5th World Conference on Educational Sciences - WCES 2013

Balanced scoreboard, the performance tool in higher education: Establishment of performance indicators

Snadrou khalid*, Noureddine knouzi, Omar Tanane, Mohammed Talbi

Observatoire de recherché en didactique et pédagogie universitaire (ORDIPU). Université Mohammedia – Casablanca, BP 7955 Casablanca Maroc

Abstract

The objective of this paper is to identify within the process of developing a dashboard and specifically the process of selection of performance indicators for a higher education institution, with all the difficulties that may generate the choice of these indicators, and this for a better response to the expectations and the needs of users. The development of a set of indicators of direction seems to be a delicate exercise.

© 2013 The Authors. Published by Elsevier Ltd. Open access under CC BY-NC-ND license. Selection and/or peer-review under responsibility of Academic World Education and Research Center.

Keywords: dashboard indicators, performance, higher education institution ;

1. Introduction

In a context characterized by mutations as far as the governance of the educational institutions of authorities gave more autonomy to these higher institutions with an aim to improve their performance. In return for this autonomy, the authorities require these institutions to have their own development strategy, operational plans of implementation of their strategy with measurable and achievable goals, and the means of controlling and monitoring the achievement of these objectives.

In Morocco, the emergency program has been the subject of contracts between public authorities and the University for the development of the University.

The contract defines the commitments of the two parts, for the implementation of the development plan 2009-2012, incorporating twelve projects of the emergency Program at each University, at the National Center of Scientific and Technical Research (NCSTR) and the National Office of Academic Social and Cultural Works (NOASCW). It also defines required resources for this implementation as the plan of monitoring and evaluating them.

* Corresponding Author: Snadrou Khalid Tel +0668448057
E-mail: ksnadrou@gmail.com.

1877-0428 © 2013 The Authors. Published by Elsevier Ltd. Open access under CC BY-NC-ND license. Selection and/or peer-review under responsibility of Academic World Education and Research Center.
doi:10.1016/j.sbspro.2014.01.984
Thus, with a combined increased internationalization with a fierce competition between the institutions of higher education, it becomes imperative to the higher education institutions Moroccan to demonstrate their results by monitoring and evaluating performance. They are then supposed to strengthen their own management capacity and to implement information systems and more efficient monitoring mechanisms, such as dashboards.

The dashboard, are the order of the day in all areas and at all levels of the education system. The current interest in these tools is part both in trends in the reform of education, but also in those that characterize the reforms in the governance and management of higher learning institutions.

In higher education, many works were conducted on indicator systems in the 1980s. After a period of maturation, especially within the Organization for cooperation and development (OECD) countries, many countries now have a system of indicators commonly called "dashboard". It allows to assess to what extent systems argue based on the objectives. Countries in the process of development as Morocco, see the interest of such tools but still face many difficulties in their implementation.

This work will be presented in the following way:
Purpose of the article
Conceptual framework of the subject
Methods and results
Conclusion and recommendations
Future directions

2. Purpose of the article

Development of measures of performance indicators, essential tool to the construction of dashboards, for institutions of higher education will be intended to improve the use of the information-based mass produced in the tertiary institutions. To date information dating back to the heads of these institutions takes the form of statistical tables from different services without a valuable management and the control of the performance of these institutions.

Thus, the information dating back in the form of statistical tables of the different services (heads of departments, education service, and financial services) according to the need of information even if they are used by software.

While this information can be summarized in what it calls dashboards, which can provide important insight into several aspects of the functioning of the academic institution and subsequently help relevant decision-making.

The objective of this paper is to identify within the process of developing a dashboard and specifically the process of selection of performance indicators for a higher education institution, with all the difficulties that may be the choice of these indicators for a better response to the expectations and the needs of users. The development of a set of indicators of direction seems to be a delicate exercise.

Before presentation of the method of work, it is estimated that it is appropriate to clarify the dashboard concepts and indicators as well as their scopes.

3 Conceptual framework

3.1. Dashboard: definition, usage, purpose and conditions

3.1.1. Definition of the dashboard
A dashboard is a set of selected indicators to clarify several aspects of a system of higher education. Thus, it allows to report on the State of a system of higher education for all of the stakeholders.

There are different types of control panel:
- **functional dashboards** which are based on the follow-up to the traditional functions of the management, Means the main to functions (training and research),, and the media functions (finance, personnel, communication, logistics, purchase)
- **sector-specific dashboards** (products, activities, benefits) that inform the University on the implementing of an action (Organization of international relations), assessment of student satisfaction on the recovery process.
• dashboards of units of responsibilities (or structural) that reflect the operation and achievement of the objectives of a service, of a component. Generally the dashboards include indicators that are related to the University’s objectives (Internal contract for example), in addition, it include data related to the functions of management (human resources, consumption of appropriations, cost of operations).

• the dashboard of governance whom the issue is to focus attention on the risks of derivatives in the management and implementation of the activities of the University (fiscal slippage, non-realization of investment programs, fall of attendance, lower rate of successful completion of the examinations, co-financing weakness, decrease in the number of research contracts).

It covers a broader scope of internal performance, in addition it responds to external requirements that are, by extension, criteria for the assessment and/or recognition of the institution. It focuses on indicators expressing objectives inserted into contracts, project...).

• strategic cockpit dashboard

It takes into consideration the strengths and weaknesses of the institution, with the aim to achieve of 3 to 4 objectives set internally, specific to the establishment, without the involvement of a third external party.

It is a customized tool created almost only for the close management team. It serve to drive the "strategic project", evolution of the project, taking into consideration strategic and sensitive issues.

3.1.2. Users of the dashboard

We distinguish three specific types of use of dashboards:

Public information (or the legislative power) on the State of the system.

The follow-up of a policy (or one of its axes) or a plan of higher education;

The management of the higher education systems.

3.1.3. Objectives of the dashboard

The dashboard provides:

• to assess the progress of the objectives of a program and to help clarify the nature of the desired results.

• to make compatible the autonomy and diversity of educational institution with responsibility and the steering of these same structures.

• Create a close and observable link between the resources allocated and the results obtained.

• an external control by the central Government, but also an internal control through which they are striving to achieve their objectives or the objectives set by the departments or units.

3.1.4. Conditions of setting up a dashboard

The construction of a dashboard in higher education can be constructed only if two conditions are realized. The first concerns the existence of a functional information system containing the basic information and sufficient reliability for the construction of indicators. This condition is not always checked: indeed, many developing countries are are suffering from a dysfunction in their information system, unreliable and unable to produce information in a timely manner.

So the dashboard does not constitute the first step, but a kind of purpose of a functional information system, with the aim to use information well and to improve the communication.

The second condition is to have a strategy available in sufficiently explicit objectives, clear and measurable, objectives from which it is possible to construct indicators for a useful dashboard.

3.2. A dashboard indicators

3.2.1. What is an indicator?
An indicator is a relative value that evaluates what activity participates at the realization of a goal. It is an encrypted landmark which can be close to a goal, an average, a standard, and values over time which constitute an assessment of trends. It allows to formalize and complete contract commitments and implement control devices.

An indicator is a series of information synthesized and analyzed.

The indicators are calculated from raw data using statistical tools like percentages, rates, ratios and indexes. However, it is highly desirable that a dashboard includes a few large raw data (total workforce by level, discipline, etc.) on which evolution indicators will be calculated (rate of increase, for example) or indicators representing the structure as a percentage of the workforce.

Example of relationship between the objective and the indicator
Objective: Improvement of the performance of an institution of higher education
Example of possible indicators:
• number of students enrolled in distance learning centers or open Learning institutions;
• student retention rates;
• student promotion rate;
Etc

3.2.2. Objectives indicators (why indicators)

The objectives of the indicators are:
1. to identify situations that are problematic or unacceptable;
2. determine the State of the system;
3. measure its strengths and weaknesses;
4. follow its evolution in time as well as its development (in comparison for example with predefined objectives);
5. measure the distance from a target given;

3.2.3. What are the criteria of a "good" indicator?

A good indicator must have the following characteristics:
• the relevance;
• the ability to summarize information without distorting;
• its coordinated and structured, allowing you to put it in relation to other indicators for a comprehensive analysis of the system;
• the precision and comparability;
• the reliability;
• the news (the information must be related to recent years).

3.2.4. The typologies of indicators or how to classify the indicators?

Rankings of different indicators vary following publications, if the aspect «analysis of the operation» award-winning, it uses a distribution means (personal finance), activities and results, supplemented by a description of the social and cultural environment.

This is a very interesting approach "dashboard view". Sometimes there are also result and impact: the result is an immediate step of the training and the impact a measure impact of the training on the situation of the individual, group or society to which it belongs.

If, on the other hand, you want to classify according to the different entities, then it can use a distribution for schools, students, teachers and costs.

There are several figures of indicators, we can distinguish imposed indicators such as the ESG more oriented towards the formation of the 'Agency of evaluation of research and higher education (AERES)
Indicators of the organic law on finance (LOLF150), and free figures; it's indicators of training institutions, research units are attached.

Generally can be grouped the indicators in five broad categories:

- cost drivers: they measure the monetary value of an activity. Example: cost per training by research unit...
- results indicators: they appreciate the achievement of what in quantitative and/or qualitative terms finalized. Example: Number of insured training
- activity indicators: they give items to the action carried out for the results. Example: The number of hours teacher by training.
- performance indicators: they ensure that implementing the activity at the lowest cost and implementation of the strategy. Example: Recipe by training/cost per training.
- strategic indicators: they tell us directly about implementing the strategy and its objectives. Example: The cost-effectiveness of training.

4. Methods:

There are two elements in search feature used to collect data:

- the review of literature on existing work in any other field in particular the company responsible of performance measuring system conception generally and particularly in education and training institutions; then the interview with the concerned actors, so any person who may fit in the formulation of indicators

Most of work concerning performance measuring system conception focuses on a certain amount of recommendation that are necessary for the elaboration of measuring indicators (Kaplan and Norton)

This literature shows that the development of performance indicators should be structured around a broader vision of the establishment of university education, that is to say should be linked to the strategy adopted by the institution and its objectives.

Some authors, demonstrate that the design of a system of performance measurement requires careful preparation and a total conviction of the head of the University.

For the construction of appropriate performance measurement indicators, these same authors identifies three main steps to do this.

The first step is about definition of strategic objective of the university and their subjective, then in Management approach.

The second includes the construction of an appropriate set of indicators to measure performance through the design of a matrix of performance measurement.

The third focuses on the integration of performance measurement indicators in the ethics of management of the establishment, and if necessary by the budgeting process.

These authors suggest that the best approach is to start with five generic indicators such as: cost drivers, performance indicators, activity indicators, performance indicators and strategic indicators.

These indicators must have a certain number of characteristics such as: performance indicators must be chosen with a view to achieve measurable goals; performance indicators should allow comparison between similar organizations; performance indicators should be selected through discussions with stakeholders such as students, teachers, businesses and policy makers.

The review of these different work highlights the fact that, despite the focus on performance measurement, little attention was given to the question of how the leaders of academic institutions can decide what performance measures they should adopt. Indeed, even the authors have tended to offer rather superficial and generic advice as opposed to a specific and adequate action.

The literature review was complemented by interviews with higher education teachers and leaders of academic institutions, educational managers, research directors, heads of departments, officials of the financial services...
These interviews helped to clarify the mission of each actor in the establishment. This, we brought to the assessment of the situation and prospects by a diagnosis of the relationship between services internally. Through a contact with all staff, we have tried to identify the shortcomings and the needs in terms of information within an academic institution and define the actions to be undertaken for the construction of the performance measurement indicators.

Meetings have formed an opportunity conducive to the course of what the participants exchanged their respective visions of the steering problem they faced in the institutions of higher education. The purpose of these meetings was to draw up an inventory of the existing places the targets assigned to implement performance measurement indicators.

5. Results

We are interested in this article to present and analyze the results related to one axis of our model which is the dimensions in the construction process of the indicators for measuring performance in academic institution. The interviews and meetings helped to highlight the dimensions used to define the construction process of the performance measurement indicators.

Table: Maintenance carried out with key players

<table>
<thead>
<tr>
<th>Number of maintenance</th>
<th>Maintenance time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>15</td>
</tr>
<tr>
<td>Head of Department</td>
<td>3</td>
</tr>
<tr>
<td>Directors and heads of institutions</td>
<td>4</td>
</tr>
<tr>
<td>Accounting and financial</td>
<td>2</td>
</tr>
<tr>
<td>Students</td>
<td>15</td>
</tr>
</tbody>
</table>

To establish suitable measures performance indicators, we must analyze of the characteristics of the process in question, identify the main objectives of the strategy or the problem it seeks to solve, identify the relevant issues from the targets.

We can summarize the process of construction and development of a list's indicators to measure performance in the following steps:

Step 1:
A review on the situation of the institution in line with the mission and directions of the strategy of the country in education and its position regionally and internationally;

Step 2:
Analysis of strengths and weaknesses;

Step 3:
Establish a synthesis between the requirements of the environment and competitive profile;

Step 4:
Define the vision of the institution;

Step 5:
Determine objectives;

Step 6:
Determine business objective is a variation of the strategic goals into operational objectives;

Step 7:
Identify indicators that allow the monitoring of the achievement of the objectives;

Step 8:
Definition of acceptable thresholds of the indicators and their validation;

Step 9:
The levers of action.
6. Conclusion

As a conclusion, we can say that an overall or partial performance of the schools above is the result of differential enhancement of performance indicators must be fixed by each institution based on its strategic choices, the choice and the determination of indicators critical thresholds will require very careful assessment.

The construction of the performance indicators approach allows concretely to understand sources that can, either trigger or inhibit performance.

Recommendations

Certainly the development of indicators for measuring performance in the institutions of higher education to understand the sources of performance. Of course it is important but not sufficient step and should be followed by a relevant analysis so we can identify the lessons learned and conclusions and to take corrective measures.

Future orientation

One of the prospects of the present work is the enlargement of the dimension of the interviews in several establishment, then the implementation of measures in establishment or several establishment and at the end, tracking closer to these indicators, to provide to the heads of the institutions of higher education, management and performance management tool.

References

George, I. (2010) process of construction of the indicators for measuring performance in a care facility
Methodological guide for the preparation of the strategic dashboard of the presidential team and University president. Guide is published by the Conference of University Presidents (CPU)
Boulianne e. (2001), "towards a validation of the built organizational performance", doctoral thesis in Administration, Faculty of graduate studies, University de Montréal.