

# Challenges of Education for Brazil: Indicators and Management Models

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**Abstract:** *This article discusses the crucial role of educational managers in Brazilian municipalities, considering that public resources should be applied in the light of the principle of efficiency and, in the light of the world order of education of the 21st century. The concern with the quality of basic education is among the main focuses of attention of public managers in Brazil and among the main causes of mobilization of civil society. In this sense, it is imperative to find the determinants of quality and establish more realistic goals and objectives, allowing them to be judged in terms of efficiency and effectiveness by stakeholders.*

**Keywords:** quality of basic education; public schools; public management; management goals

## 1. An Overview of Brazilian education

It is unusual to see managerial approaches, with modern management techniques, dedicated to education, especially in public education, in Brazil. Most schools are managed and run by public authorities, and a vision of results is not common in this segment. This article addresses the crucial role of educational managers in Brazilian municipalities, considering that public resources must be applied in the light of the principle of efficiency and that, in the light of the world order of the 21st century, public organizations have objectives that must be achieved.

In this sense, it is imperative to find the determinants of the quality of public education and, with this, to set more realistic goals and objectives, making them possible to be judged in terms of efficiency and effectiveness by the stakeholders.

The Brazilian government, and Brazilians involved in education, must recognize that the future of Brazil depends on improving the quality of schools (Hanushek, 2013). In this direction, the concern with the quality of basic education is among the main focuses of attention of public managers in Brazil and among the major causes of mobilization of civil society (MEC - Ministry of Education, 2011).

From this perspective, the evaluation of public policies and programs is given a prominent place as a means to measure their performance and exercise accountability to society. Thus, the evaluation of public management performance seems to be directly linked to the promotion of greater transparency and the creation of accountability mechanisms (Bonamino & Sousa, 2012).

This set of ideas reaffirms the precepts of the New Public Management (NPM) which, according to Marques (2008), seeks to renew and innovate the functioning of public administration, using private sector techniques, adapted to its own characteristics, as well as developing new initiatives for achieving economic efficiency and social efficiency. In the NPM underlies the philosophy of offering unique opportunities, to improve the economic and social conditions of the people. However, it is not common to find

educational policies that have important impacts on educational outcomes (MEC, 2011).

One possible explanation for the lack of effectiveness of education policies is that in such an environment, aligning the will of stakeholders (eg, government, teachers, learners, parents and society) is a rather difficult task, given that stakeholders are rational, selfish, and resistant to change.

In this environment, agency theory is fundamental to delineate the desire of the parties, using management control systems based on a structure that allows monitoring results, evaluating performance and rewarding or penalizing those responsible for results. As Hanushek (2013) states, the introduction of better accountability systems for schools and teachers is an important element in the improvement of Brazilian education.

In addition to the agency relationship, the literature indicates that social and economic factors are related to educational efficiency. For example, Gong & Tse (2009) point out that an organization's performance depends on the fit between its organizational structure and other contextual variables, such as economic environment, strategy, technology, organizational structure, size and culture.

They are economic, social, technological, legal and demographic peculiarities that make educational management contingent and may require specific models for each situation. These aspects are challenging for managers, educators and researchers in contingency theory, since they presuppose that there are a number of factors to be considered in order to achieve efficiency and effectiveness (Espejo & Frezatti, 2008).

This is because school is a good example of an open system, its characteristics are strongly influenced by socioeconomic conditions and other local peculiarities. This makes education multifaceted, dependent on many variables that must be taken into account by the manager.

With this, the role of the educational manager is to adjust the organizational structure according to the contextual variables associated with that organization. For Gong & Tse (2009), this indicates that when there is a change in one

or more of the contextual variables, another type of organizational structure may constitute a better fit.

Among the many variables that may influence the result of educational management, the money applied is the most controversial. The literature reveals intriguing results that indicate that resources are only attenuating school performance. This does not imply that resources are unnecessary, but that resource growth alone is unlikely to be sufficient to improve educational quality (Al-Samarrai, 2006).

According to the Organization for Economic Co-operation and Development (OECD) (2012), based on the results of the International Student Assessment Program (PISA) in 2012, Brazil spends the equivalent of USD 26,765 per year in education per student between ages 6 and 15 years. This represents about one-third of the OECD countries' average expenditure (USD 83,382). However, Foreque & Patu (2015) warn that on average, in proportion to Gross Domestic Product (GDP), Brazil is already investing 6.4%, while the average of the OECD countries was 5.6% in 2011.

The results of PISA 2012 show a positive relationship between the resources invested in Brazilian education and performance. Confident in this effect, the Brazilian government has approved Law 13,005 / 2014, which increases the amount of money for public education until it reaches the 10% of national GDP. As a counterpart to the contribution of this resource, the government set the goal of matching the quality indices of Brazilian education to the average of the OECD countries.

It turns out that, historically, Brazil occupies the worst positions in the ranking of education measured by PISA (position 57 of 65 countries). However, international and Brazilian researchers have diverse and conflicting opinions about the effect of the increase in public spending and its relation with the quality of education. This raises questions as to whether the increase in resources for education will produce the expected effects (as predicted by NGP) or will be wasted.

In this context, Filho, Lopes, Pederneiras & Ferreira (2008) point out that mechanisms need to be created to monitor the results of the application of the funds in public education, as well as to offer stakeholders the possibility to evaluate the management of these funds, to establish a border of efficiency.

To do so, especially in the context of NGP, it is imperative to develop specific techniques for educational management, in order to evaluate costs, set goals, determine strategies and choose parameters to provide useful information to managers and other stakeholders.

Following the reasoning, the management of education expenditures is precisely one of the most recurrent criticisms of the specialists (Foreque & Patu, 2015). In addition to the volume of money spent, Sarrico, Rosa & Manatos (2012) point out that there are openings to investigate the determinants of school performance, especially at the level of management practices.

In this context, it should be noted that in the context of recent reforms in the basic education evaluation system, the Brazilian government established pillars for educational policy in which the three main innovations were: the incorporation of accountability objectives; the definition of goals, both for the country and for each state and municipalities, and the creation of the Basic Education Development Index (IDEB)

The IDEB is the indicator of the educational quality of Brazilian schools. Created to follow the evolution of education and to establish the quality standard that the Ministry of Education (MEC) has defined as a goal to be achieved. The IDEB summarizes the major challenges of the quality of current basic education: improving school flow and performance (MEC, 2011).

Based on the IDEB and the definition of goals to be achieved, the way was opened for educational management to act decisively and immediately according to the precepts of the NGP. Therefore, it is necessary to find a set of determinants of the quality of education on which to diagnose the effectiveness of management.

In this direction, it should be emphasized that Brazil is a continental country in size and economic, social and cultural diversity. In view of the above, this research takes great importance in studying the determinants of the quality of education in Brazilian municipalities and, in parallel, discuss the role of stakeholders in the educational context, taking into account that in NGP it is paramount to establish performance measurement parameters from the point of view efficiency and effectiveness of management.

Differently from what has already been produced, the present study addresses the complex relationship between the IDEB as an indicator of the quality of Brazilian education and variables that are controllable and not controllable by managers, but which must be taken into account in budgeting and in setting quality of education.

It is in the interest of Science to find variables with some power to explain the variation of the IDEB in the Brazilian municipalities. Thus, the present study gains significant relevance by going beyond the financial context to include socioeconomic variables that are representative of local peculiarities and, by this way, demonstrate that the problem of the low quality of Brazilian education is much larger than the volume of resources invested by governments.

In a broader view, by contributing to school management, findings from this research may indirectly improve school outcomes. After all, as Hanushek (2013), states, if Brazilians are not willing to improve schools, they will be accepting the fact that the country's economic power will remain well below what it could be.

#### **Stakeholders and accountability**

The society involved in the management of Brazilian education has the expectation of an increase in school expenses in the order of 4% of the Brazilian GDP, with the purpose of improving the IDEB. However, if the targets are not met, such public resources will certainly be wasted.

The literature does not identify a consistent set of variables and a methodology that empirically explains changes in the quality indicator of Brazilian education, possibly because, in addition to money spent on educational expenses, endogenous or contingent factors at each locality make generalizations difficult (Evans, Murray & Schwab, 1997; Harris, 2007; Meier & O'Toole, 2003).

This article was written from an empirical research that listed as objectives, explore the relationship between local socioeconomic variables and the municipal IDEB; to explore the relationship between educational expenditures within the Fund for Maintenance and Development of Basic Education and Valorization of Education Professionals (FUNDEB) in municipalities and the municipal IDEB; explore the relationship between municipal public revenues and the municipal IDEB; to identify efficient municipalities in Brazilian educational management, and; to identify the average value of school expenses, per student, in municipalities that are efficient in Brazilian educational management.

### Current state of knowledge and expected contributions

By the current state of knowledge it is possible to infer that the discussion about educational policies is articulated in a process broader than the dynamics of in-schooling (Dourado, 2007). Several perspectives, conceptions and complex scenarios are in dispute in this theme and, according to Dourado (2007), the management of education has been the subject of several studies in the national and international scenario.

In fact, many studies conclude that school characteristics, for example: teacher qualifications, number of pupils in a classroom, family influences, and socioeconomic aspects of the place where students reside, can be determinants of the quality of education (Dahar, Dahar & Dahar, 2011; Hanushek, 1986, 2008, 2009; Harris, 2007; Hedges, Laine & Greenwald, 1994; Krueger, 2003; Mensah, Schoderbek & Werner, 2009; Parcel & Dufur, 2001).

The present study stands out from the others because it is the pioneer to jointly invoke theories of agency and contingency to investigate this continental country of great cultural diversity. This research explores the regional differences in a comparative analysis of the five major Brazilian regions to see if uniform treatment by the central government for all regions is beneficial or prevents some regions from developing education at acceptable quality levels.

In addition to the above, among the various possibilities of contributions that can be given by the present investigation, one can cite the following: 1) find indicators that affect the management of education and school performance; 2) to contribute to the economy of resources, to minimize the cost of school consumption, as it identifies factors that increase efficiency; 3) contribute to the establishment of goals and pave the way for increases in the remuneration for teachers' performance, based on the performance indicators; 4) to subsidize the discussions in the school councils towards the improvement of the educational quality, and, in the same way, to support the elaboration of participatory budgets and the multi-year investment plan; and 5) serve as a parameter

for public education management audits. The contrasts and challenges of education.

The constant world crises of recent years and spending restraint policies have led governments to reconfigure their roles according to the principles of neoliberalism, based on the conviction that markets are better than bureaucratic organizations to produce economic rationalism (Broadbent & Guthrie, 1992, 2008). Such a movement of government reform in liberal democracies has advanced from the experiences of countries such as England, Australia and New Zealand (Ezzamel, Hyndman, Johnsen, Lapsley, & Pallot, 2005; Grubisic, Nusinovic, & Roje, 2009; Marques, 2008; Sarker, 2006).

In the light of the set of ideas brought by Gourishankar & Lokachari (2012), Chaudhary, Nafziger, Musacchio & Se (2011) and Hu, Zhang and Liang (2009), it is highlighted that, as in most developing countries, in Brazil, the central government and state governments, since the beginning of the 1990s, have used efforts to make public management based on results and performance evaluation.

The challenge of the Brazilian public administration is great, considering that there are 5,565 municipalities with very different characteristics, in which it is intended to develop management in order to raise the level of participation of society, improve the quality of public expenditure and the attributes of benefits of bills.

Considering the international character of the changes, it is important to understand the effects of the application of public resources in the most diverse nations and, specifically, in local governments or organizational units providing public services (Broadbent & Guthrie, 1992; Kluvers & Pillay, 2009; Kluvers & Tippett, 2011).

In this new age of accountability, it is assumed that managers are able to formulate coherent strategies and improve the performance of their organizations in order to monitor actions to make economic decisions about the resources made available. However, taking school districts, for example, neither school board members nor economic managers are prepared for this task (Childress, Elmore & Grossman, 2005).

In public administration, the relations between the parties are observed as soon as the population, through the vote, delegates powers to the public agents who make decisions and attitudes in the name of the interests of the citizen as the recipient of their actions (CFC - Council Federal Accounting, 2011). Such a relationship, in principle, indicates a quest for efficiency in public management that the accounting system should be concerned about, as it should provide information to assist stakeholders to judge compliance, level of transparency of accountability and correct disclosure of the equity.

On the other hand, because of the analytical importance of decision-making, public management scholars have turned their attention to the contingency approach because, despite the development and use of sophisticated control techniques, there is no guarantee of organizational success through

universal application of any particular technique, assuming that there are a number of factors to be considered to achieve efficiency and effectiveness of management (Espejo & Frezatti, 2008).

### Accountability in public management

Accountability is a term often used in business, political and social contexts and is an important concept for society and for organizational systems (Frink & Ferris, 1998). On the basis of accountability, people tend to manage perceived risks in fulfilling their responsibilities (Bergsteiner & Avery, 2010). Accountability is also the ability and willingness to explain the manager's behavior, stating how he fulfilled all of his responsibilities (Broadbent & Laughlin, 2003).

This concept has a close relationship with management accounting (Monfardini, 2010). Broadbent & Laughlin (2003) discuss it, distinguish it in politics (the one preoccupied with issues of democracy and trust) and administrative (one that is concerned with the day-to-day operations of an organization). Political understanding was supplemented by an administrative conception of accountability (Greiling & Spraul, 2010). Broadbent & Laughlin (2003) understand that, according to administrative responsibility, management information is not directed at the general public, so it is rather a way for elected officials to control their agents responsible for achieving goals and objectives.

In the empirical field, an important study on accountability was designed by Greiling & Spraul (2010), when analyzing economic, psychological and sociological theories. The authors wanted to know if the complexity of regulations could confuse managers and citizens about transparency and accountability. The research concluded that public administrators can purposely use the overload of useless information to confuse citizens.

In the theoretical field, Broadbent & Laughlin (2003), Benz (2007), Schillemans (2008), Greiling & Spraul (2010), Olu Adeyemi & Obamuyi (2010), Kluvers & Tippett (2011) and Saliterer & Korac (2014), investigated NGP and accountability in the context of agency theory.

For Saliterer & Korac (2014), accountability occurs when the agent accepts resources and responsibilities passed on by the superior, the principal. Thus, accountability can be achieved through the use of contracts (Kluvers & Tippett, 2011). Speklé & Verbeeten (2014) go even further by emphasizing that the effects of performance depend on the quality of contracts. This encompasses clarity of objectives, the ability to select performance metrics and the degree of knowledge and control capacity by the public managers involved in the process.

Broadbent & Laughlin (2003), warn that some relationships between principal and agent can not be precisely defined to the point of being contractual, since it is reasonable to generate accurate information to be able to monitor contracted performance. Thus, it is clear that information is a crucial factor in accountability (Greiling & Spraul, 2010).

In conclusion to this topic, we have that the mentioned literature reaffirms the decisive role of the management accounting, since, in the context of NGP, in addition to the traditional practices of budget and control, the management goals are established for each sector, area and subunit and the parameters for accountability are created. Among goals and accountability is the accounting information, which should be sufficient for the manager, and other stakeholders to evaluate the efficiency and effectiveness of management.

### Establishment of management goals

A good management performance can be achieved by selecting strategies to achieve previously measured goals, transferring decision rights, measuring performance and offering rewards (Heinrich, 2002; Ittner & Larcker, 2001; Otley, 1999; Verbeeten, 2008).

The literature suggests that clear goals and measurable outcomes are needed to prevent the dispersion of organizational energy (Rangan, 2004; Yee-Ching, 2004). Thus, by quantifying goals and assessing the likelihood of them being achieved, organizations reduce or eliminate potential ambiguities or confusion about objectives in order to gain coherence in order to focus and pursue business mission (Verbeeten, 2008).

In the empirical context of this theme, Parker & Bradley (2000) studied the process of organizational change triggered by administrative reforms in the public sector in Queensland, Australia, under the aspect of organizational culture. The objective was to understand how public organizations, previously strongly based on the traditional bureaucratic and hierarchical model, would behave according to the NGP. The empirical study observed four perspectives of integration to the new system: the competitive value model, the open systems model, the human relations model and the rational goal model. The results showed that the four models of integration were important, with a slight differentiation for the rational target model, since it involves external control in which goal planning is set to achieve productivity and effectiveness.

The rational meta model, also called rational culture, has an emphasis on results and goals. In this organizational model, managers and employees of the organization are oriented to pursue established goals and objectives (Parker & Bradley, 2000).

In this framework, Flemming (2009) did a quantitative research to develop a map with managers performance indicators and thus identify which leadership style is best suited to improve organizational effectiveness in the public sector. Data analysis indicated that organizational effectiveness depends on alignment of leadership style, culture, and strategies. The author concludes that in the public sector, as well as in the private sector, leaders must clearly articulate organizational goals and objectives.

In the same vein, Verbeeten (2008) developed an empirical study to analyze management performance in public sector organizations in the Netherlands. The study is based on data collected in a questionnaire addressed to managers of public organizations, in which information was sought on the

clarity and measurability of the organization's goals, on the incentive system and on the performance of the organization. The results indicated that clear and measurable goals are positively associated with the quantity and quality of performance. In quantitative terms, the impact of clear and measurable targets on efficiency is 0.25; and for efficacy is 0.35. Therefore, according to Verbeeten (2008), goal setting has a greater impact on effectiveness than on efficiency.

Wright (2007) proposed a goal theory model to explain the potential effects of organizational mission on the motivation of public employees and to test the empirical relationship between the importance of organizational mission and the motivation of employees to work.

The literature review indicates that goal theory provides a theoretical rationale for understanding the importance of mission in motivating public servants to perform best. The empirical test indicated that the results of the research are consistent with the doctrines of goal theory. The author concluded that public employees will be more motivated to carry out the work, when they clearly understand that the tasks are challenging and achievable.

Still according to goal theory, Frink & Ferris (1998) investigated the effects of individuals' responsibility on established goals when they are important in performance evaluation. The authors consider that the correlation between goals and performance will be significantly different for high liability conditions against none or low. To validate the hypothesis, the authors made tests with groups of students. The results indicated that there is a positive correlation between goals and performance when there is no accountability and a negative correlation when accountability is high. Therefore, the survey indicated that individuals are willing to achieve the goals, provided they are not penalized when they fail to meet them.

In view of the above, it is necessary that goals and objectives be clearly specified, as they stand for (Speklé & Verbeeten, 2014). To corroborate with the ideas underlying the above-mentioned researchers, from the point of view of school management, measurable goals are indispensable for the evaluation of effectiveness, since the goals function as a border between effective and non-effective management.

### Measuring performance in public schools

The notion of performance measurement emerged within the scope of NGP and is applied in both developed and developing countries, including India, Jamaica and Thailand and more recently Japan and Latin American countries (Gajda-Lüpke, 2009).

Over the last two decades, the introduction of performance measurement in public management has been one of the most widespread international trends (Pollitt, 2006). In the scientific literature, it is widely recognized that performance measurement systems can serve several purposes and can be applied in a variety of ways (Speklé & Verbeeten, 2014).

Especially in school organizations, measuring performance is a significant challenge, given that the quality of such public services has many factors that can influence all of these indicators, since school districts are increasingly charged with responsibility for academic performance of their students, with the political, social and economic pressure behind the accountability movement, considered unprecedented in duration and intensity (Childress et al., 2005).

In this scenario, special attention is given to ways of measuring school performance, since the only way to measure the effectiveness of educational management is to monitor student performance and compare it with the effort undertaken for that result.

Ackerman (1987) reports that for much of the second half of the 20th century there was a heated debate about the performance criteria of students, whether such criteria are dynamic or static.

For this author, this debate has been largely solved, with recent theories and empirical research that have shown that individuals may present patterns of performance, or trajectories, that are systematically different over time.

The empirical conquests refer to the works of Sanders (2000) and Sanders & Horn (1994). The idea behind Dr. Sanders' work is to measure student performance based on a statistical process that provides measures of the influence that education systems, schools, and teachers have on each student's learning indicators over the course of the course. The model described by Sanders & Horn (1994) was known as value added model (or aggregate).

In addition to evaluating students, this model evaluates schools and school systems quite simply, says Sanders (2000), explaining that the equations of the model incorporate the scores of all students, then models each student's learning profiles each discipline. Finally, these profiles are grouped by education system or by schools. The earning score of a school system or a school is estimated and compared to the national standard. In this way, the education system or school can identify where students are achieving exceptionality, normality or disability.

In addition to the above, Chen & Mathieu (2008) have collected several studies that have demonstrated relationships between the various individual differences and different patterns of performance over time, reinforcing the notion that performance trajectories capture systematic and significant phenomena.

Based on these considerations, Anderman, Anderman, Yough & Gimbert (2010) argue that in the USA, public opinion has suggested improvements in how to evaluate school performance from the longitudinal analysis of student achievement.

Still, based on these authors, a breakthrough in this direction occurred in the USA with the 2001, No Child Left Behind Act (NCLB), which describes the performance in terms of

measurable annual goals, taking into account a minimum percentage of students who must reach a level proficiency in reading and math.

According to the above rule, all states should measure students' academic performance through standardized tests and report on the progress of schools and school districts by comparing them with scores from previous courts (for example, from the previous two years ) in longitudinal analyzes, in the form recommended by Sanders of added value in longitudinal evaluations.

In this context, Childress et al.(2005) defined the value-added assessment system as the method of gain analysis, growth in score or quantity of aggregate knowledge from one year to another.

From Wright's(2010), point of view, to determine the growth of education quality scores, value-added placements use one of two approaches: a) a regression line representing the average growth of students is used as a point of comparison for a student's performance judgments and thus collectively the performance of a school or municipality, ranking them above or below the expected rate of growth; or, b) growth rates are computed for students who have similar scores at time 1, in contrast to the group's average performance at time 2. For the author cited, this approach allows educators and managers to make the necessary changes to the growth in students' academic performance over time.

Like Braun (2005), researchers argue that value-added models are relatively robust, especially if students are distributed heterogeneously among schools within a single local government. This author affirms that the positioning based on this concept and the statistical methods for its application have been a topic of debate between researchers and public managers and tend to be widely adopted as an instrument of evaluation of educational efficiency.

To give more robustness to the value-added method, Anderman et al.(2010) recommend the combination of added value with established goals to achieve management effectiveness.

In accordance with the considerations made by the author just cited, Che-Ha, Mavondo & Mohd-Said(2012) attest that guidelines for the goal impel the development and improvement of organizational capacity.

Based on a review of the value-added literature, it is observed that the underlying idea of proponents of such a method complements the arguments already outlined, especially in agreement with Verbeeten(2008), Rangan (2004), Shih-Jen & Yee-Ching (2002), Heinrich (2002), Ittner & Larcker(2001) and Otley(1999) when they stated that, according to NGP, it is necessary to plan, select the most efficient management technique, monitor the performance of personnel and compare the results with established goals and objectives.

### **Benchmarking for performance management in the public sector**

In a business environment, subject to the effects of changes in external variables not controllable by the company, organizations are conditioned to perform periodic and systematic reviews of the performance management procedures used.

Given that the reforms brought by NGP led to important changes in the management of public sector organizations, based on the notion of competitive markets and the adoption of private sector management techniques, the literature reveals that benchmarking can be used to improve performance in the public sector, just as it does in the private sector (Speklé & Verbeeten, 2014).

The definition of benchmarking has many variations, but most include measurement, comparison, identification of best practices, implementation and improvement. According to Anand & Kodali(2008), one of the most cited definitions is: benchmarking is the pursuit of best practices in the industry for exceptional performance to implement these best practices. Often this concept is understood as an act of imitation or copying, but in reality it is relevant to innovation rather than imitation (Dattakumar & Jagadeesh, 2003).

Benchmarking is a quality improvement strategy, a process of discovery that seeks to identify particular practices or organizations that are best in their field and to find out what they are doing to achieve this exemplary status (Weller, 1996). It is the search for better performing organizations, learning from successful practices (Magd & Curry, 2003).

Benchmarking is recognized as an essential tool for continuous quality improvement. With this, decision-makers are constantly looking at techniques that allow quality improvement (Dattakumar & Jagadeesh, 2003). Benchmarking is an ongoing activity; By this technique, the main internal processes are adjusted, performance is monitored, new comparisons are made with current performance and more changes are better explored (Magd & Curry, 2003).

Benchmarking has been successfully migrated from the private sector to the public sector, and is now frequently applied in their (Andersen, Henriksen, & Spjelkavik, 2008). It is a powerful vehicle for quality improvement and a paradigm for effectively managing the transformation of public sector organizations into quality organizations (Magd & Curry, 2003). According to Andersen et al.(2008), benchmarking is undoubtedly an appropriate tool for public sector organizations. The authors demonstrate a large number of studies describing cases of their use in the public sector.

In this sense, it is considered as a way to allow public sector organizations to disseminate a broader perspective for performance evaluations and to develop these indicators in a more adequate and clear way (Andersen et al., 2008), In education, the term "benchmarking" was first observed in the United Kingdom in 1957 (Henderson-Smart, Winning, Gerzina, King & Hyde, 2006). Currently, the technique is

already widespread in this environment, as Dattakumar & Jagadeesh (2003), attest, when reviewing 21 articles on the application of benchmarking in education.

For Weller (1996), benchmarking can be a very successful tool in applying the principles of total quality management in schools. Following Weller's (1996) understanding can be used in this sector as a powerful tool in promoting quality change, regardless of the type used, since it can promote the paradigm shift in organizational thinking.

In this sense, Henderson-Smart et al. (2006) developed a method for applying it in the academic field. The authors used the comparative analysis approach to improve self-regulation and quality in teaching and learning. The plan provides for three stages, thus summarized: defining the project focus and developing an approach; define a set of comparable quality indicators with other schools with similar characteristics; and describe different levels of performance for each quality indicator.

With the approach on agency theory, Andersen et al. (2008) note that in benchmarking, the main one can reinforce the message and communicate more clearly the policies that the agent wishes to execute. According to these authors, the principal can define performance indicators that will be used to evaluate the behavior and achievements of the agent. The authors have demonstrated that the most typical way of using it to obtain improvements for the public sector is through the voluntary disclosure of this management tool.

However, according to Smith (1994), management accounting information systems are still very closed, which impedes the efficient functioning of the procedures. In this way, new initiatives are needed to promote a cooperative attitude. For the author, improvements in accounting information systems can be achieved if evidence is used from benchmarking.

## 2. Final Considerations

In view of the above, it is evident that the main problems of Brazilian education in the 21st century have more to do with management rather than resource. Resources are scarce as in any part of the world; however, management is a problem of social organization and budgetary discipline, mainly. Models are smart ways to conduct education; their effectiveness is related to understanding by the society involved and their ability of managers to track results.

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