Introducing Key Performance Indicators: Perspective of Higher Education Performance Monitoring and Evaluation in Nigeria

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Abstract

This article attempts to introduce, clarify and justify the application of key performance indicators, KPIs in the Nigerian higher education system in a changing complexity of global education where stakeholders' accountability in educational performance is not only a culture but a global one. This paper also attempts to propose the use of key performance indicators as a deliberate measure for quality decision making and taking with a view to engendering operation excellence in education, *continuous improvement* giving the fact that most of the constructs in education are mostly in abstract forms and so, not directly measurable except through some concrete measures. Furthermore, giving the strategic position education as system and evaluators as professionals occupy in the recreation of the individuals specifically and the society in general in which the individual is supposed to be a positive change agent.

1.0. Introduction

A sea of studies has been focused on enhancing students' academic achievement or performance, academic staff performance and education managers' performance in the education system. Such studies include the individual learners' all-round (life-long and life-wide) development and by extension societal development, but there little or no deliberate efforts fashioned to effectively and efficiently track and measure these educational dimensions in more concrete manners with a view to improving the much desired overall outcome in the various subject areas (operations) and educational environment (services) specifically and the entire education system (administration, community involvement as well as policy enactment and implement) in general.

It is a common practice here not to anticipate, accept or even make for change(s) especially when things seem comfortable with such like: we cannot try that because of the risk, we do not have that item in our budget; the benefits are not for my budget's credit; who is going to pay? we do not have the people to investigate it;   there are only 8 hours in a working day; it sounds good in theory, but it will never work; to do that now would be moving too quickly; for this we need the permission of X; fine in the long term, but we live in the present; fine in the short term, but we must look to the future; we are already doing better than any other schools; etc. These are ideas' killers. These attitudes only engenders decay in any system because when no change takes place again, that system is believed to have outlived its usefulness and so, extinction sets in. Education as we know is a process and not a product, therefore, cannot suffer any form of extinction. A sure way to continue to bring about change is by improvement, which is possible only by effective tracking of all component processes of teaching and learning and by extension, the output, students' achievement, learning services provision, effective and efficient management, etc which include non-stop measurement, assessment and evaluation. Hence, the catch phrase: **anything that gets measured, gets improved.** In other words, continuous improvement is what we enjoy through continuous measurement.

In his words, Shri Azim Premji, Chairman of the Wipro Corporation in a presentation *The Changing World* at the 37[th]Annual Convocation Ceremony of the Indian Institute of Management, commented as follows:
While change and uncertainty have always been a part of life, what has been shocking over the last year has been both the quantum and suddenness of change. … What lies ahead is even more dynamic and uncertain… (Premji, 2002)

Doing things right and differently only implies getting at different and improved results especially in a changing world. Afterall, it is a common say that you cannot expect a change if continue to do a thing the same way. The society we live in is changing in complexity and to key into such complex society, we must remember that succeeding in a changing world is beyond just surviving (Premji, 2002). One way to do things differently in our schools is to invest in the monitoring and evaluation strategies through a well articulated performance indicators in all aspects of the school system ranging from the students/pupils, to the staff (teachers, non-teachers, management, administrators, policy makers, etc) through to the school milieu or environment. This paper intends to achieve the introduction of the concept of key performance indicators, KPIs application to improving education quality in the higher education system in Nigeria. A practice that is more like a culture in the developed world's academic and business institutions.

2.0. Justification for the Use of Indicators

In practice, indicators have been interchangeably used with some educational constructs such as concepts and dimensions. But in reality the difference is in their complexity or abstraction or degree and ease of measurability. Concepts are highly abstract, and dimensions are abstract while indicators are concrete and easily measured particular concept could have several dimensions and a dimension could have several indicators. A typical example is the construct, social class or status which could be expressed in multiple dimensions such as **wealth**, riches; **prestige**, university professor, celebrity, etc; **power**, politician, a 5-star military general, etc or even **royalty,** Queen of England, Pope of Rome, etc, which could be an embodiment of all the other dimensions highlighted above. Wealth, prestige, power, royalty, etc are all dimensions of social class.

When a dimension is not directly observable, **indicators** are used. For example, to measure the powers of a politician as a dimension of social class, the following measures may be used: area of influence (for elective office holders: an entire country, senatorial district/constituency, Local Government Area/Ward, number of government ministries/departments supervised, annual budget controlled, etc). In education, most of the constructs are concepts and dimensions with varying degree of abstraction, hence the justification for the use of indicators in places of the conventional variables.

2.1. Indicators versus Variables

A variable is a characteristic or attribute of an individual, group, a system, or environment of interest in a study, program or project. In other words, a variable is a statistical term, meaning a quantity that can take on different possible values. Variables can be very easy to measure like gender, age, etc or very complex to measure such as social class, academic achievement, or attitude towards education, teaching methods, etc. The former measures are examples of indicators which can be directly measured while the latter are dimensions. Both dimension and indicator can be variables. When a concept has only one dimension with one indicator, a concept is practically equivalent to a variable. Furthermore, **all indicators are variables, but not all variables are indicators.**

3.0. Definition of terms

It is important to provide explanations for the terms that apply in this area as they may be confused to mean or implied differently. These include indicators, performance indicators and key performance indicators (measures).

Indicators: Scholars differ in their definitions of indicators. To some, indicators are statistical measurements (Johnstone, 1981) and to others, indicators represent signals that manifest the performance of organizations (Spee and Bormans, 1992). McEwen (1995) opined that could be in the form of numbers, percentages, test scores, levels of participation or perceptions of student achievementwhich can also represent a single or multiple input, process or outcome for comparison or evaluation. Scheerens (1991) and Cuttance (1990) define indicators from a management perspective to mean tools for measuring organization's performance. In all these definitions, indicators simply mean pointers, gauges, meters, signs, etc that are specifically used for measurement purposes.

Performance Indicators: When indicators are performance indicators, they are simply measures of the components of the performance under consideration such as the performance of the inputs, processes, outputs, outcomes and impacts for a given project, program, or strategy of interest. When supported with sound data collection, perhaps involving formal surveys, analysis and reporting, indicators enable managers to track progress, demonstrate results, and take corrective action to improve service delivery. From the foregoing, performance indicator is a management tool and the participation of key stakeholders in defining indicators is important because they are then more likely to understand and use the indicators. The opinions of some authors on the definition of performance indicators are therefore, as follows: Clark and Sartorius (2004) performance indicators are a management decision-making tool. For Rowe and Lievesley (2002) performance indicators are data indices of information by which the functional quality of institutions or systems may be measured and evaluated. Vos (1996) reported that in a recent World Bank study, that performance indicatorswas reported to serve as an information source about prevailing problems and hint at some of the causes of the problems. Performance indicators can facilitate improvements in the design and implementation of educational policies.

Key Performance Indicators (KPI): Key performance indicator differs from performance indicator only in the importance attached to a given performance indicator. From the foregoing, it is obvious that key indicator is also a performance indicator that enjoys some extra importance depending on the aspect of the performance being measured. Therefore, *key* could mean *basic* or *critical* or *primary*. KPI is an industry jargon for performance measurement. According to Fitz-Gibbon (1990), KPIs as a term is often used in assessing financial management and general administration by quantifying and qualifying the performance of companies, employees and tasks over a given period. KPIs can be likened to the gauges on the dashboard of a motor vehicle or the like. Driving is

a complex task requiring indicators for fuel, engine speed and temperature, vehicle speed and destination. Like a driver, management personnel must remain attuned to environmental and performance factors, and therefore need gauges or indicators to safely guide the organization into the future. A group of similar key performance indicators is referred to as key performance measures, KPM.

Other interpretations of KPIs have been offered. Kerr (2000) regarded KPI as an important feature of a management control system that obtains valuable feedback for planning and evaluation purposes i.e. it is also viewed as a method for policy administration by helping decide policy formulation and implementation. Wang (2004) believes that in the tripartite operation of Planning-Implementation-Assessment of management, KPI is an inseparable component of assessment that represents the basis for evaluating key individual and organizational performance and contribution. Li (2004) pointed out that KPI is simply an indicator, not a goal; however, it can be used to determine goals or behavioral standard. KPI is a performance indicator, not an indicator of ability or attitude; it is a key performance indicator, not a general indicator; KPI is a quantified indicator that can reflect the critical success factors of an organization. Therefore KPI is selected according to the design of the organization. However, regardless of the type of KPI chosen, it must concur with organizational goals and be quantifiable.Wu and Lin (2008) define KPI as the analysis, summarization and selection of factors that are critical to the successful operation of organizations or departments. In addition, by breaking down organizational or departmental goals into quantifiable targets, the degree to which these goals are achieved can be reviewed and determined.

4.0. Higher Educational Performance Indicators

Educational performance accountability developed in the western world which emphasizes on fair and effective multi-indicators as the first tools toward better educational efficiency and effectiveness (Wu and Chen, 2002). In that light, countries have made efforts to craft out educational performance indicators to suit their educational policy. New Zealand ministry of tertiary education is an example of such country's endeavour. To them EPIs means activities tertiary education organizations (TEOs) undertake that contribute to the Government's vision for the tertiary education system: a system that 'equips all New Zealanders with the knowledge, skills and values to be successful citizens in the 21st century' (MTE, 2010). This practice is also a common in Australia (Department of Education, Employment and Workplace Relations, 2009); the United Kingdom (CUC-Committee of Universities Chairs, (2006); and Canada (Educational Policy Institute, 2008). Nigerian higher education system has come of age to key into this regime of practical and functional accountability in educational performance.

According to Wu (2002), educational indicators have dual meanings. First, they are concrete items predicting the outcome of educational operations; second, they are concrete items describing the important features of an educational system.

Through his field experience, Yang (2009) defined KPI according to SMART, that is, specific, measurable, attainable, relevant and time-bounded. Accordingly, choosing the right and SMART KPIs relies upon a good understanding of what is important to the organization. Since there is a need to understand well what is important to an organization, various techniques to assess the present state of the business, and its key activities, are associated with the selection of performance indicators. These assessments often lead to the identification of potential improvements, so performance indicators are routinely associated with 'performance improvement' initiatives. A very common way to choose KPIs is to apply a management framework such as the balanced scorecard.From foregoing by stating that, establishing the specific criteria by which effective teaching can be evaluated is a vital step in theteaching learning process (Cunningham, 1986; McBeath, 1992; Owoyemi and Adesoji, 2012). Furthermore, students' evaluation is commonly used in developed countries to provide information that could be used by the teacher to improve on his/her teaching and by administrators to make personnel decisions like promotion (Owoyemi and Adesoji, 2012).

5.0. The Nature and Purpose of Educational Performance Indicators

During the last decade, education systems throughout the world have been subject to considerable reform and change, all justified on the grounds of improving the *quality* of school education. A key feature of this change has been the frequent revisions of style and policy focus, especially in the area of EPIs, with major emphases being placed on the assessment and monitoring of student learning outcomes. Indeed, current policy activities related to 'outcome-based' EPIs and their links with growing demands for *accountability*, *policy formulation, standards monitoring*, *benchmarking or target-setting, school effectiveness* and *reform* are widespread and well established in many developed countries (Dorn, 1998; Tucker and Codding, 1998; Hill and Crévola, 1999; Visscher, Karsten, de Jong and Bosker, 2000; Rowe and Lievesley, 2002).These are the various purposes of

performance indicators. Whereas the provision of quality education is critical to the development of allcountries, it is especially the case for developing countries where there is considerable pressure to increase access to education, but not at the expense of quality. Hence, the demand is to ensure that EPIs do not provide a partial and thus potentially misleading picture of either quality or effectiveness.

Despite the difficulties entailed in defining educational effectiveness at the school or system level, and reaching consensus on the relevant criteria, a good deal of discussion has focused on what is meant by quality schooling, and how it might be measured and improved. Although the term quality is likewise problematic, the "...measurement of the quality of schooling is of critical importance at a time when so much school reform in so many parts of the world is being undertaken" (Mortimore, 1991).In fact, concerns about the quality of school education and its monitoring have long been high priority policy issues in all Organization of Economy Cooperation of Developing Countries, OECD (OECD 1989; 1995).

Learning achievement is one of the most important measures of the quality of education.It is also intricately linked to school efficiency because the promotion and repetition ratesare directly related to the learning achievements of the students, to which in turn schooldrop-out can be attributed. This view is supported by the assertions: When judging educational quality, either we focus on what schools spend or one of itsmany variants or we focus on what students achieve, what they know and can do. Thosewho advocate a focus on outcomes in judging educational quality hold one common belief: we must specify what we expect all children to learn, and we must assess them todetermine whether they have learned it (Manno, 1994).

6.0. Essential Features of Useful Indicators

Rowe and Lievesley (2002) defined useful performance indicator (PI) as one that informs the processes of strategic decision making and taking resulting in measurable improvements to desired outcomes following implementation. They added that like other indicators, the quality of a PI is comprised of many components including: Validity; Reliability; Relevance to policy; Potential for disaggregation (e.g., by gender, socioeconomic and ethnic groupings, education administrations, etc.); Timeliness (i.e., currency and punctuality); Coherence across different sources; Clarity and transparency with respect to known limitations; Accessibility and affordability (cost-effectiveness); Comparability through adherence to internationally agreed standards; Consistency over time and location; and Efficiency in the use of resources.

Theyfurther stated that optimum combination of these components is dependent upon the use to be made of the data. Data acceptable for one purpose might be inadequate for another and, since most data are used for many different purposes, the process of determining 'fitness for purpose' is extremely complex and requires wide consultation. The features of five of these characteristics of useful EPIs, are Relevance; Cost-effectiveness; Timeliness; Reliability and Validity (http://www.unescostat.unesco.org/).

In the nutshell, useful educational performance indicators (EPIs) are those that are *relevant*, *cost-effective*, *timely*, *reliable* and *valid* – in terms of their capacity to inform the processes of strategic decision-making and decision-taking, resulting in measurable improvements to desired outcomes especially in student achievement.

7.0. Types and Sources of Performance Indicators

Prevailing classifications of indicators are roughly similar, though some important differences exist. The UNESCO EFA distinguished four types of indicators: input indicators; access indicators; output indicators; and outcome indicators (Drewnowski, 1970; PREALC, 1980; Hopkins and Hoeven, 1983 and Vos, 1992). The **World Bank** defines *input*, *process* and *impact* indicators in its approach to project monitoring and evaluation. The USAID and many other aid-donor institutions define what they called the *Logical Framework*, which distinguishes three different categories: *input or activity indicators, output indicators, and goal and purpose indicators* (Carvalhoand White 1994). Generally three types are discernable: input, process and output and this will be adopted for the purpose of the paper.

8.0. Development, Tracking and Publication of EPIs

As a first step, the development of EPIs must be preceded by deciding on student outcomes (Cunningham, 1986; McBeath, 1992). EPI development has become so popular that it is today a type of service provided by some specialized research organizations like the Curriculum, Evaluation and Management Centre (CEM) at the University of Durham (UK) that developed the *Performance Indicators Information System,* PIIS. In recent promotional literature published by the CEM, it was claimed as follows "...*we have become the largest provider of performance indicators to schools and colleges in the world*" (Tymms, 1999). Another organization in this

line of service providers is the Australian Council for Educational Research, ACER with their *Longitudinal Literacy and Numeracy Study,* LLANS (Meiers, M. (1999; Meiers & Forster, 1999; Rowe, 2001).

EPI tracking can be a very tedious task or group of tasks but the benefits are abound. This task could be effectively executed using various or different format of data gathering and management instrumentswhose content can be adopted or adapted from the UNESCO EFA year 2000 provision performance indicators, World Bank, USAID and other donor agencies framework for EPIs or created from *ab initio* giving the peculiarities of what aspect of performance outcome that is to be measured. Indicators are grouped into key performance measures such as the general format of input, process (output and access) and outcome or

Data gathering could be done through existing school records and development of new data collection and organizing methods. The use of the computer cannot be overemphasized in all of these tasks especially the excel spreadsheet. Data analyses is also one advantage that the use of the excel sheet application provides. In the organizing of gathered data, automatic update and instant analyses is can be seen to be effected.

9.0. Conclusion

The concept and application of performance indicators as a performance measurement and improvement tool even in education has come to stay. The benefits are abound and so worth partaking. It is a wise counsel to ignore any counter opinion. The regime of continuous improvement is now especially in continuously changing world. Effectiveness and efficiency cannot be overemphasized giving the background that *anything that gets measured gets improved.* Education for all has no ties with compromised quality of education.

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