27
2	Community College *	13	-
3	e-Learning	13	13
4	Research and Development	12	10
5	Learning and Teaching	10	5
6	Private Universities *	10	-
7	Top Business School	10	5
8	Polytechnic Transformation *	10	-
9	Entrepreneurship	7	7
10	Academia	7	7
11	Malaysia Key Result Area* (Education)	7	-
12	Internationalisation	6	6
13	Mybrain15	6	6
14	Lifelong Learning	6	2
15	Quality Assurance*	5	-
16	Holistic Student Development	5	5
17	Leadership	5	4
18	Accessibility and Sustainability*	5	-
19	Centre of Excellence*	4	-
20	Ministry's Delivery System*	3	-
21	Graduate Employability	1	1
22	Governance*	1	-
23	Industry & Academia	1	1
	Total**	**89**	**72**

Table 1: Critical agenda projects and number of indicators
* KPIs of the Ministry; ** Total KPIs associated with HEIs; '-' no available data. Source: www.psptn.net

Types of Measure

Deciding what to measure has not been a straightforward process for many. The secretariat for each CAP conducted series of workshops and roundtable discussions in defining what success means and how it could be measured (Nur Anisah, Shukran et al. 2011). For many CAPs, the indicators were intended to capture quantity. The list of indicators for CAP academia is presented in Table 2 to illustrate this. Some of these measures were closely related while others were of disconnected components.

CAP Academia and KPIs
Number of academics with double appointments
Number of expert-based councils (local or international level) established
Number of joint publications
Number of awards
Number of academics appointed as adjunct professor
Number of academics appointed as consultant (local or international level)
Number of invitations as keynote speakers

Table 2: Critical Agenda Project- Academic and Key Performance Indicators (KPIs)
Note: The objectives of CAP academia were to enhance academic eco-system and to ensure academic scholarly quality.

The selection or design of measures depended heavily on those who were authorised, in this case, the secretariat for each project (CAP). Those with administrative role would generally choose input and output measures while the professional educators would be more interested in the process (how things are done) and outcome-related measures; e.g. for holistic student development, administrators would opt for the number of courses/activities for skills development; and/or the number of certified trainers for student activities; while academics would choose to better understand student experience and how those experience shaped personality, a phenomenon that was not easily quantifiable. A simple "how would you measure that?" would shift the measure focus to something simpler but not necessarily meaningful or useful.

The selection and implementation of measures raises further concerns. Generally, it is always easier to select measures where data most readily available or of those that are easiest to collect rather than those that were most meaningful and relevant to the strategic objectives of the Plan. Some measures were selected because there was a need to deflect attention from more critical issues such as the soaring anxiety about social decay, of which can not be simplified into one or two quantifiable proxy indicator(s) making it a difficult phenomenon to measure in addition to its perplexing nature for any straightforward solutions. The process of selection of measures could also provide opportunities for some to manoeuvre and channel already scarce resources towards selfish agenda that could be detrimental to higher education as a whole.

Performance Review

A reporting structure was created whereby leaders of each institution were asked to present their institutional quarterly performance each year. The intention was to identify and highlight performance issues to the ministry in seeking for more support for improved delivery; e.g. coordinated act among several government agencies.

DISCUSSIONS AND CONCLUSIONS

On 'what we must know about education': The strategic plans for higher education are closely mapped onto the country's plan and economic model. Higher education is one of the main drivers of the envisioned 'high-income knowledge-based economy'. Educational indicators for the period between 2007-2020 were to be designed to measure the achievements of those strategies. The challenge remains on how to design relevant measures. How could we simplified the complexity of education into something quantifiable without losing its substance [of diversity and pluralism (Gooler 1975)]? How would we measure quality of life as an educational outcome? The common correlations were that the higher the educational attainment, the better the job (the higher monthly wage) for graduates. Hence, graduate employability becomes a crucial measure of success of education. This reinforces the observation that education is heavily job-orientated (Withey 1975). Withey (ibid) proposes the need to measure various components of quality of life and to examine how those parts fit into a larger picture than measuring each component in silo (p.39-40). The indicators for Malaysian education reforms were designed based on the strategic objectives of each critical agenda project (CAP). While there was a level of appreciation for the inter-connectivity of different CAPs but there were limited obvious efforts to examine how each CAP fit together as a larger picture, hence the design of measures was at best considered only the outputs of each CAP (Nur Anisah, Shukran et al. 2011). A framework ought to be

adopted by the ministry in guiding the design of indicators for project evaluation. Examples include the British's 3Es: Economy, Efficiency and Effectiveness for evaluating performance in public services (HM Treasury UK, 2005); or the Logic Model for Government Performance Results Act 1993 where "performance indicators be used in measuring or assessing the relevant outputs, service levels, and outcomes of each program activity" (Sec. 115 Performance Plans). The magic wand would be the ability to strike a balance between the use of input, process, output and outcome measure. Evaluation of performance ought to be across the value chain rather than myopically on just one dimension.

On what we do with what we know: How adequate is our present educational information system? Essentially, educational indicators ought to provide information that are useful to decision makers and consumers of education. In Malaysia, an educational information system has been established well before 2007 for institutional statistics and data has been systematically collected since. There were however lack of use of those information to support policy decisions until 2009 when Phase II of the Plan was about to commence in 2011 (Nur Anisah, Shukran et al. 2011). A change in leadership at the ministry also contributed to the change in work practices and processes in managing CAPs and higher education as whole. The Plan (Phase I) brought about some problems such as lack of co-ordination of different policies across public universities and between public and private universities; therefore, Phase II shaped appropriate mechanisms encouraging collaborations between public and private higher education institutions (an observation similar to that of Bouckaert 2004).

On how we use performance information: Malaysia's higher education has progressed and developed particularly at the maturity of Phase I of the Plan. Policies were adopted to ensure processes for effective management and governance were in place and being enforced. In the last 5-6 years, leaders of higher education institutions were made accountable for institutional performance towards the Plan. While a platform for reporting was established, there were concerns on the use of performance information. For example, if the rate of graduate employability for certain courses in higher education was found unfavourable as employers were looking for skills and talents that were not represented by our graduates- we ought to see more coordination among government bodies in developing solutions for addressing issues such as this. This was not seen happening; such disconnects and the lack of coordination mechanisms is found to be common across East Asia (World Bank 2012).

On how we gather needed information: The use of quantitative measures has created a culture of 'feeding-the-beast' with data and reporting. There are multiple reporting platforms higher education institutions were expected submit timely, reliable and valid data; and very often, sets of similar data for different indicators. This has created additional work and another level of stress for administrators. Soon many were defeated by fatigue in their continuous struggle to feed-the-beast in a timely and comprehensive manner. Acerbated by the lack of appreciation for why the Plan and CAPs were developed and implemented, many view data collection as a laborious chore with little value in itself. Hence data manipulation in attempts to present 'green' achievements was common (Nur Anisah, Shukran et al. 2011).

On performance measurement and work practices: Prior to the Plan, there were limited if any, evidence for strategic planning at HEIs. By tradition, HEIs were operated based on top-down requirements and they were not used to having to think for themselves. Without directions, most were 'doing business as usual'. The Plan emphasises, for each institution, the need to develop road-maps - short and medium term visions for core businesses; particularly for teaching and learning, and, research and innovation (Nur Anisah and Shukran 2010).

Educational indicators necessitate institutional commitment towards recognising their performance, the need for improvement, the need for learning and the need for being responsive and adaptive towards change. This was an entirely new practice for higher education in Malaysia. Prior to 2007, performance reporting were basically annual updates of institution statistics such as student enrolment, staff numbers or numbers of graduates. For example, 'percentage of budget utilized' as a statutory required indicator, was measuring spending efficiency rather than effectiveness or value-for-money. Such measures do not provide answers to "what did we achieve by spending public money in higher education and how well was it used" (Layzell 1996).

The Malaysian Research University status was launched under CAP Research and Innovation. The attainment of which promises a remarkable increased in the budget for research. HEIs were driven to shape-up in strengthening research, creativity and innovation. An interesting observation from this intervention was, for most, research efforts were disjointed without a guided business model collaborating pursuits in generating greater value to the institution (Nur Anisah, Shukran et al. 2011). The Plan emphasises on the need to move away from 'doing business as usual' to 'creating value by making a difference'. This reform initiative has started the wave on performance funding, a topic for discussion in another paper perhaps.

One main lesson from these observations: while there was a consensus on the directions and the deliverables of higher education, there must be more robust implementation coordination between the ministry and higher education institutions and among government bodies in working together for the betterment of the society. Without genuine appreciation for the national agenda, the world's best policies supported by well-engineered processes and systems could never deliver the intended outcomes. All the King's horses and all the King's men could not put humpty together again!

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