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Quality Management, Performance Measurement and Indicators in Higher Education Institutions: Between Burden, Inspiration and Innovation

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Abstract

Performance indicators are increasingly used to measure the performance and quality of higher education. The purpose of this article is to discuss their role for reflecting on the challenges faced by high-participation higher education systems, regarding quality of student outcomes, equity of access, societal relevance and financial sustainability. Based on a review of existing international comparable metrics, policy and scholarly literature on higher education performance, the article discusses the strengths and weaknesses of current performance indicators and the perennial tension between the burden of accountability and the inspiration and innovation that may result from the developmental use of performance indicators for improvement. It concludes by summarising some observable results of performance and quality management and reflecting on some possible future trajectories.

Keywords: performance, indicators, quality, challenges, high-participation, higher education

Rationale for performance and quality management in higher education

Higher education brings significant benefits for individuals and society: human capital formation, knowledge creation, and broad economic, social, cultural and environmental development. As a result, higher education is rapidly expanding. Participation and attainment are increasing, the number of higher education institutions is growing and the sector serves a more diverse body of students. In addition, higher education is becoming increasingly global (OECD, 2015).

Given the importance of higher education to our societies, its performance has been of increasing interest to institutions of higher education and its stakeholders, such as students, families, funders, employers and society at large. Performance is a complex construct that includes different perspectives, for example effectiveness or quality (how well it achieves the intended outcomes), efficiency or productivity (how much output it can produce given its resources), economy or cost (how much it costs to resource it) (Cave *et al.*, 1997). In higher education, these perspectives are realised by their contributions to society through teaching and learning, research and scholarship and wider engagement with the world of work and civic affairs.

Quality is a preeminent dimension of performance, which has long been hard to define (Harvey & Green, 1993; Dicker *et al.*, 2019). Casting aside considerations of productivity and cost included in the broad definition of performance above, in this article quality is defined by the extent to which the outputs of higher education from its education, research and engagement functions translate into the intended outcomes, such as learning gain of students, graduate skills, labour market and social outcomes of graduates, knowledge production and innovation in products, processes and society. In the high-participation systems of the developed countries, quality is also increasingly about how equitable access is to higher education, and how equitable the desired

outcomes of higher education are distributed between different groups of society, characterised by gender, age, socio-economic status, ethnicity, indigeneity, disability, or country of origin.

Ideally, performance and quality management contribute to a better understanding of the learning and teaching, research and engagement processes and the factors, internal and external to higher education institutions, that enable or hinder the desired results as regards quality and wider performance. The knowledge obtained from actively managing performance and quality contributes to the development of better and new processes that are monitored and improved in a continuous Sisyphean process.

The challenges of an expanding higher education system

The share of 25- to 34-year-olds with a tertiary degree across the Organisation for Economic Co-operation and Development (OECD) countries has increased from around 1 in 4 in 1999 to almost 1 in 2 in 2019 (OECD, 2020b). High-participation systems of higher education face several challenges regarding quality, equity, relevance, and cost.

Quality of student outcomes

Increased participation means a diversification of the type of students and providers of higher education. Students are no longer a minority of the most select secondary school graduates. In many developed countries, they are the majority of the secondary education graduating cohort, coming from general education tracks but also from vocational education and training and from different socio-economic backgrounds. Many will come to higher education after a period in the labour market, or study and work concurrently, often having alternative credentials to mainstream secondary education. In countries where higher education is an export industry and is provided in world languages, many students will be foreign and the language and cultural setting of

provision not native to them. The modes of delivery of higher education are also changing by the digital transition, now accelerated by the move to digital learning as a consequence of the Covid-19 pandemic.

Associated with increased participation questions are raised about the quality of the student experience, learning gain, learning outcomes, and labour market and social outcomes of graduates. On average, tertiary education graduates have better cognitive skills, have higher participation rates in the labour market, earn more and have better social outcomes compared to the rest of the population (OECD, 2020a). Even before we examine the quality of the outcomes of higher education, the extent of drop-out or timely completion is worrying. Thirty percent of students with a general secondary education do not complete their bachelor within the standard duration of the programme plus three years. This raises to more than 40% among those from vocational secondary education (OECD, 2019b). Dropout is of especial concern among students from under-represented groups (Quinn, 2013). These indicators reflect significant efficiency issues of higher education.

There are also concerns about the quality of the learning outcomes of graduates. Despite graduates, *on average*, having better skills than non-graduates, the percentage of graduates with low literacy and numeracyⁱ is not insignificant in many countries (**Figure 1**).

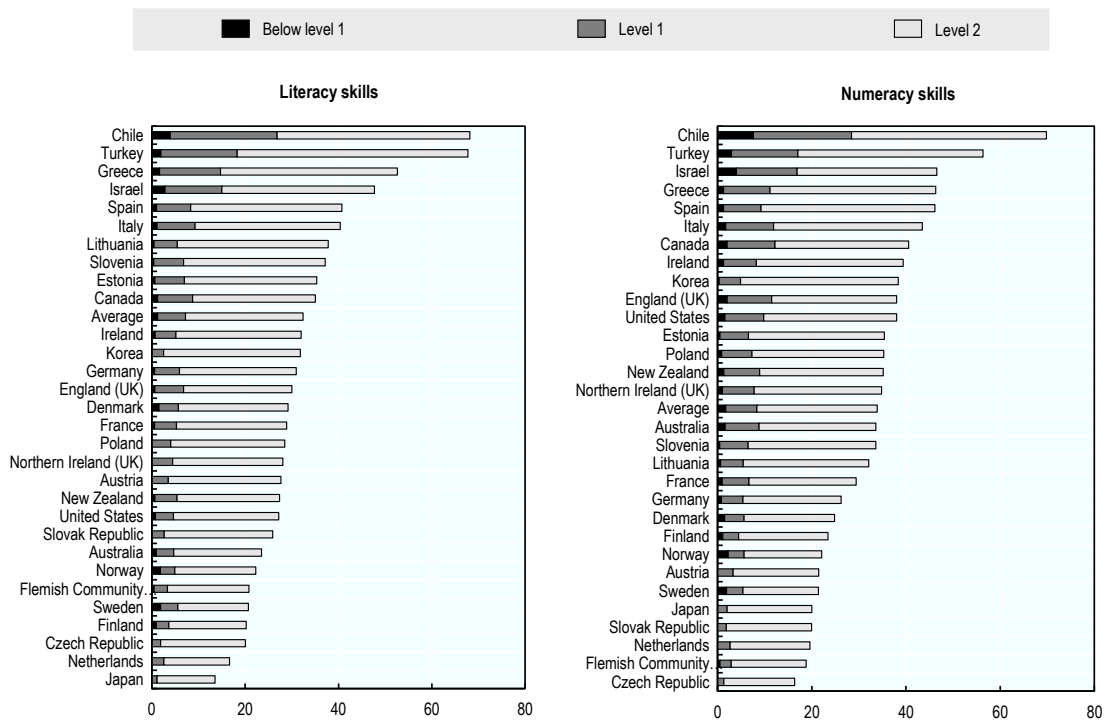


Figure 1. Percentage of higher education graduates with low levels of literacy and numeracy (2012, 2015)

Source: OECD (2019a). Note: Data is from the OECD Survey of Adult Skills, for 25–65 year-olds, collected in 2012 or 2015, depending on the countries.

Equity of access

Despite the dramatic increase in access to higher education, equity challenges remain. The expansion, even in high-participation systems, has not widened access as much as desired. Access rate gaps for 18- to 24-year-olds from more disadvantaged groups remains. The percentage change in the probability of entering a first-degree is significantly lower for those whose parents have not attained higher education (**Figure 2**).

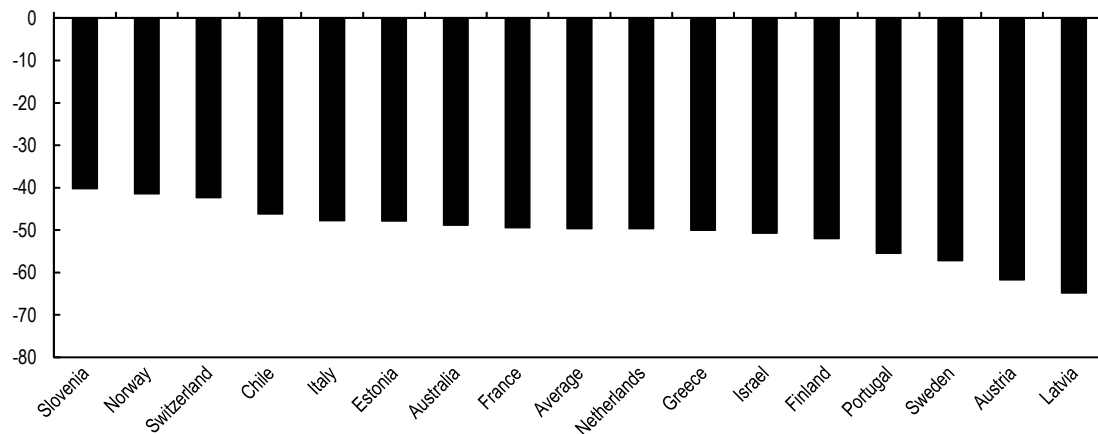


Figure 2. Access rate gaps for 18- to 24-year-olds whose parents did not attain higher education (2015)

Source: OECD (2019a). Note: How to read this figure: in Slovenia, 18-24 year-olds without parents with higher education are about 40% less likely to enter a bachelor's or long first-degree programme than other 18-24 year-olds.

If increased participation resulted in improvements in equity of access, the increasing horizontal diversification by mission orientation (for example, teaching-oriented versus research-oriented institutions) and vertical stratification (as to prestige and selectivity of access) of high-participation systems increasingly raises questions about equity in respect of the outcomes provided by participation in higher education. Not all student experiences of higher education are of the same quality and those from privileged backgrounds are more likely to have a better-quality experience (Marginson, 2016).

Societal relevance

In addition to issues of quality and equity, there are perennial questions about the extent that the objectives of higher education are aligned to the needs of society and how much

it contributes to economic and societal development. The question remains whether higher education engages with the world of work, public affairs and the social sector to solve societal problems. For instance, the share of businesses collaborating on innovation with higher education institutions is not widespread (**Figure 3**). Although, in this regard the most significant impact is probably the transition of higher education graduates to the labour market; still this indicator raises questions about the enduring engagement of higher education with the world of work.

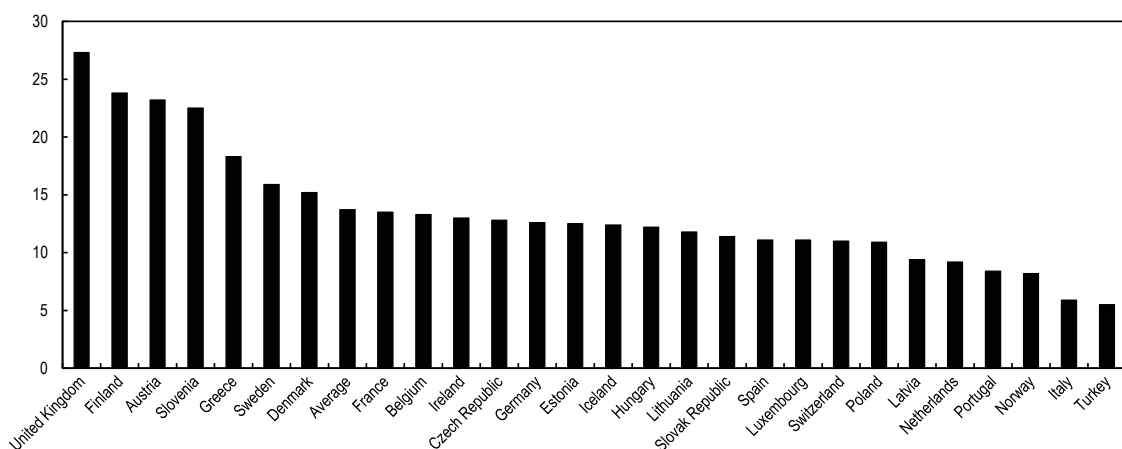


Figure 3. Percentage of enterprises co-operating on innovation with higher education institutions, as a percentage of total enterprises with 10 or more employees (2016)

Source: OECD (2019a)

Financial sustainability

In addition to questions of quality of the student experience and graduate outcomes, equity of access and societal relevance, the costs of higher education are becoming increasingly difficult to manage. The trend for total expenditure on higher education and even *per capita* expenditure is an increasing one. In two decades, total expenditure in higher education doubled and expenditure per student more than tripled across OECD

countries (Figure 4).

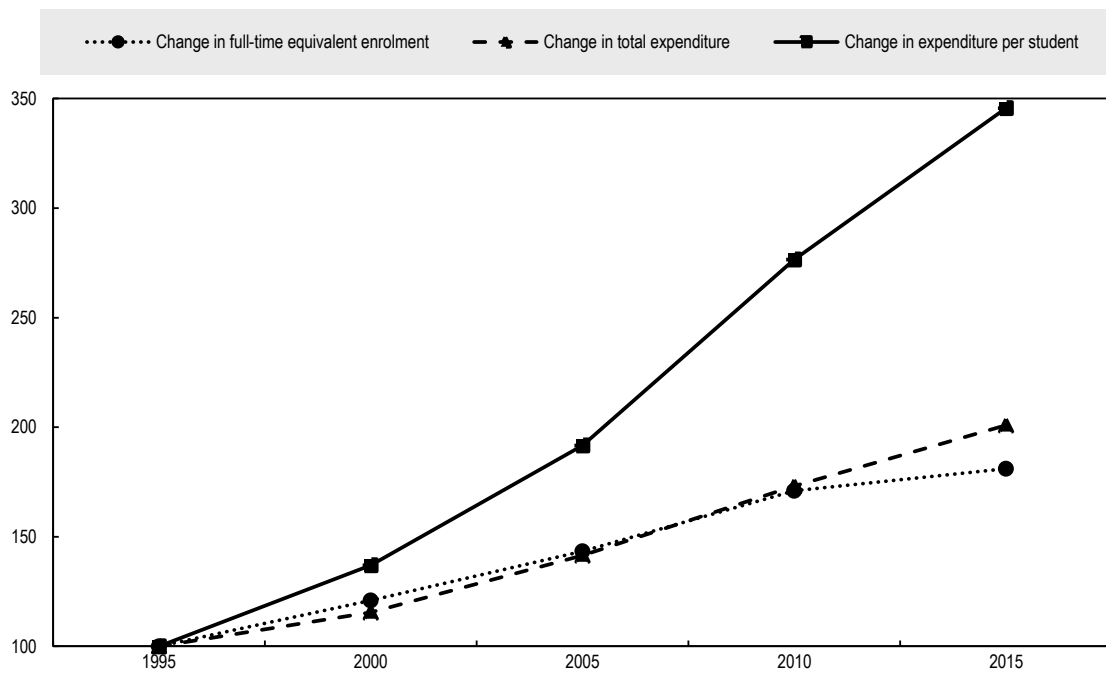


Figure 4. Increase in full-time equivalent enrolment and real expenditure in higher education institutions, 1995–2015

Source: OECD (2020c). Notes: Average value across 13 OECD countries with available data for all years (Chile, the Czech Republic, Finland, Israel, Italy, Mexico, the Netherlands, Norway, Portugal, the Slovak Republic, Spain, Sweden, and the United States). Index 100 for base year 1995.

Higher education must compete with other levels of education, the health system, the welfare system and other demands on public budgets. To sustain the growth, many systems have introduced cost-sharing measures to increase income from families and other third parties. This in turn raises issues of student debt and its impact on equity of access, family formation and inter-generational cohesion. Dependency on third party funding raises issues of conflicts of interest and academic autonomy. The debate on how to make higher education more affordable, without hindering quality, and how to adequately fund institutions and finance its students, is an ongoing concern.

From burden to inspiration and innovation

Doubts on quality of learning and teaching and its outcomes, equity of access, societal relevance and financial sustainability of higher education erode trust in higher education. Accountability mechanisms, such as performance indicators, are increasingly frequent and encompassing external reviews have been developed as an attempt to restore trust (Stensaker & Harvey, 2011) but impose a heavy burden on institutions.

In older elite systems of higher education, institutions had relied on a normative perspective on trust established by the existence of strong academic norms and expectations. Quality of the academic endeavour was a matter of internal concern and mostly dealt with by academic expert judgement, often implicit. In high-participation systems, they increasingly operate as well in a more rationalist-instrumental perspective (Stensaker & Gornitzka, 2009), where trust cannot be established without explicit control. The student, who often pays substantial fees is also a consumer and the ubiquity of higher education makes quality of learning and teaching an increasingly external concern to many other parties, such as government agencies, companies and other organisations, at national, regional (for example, European Union) and even international level (for example, Organisation for Economic Co-operation and Development).

Despite the fact, that quality and performance management at institutional level also feed external reviews for reassuring a myriad of stakeholders, it concurrently represents an important developmental exercise and can be a source of inspiration for improvement. It serves organisational learning in activities of institutional research, staff development, student support and engagement with the community.

Measuring performance

The search for quality and performance in higher education gave rise to different measurement and management procedures (Sarrico, 2010). With time, frameworks tend to evolve, which increasingly integrate the views of different stakeholders, and at different levels of analysis: system, institution and institutional sub-unit. This evolution is also in line with the steering mechanisms observed in higher education: professional, state and market regulation (Clark, 1983; Barnett, 1992; Dill & Beerkens, 2013).

Performance indicators are the backbone of the endeavour of restoring trust. They give a measure of how well higher education is doing in relation to its functions of education, research and engagement. Higher education is a highly intangible professional service where there is co-production of service delivery between providers, the teachers and the recipients, the students. This means that there is simultaneity between production and delivery resulting in high heterogeneity of experience and outcomes of higher education. These characteristics make performance measurement in higher education complex.

Given its social nature, there are no absolute definitions of performance, as would be on the other side of the spectrum of mass-produced manufactured goods. Performance, instead, can only be construed as relative performance to observed possible performance and it is difficult or even impossible to ascertain maximum possible performance. Therefore, monitoring performance via indicators tends to be about trends in time for a unit of analysis, or how that unit compares to the observed performance of other comparable units. The unit of interest can be a student, a member of staff, a higher education institution, or a higher education system.

Performance is the result of the effort of individuals and institutions but also of contextual variables that the units being measured do not control. Disentangling the two

is difficult if not impossible. Ideally, performance indicators would be calculated as the difference between observed performance of the unit under analysis and the expected performance of that unit, given its contextual variables that the unit does not control. These include the wider economic, social and cultural context but also the structure, organisation and governance of the higher education system, as well as the policies that govern it.

Indicators of different dimensions of performance

Not all performance indicators can be interpreted as the more the better, or the less the better. There are likely to be trade-offs, for instance between maximising participation and minimising dropout rates. Conceptually, higher education systems can be equally effective, or have equal quality but have different levels of productivity (or efficiency) at different cost (or economy). The search for increased efficiency and economy ought not to be at the expense of effectiveness. These considerations mean that units must be monitored using integrated sets of performance indicators which measure different dimensions of performance to account for both synergies and trade-offs between them.

Indicators of different stages of performance

In order to get a good understanding of the different dimensions of performance, indicators need to be collected along the different stages of the production process, from input, activity, output and outcomes and for the different functions of higher education.

Outcome indicators, such as learning outcomes and labour market outcomes of graduates give us an understanding of the effectiveness of higher education.

Productivity indicators, such as completion rates, allow us to have an idea of the efficiency of higher education. Expenditure per student and how it varies between

different institutions and systems, gives information on the economy of higher education.

Not everything one would like to assess is easily quantifiable in the core missions of education, research and indicators of third mission. Indicators for continuing education, knowledge exchange, civic and social engagement, are notoriously difficult to come by (Molas-Gallart & Castro-Martínez, 2007). This means that not every aspect of performance will be covered by quantitative indicators and that qualitative indicators and instruments need to be used as well, to have a balanced, comprehensive view of higher education performance.

Procedures for collecting indicators

Data and information for building performance indicators are mostly collected and retrieved from administrative and survey data. Administrative indicators, often from census data, typically provide information on the easiest things to measure, such as expenditures, demographic characteristics of students, staff and graduates. Registry data provide information on enrolments, progression, retention, drop-out and completion rates, time-to-degree and student-staff ratios. Surveys tend to be procedures that are more expensive but often provide qualitative information on the more intangible and often more important aspects of performance, such as the quality of the student experience and outcomes, provided by surveys to students, staff, graduates and employers.

All these surveys can provide important information on student satisfaction and engagement, destinations and labour market and social outcomes of graduates. Increasingly, there are also attempts at measuring skills on entry, skills on exit and learning gain via survey instruments (Weingarten & Hicks, 2018).

Ideally, data should be disaggregated by different groups of interest, such as socioeconomic background, gender, ethnicity, migrant status, indigeneity, disability, geographical origin, full-time versus part-time and age. By tracking cohort student data along their trajectory through education, taking into account access, progression, retention, completion and outcomes, a better view of equity in higher education can be ascertained.

Making sense of performance indicators

Performance indicators can be quantitative in nature, such as number of students and staff. These can be used to compute ratios, such as student-staff ratios that give an indication on the level of resourcing of higher education. Survey instruments also provide qualitative data in the form of categorical variables that allow for monitoring of student satisfaction and engagement, for instance.

Several methods are used to make sense of performance indicators and get an idea of how well higher education is performing. Parametric methods (for example, regression analysis) are often used to determine the difference between observed performance and expected performance in an indicator, controlling for contextual variables (Johnes & Taylor, 1990). Nonparametric methods (such as, data envelopment analysis) define a frontier of best-observed performance and the distance of different units of analysis from the frontier. It can consider aggregate performance on multiple indicators simultaneously and allows for the identification of feasible benchmarks, as well as the establishment of targets for different performance indicators based on observed best performance of a set of units (Johnes, 1992).

Use of performance indicators

Performance indicators can be used to inform government policy, in the design,

implementation and evaluation of legislation and regulation, and they are the basis for performance-based funding of institutions. They are also increasingly used as informational policy levers to influence the behaviour of students, staff and institutions. More importantly, they are used to monitor the performance of institutions that informs a developmental process of improvement.

Performance indicators allow for comparison of metrics within institutions, between departments, and longitudinally across time, as well as between institutions, nationally and even internationally, in an exercise of metric benchmarking. These exercises underpin the construction of rankings, which have emerged as an attempt to make sense of the performance of higher education institutions to a wide audience of stakeholders. In the process, they have exacerbated the burden on institutions and narrowed the performance efforts in a few measurable dimensions to the detriment of others more difficult to measure but nonetheless important (Hazelkorn, 2013). This usage of performance indicators is in tension with their use for improving performance.

Improving performance

Instead of traditional rankings published by the media that feed on publicly available data and reputation surveys, benchmarking based on performance indicators can be the first step for a more productive policy and practice benchmarking (Sarrico & Godonoga, 2021). The comparison of policies and practices allows for peer learning, inspiration for new ideas that stimulates new practices and ultimately innovation in teaching and learning, in scholarship and research as well as in civic and social engagement of institutions to address the challenges still faced by higher education (**Figure 5**).

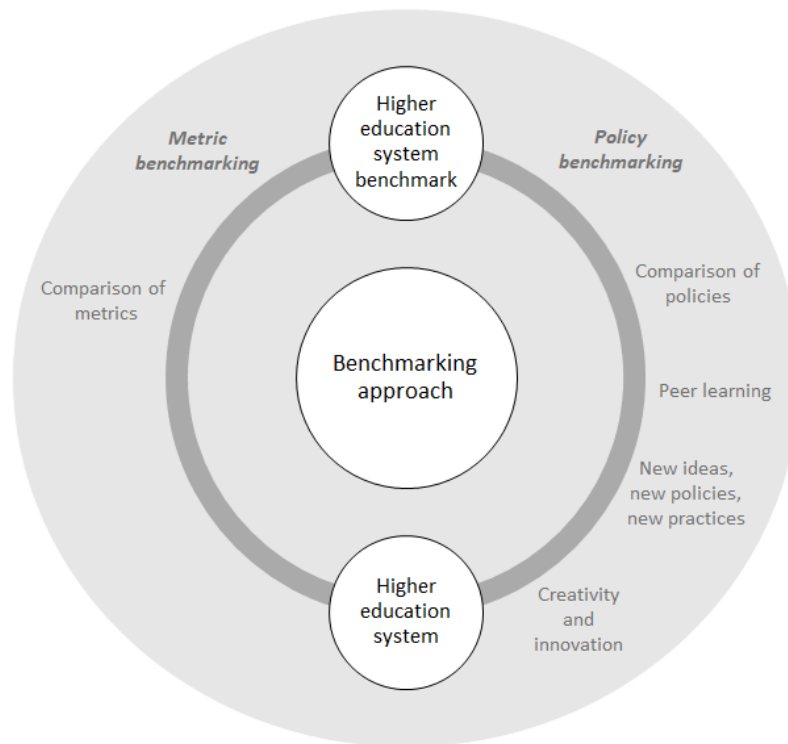


Figure 5. Benchmarking in higher education: source of inspiration and innovation

Towards integration and an ontological approach

The quest for improving performance in higher education mirrors developments across time in performance in the public domain (Talbot, 2011). Managing performance has become more integrated into the apparatus of government and public policy (Bouckaert & Halligan, 2008) and has been the basis for policy reform (Pollitt & Bouckaert, 2017).

Performance measurement in higher education, with time, has encompassed several different measurement and management instruments, within a landscape of coexisting steering mechanisms: professional, state and market regulation (Dill & Beerkens, 2013). Performance models have increasingly included indicators of the different dimensions and stages of performance, described above. However, this integration has often been ad hoc and driven by data availability, rather than being

underpinned by an ontology-based approach to performance measurement, grounded on a conceptual analysis of what higher education systems are (Daraio *et al.*, 2016).

As a consequence, performance management became fragmented, often stuck in a stage of ‘management of performances’ (Bouckaert & Halligan, 2008). More integrative frameworks, at system, institution and unit level are a way of making sense of it all and addressing fragmentation. Examples of these attempts can be seen at national level but also through frameworks developed at the supra-national level, which allow for benchmarking between institutions but also systems. The *European Standards and Guidelines for Quality Assurance* (ENQA, 2015) and *INQAAHE Guidelines of Good Practice* (INQAAHE, 2018) are examples of quality assurance frameworks that attempt to provide integrated approaches for the quality management of institutions and systems. Wider system performance management frameworks have been devised by the World Bank (Marmolejo, 2016) and the OECD (2017), the latter following explicitly an ontological approach.

At institutional level, performance measurement and management are increasingly integrated in wider management and governance arrangements of institutions (Manatos *et al.*, 2017). Institutional quality management has evolved to include the different missions of higher education and different quality principles. It cascades through different organisational levels: from the institutional level to its sub-units, such as faculties, schools, departments and research centres, covering different quality and performance dimensions.

Leiber (2019) offers an ontological approach, based on a general theory of learning and teaching, to arrive at a set of comprehensive indicators to be used by higher education institutions. Along these lines, the Erasmus + project ‘Sustainable Quality Enhancement in Higher Education Learning and Teaching’ (SQELT) offers a

comprehensive set of indicators for learning and teaching and guidelines for institutions to benchmark themselves and learn from the practices of each other (SQELT-PI, 2020; SQELT-GL, 2020). This approach can be deepened by analysing the interweaving of performance indicators and theories and practice of learning and teaching (Leiber, 2021).

What has resulted from the quest for performance in higher education?

One important question is whether performance and quality management in higher education results in more outputs and better outcomes. More graduates and research output are being produced. Yet, does more also mean better?

Research productivity and scientific impact has increased noticeably (May, 1997; King, 2004). However, it is not clear whether the economic and social impact of research has been commensurate. Novel research that explores uncharted territory and that combines untested and distant knowledge fields has higher variance in its citations, reflecting its risky nature, has delayed recognition and publishes in lower impact factor journals (Wang *et al.*, 2017). However, novel research has greater direct, indirect and transdisciplinary impact than mainstream incremental research. The potential bias in standard bibliometric indicators, such as journal impact factors and h-indexes, against novelty is a worry, as these indicators are often used in research assessment exercises and by research funding agencies (Franzoni *et al.*, 2021). Such bias detracts researchers from high risk but potentially high reward work (Wang *et al.*, 2017; Machado, 2021).

Rankings have elevated the reputation pursuit by higher education institutions and the quest for world-class universities, as many countries' policies focus on excellence programmes for a few elite institutions. As rankings are mostly underpinned by research metrics, this has arguably led to a lack of attention to the quality of learning

and teaching and meaningful engagement with the wider world (Sarrico & Godonoga, 2021).

Nevertheless, very poor education provision has become less likely, as study success, as measured by retention, progression, completion and time to degree, has been increasingly addressed by performance-based formulas or performance agreements and the quality of education externally reviewed by dedicated quality assurance agencies. Less is known about the student experience, the learning outcomes and learning gain of graduates. More has been done to investigate labour market outcomes of graduates but it is very difficult to disentangle how they relate to learning outcomes or are simply mostly the result of external labour market forces and demand for graduate labour. The increasing emphasis on science, technology, engineering and mathematics (STEM) to the detriment of arts, humanities and social sciences, raises questions about the wider social outcomes of graduates beyond labour market outcomes.

The lack of good data and indicators on graduate learning and social outcomes risks that the increasing total and *per capita* cost of higher education is disproportionately being channelled to ancillary services and concomitant management structures and facilities. Some university campuses in their grandiosity are akin to new cathedrals, and they may signal rather than actually deliver good quality education. Expenditure in ancillary services in the United States and the United Kingdom, two of the most marketised systems of higher education, where institutions are heavily dependent on tuition fees and on attracting students to fund their activities, are some of the highest across OECD countries. Expenditure in ancillary services represent 14% in the US and 9% in the UK of total expenditure per full-time student, compared to only 4% on average for OECD countries (OECD, 2019b, p. 267). According to Professor Fionn Stevenson, citing statistics from the UK Higher Education Statistics Agency,

“over the past seven years, capital expenditure across the higher education sector has increased by 34.9 per cent, while staff expenditure has been cut by 1.9 per cent” (Stevenson, 2019).

Concerning engagement with society, the emphasis has been on technology transfer and commercialisation of research but there seems to be less activity on wider civic and social engagement, especially in the arts, humanities and social sciences, despite an emerging rhetoric of ‘valorisation’ of higher education activities (Benneworth & Jongbloed, 2010). Although, due to the difficulty of measuring ‘valorisation’, it is difficult to say how activities of engagement are evolving over time. The lack of good measures around higher education’s engagement with society, compounded by a focus on intense scrutiny in other dimensions, such as research prowess and employability of graduates, means that institutions can become civically disengaged, aggravating the concerns with the relevance of higher education.

Performance-based funding, in addition to basic government allocations, is an attempt to ensure that more and better is simultaneously achieved. This has been enacted through ex post reward for good past performance, via external reviews but increasingly as ex ante performance agreements. The latter are an attempt to stop the homogenisation effect of one-size fits all approach and promote diversification of missions among institutions, with a balance between institutional autonomy and external accountability (de Boer *et al.*, 2015).

Another trend that may spur more relevance from higher education is the growing importance, in some countries, of third-party funding in addition to core funding and student fees. Third-party funding comes from continuing education, knowledge and technology transfer, service provision, endowments and other philanthropic donations. Unlike the other two funding streams, it is often earned by

units within the institution and can be limited in time. Nonetheless, it reflects engagement with the public, private and social sector.

What does the future hold? Some possible trajectories

Quality and performance management will endure in higher education, as the tension between long-standing institutional autonomy and accountability to society will if anything increase with the continued expansion of higher education in size and scope.

One possible trajectory for quality and performance management is proposed by Hazelkorn (2016) from self-accountability to societal accountability to societal engagement. This ideal trajectory would address the paradox that accountability exercises undermine the trust that they were designed to inspire (Power, 1997).

Some signs of that trajectory can be observed. The transition to open science calls for changes in the recognition and reward systems for academics and institutions. In the Netherlands, the universities, together with the research agencies, have launched an initiative towards a more balanced assessment and recognition of the research, teaching and service activities (VSNU *et al.*, 2019). Since research is a global enterprise, the movement has sought the collaboration of international partners, such as the European University Association (EUA), to support the development of research assessment frameworks that focus on not only traditional bibliometrics but also future impact. In the United Kingdom, the Research Excellence Framework, now includes narrative case studies of societal impact of research. The United Kingdom has also added the Teaching Excellence Framework and the Knowledge Exchange Framework to its long-standing research assessment, currently the Research Excellence Framework, which in 2014 replaced the Research Assessment Exercise that began in 1986.

The performance measurement bias towards research is, to a limited extent, being addressed. There are also more initiatives to measure learning outcomes and learning gain, despite the fraught route for doing so, in Australia, England, Canada, the USA and across Europe (Barrie *et al.*, 2014; Goff *et al.*, 2015; Weingarten *et al.*, 2015; Wagenaar, 2018).

There is more attention being paid to human resources management and professional development. The initiative of the association of universities and research agencies in the Netherlands is such an example, as well as the renewed Concordat to Support the Career Development of Researchers (Vitae, 2019) and the recently announced European Researchers Competence Framework (European Commission, 2020) to complement the existing European Charter for Researchers and Code of Conduct for the recruitment of researchers, launched in 2005.

The valorisation agenda is taking off, with more emphasis on the social impact of higher education, with more engaged graduates, knowledge exchange, co-creation, and civic and social engagement. One example of that is the Talloires Declaration on the civic roles and social responsibilities of higher education. The Talloires Network of Engaged Universities has called on those that produce global rankings to take civic engagement seriously and to reduce the negative effects of rankings on the public service responsibilities of higher education (Talloires Network, 2014). The *Times Higher Education* (THE) that produces the World University Rankings has responded to some extent by introducing the University Impact Rankings in 2019, which purports to evaluate universities based on their contribution to the Sustainable Development Goals (THE, 2021).

The public discourse to some extent is changing from ‘world-class universities’ to ‘world-class systems’ (Sarrico & Godonoga, 2021). In the Netherlands, a recent

strategic agenda aims to raise the quality of higher education, while at the same time ensuring the diversity of the system and protecting students and staff from the heightened pressure to produce research outputs (Netherlands, 2015). In Norway, a working group was set up to assess whether the higher education system is effectively meeting societal needs and the labour market in the country (Norway, 2018).

Covid-19 may possibly accelerate that by showing the importance of higher education to societies for solving intractable problems, such as the pandemic and all those that it made starker: the growing social divides, climate emergency, the digital transition, migratory flows and demographic imbalances.

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ⁱ There are six proficiency levels for literacy and numeracy (from below Level 1 – the lowest – to Level 5 – the highest). At each level, individuals can successfully complete certain types of tasks. For example, a person who scores at Level 1 in literacy can successfully complete reading tasks that require reading relatively short texts to locate a single piece of information, which is identical to or synonymous with the information given in the question or directive and in which there is little competing information. A person proficient at Level 5 in literacy can perform tasks that involve searching for and integrating information across multiple, dense texts, constructing syntheses of similar and contrasting ideas or points of view, or evaluating evidence and arguments. They can apply and evaluate logical and conceptual models and evaluate the reliability of evidentiary sources and select key information. They are also aware of subtle, rhetorical cues and can make high-level inferences or use specialised background knowledge (OECD, 2016).