

New transparency instruments for European higher education: the U-Map and U-Multirank projects

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Abstract

In this paper we briefly introduce the U-Map and U-Multirank projects, both sponsored by the European Commission. The first project is aimed at building a classification of European higher education institutions, while the second tries to capture the relative performance of institutions on their various clusters of activity. Both projects produce instruments for increasing the transparency in an international higher education landscape that consists of a great variety of institutions. Where the U-Map project provides a mapping of institutions, the U-Multirank project aims at a ranking of institutions. We elaborate on the choice of indicators in both projects and the associated problems and pitfalls related to indicators for the respective activity areas and performance dimensions. Finally, we shall illustrate how we communicate the information to the users of U-Map and U-Multirank.

The need for transparency

Although education is a member state responsibility, the European Union has created a role for itself in higher education. Backing up the Bologna process and initiating the Lisbon Agenda has boosted the need for transparency in the overwhelming diversity of higher education institutions (HEIs) and (more) comparable information at the institutional level. There is a wealth of information these days that relates to the various teaching, research and third mission activities of individual HEIs. However, as we know from projects such as PRIME-Aquameth and CHINC, this information is rather scattered and not based on common definitions and therefore difficult to interpret.

Classification systems

Given the large institutional diversity that exists in higher education in Europe there is a need for instruments that can help improve its transparency. Classification systems are one of the tools here.

The most well known example of a classification is the Carnegie Classification of Institutions of Higher Education. This US-based classification has existed since the early 1970s and underwent several changes since, partly technical, partly in the labels used. However, the backbone of the classification remained the same; institutions were classified on the basis of their research and teaching objectives, the degrees offered, their size and their comprehensiveness.

In 2005, the Carnegie classification has been revised comprehensively¹. Three major innovations have been introduced (McCormick and Zhao 2005). First, instead of one single classification, the new Carnegie classification uses a set of multiple, parallel classifications. These classifications are organised around three fundamental questions: what is taught, who are the students, what is the setting. The result is a set of five classifications on: (1) undergraduate instructional programme, (2) graduate instructional programme, (3) enrolment profile, (4) undergraduate profile, (5) size and setting. Apart from that, the existing original (one-dimensional) classification has been updated. Second, a web-based tool has been developed to enable users to combine (categories of) classification schemes and thus to generate subsets of HEIs. Third, elective classifications are being developed. These classifications depend on the voluntary participation of institutions. The elective classifications open up opportunities to map institutions on characteristics

¹ <http://www.carnegiefoundation.org/classifications>

of a special nature. The first elective is on “community engagement” and was introduced in December 2006.

In the EU-sponsored U-Map project (Van Vught et al., 2009) a great deal of the same principles appear. The U-Map project aims at the building of a European classification of higher education institutions, offering a tool which enables various groups of stakeholders to discover the institutional profiles of European higher education institutions. In this sense the classification is an instrument for mapping the European higher education landscape. It provides a series of lenses (say dimensions) through which important similarities and differences among higher education institutions can be described and compared, capturing the complexity and diversity of European higher education without resorting to one-dimensional instruments such as the existing international higher education rankings.

Dimensions of institutional activity

The U-Map classification consists of six dimensions and a set of indicators per dimension. A dimension reflects a characteristic of higher education institutions upon which differences and similarities can be mapped. Each dimension highlights a different aspect of the profile of the institutions included. This multidimensional set up of the classification implies that institutions can be described, grouped and compared in a variety of ways. (quantitative) information on indicators can be used to describe the position of a higher education institution on the dimensions.

The U-Map approach to selecting dimensions and indicators has been heuristic. Through an iterative process long-lists of dimensions were discussed with stakeholders and higher education researchers. Next, the relevance of the dimensions was tested through in depth case studies and both a pilot and a larger survey (CHEPS, 2008). The dimensions are:

- Educational profile
- Student profile
- Research involvement
- Knowledge exchange
- International orientation
- Regional engagement

Indicators were selected to allow a description of an institution on each dimension. The indicators make it possible to differentiate between institutions and to construct different classes per dimension. The indicators are listed in the table below.

Dimensions	Indicators
Educational profile	<ol style="list-style-type: none"> 1. Degree level focus 2. Subject areas covered 3. Orientation of degree
Student profile	<ol style="list-style-type: none"> 1. Mature or adult learners 2. Part-time students 3. Students in distance learning programs 4. Students enrolled (headcount)
Research involvement	<ol style="list-style-type: none"> 1. Peer reviewed publications 2. Doctorate production 3. Expenditure on research
Involvement in knowledge exchange	<ol style="list-style-type: none"> 1. Patent applications filed 2. Start-up firms 3. Cultural activities (concerts, performances, exhibitions 4. Income from knowledge exchange activities (e.g. research contracts, licenses, copyrights)
International orientation	<ol style="list-style-type: none"> 1. Foreign degree seeking students

	<ol style="list-style-type: none"> 2. Students sent out in European and other international exchange programs 3. Incoming students in European and other international exchange programs 4. Non-national teaching and research staff 5. Importance of international sources of income
Regional engagement	<ol style="list-style-type: none"> 1. Importance of local/ regional sources of income 2. Graduates working in the region 3. First year bachelor students from the region

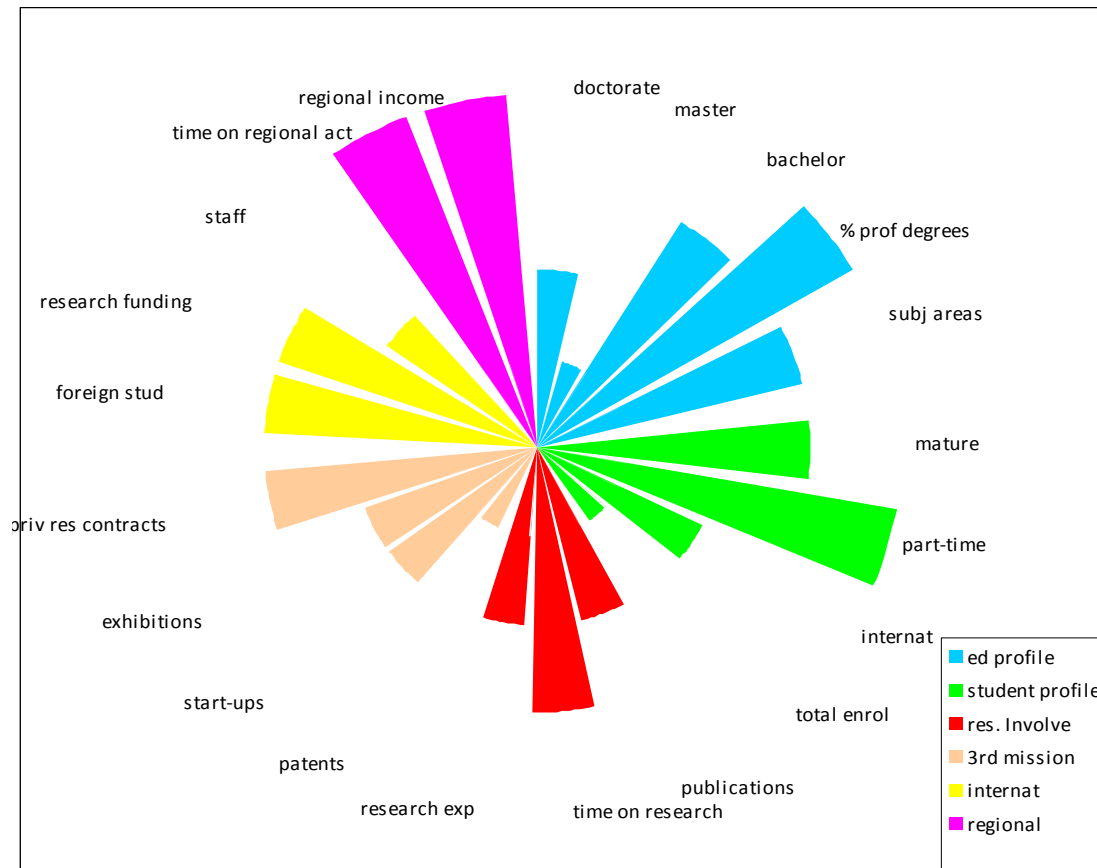
A classification needs data in order to be usable. An overall Europe-wide higher education data system covering the institutional level does not exist. Although a number of European and international surveys exist that offer some information on European higher education institutions (including the recent EUMIDA project), these surveys are often fragmented and still rather limited. As a consequence, the data for the U-MAP project had to be provided by individual HEIs themselves using questionnaires. Information from national statistical offices and related sources in the various countries was used to 'pre-fill' the institutional questionnaires.

Communicating the results

In the U-Map project the results are communicated through two instruments, known as the Finder and the Viewer. These tools allow the user of the classification to select and then compare institutions, following a user-driven approach. Through the Finder the user selects HEIs on the basis of particular characteristics, arriving at a subset of institutions that meet particular criteria. In the next step, the Viewer provides a picture of the institutional profile along the six dimensions covered in U-Map. The institutional profile shows ('maps') the activities of an individual HEI against the background of the information on other HEIs.

The U-Map Viewer tool shows for each dimension the institution's value for an indicator by assigning the institution to one of four intervals (or classes). Given the choice of intervals and the institution's indicator value, the institution is assigned to either the class None, Some, Substantial, or Major. The intervals are determined by cut-off points that are based on the sample distribution. The choice of cut-off points ultimately depends on the properties (e.g. average, quartiles, standard deviation) of the indicator across the sample. So, if the sample changes, the cut-off points may change.

U-Map profile of a higher education institution



For instance, for the indicator 'Mature learners' (in the Student Profile dimension) the cut-off points were set at 10, 30 and 60% of the institution's student enrolments. This leads to the following labels:

more than 60%:	predominant
between 30 and 60	substantial
between 10 and 30	some
less than 10	none

So, an institution is said to be predominantly part-time in its student profile if it has more than 60% of its students enrolled in part-time programmes.

It is good to stress that the emergent classification does not imply a rank order. There is no hierarchy between dimensions, nor between the categories within a dimension. It offers a description of the actual profile of an institution on the dimensions and indicators judged to be relevant by stakeholders.

Towards a multidimensional ranking: U-Multirank

The European classification of higher education institutions described above differs from aggregated rankings in that it allows multiple scores for individual institutions. It does not intend to create hierarchical comparisons, leading to one "league table". However, this will not stop users from developing their own rankings of tailor-made subsets of institutions within the classification. This is not necessarily a bad thing. The use of subsets of largely similar institutions reduces the diversity within these groups of institutions and consequently implies that these institutions are not unfairly ranked. In this sense, one may argue that a classification is a relevant and significant prerequisite for better rankings in European higher education.

Rankings and performance assessment have become an important aspect of contemporary higher education and research policies. They have become an integral part in the strategy building of individual HEIs (Hazelkorn, 2007). In the recently (July 2009) initiated U-Multirank project, carried out for the European Commission, the CHERPA network (consisting of researchers from CHEPS, CHE, CWTS, Incentim and OST) is testing the feasibility of a multidimensional ranking of universities worldwide. In contrast to the U-Map classification project, U-Multirank is a ranking project. Taking an 'input-process-output-impact' approach to HEIs, U-Multirank pays attention mostly to output (performance) and impact (outcomes), whereas a classification is looking mostly at inputs (resources) and processes (activities). While the U-Map classification and the indicators it employs focus mostly on what an institution has to offer, U-Multirank intends to focus more on what an institution actually delivers.

What sets U-Multirank apart from other rankings (e.g. the Sjanghai and the Times Higher rankings) is its multidimensional approach. HEIs are ranked in a multidimensional way, both on the level of the institution as a whole and the level of individual programme fields. For the latter, two programmes were selected: business studies and engineering. For the institution-level ranking, the feasibility of a series of 'focused institutional rankings' will be investigated. A focused institutional ranking pictures (benchmarks, ranks) a HEI along a selected dimension of institutional performance, such as education, research, internationalization, or knowledge transfer.

Focused rankings are based on performance measures, in terms of outputs, outcomes or impact. In contrast to classifications, rankings have a clear judgmental character, in the sense of 'more is better'. While both being transparency instruments, classifications and rankings differ in their choice of dimensions and indicators.

There is a connection between U-Map and U-Multirank because the first step in the ranking process is using the classification tool to select those institutions that in a second step will be ranked. The classification therefore acts as a filter to arrive at roughly comparable institutions that subsequently are ranked.

U-Multirank dimensions and indicators

At this stage of the U-Multirank project the following areas/dimensions were identified as relevant for constructing the institutional performance profiles:

- (1) Teaching and learning
- (2) Research
- (3) Knowledge exchange
- (4) International orientation
- (5) Regional engagement

The final choice of dimensions is still to be decided, as is the choice of indicators to be used for measuring the relative performance of HEIs along the dimensions. The choice of dimensions and indicators will be based on dialogues with stakeholders (users of the ranking, such as policymakers, institutional management, student and employers' organizations).

The idea of focused institutional rankings implies that an institution can be positioned on each dimension in a hierarchical list. This means that for each dimension the values for the underlying indicators need to be aggregated. The approach on the basis of which the weights of the indicators in a dimension are determined is one of the outcomes of U-Multirank. Theoretical notions on how the indicators may contribute to the dimension and the analysis of empirical data to test those notions are the building blocks here. An alternative to such a 'pre-determined weighting' is a user-defined weighting where the user can influence the weight of individual indicators for computing the score on a dimension.

References

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