ANALYSIS OF GLOBAL QUALITY INDICATORS IN THE NATIONAL POLYTECHNIC INSTITUTE, MEXICO

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ABSTRACT

The public education of quality can mitigate educational differences between rich and poor families, according the report of United Nations about Human Development in 2014. The Human Development Index (HDI) is an index that measures the achievements of a country in three basic dimensions of human development: 1) A long and healthy Life, 2) Access to education and knowledge and 3) Dignified standard of life.

The same report states that primary and secondary education worldwide remains at acceptable progress but in higher education levels there are large gaps between developed countries and those it in developing.

Derived of policy national and institutional in education of Mexico, quality indicators involve various parameters within which highlighted, approval rating, the reproof rate and the desertion rate; although these rates are not the best way to measure the quality that exists in the process of educational training.

It has been observed that ethics and responsibility of all stakeholders in the education system of this level have an influence unfavorably on the values presented by the mentioned parameters.

This research attempts to find relation between educational performance and the behavior of the actors involved in the educational system; employing, a systemic methodology that allows us to evaluate the problem and contributing to the resolution of a holistically.

Keyboards: Quality indicators, Educational Performance, Ethics, Responsibility.

INTRODUCTION

At present is observed a demand for higher education unprecedented accompanied by a diversification of the same, and greater awareness of the fundamental importance that this education has for the sociocultural and economic development and for building the future

of nations, for which new generations must be prepared with new skills and new knowledge and ideals, based on ethics and responsibility.

Higher education faces everywhere to challenges and difficulties related to financing, equal access to studies and during them, better staff training based on skills, improvement and preservation of the quality of teaching, research and services, relevance of curriculum and later but very important, the employability of graduates.

Higher education must address the challenges posed by the opportunities of the new technologies that improve the way we produce, organize, disseminate and manage knowledge to access it. The societies, which currently transiting into stages based on knowledge, offer new horizons for educational institutions, both in the tasks of training of technicians, professionals and researchers, as in the generation, application and transfer of knowledge to address the country problems.

In this context, educational institutions and generally the organizations to evolve and conduct themselves ethically, grounded in values of socially consensus, will be those that will survive. Today, the ethical conscience becomes the competitive strategy of the institutions and this should be very clear for managers and others involved in the activity of educational institutions (Patiño, 2006b).

Is urgent the need to implement ethical systems which guide the performance of an educational institution, especially in the training of future professionals and scientists, who will develop occupationally in the same social nucleus, which implies implementing instruments to regulate the quality of processes and subsystems involved to achieve the final purpose, total quality.

The research is developed in the National Polytechnic Institute (IPN) in Mexico", because it is a biggest educational institution of Mexico and also one of the best for industries and Mexican society.

DEVELOPMENT

The main objective of this research is to develop an analysis of the quality indicators at the National Polytechnic Institute of Mexico, especially as they have been affected by the influence of ethics and responsibility of those involved subsystems.

The main quality indicators are three:

1. Approval Index. It comprises the overall percentage of students passing the normal courses and accredits all subjects of the school year.
2. Reproval Index. It comprises the overall percentage of students who reprove one or more subjects of a school term.
3. School leavers Index. It comprises the overall percentage of students who leave school for any reason.

It should be noted that these indicators are presented by the website of the IPN, according to some indicators suggesting the UN, as already explained (Enrollment). But nevertheless, we believe that these do not provide a more realistic and accurate measure of the quality inside and outside within the education system, since this is more complex than just the three indicators that are mainly concerned with school enrollment.

Similar research was developed and presented in the Congress of the ISSS in Tokyo - 2007. This time, keeping the concordance of the research mentioned, is considered a similar hypothesis and also similar procedure takes place in the analyzes developed:

Hypothesis:

The indicators of educational performance at the National Polytechnic Institute of Mexico are affected by the lack of ethics and responsibility in the process of training of students.

For the development of this research, the research method of Mario Bunge (1990) and methodology Checkland (1981, 1990) was followed.

Having described the problem, the next step was to define through the methodology Checkland find two relevant systems, which are described below:

1. Ethics and Responsibility System: A system allowing develop of a way ethical, decent and honest the proper functioning of an educational institution, respecting the rules established for this purpose.

2. Performance system: the end purpose of an educational institution, to maintain and / or increase favorably the indicators involved.

Relation of Variables

Of the hypothesis analysis, and certain relevant systems, we can deduce that have 2 variables in this problem. The value system as the independent variable and the educational performance as the dependent variable.

Educational Performance = f (Ethics and Responsibility System)

Dependent Variable = f (Independent Variable)

It is clear that educational performance depending on many variables, but this research, given the limitations, only considers at this early stage the influence of Ethics and Responsibility System.

Research Instrument

It was used as a research tool the survey, developing a questionnaire that allowed us to gather empirical information relevant for analysis (Kerlinger, 1964) and the operational definition of the variables was also performed.

Table 1. Operationalizing of variables.
Source: own.

Relevant System Variable	***Indicator***
Ethics and Responsibility System	Responsibility. Honesty. Ethics Respect to equity. Respect to dignity.
Performance system	Terminal efficiency. Indexes: approval, reproval and school leavers. Quality of education Cost of education

As a research tool, three suitably validated questionnaires were developed, one for the academics, other for personnel to support teaching and authorities, and the third, for students.

Each questionnaire contains several questions related to the variables involved. The systems are measured with a scale of values type Likert of 4 levels (See table 2).

Table 2. Range of values for the questionnaire.
Source: own.

Nothing	Not Much	Regular	Much
1	2	3	4

Processing and analysis of data

Once the validation of research instruments was obtained, the next step was to start its implementation, which was performed for each of the four fields of knowledge that comprise the IPN, which are: field of Engineering and Physical-Mathematics Sciences, field of Biological and Medical Sciences, field of Social Sciences and Administratives and the field of Interdisciplinary Studies.

Of the schools randomly selected by thematic of knowledge, each of the three research instruments was applied 30 individuals from each of the four areas of knowledge, which

gives us a subtotal of 90 responses for each area, and consequently a total of 360 responses. The items are grouped in correspondence to each of the variables involved, thus, to each of the systems considered relevant. Thus, the main reagents for system of ethics and responsibility; and their influence on the overall quality indicators are presented below:

1. Behave with ethics and values in the performance of their duties by the academic staff and non-teaching would positively influence the educational performance of IPN?

Table 3. Results obtained for item 1.
Source: own.

Nothing 1	Not Much 2	Regular 3	Much 4
0 %	5.08 %	21.33 %	73.59 %

As shown in Table 3, the IPN community in general strongly believes that the educational performance of the Institute would be helped by the presence and application of ethics in processes involving the realization of educational activity.

In addition, for the system of educational performance is considered the following:

This system reflects the actual performance of the Institute and, as we know, is a complex system where they are harvested all the efforts of an educational organization. From the website of the Institute for some indicators of efficiency of IPN they are as show in table 4.

Table 4. Results of quality indicators weighted of IPN.
Source: Direction of Evaluation, IPN, 2015.

	2011-2012		2012-2013		Variation	
Index	**Students**	**%**	**Students**	**%**	**Students**	**%**
Approval	49,507	51.71	52,585	53.32	3,078	1.61
Reproval	40,882	42.7	40,272	40.83	-610	-1.87
School leavers	5,534	5.59	5,767	5.85	233	0.26

Hypothesis verification

Recalling that the hypothesis generated by this research question was:

The indicators of educational performance at the National Polytechnic Institute of Mexico are affected by the lack of ethics and responsibility in the process of training of students.

We can see of the comparison of percentages of Table 3 that there is an association of variables between educational performance and the system of ethics and responsibility, in the sense that behave ethically and responsibly will raise educational performance. We can say that the 5.08% think it would not much; the 21.33% think it would be regular and 73.59% think it would be much, which expresses the perception of the influence of the independent variable on the dependent variable (performance).

Using the SPSS computer program and application of the averages of the items involved in the variables Educative Performance and Ethics and Responsibility, gave us as a result of correlation analysis as follows:

Correlation coefficient:

***Rho de Spearman*: 0.514**

Which indicates without doubt that there is a positive association between these two variables, thus, the increase in the independent variable (Ethics and Responsibility) lead to an increase in the dependent variable (educational performance); which suggests that the research hypothesis is confirmed.

On the other hand, it developed an analysis of the evolution of the indicators, which is presented in Figure 1.

Index	2005 %	2012 %	2013 %
Approval	54.67	51.71	53.32
Reproval	30.33	42.7	40.83
School leavers	15.00	5.59	5.85

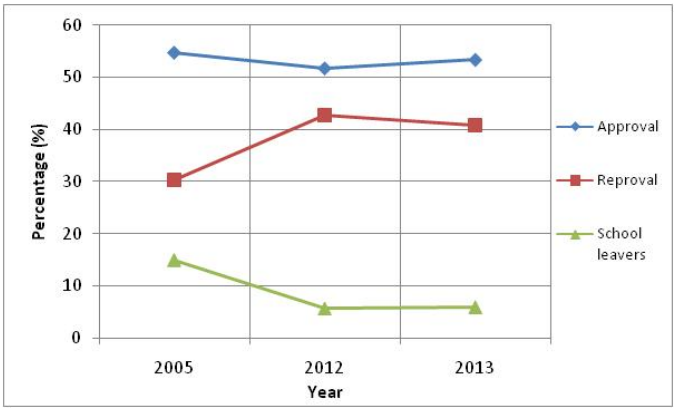

Figure 1. Evolution of weighted quality indicators IPN.
Source: own

The Figure 1 show the result of statistical analysis developed for the years indicated and applied to the 3 quality indicators presented.

CONCLUSIONS

a) In general, it appears that the community thinks that an appropriate change in the ethical conduct and responsible by the teachers and administrative staff, would impact undoubtedly in a better educational performance of institutions, which somehow matches the research presented in 2007.

b) As in previous investigations, is observed the need for a more complete analysis in higher education systems that take into account more variables involved in this complex problem, which undoubtedly shed, the need for urgent changes mainly focused on the benefit of students, who are most affected by the malfunction of institutions. Overall, it is expected that the results presented in Figure 1 were more favorable for the indicators in question, which opens the view to seek more integral solutions to the problem, obviously, by all members of the community of the IPN.

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