

## WORKING TO IMPROVE QUALITY IN EDUCATIONAL BUILDING: EXAMPLES AND PERSPECTIVES FROM PORTUGAL

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***Abstract.** This paper presents three experiences on evaluation projects in Portugal over the last 10 to 15 years: characteristics of existing school property; diagnosis of existing laboratories in secondary schools; and a general survey of school facilities. It also presents an activity on "Safety and wellbeing at school", which is currently being carried out by the Portuguese Inspectorate for Education as part of a larger programme that looks to evaluate the effectiveness of the education system.*

### The education system in Portugal

Portugal suffered a large process of entering the modernity during the last 30 years and we are still facing hard scores when we compare our students' performances with our partners in EU.

30 years ago our students only had to perform 6 years of compulsory school, nowadays they have to perform 9 years and we discuss if they have to perform 12 years, as outlined now by the leading government.

Meanwhile, through all country, an annual program was launched in 1997 to promote early childhood school facilities with financial support from the State<sup>1</sup>, which has had a great success, reaching today 242 622<sup>2</sup> children from 3 to 6 years old in a total of 6 448<sup>3</sup> schools both private and public.

After a hard process of building schools for all, we may say that we have now a complete network of schools covering all country and all levels of schooling.

And when comparisons with other national education systems are made, we may say that quality of our education infrastructures as well of our educational resources are, in its mid value, equal to other OECD countries<sup>4</sup> although poor performances of our students in areas such as mathematics and literacy.

Today, as we talk about the existing stock of school buildings, we start facing in certain areas and in certain ages, a decrease in school population that goes with a slight decrease of our 10.3 millions population growth and an important decrease in the young population group (less than 14 years old). The number of students entering school has decreased at all levels, including secondary, except for the 2d cycle that saw an increase in its school population<sup>5</sup>.

Many primary schools are being closed and basic schools from 1st cycle are being transformed to adapt to central schools covering large geographic areas and offering different and integrated facilities for different groups of school populations<sup>6</sup>. But we still keep unsolved situations of uncompleted buildings for the educational needs, overcrowded facilities, lack of special facilities as laboratories, missing sport facilities or even non-existent resources as workshops for technical areas of education. These situations still occupy our education authorities with annual programs for maintenance, repair, renovation and extension of school buildings. Our budget for 2005 shows a capital investment of EUR 113 millions for basic and secondary schools: EUR 56 million for new buildings and EUR 32 million for remodelling and maintenance of the existing facilities.<sup>7</sup>

Our education administration also changed from a central department responsible for all school building to a decentralised administration and to a more important role of local authorities in the school planning, building and maintenance.

We know, at central departments, that our challenge today, becomes to reach quality, to solve the problems of modernisation, to upgrade old facilities and to adapt for uses that change constantly, or to give answers to new demands as will be, for instance, the impact of the a 3 years extension in compulsory school on the existing stock of school buildings.

These needs, and being aware of the ageing stock of buildings, are leading us to concentrate on evaluation programs and methodologies according to different needs. And in different moments, different demands have made us to develop different programs of evaluation that have been carried by different departments within the Ministry central administration.

I want to point out three experiences in which we have participated in a less or more complex involvement, departmental or personal, during the last 10 to 15 years and which were:

- ∞ Nature of existing school building stock.
- ∞ Finding out about existing laboratories.
- ∞ A general survey of schools and its facilities.

### **Nature of existing school building stock**

The results of this study were published in 1997 in an essay, “The State of the Scholar Park”<sup>8</sup>. It described the national school estate, and was launched by the Ministry Studies and Planning Department at that time (GEP), now GIASE. This department launched an inquiry to all 2d and 3d cycle, and to all secondary schools existing in 1991/92, having in return a large sample of answers (945 answers in 977 existing schools at that time). The objectives were to find out how they were, when were they built and what kind of construction, the types of schools, their dimension, how they were equipped and how they were being used, as well as to know about their environmental conditions.

In this inquiry, our department was involved in defining and classifying types of schools according to their construction, form, site, project and their spaces, helping to build the section of the inquiry that deals with physical resources and facilities.

After the inquiry, GEP made a systematic analysis of the collected data and finally printed a report giving us an image of how schools were by age, type, school population, construction type, the geography of several indicators, how many of each type were built in each year and told us how spaces were used, how the conditions of spaces and buildings look like, how many were precarious or existing in old buildings adding also a list of inadequate environmental conditions reported by schools.

This work was very important for us because it gave us a real measure of how our schools were at the time in terms of quality and how they were being used. It also gave us a first definition of indicators that could be used in further surveys.

According to this work, we knew, for instance, that 76% of our 2d, 3d cycle, and secondary schools, were built between 1976 and 1991 or that 21% were in “square blocks”, pre-fabricated type. Or, at that time, only 50% had working rooms and only 31% had facilities for school consultative bodies. Several indicators were also discussed in the final report showing that a few questions were somehow ambiguous, or could originate inaccurate answers.

It took about seven years to make since it was designed until the results were published. And the ambition of continuing updating the database in the following years, correcting questions, identifying meaningful indicators and improving the methodology, seems to be lost as we know that this work was never repeated until now.

### **Diagnosis of existing laboratories in secondary schools**

In 1999, the ministry secondary education department was preparing pedagogical changes on secondary curricula by which schools should put more emphasis on science. We were then asked to perform an inquiry to find out how secondary schools could support this practical curricular reform on exact sciences.

We developed an on-line inquiry that we launched to all schools with secondary education. An important sample of schools reported – 313 (66%) in 470 - through internet, feeding a database that allowed us, in an immediate phase, to print series of individual reports that were included in a preliminary report presented in October 2000. These reports were school by school, or by series of schools by geographical bases, and gave us a very detailed idea of how schools were equipped with laboratory facilities for sciences, what were their conditions and how they were been used.

This inquiry and its results was made in a very short time, it took about 6 to 8 months since its design to the preliminary report. And preliminary results were available in the website were everyone could check their school report or regional or even check the global situation.

But for being accurate, results and their analysis should be verified locally with the help of regional departments.

Nevertheless, this was not possible to do, and the diagnosis not fully accepted by regional departments or even by central authorities under a government change at that time.

But as an on-line evaluation and a direct inquiry to schools without intermediation and giving answers in an acceptable time, we believe it was a full success.

As one of its general results, I can mention, for instance, that we found the need for construction of 89 Biology and Geology laboratories, 68 for Physics, 102 for Chemistry and 31 for Physics and Chemistry combined, in a total estimated cost of 21 millions of euros. And all this would be needed, in the school representative's opinion, for having, at secondary school, reformed curricula integrating activities for learning and practise of exact sciences.

We believe that, nevertheless its rejection from the regional authorities, it allowed that a more important attention was given to the repair, construction and refurbishment of many laboratories at schools through the country.

The inquiry was based on definitions and norms made at our central department resulting from decades of school building experience, by which school representatives could compare their existing facilities and infrastructures with the norms and definitions of spaces, equipment and furniture needed for each type of school and discipline, shown in the ministry inquiry site. School representatives had to go through several blocks of questions and definitions and only when every question and all of them were answered they could finish and have their final answer fully accepted by our central computers, counting to the final results of the inquiry.

### **General survey of school facilities**

This study was conducted as part of a large auditing activity on the whole educational system, conducted by the Ministry General Inspectorate of Education.

In this activity our department helped doing the manuals that inspector teams used for doing their surveys. In this experience, exhaustive check-lists for evaluating facilities helped inspection teams to go through large samples of schools, visiting, interviewing responsible, doing direct observation and preparing reports of each visit, according to an 8 years program aiming to audit a total of 1130 schools.

The objectives of this evaluation were, in general terms, to find out about quality and adequacy of the existing stock of school buildings to the pedagogical and social demands and regarding existing planning criteria.

This program was very ambitious and started producing large amounts of data to be processed at central level which is still waiting for definition of priorities and remaining most of the individual reports produced without contributing to an overall survey of the existing schools or to the adequacy of the inquiry tools that have been designed to this evaluation process.

For this evaluation we also prepared an inquiry to include in the survey, where we wanted to find out what the image of the school could be to their users, students, teachers, staff and parents, but we have had yet no report of their results, we didn't manage yet to get an idea about its findings.

Although the results of this big evaluation are still waiting for better days, it was certainly an opportunity for having our inspection teams looking with detail to buildings, seeing them as an important component of the education system and establishing the importance they have in the performance of work in school.

Priority, at central level, in the last five to six years, has been to review security conditions as well as improving quality when designing new schools and improving interior environmental conditions of the existing. These, I think, are becoming the challenges for today that our local and regional authorities are pursuing in our schools and which we must support.

In fact, profound changes in our departmental administration structure are giving emphasis to norms and regulations as well as to the development of evaluation tools that may support remodelling the existing schools and building new educational facilities that have the quality needed for their role as places for learning.

In this way goes collaboration with the University to develop an evaluation methodology to help finding out how our schools are prepared to resist seismic activity and how to reinforce them. Following the line that has been pursuit at PEB/OECD after several accidents that have happen in Mediterranean countries, and although our schools have been built according to consistent regulations, evolving since the sixties, that take into account the seismic risk in our country, we started a collaboration with the IST – Instituto Superior Técnico – in order to develop a methodology for evaluating the seismic vulnerability of our schools. After a preliminary characterisation of building types the Instituto will develop a mathematical model which behaviour analysis will allow the creation of simplified inspection procedures for evaluating similar buildings in the future.

And after those experiences I mentioned before, we look also for adequate and simple tools that may help us to develop plans for qualitative evaluation of our basic and secondary schools and guide further interventions on educational facilities projects.

The opportunity of doing this POE at Galopim de Carvalho School within the Expert meeting context and the results we may have, are most certainly, an important contribution for these objectives.

This school is different from the general existing schools built in the suburban areas of our cities. It is different for a handful of special reasons, being one the result of a dynamic process of renewing precarious school buildings into a new brand school. This POE demonstration appears to be an opportunity for evaluating the experience that it represents in the way of doing school buildings at our school administration.

For now, I must say, as a preliminary opinion, that the focus on the users experience of the building, revealed that this methodology has for sure a place in the normal life of schools, as well as with all those that have a role to play in building and management of educational facilities.

## Safety and Well-being at School programme

### *Conceptual and methodological aspects*

In 2004, the Portuguese Inspectorate of Education (IGE) launched an “Appraisal Programme” aimed at contributing to the effectiveness of the education system, supported by the quality of learning and a good school climate.

The activity “Safety and wellbeing at school” is part of this Programme, which sets the conceptual and methodological framework of its activities.

#### *What is the appraisal programme?*

The Appraisal Programme was designed to compare the actual school situation of an education issue against a standard. The standard is established in accordance to a cluster of elements and it represents the ideal situation.

This Programme is focused on specific aspects of the school performance and the quality standards are built upon the existing norms, scientific knowledge and professional experience. It is against the quality standards that the work developed by the school is appraised. It is not an overall appraisal, but one focused on specific aspects of school management and the education process, instead.

#### *What is the programme meant to?*

This Programme is meant to:

- ∞ Check the compliance with a standard, by comparing the actual situation against it;
- ∞ Find whether the chosen action strategies led to the goals set beforehand and whether they are adequate to the standards;
- ∞ Guide school management towards more demanding levels of quality and make teaching meet students’ needs.
- ∞ Induce schools to a culture of quality, self-demanding standards, and reliable procedures, making available quality standards to be compared with.

#### *Which organisational aspects of the educational institutions are going to be appraised?*

Three key areas of the work and quality of the education system:

- ∞ The effectiveness of self-evaluation
- ∞ The effectiveness of learning and of the learning processes in the early years
- ∞ The culture of safety and wellbeing that schools develop.

These three key areas are diverse, but following the same conceptual model and the same methodology, and the materials supporting these inspections are very much alike in what concerns the way they were designed and structured.

These materials aim at having formative and inductive effects, as they:

- ∞ Can contribute to promote a culture of quality and institutional improvement;

- ∞ Strengthen attitudes of criticism and self-questioning about the work undertaken by schools on these issues (self-evaluation, teaching and learning, safety and wellbeing).

*What is appraising in this context?*

With this Programme, IGE intends to appraise and measure the chosen strategies based on the information gathered continuous and systematically, so that it can highlight the possible gap between the goals and what actually exists, between what was done and what worked.

In short, it is intended to appraise the extend to which the organisation is developed in order to support educational quality.

*Which conceptual framework?*

Developing schools have their own project and action strategies constrained the variables of context to achieve the goals set previously. They also have regulation devices such as:

- ∞ Systematic monitoring – at internal level,
- ∞ Self-evaluation – on a regular basis.

They also can use external information.

It is at this stage that we find the activities included in the Appraisal Programme, as it appraises the way school deals with the existing information, namely in the two first levels of internal regulation: monitoring and self-evaluation.

*How to appraise?*

By enquiring the schools about their actual practices, in a way it is possible to collect evidences about the effectiveness of procedures and performance.

By enquiring schools in order to find out whether their action was intentional, that is to say:

- ∞ Whether they are familiar with the problems they are facing.
- ∞ Whether they are aware about their objectives.
- ∞ Whether they know how to achieve such objectives.
- ∞ Whether they know the extent to which the chosen strategies of action led them to the goals that were set.

Therefore, observation and interview are the two main methods used by inspectors.

*What are the structuring elements of the activity?*

There are four structuring elements of the activity “Safety and wellbeing”:

1. **The framework of the appraisal activity.** This comprises:

- ∞ Seven quality indicators and sixteen operational sub indicators.
- ∞ Four areas of appraisal:

- *Vision and strategy.* How safety and wellbeing are perceived at the decision level and how they underpin articulated and systematic interventions with effects on planning and work programme.
- *Antecedents or contextual feature.* These describe school awareness of relevant data about internal and external factors that influence both positively and negatively the development of a culture of safety and wellbeing. For example, the integration of school in the community, the characteristics of its physical and human resources, its location, violence and indiscipline.
- *Strategic processes.* This considers planning, the development of planned actions and self-monitoring and self-regulation. Some examples of school issues related to these processes include:
  - Conditions of habitability and how it contributes to keep safe and healthy conditions of the physical resources. The existence of these conditions requires maintenance and preservation programmes as well as specific programmes addressing risk situations;
  - Conditions of use and their contribution to ensure and to protect the physical integrity of its users. It implies norms and regulations for the use of spaces and equipments and providing orientation for emergency situations.
  - Appropriation of good practices in order to foster the individual and collective engagement, and responsible and proactive attitudes. Such practices can be found when schools make the education community feel how important these issues are and when they raise the awareness of the importance of a good school climate and satisfaction.
- *Outcomes and effects.* These consider the evaluation of procedures, in order to reflect about the effectiveness and efficiency of improvement processes.

Altogether, these four areas contribute to the development of the school own culture. We can say there is a culture of safety and wellbeing when we realise this is in line with other aspects of school culture.

## **2. The key (or leading) question**

Each indicator or sub-indicator has its own key (or leading) question, in order to guide the observation or the interview. It is expected that schools provide evidence about what, who and how the specific actions were undertaken and what their outcomes were.

## **3. The illustrations of level 3**

These are quality standards used by the inspectors to measure the actual situation of the school. They are clear enough about what is to be observed and how to appraise each indicator and sub-indicator.

## **4. The levels of appraisal**

These comprise the following degrees: very good, good satisfactory and non-satisfactory. The judgement will be produced taking into account the standards of quality set for level 3.

*When is this activity going to be implemented and how long does it last?*

In the scope of the activity “Appraisal of the development of a culture of safety and wellbeing at schools”, three hundred management units will be inspected from 2005 to 2007.

A team of two inspectors undertakes the inspection within each school, lasting no more than ten days.

The typical inspection procedures encompass several steps, such as the presentation of the activity to school representatives, namely methodology and instruments; gathering evidences provided by the school, which can be either documents or observed facts; reporting and presenting the findings in a meeting with the staff more involved in the activity; and submitting the report to a national database and forward a copy to the inspected school.

*Which support materials do inspectors use?*

While inspecting schools in the scope of this activity, inspectors have the following materials:

- ∞ “The inspectors’ handbook”, which presents the conceptual and methodological aspects of the activity, as well as the quality indicators and the level 3 illustrations (quality standards);
- ∞ “Inspectors’ booknote” with fields to note down evidences for each sub-indicator;
- ∞ “The template of the school report”, with fields for the quantitative and qualitative appreciation of each indicator;
- ∞ “Guidebook” providing some orientation about the aspects to be observed related to safety and wellbeing, and a glossary with some technical vocabulary.

## Notes

1. Programa de Desenvolvimento e Expansão da Educação Pré-Escolar (Programme for Early-School Education Development and Expansion) according to the Government Law 147/97, 11 June and following the main orientations from the Law for the Early School Education, 5/97, from 10 February.

2. In “Sistema Educativo Português”, school year for 2004/05, ME/GIASE.

3. In “Ano Escolar 2004/05 Estatísticas Preliminares” GIASE, ME, December 2004.

4. In “Resultados do Estudo Internacional PISA 2003”, first national report, Dec 2004, ME/GAVE. This statement comes from board of schools members when answering to PISA questionnaires

5. In “Indicadores Sociais 2003”, INE, 4 Maio 2005.

6. PER EB1 Algarve is a Special Reordering Program for Basic Schools working in Algarve since 2003 with what education authorities aim to end with overcrowding of schools in high-populated districts as well as closing small rural schools with 6 students. This program is originating the concept of “Complete School” which is a 1st cycle school with library, meeting room, kitchen and eating room, as well as equipped outside spaces, sometimes including early childhood facilities. A good examples is EB1+ji de S. Brás de Alportel, under construction, in a district where all 1st cycle schools have already been improved, and the same can be said for Castro Marim district.

7. Orçamento do Ministério da Educação para 2004-2005 – Orçamento por acções, ME, Gabinete de Gestão Financeira.

8. “O Estado do Parque Escolar, Ensaio de Caracterização”, DEP GEP, ME, Setembro 1995, Carlos AFONSO E Maria clara Sousa Lopes

9. “Diagnóstico dos Espaços para as Ciências Experimentais, Ensino Secundário – Cursos Gerais”, Relatório, DSQE/DGAE/ME, Janeiro de 2001, Maria Madalena Valente, José Freire da Silva, DATINFOR

10. Qualidade dos Equipamentos Educativos e Adequação da Rede Escolar, actividade iniciada pela IGE em 2002

11. “Qualidade dos Equipamentos Educativos - Roteiro” Autoria da IGE, colaboração da DGAE, 2001.

12. PROGRAMA DE REDUÇÃO DO RISCO SÍSMICO DAS INSTALAÇÕES ESCOLARES (PRRSIE) . Ao abrigo deste programa, foi assinado com o IST em Abril último, um Protocolo para a realização por este Instituto de um estudo-piloto (PRRSIE/EP) de caracterização preliminar do risco sísmico do parque escolar e avaliação individualizada da vulnerabilidade sísmica de uma tipologia representativa.