

Universities in the New Knowledge Landscape: Tensions, Challenges, Change—An Introduction

Andrea Bonaccorsi · Cinzia Daraio · Aldo Geuna

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Abstract In the last decades of the twentieth century universities in Europe and other OECD countries have undergone a profound transformation. They have evolved from mainly élite institutions for teaching and research to large (public and private) organisations responsible for mass higher education and the production and distribution of new knowledge. Increasingly, new knowledge is produced by universities not only for its own sake but also for potential economic gains.

Keywords Higher education · Universities · Third mission · University-industry relations

It can be said that the social demand placed on universities has increased significantly. These are great expectations of their ability to produce more education, more research, and more direct interaction with society and the economy.

This development has been associated with a rise in the state's financial investment, as well as that of families, business companies and other private organisations. However, in most cases the increase of expenditure in absolute terms has not been matched by larger investments in relative terms, for example

A. Bonaccorsi (✉)

School of Engineering, University of Pisa, Largo Lucio Lazzarino 2, 56126 Pisa, Italy
e-mail: a.bonaccorsi@gmail.com

C. Daraio

Department of Management, CIEG, Centro Studi di Ingegneria Economico-Gestionale,
University of Bologna, Via Umberto Terracini, 28, 40131 Bologna, Italy
e-mail: cinzia.daraio@unibo.it

A. Geuna

Dipartimento di Economia “S. Cogneetti de Martiis”, BRICK, Collegio Carlo Alberto, Grenoble
Ecole de Management, Università di Torino, Via Po 53, 10124 Turin, Italy
e-mail: aldo.geuna@unito.it

expenditures per student. The greater student involvement in higher education, which in some countries has reached 60–80% of the eligible age group, coupled with the growth in science spending have raised expectations about what universities can (or should) deliver. Policymakers are devoting more attention to the workings of universities and have introduced significant institutional changes in several countries (see, for example, the recent reform of the French, German and Italian higher education systems).

The rise in social expectations, however, is often based on a severe underestimation of the tensions that are generated in universities. Offering a larger and more diversified education, also including the adult population, while maintaining adequate research performance, is a challenge. Engaging into direct and systematic relations with industry and society, while producing scientific results that are published in competitive, peer-reviewed journals, is a challenge. University production does not follow a simple production function, whose rates of substitution in inputs and outputs are well known. Furthermore, when universities are asked to comply with an increasing social demand, it is not only their efficiency and productivity which are placed under pressure, but also their institutional identity and role in the society. The increased social demand also means that several, often conflicting, dimensions of performance are considered relevant by different stakeholders.

This situation has stimulated a flurry of studies in the economics of education/higher education studies and in the economics and organisation of science.

We see a few trends in the field, which we believe should be encouraged. First, there is increasing cooperation and overlapping between fields of analysis that have been so far working in isolation, namely higher education studies and science and innovation studies. This reflects the need to consider jointly the traditional outputs of universities, education and research, and to examine the implications of the addition of knowledge transfer as a third mission of the university. Scholars of higher education recognise that in order to understand the research activity of universities they have to rely on specialised theories of scientific production and of science–technology relations. In turn, scholars of innovation increasingly recognise the role of universities as crucial actors, sometimes the most important ones, and must include the educational role alongside research and development into more general models. This cooperation is welcome and should expand to involve also scholars of the economics of education.

Second, there have been pioneering contributions in the production of quantitative data on individual universities. For example, in the European context, the AQUAMETH project demonstrated the feasibility of collecting microdata on 11 countries and to make them comparable, and the EUMIDA project is expected to deliver basic microdata on all tertiary organisations and on research active universities in 29 countries.¹ Over the next few years, we anticipate a new generation of studies, which combine qualitative and policy-related analysis with statistical and econometric work. This will provide a better background to policymaking.

¹ On the AQUAMETH project, see the web page of the PRIME Network of Excellence: www.prime-noe.org; on EUMIDA, see www.eumida.org.

Third, the notion of differentiation is gaining ground in both policy studies and practice.

Universities face a social demand for increase and diversification of their activities. In order to be able to meet social demand without compromising on quality or their institutional missions, universities are adopting different strategic profiles. This differentiation is not based on institutionally embedded diversity (e.g., the distinction between dual and unitary systems of higher education), but rather is the outcome of an intentional strategic positioning of individual universities. The transformation from a homogeneous landscape of institutions to a highly differentiated one needs to be seriously taken into account in any summative performance evaluation of the higher education sector.

The aim of this Special Issue is to contribute to the establishment of universities as a field of study, assuming the institutional level as a focus for analysis.

This Special Issue is organised as follows. The first paper provides a critical assessment of the changing activities and role of university in the production of new knowledge. It is followed by two papers that examine the core element of the new governance of the university: performance measurement and comparison with international league tables. Finally, the last paper reminds us that universities are very different organisations with different specialisations in teaching and research depending on the subject mix offered.

The article by Stan Metcalfe sets the stage providing a broad critical assessment of the recent involvement of universities into direct and intimate relations with industry. While the paper acknowledges the evidence from empirical studies showing the benefit of increased university-industry collaboration, it argues that there is no strong reason for a general policy orientation which would favour the involvement of all universities and all disciplines into such activities. In his words, “suitable policies to enhance the transfer of university developed ideas into commercial practice must be crafted carefully if we are to avoid substantial long run costs to economic progress”. It is known that the issue of university–business relations has been examined in the literature following two opposite views. On the one hand, the notions of entrepreneurial university, academic capitalism, and triple helix relations have emphasised the economic and social gains that can be accrued if universities engage systematically into direct relations with industry, by commercialising knowledge and transferring it more rapidly into the marketplace. On the other hand, several authors have questioned the impact that these practices may have on circulation of knowledge, by raising transaction costs and placing restrictions on publication practices. The paper by Metcalfe offers a balanced view, one that defines with care the conditions under which university–business relations are productive not only for individual actors, but for society as a whole.

The second article of this Special Issue by Sarrico, Rosa, Teixeira and Cardoso develops a critical reflection on the relationship between performance measurement and quality assessment in higher education and research. It provides a critical discussion of performance assessment (both in research and teaching) paying particular attention to the weaknesses of performance indicators. They note that the demands placed upon higher education come from different stakeholders, which are often concerned with different aspects of performance. There is also a tension

between imposed external evaluations (linked to the extrinsic dimension of quality) and the self-evaluation of the pursuit of university objectives (the intrinsic dimension of quality). This is another demonstration of the tensions generated by the raise in expectations, since governments now routinely carry out external evaluations in order to make universities accountable and sometimes to allocate resources according to performance. The authors claim that the two processes of performance evaluation and quality assessment should be kept separate and independent.

An indirect analysis of the impact of performance measurement is offered in the paper by Halffman and Leydesdorff. They study the changes in inequality in the distribution of ISI publications within the top 500 universities in the world, as demonstrated by international league tables. Contrary to common wisdom, they do not find significant increase in overall measures of inequality. Rather, it seems that universities, being subject to external evaluation pressure mainly based on bibliometric indicators and rankings, accept “global conformity to performance standards”. This leads, unexpectedly, to an equalising effect among top universities. Whether there is a price to be paid for this conformity, and how large and acceptable it is, is a matter for debate and further research.

Finally, the paper by Lepori, Baschung and Probst takes advantage of the AQUAMETH data to explore the issue of subject mix. Differences across universities in the mix of disciplines offered to students, and the related departments for research activities, are a major source of heterogeneity. They make comparability between universities largely unreliable. Indicators of scientific and education performance, as well as many economic indicators, such as cost per student, are in fact extremely variable across disciplines. By using data on six European countries, the authors single out specialist and generalist institutions, the latter subdivided into technical schools and institutions specialised in human and social sciences. These distinctions have a deep historical origin and exhibit significant resilience over time. By comparing data on Web of Science publications across disciplines, they show that, since Human and Social Sciences are heavily underrepresented, universities which specialise in such disciplines are penalised in national and international comparisons. Removing data on staff in these disciplines in indicators of scientific productivity greatly improves the position of these universities. Thus, once more, measuring the performance of universities is a highly sophisticated business, which requires good data and advanced statistical methods.

Overall, the four articles of this Special Issue provide a variegated view on the tensions, challenges and changes going on in universities. Using different methodologies and theoretical references they offer a rich picture of the changing university landscape. Rather than presenting a neatly cut view on the current state of universities, these papers raise more questions than they answer. Interestingly, some of the results and conclusions presented are even conflicting. This Special Issue does not represent the end of a research programme. On the contrary, it wants to highlight the need for more and better research.