

## IMPLEMENTATION OF AN EFQM MODEL IN A HIGHER EDUCATION INSTITUTION IN PORTUGAL

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### ABSTRACT

In an increasingly competitive sector, such as education, higher education institutions depend more and more on the quality of services provided, given that the success achieved through quality management does not depend only on the recognition of their users, but increasingly, the attractiveness of financing, ensuring the present and future sustainability of the organization. In this way, it is not enough just to meet the "minimum quality requirements", but rather to exceed the expectations created, which creates difficulties, given the very organizational nature of the HEI. In view of the challenge created, HEIs tend to incorporate Internal Quality Assurance Systems (IQAS) into their strategy with a view to continuous improvement of their performance. Using the methodology of the case study, the present work intends to analyze the applicability of a IQAS in the organizational performance of an HEI, based on the model of the European Foundation for Quality Management (EFQM), and implemented in a School of Engineering in Portugal. We try to contribute with a critical analysis to the viability of the application of the model under study, highlighting in the end some identified advantages, as well as some difficulties found, that can be overcome from a set of measures suggested here.

**KEYWORDS:** TQM; Excellence; High Education; Self-assessment; Continuous improving; EFQM

## IMPLEMENTAÇÃO DO MODELO EFQM NUMA INSTITUIÇÃO DE ENSINO SUPERIOR EM PORTUGAL

### RESUMO

Num setor cada vez mais competitivo, como o do ensino, as Instituições de Ensino Superior (IES), dependem cada vez mais, da qualidade dos serviços prestados, dado que o sucesso obtido através da gestão de Qualidade, não depende apenas do reconhecimento dos seus utilizadores, mas sim e cada vez mais, da capacidade de atração de financiamento, assegurando a sustentabilidade presente e futura da organização. Deste modo, não basta apenas, satisfazer os "requisitos mínimos de qualidade", mas sim, superar as expectativas criadas, o que levanta dificuldades, dada a natureza organizacional muito própria das IES. Atendendo ao desafio criado, as IES, tendem a incorporar na sua estratégia, Sistemas Internos de Garantia da Qualidade (IQAS), com vista a melhoria contínua, do seu desempenho. Recorrendo à metodologia de estudo de caso, pretende-se com o presente trabalho, analisar a aplicabilidade de um IQAS no desempenho organizacional de uma IES, baseado no modelo da *European Foundation for Quality Management (EFQM)*, e implementado numa Escola de Engenharia em Portugal. Procura-se contribuir com uma análise crítica à viabilidade da aplicação do modelo em estudo, destacando-se no final algumas vantagens identificadas, bem como algumas dificuldades encontradas, que poderão ser superadas a partir de um conjunto de medidas aqui sugeridas.

**PALAVRAS-CHAVE:** TQM; Excelência; Ensino Superior; Autoavaliação; Melhoria continua; EFQM

## 1. INTRODUCTION

Most European governments have witnessed a number of structural problems, stemming from a "heavy" and ineffective public administration (Bovaird & Loffler, 2003; Rocha, 2011, Carapeto & Fonseca, 2014), so that institutions public institutions, and in particular, higher education institutions (HEI), have increasingly adopted private management models (Simões, 2011).

There is a tendency for HEIs to adopt management techniques, usually applied to the private sector, in order to respond to the efficiency and effectiveness requirements, increasingly imposed by the current governments, in particular by the Portuguese State, who have come to grant greater administrative autonomy to HEIs in recent times. In this context, the concern for quality by the HEI has taken on greater importance (Saraiva, Rosa & d'Orey, 2003) in light of the above-mentioned evidences.

Despite the vast literature on "Quality", it is not easy to define it as a concept, especially when applied to HEI (Osseo-Asare & Longbottom, 2002). This is due in part to the fact that HEIs need to serve various stakeholders, namely, the State, students, teachers, researchers, etc. In this context, HEIs have tried to follow the good examples practiced by other organizations, adopting Internal Quality Management Systems (IQAS).

This concern was already a constant of HEIs, a little throughout the world, and in Portugal, these themes began to assume special relevance, due to the emergence of a body mandated by the Portuguese State, and within the framework of European directives, namely the Agency and Accreditation of Higher Education (A3ES).

In addition, HEIs increasingly provide services to their stakeholders, mainly through their laboratories and research and development centers (R & D), which leads to a higher requirement, in the scope of the quality provided in their services. The HEIs must find effective and efficient ways to respond to the accreditation requirements of A3ES (Sá, Sampaio & Rosa, 2009), promoting quality by increasing the efficiency of resources and improving, at the same time, the quality of service provided (Hall, Swart & Duncan, 2012). It is known that many HEIs have adopted several quality models, however, there are no certainties about the results of their implementation (CRE Project, 2001, Wynen et al, 2015, Karasoy, 2018). According to Rosa & Amaral (2007), this is due to the fact that the adopted IQASs have a set of techniques based on theories, sometimes incompatible with the mode of management of HEIs. Authors such as Boele, Burgler and Kuiper (2008) argue that HEIs should promote self-assessment of their performance in a logic of continuous improvement. The use of models such as EFQM (European for Quality Management) may be a solution to consider. However, authors such as Carapeto & Fonseca (2014) and Wynen et al. (2015), point out that the adoption of quality techniques from private management poses some challenges, mainly at the level of their application, resulting as such, and partially, in cases of success. These challenges occur in particular in the case of HEI, due to their inherent specificities (Sheffield, 2003; Santos, 2013 and Karasoy, 2018).

The present research aims to study the feasibility of the implementation of the EFQM model in an HEI, using to the effect, to the study of the implementation of a IQAS, in an engineering school in Portugal. To this end, any difficulties encountered with the implementation of the model, such as compatibility with systems and entities associated with the organization, such as QUAR (Service Performance Assessment Framework, strategic objectives, performance indicators,

available resources (human and financial) and identification of possible deviations and related causes), A3ES and the Order of Engineers.

### **1.1. Problem research and objectives**

Through previous findings, the central question that defines the problem, created around this study, has arisen:

How can the EFQM model be implemented in an organization with the characteristics of a published HEI?

In order to contribute with answers to the main question, the implementation of the EFQM was evaluated in a Portuguese HEI published, whose IQAS, is being elaborated within the EFQM.

On the basis of the issues raised, some questions have arisen, which will enable us to answer the main question mentioned above, namely:

- What are the difficulties encountered in the design of an IQAS in an HEI published, and within the framework of the EFQM model, in order to satisfy its different stakeholders, given the different perceptions about the concept of 'quality'?
- How the implemented IQAS can frame the strategic guidelines to be defined (or already existing) by the organization, as well as any existing evaluation systems / requirements to which the organization is subject (e.g. A3ES, Order Engineers, etc.)?
- What are the advantages that the different stakeholders can achieve with the implementation of an EFQM in an HEI publication?

As objectives of the research to be carried out, the following are proposed:

- Study and feasibility analysis in the application of the EFQM model in a public HEI (possible advantages and difficulties encountered, and ways of overcoming them);
- Contribution to the study of the application of the EFQM model in a HEI published, through the accomplishment of the present study;

## **2. MATERIALS AND METHODS**

### **2.1. Materials and techniques for collecting data used**

As regards the techniques for collecting information, these are based on the following:

- Documentary analysis.
- Observation throughout the process of implementing the IQMS in the HEI.

The first one was based on the documentary analysis of several documents related to the different functional areas that make up the HEI under study, namely Departmental Areas assigned to the different courses taught, services (e.g. Financial, Human Resources, Procurement),

complementary units (e.g. Library, Informatics), offices (e.g. Audit and Quality, Communication, Accounting & Heritage), Laboratories and R & D Centers. The documentary analysis also focused

- Various Regulations associated with the governing bodies of the institution (e.g. Supervisory Board, Technical-Scientific Council, Management Council)
- Annual Activity Report
- Annual Report of Accounts
- Annual budget
- Evaluation and Accountability Framework (QUAR) of the HEI under study

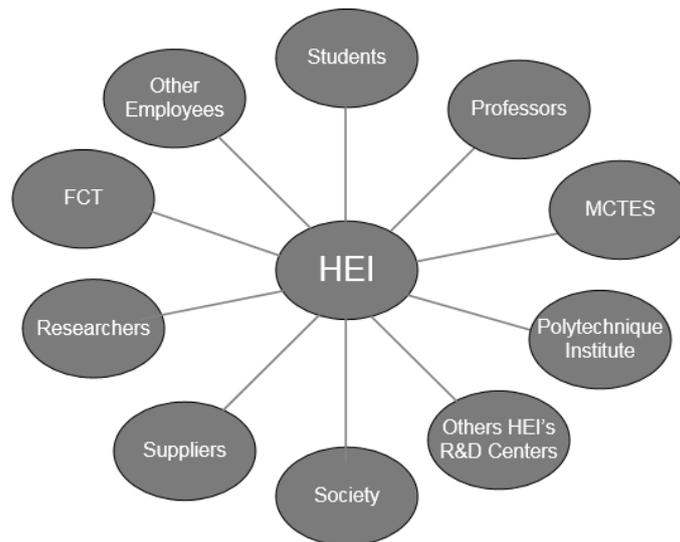
The second one was based on the collection of information from the Office of Audit and Quality, responsible for the proposal for the implementation of the IQS in the HEI under study, as well as the consultation of the different human resources, affecting the several functional areas mentioned above, as well as the remaining elements belonging to the institution's governing bodies.

## **2.2. Methodology**

In order to try to answer the above questions, the case study methodology will be used, since it is the most appropriate strategy in answering the questions posed in the "how" or "why" research (Yin, 2003). According to the same author, the indicated methodology allows to define an empirical approach that aims to investigate a current phenomenon inserted in real context, particularly appropriate when the boundaries between the phenomenon and the context are not clearly evident, still allowing the construction of a theory, not only from the literature review, but also from empirical observations or actual experiences that may result in both qualitative and quantitative research. In this sense, this research is based on an inductive logic, since the possible confirmation of the applicability of the EFQM model in the HEI under study, does not constitute evidence by itself, to be applicable to other HEI, but may contribute to the analysis and discussion of their viability (Lakatos & Marconi, 1992).

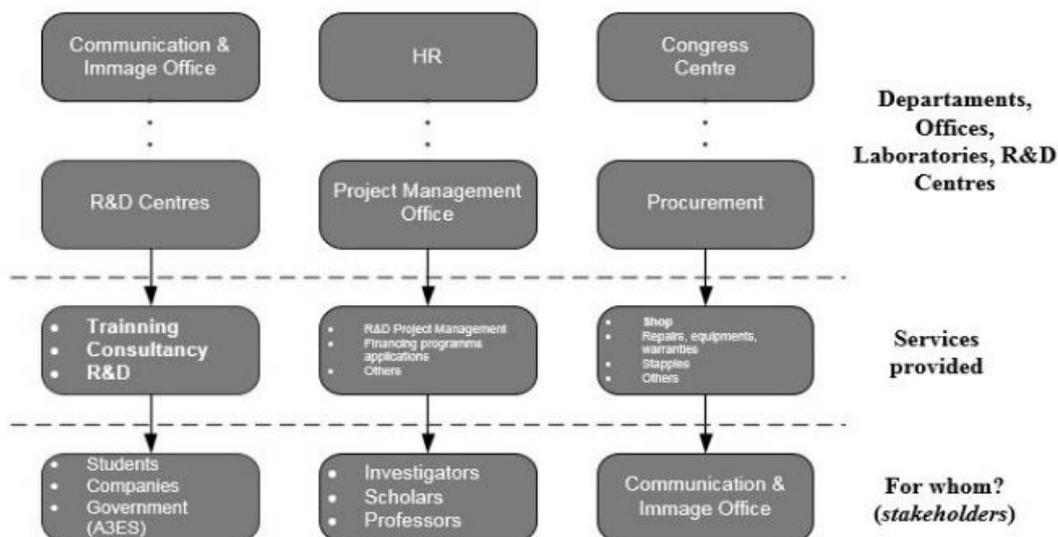
## **2.3. Case study**

Considering the above, the case study presented here refers to a School of Engineering in Portugal, composed of about 4000 students, 483 Teachers and 116 non-teaching staff. Like the generality of HEIs, this HEI also aims to satisfy a diversity of stakeholders that are part of it (**Fig.1**)



**Figure 1** - Diversity of Stakeholders assigned to HEI under study

Se ao nível do aspecto organizacional, e tomando como exemplo esta HEI, quiser-se fazer uma correspondência entre as diferentes áreas funcionais e os stakeholders associados, verifica-se que existe uma diversidade de stakeholders com diferentes perceções e requisitos de qualidade, que variam de acordo com a área funcional a que dizem respeito (**Fig. 2**).



**Figure 2** - Example of relationship between the functional areas and the diversity of stakeholders, inherent in an HEI

Observing figure 2, the organization can be subdivided into small models of self-assessment, which corresponds to subdividing the ICAM into parts according to their functional area, although related to each other. According to Tari et al. (2006), an HEI can be evaluated in three broad areas: teaching, research and services. It will be the context of the services that will be emphasized in this study, where, naturally, it will be necessary to study the feasibility of the implementation of an IQMS within the framework of the EFQM model in an HEI, serving the case of this school as a means of research.

### 3. LITERATURE REVIEW

#### 3.1. Quality Management in Higher Education Institutions (HEI)

In spite of the quality in higher education, it is a subject that has been of concern to HEIs throughout the world, and over time, it is however, and in the last decades, that this assumes more importance (Sá et al., 2009). In its genesis, there are essentially factors such as the growth and the exponential appearance of HEIs, as well as changes in the scope of its supervision, whether private or public, with the state having a supervisory role, rather than control, resulting in an increase in the autonomy of these institutions (Rosa & Amaral, 2007).

However, Quality as a concept (and in particular in HEIs) is not easy to define. In fact, the various debates about the quality of higher education (USA, 2007) have revealed some difficulties in obtaining some consensus, not only on the definition of quality itself, but mainly on its implications for the higher education (Sarrico, Rosa, Teixeira, & Cardoso, 2010, p.51). According to (Santos, 2011), one of the main factors for the lack of consensus in its definition is the multidimensionality of HEIs.

This feature is reflected in the wide variety of missions, usually associated with the various stakeholders, which has created an even greater dynamic than it did a few years ago. The dynamics created, although positive in many respects, contributed in part to an erosion of trust in the higher education system (Sá et al., 2009). This "erosion" has been studied in most countries, which has allowed to a great extent, to promote the expansion of the discussion around the concept, as well as the activities of quality assurance in institutions and higher education systems (Massy, 2003).

In this context, countries such as the Netherlands, Flanders and Portugal, whose HEIs were in charge of the national evaluation system, have seen their governments turn to independent accreditation agencies from HEIs, recognizing that they would provide the necessary results, free of any interest or internal pressure. In Portugal, this agency receives the designation Agency of Evaluation and Accreditation of Higher Education (A3ES).

According to the A3ES, Quality (in higher education) can be defined as follows: "Multidimensional concept, multilevel and dynamic, related to the context of an educational model, with the mission and institutional objectives, as well as with the rules and the specific terms of reference of a particular system, institution, course, program or disciplinary unit "(A3ES, 2018a). Still according to A3ES (2018a), quality can take on different meanings (sometimes conflicting with each other), and which depend essentially on:

- (i) Perspective of different stakeholders in higher education (e.g. students, teachers, disciplinary areas, labor market, society, government);
- (ii) Internal references (inputs, processes, outputs, missions, objectives, etc.);
- (iii) Attributes or characteristics of the academic world to be evaluated;
- (iv) Historical period in the development of higher education;
- (v) Perspective of different stakeholders in higher education (e.g. students, teachers, disciplinary areas, labor market, society, government);
- (vi) Internal references (inputs, processes, outputs, missions, objectives, etc.);
- (vii) Attributes or characteristics of the academic world to be evaluated;
- (viii) Historical period in the development of higher education;

In addition, the promotion of Quality in HEIs, through the evaluation of their performance, implies the creation of organizational structures, models and indicators, which support a culture and dynamics of their own, and although not rooted in HEIs, are essential in promoting of evaluation cycles, helping institutions to take responsibility to their stakeholders (Maslow et al, 2006). It is clear that the importance of quality is considered to be one of the most relevant aspects of higher education reform around the world, at a time when the reduction of public funding to HEIs is increasingly evident (Rosa et al. 2007). The European Union, through the European Quality Area in Higher Education, has established directives for each Member State to adopt measures for the promotion and accreditation of quality in higher education, a challenge to which Portugal responded by creating the A3ES (Sá et al. 2009). In this context, the importance of accreditation in HEI can be evidenced through the definition of the US (European University Association) group, whereby accreditation is a formal statement published regarding the quality of an institution or program, following a cyclical evaluation based on agreed standards (CRE Project, 2001).

In addition to accreditation, it is important in the first instance to highlight the role of evaluation in HEIs, so that higher education institutions (HEIs) cannot afford to do without this purpose in a culture of anticipation.

According to A3ES (2018c), the evaluation of higher education can be defined as: "Systematic and critical analysis process for the issuance of judgments and recommendations on the quality of a higher education institution or a cycle of studies ". The key concepts implicit in this definition were obtained by the Agency, based on the work of UNESCO-CEPES (2007), and later adjusted to the Portuguese context of HEIs. Several studies have been developed in this field (e.g. Llano, 2003). The evaluation generates learning, promotes professional and personal change, so it takes a prominent place in the policy discussions and management of the HEIs themselves. The question of evaluation is directly related to the decision making, carried out within the organizations, establishing a place for critical dialogues, allowing to perceive the multiple references that sustain the way of acting of the various involved parties. The evaluation, being internal and / or external, serves the organization in the sense in which the evaluated ones are also evaluators. The internal and external evaluations are complemented when the institution, after being submitted to an internal evaluation, will have the respective results explained in a report that will serve as a point of support for the external evaluation (Sobrinho, 2003). It is in this context that the A3ES assumes special relevance, contributing to the improvement of the quality of higher education in Portugal through the evaluation and accreditation of HEIs and their study cycles, within the scope of their mission.

Still in relation to the internal evaluation, the process of self-evaluation will only succeed after all the participants understand and share the same theoretical framework. Benavent & Giner (2011) reinforce the importance of internal evaluation by recommending that organizations should seek to implement QIG in order to improve quality, regardless of the external quality assurance systems to which they may be subject. In recent years, model proposals have emerged that meet these requirements and seek to reduce differences and develop some consensus around the practice of quality assessment (Sarrico et al., 2010). Some of these examples are the Benchmarking Exercises (Jackson & Lund, 2000), the US Institutional Evaluation Program (Amaral et al., 2008) and the EFQM - Excellence Model (Rosa & Amaral, 2007). The first two propose a holistic assessment of HEIs taking into account not only the teaching and scientific research developed, but also the management of institutions, while the EFQM model, based on Total Quality Management (TQM) and with evidence given in industry, is beginning to be introduced, and essentially, in the management of HEIs, a little around the world (Sheffield, 2003).

### 3.2. Internal Quality Assurance Systems (IQAS) in HEI: The Portuguese case

In Portugal, the entity responsible for promoting and evaluating quality in HEIs is the Agency for Assessment and Accreditation of Higher Education (A3ES). This agency comes from the initiative of the Portuguese government, when it approved in 2007 the new legal regime for the quality of higher education (Decree-Law no. 369/2007, of 5 November), based on European recommendations, published by the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). This agency has the objective of evaluating and accrediting the IQMS of the HEIs and their study cycles. This legislation sought to provide the HEIs with some autonomy regarding the responsibility for quality assurance in their institutions (in part ensured by the freedom of choice of adopted IQASs), while ensuring that the State retains the power to demand the responsibility of HEIs quality. The certification of Portuguese HEI is also a competence of the A3ES, and the agency has developed a strategy to make the quality assessment and accreditation system more flexible. The main objective is to enable HEIs in general, and through their audited and certified QSIs, to be addressed in a lighter manner, supported by institutional audits and accreditation of only a sample of study cycles (Rosa et al. 2015). For the implementation of the IGOSS, the A3ES developed a set of ten references, which act as recommendations for the implementation of the IQAS in the Portuguese HEIs.

The use of these references by HEIs, and subsequently the accreditation of their IQAS, constitutes a powerful instrument of consumer protection, which is not a measure that is increasingly international, to effectively consolidate the principles by which the Bologna Process (Sá, Sampaio, & Rosa, 2011). In the auditing process carried out by the A3ES, the basic assumption is that respect for the autonomy of HEIs is essential. The main objective of this process is essentially the strategic institutional evaluation of the quality and the way in which it translates into an effective and efficient IQAS. well documented. In a benchmarking perspective with the present case study, and in order to provide a broadest possible view of the different IQAS developed by Portuguese HEIs, an analysis of the Quality Manuals of the various institutions was carried out. The Quality Manual translates into a document that aims to describe the IQAS of an HEI, defining its organization, functioning, actors and respective responsibilities and also present the Institution's Quality Policy. For this purpose, the manuals referring to three Portuguese HEIs were chosen, namely the Instituto Politécnico da Guarda, Instituto Superior Técnico and Universidade do Minho, in order to identify common aspects in both publications. In all the manuals analyzed, the respective organization chart is presented, and in the three institutions there is still a body responsible for monitoring and monitoring the IQAS.

This body may differ in its designation, and according to the institution concerned, and in the main they have the common function of monitoring the application of the IQAS in the respective HEIs to which they relate. In the same monitoring area, the three manuals identified three common and common axes: teaching, research and external relations. For each of them, the same institutions present a set of methodologies described in the respective quality manuals (**Table 1**).

**Table 1** - Procedures and methodologies in the Quality Manuals consulted

Investigação	Ensino	Relações Externas
<ul style="list-style-type: none"> <li>• Evaluation process carried out by the Foundation for Science and Technology (FCT)</li> <li>• Self-assessment reports from R &amp; D centers</li> <li>• Indicator Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Student and faculty surveys on curricular units (UC)</li> <li>• Reports of UC's</li> <li>• Indicator Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring indicators</li> </ul>

It should also be noted that in both of the aforementioned manuals and associated with the IQF, the functions and responsibilities associated with the various stakeholders are described, as well as the participation of the different stakeholders of an HEI, namely: teachers, students, non- teachers, alumni, employers and other external entities, and it is fundamental for each of these stakeholders to monitor their degree of satisfaction.

### 3.3. Main models used

The accumulated experience with successful examples, coupled with the industry's decades-long developments in evaluation through the "Quality Management" of its products / services, served as an incentive, and in a way, as a reference, for some HEIs, felt the need to rely on quality management models, originating in the industry to certify their services (Rosa and Amaral, 2007).

In this context and considering that HEIs have to implement reference models for their IQFs, the universally accepted models include the European Foundation for Quality's model of excellence, the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), the European Association for Quality Assurance in Higher Education (ENQA), the Balanced Score Card (BSC) and the International Organization for Standardization (ISO) standards.

The last models mentioned here are adopted from the industry, and lately, and in the perspective of continuous improvement, the focus on approaches inspired by Total Quality Management (TQM), have increasingly assumed a greater relevance in the universe of HEIs (Galvão et al. , 2011).

However, given the complexity of HEIs due to the service provided and the stakeholders involved, it is not easy to adopt and implement system-based TQM (TQM), although this is a path that can be quality of service (Rosa & Amaral, 2012), which is in line with the TQM philosophy, and in particular the European for Quality Management (EFQM) model.

### 3.4 Advantages & Difficulties found in the literature with its implementation

In addition to the diversity of stakeholders with different perceptions and requirements in the scope of quality, other difficulties in the implementation of IQMS can be pointed out, namely the fact that the organization's employees are the ones who know the best about its operation, although they rarely share it, causing barriers in process improvement (Abbott, 1995), demonstrating well the difficulties experienced in HEI, especially those of a public nature, given the frequent mobility of public administration workers. Other difficulties are pointed out in the literature, namely the lack of experience in process improvement, coupled with a reduced number of human resources (HR) dedicated to the area of quality and improvement (Campatelli et al., 2011), or even the compatibility of the IQAS implemented, with the requirements of other existing systems, such as A3ES,

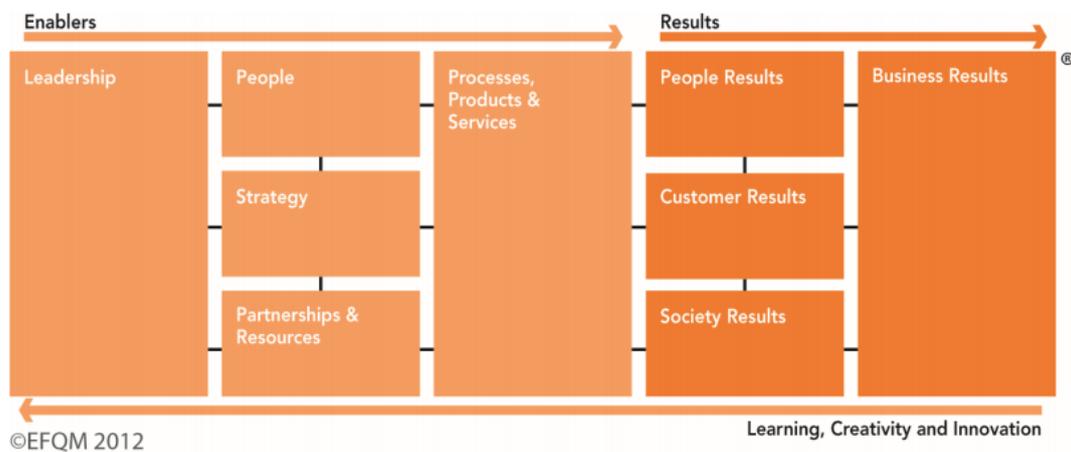
associated to the Portuguese context (Sá et al., 2009). One of the advantages associated with the use of the EFQM model in HEIs is its very nature, where, according to Maslow et al. (2006), it focuses on the "key clients" of the organization, while meeting the current needs and stakeholders. To do this, the model uses a series of appropriate indicators, in order to monitor the performance of the organization as a whole and in its most diverse processes, also predicting the complementarity of the improvement to be performed with benchmarking actions, whether internal, either externally. Another advantage is its certification, where, according to Soeiro (2011), it allows to attest to the quality of the management practiced in the HEI, increasing the levels of efficiency and effectiveness through the allocation of resources, allowing the same recognition at both national and international levels between HEIs and the societies with which they are integrated as partners.

### 3.5 EFQM Excellence Model

The EFQM Excellence Model was created in 1992 to assist organizations in Europe, and aims to establish a quality management system that allows the evaluation of organizations with the objective of continuously improving their performance, aiming at the attribution of the European Quality Award (EQA). Currently, the model is used by many organizations from different economic sectors, namely banks, insurance companies, oil companies, energy companies, health, schools, universities, etc. The evaluation of the organization is performed according to a set of criteria and subcriteria, which are assigned a pre-established score (EFQM-APQ, 2010). The principles of the model are based on 8 fundamental concepts, which allow any organization to achieve "Excellence" in a sustained way, and also to establish a common language among managers (APQ, 2012), which are:

- Add Value to Clients;
- Building a Sustainable Future;
- Develop Organizational Capacity;
- Take advantage of Creativity and Innovation;
- Leading with Vision, Inspiration and Integrity;
- Manage with Agility;
- Succeed Through Talent of People;
- Maintain Outstanding Results.

Based on these concepts, the model proposes to the organizations the use of nine criteria, in order to analyze the relations of cause and effect, namely what the organization "does" through the means that it disposes, and what they "obtain" in matter (APQ, 2012), defining the EFQM model as a whole (figure 3).



**Figure 3** – The 9 criteria Model EFQM 2013 (APQ, 2012)

### 3.6. Some implementations of the EFQM model in HEIs found in the literature

Several examples of the application of TQM models, namely in the application of the EFQM model, or based on it, can be found in the literature, some still in progress, others already completed, some partially implemented in some services (e.g. Tari et al., 2006), and others fully implemented, such as the DAETE project of the University of Porto (Soeiro, 2011). The latter is a project financed by the European Commission and the US under the Atlantis program, which aims to develop various tools based on the EFQM model and applied in the context of HEIs. To this end, several self-assessment tests were carried out covering 42 HEI in Europe, the USA and China, and the process was later adopted by the Association of Continuing Engineering Education as a tool for assessing the quality of management at a global level (Soeiro, 2011). Other studies have been developed, namely the adaptation of the EFQM model by the University of Sheffield in Hallam (Pupius, 2003), or the study by Campatelli, Citti & Meneghin (2011) on the implementation of the EFQM model in the analysis and improvement of processes at the University of Firenze in Italy.

## 4. RESULTS AND DISCUSSION

Of all the evidences obtained during the implementation phase of the IQS in HEI, only a few, considered as more relevant, will be presented, these being related to advantages, difficulties and ways of overcoming the difficulties encountered with the implementation of the model. The objective is to contribute to the discussion of the problem raised initially, ending the same with the respective conclusions.

### 4.1. Advantages achieved in its implementation

- Compatibility between the implemented IQAS, the Strategic Plan and the Assessment and Accountability Framework (QUAR) of the organization.

One of the main advantages observed with the implementation of the EFQM model, and which is clearly shown in the School Strategic Plan, is the focus of the model on the results obtained, resulting from the processes developed / managed, allowing the realization of an

appropriate alignment between the school EP design form and the EFQM model, as well as the organization's QUAR, due to the unfolding of its criteria and subcriteria in "means" and "results".

This evidence is clear in the EP of the institution, by deploying the strategy developed in "strategic axes", by establishing the "operational objectives" (as a way of implementing the axis) and finalizing the "actions" and "expected results" (ISEL, 2018)), which are monitored and validated through indicators associated with predefined objectives and in accordance with QUAR (ISEL, 2011), (QUAR, 2011).

As an example of the above-mentioned alignment, found in the HEI under study, the Strategic Axis E5 - Efficiency and sustainability, present in ISEL (2018) stands out, which meets one of the purposes of the EFQM model, as well as as well as the recommendations of the A3ES, present in A3ES (2018a), namely to ensure the efficiency and the sustainability of the actions developed in the organization, in this case the HEI under study.

The recommendations of the A3ES mentioned above, mentioned in the literature review, are those that result from a set of ten references, which act as recommendations for the implementation of the IQAS in the Portuguese HEIs, and whose use constitutes a powerful instrument of consumer protection, in accordance with the principles governing the Bologna Process Sá, Sampaio, & Rosa (2011).

- Creation of "quality groups" for the continuous improvement of processes

The EFQM model allows the creation of quality groups in each functional area (also often referred to in the "improvement commissions" literature) in order to develop / reshape their processes under continuous improvement under the EFQM model. In the case of this school, the commissions cover each functional area and within the framework of a TQM approach, and it is also planned to create regular meetings between functional areas to promote internal benchmarking of the organization, to disseminate best practices between areas functional. Therefore, it is expected that employees will be more involved in the continuous improvement of processes, together with a greater development of labor relations in the field of teamwork, which will produce added value for the different stakeholders of the organization.

This advantage, together with the advantages reported by Maslow et al. (2006), since it allows the TQM approach to focus on the different stakeholders of the organization, thus seeking to meet its current and future needs, as previously mentioned.

- Increased operational efficiency

Although the EFQM model is still in an implementation phase throughout the whole operation, it is noticeable during the first few months, some operational efficiency achieved, namely through a reduction of costs with consumables (eg paper, printer toners, folders, etc.) to some existing functional units, namely human resources department, procurement, project office, quality office, technical maintenance services, among others. This reduction represents about 5.7% compared to the previous year (2017) at the beginning of the implementation of the model (ISEL, 2019). It should be noted, however, that there were no signs of "interference" of the EFQM model in scientific production, and to prove this thesis is the increase of the scientific production volume of 7.36% in scientific articles between 2017 and 2018 (ISEL, 2018). Also at the level of the number of partnerships with companies, there were no signs of

"interference", just as there were no services provided to students in general, the latter being observed, evidenced by the degree of satisfaction. The latter was measured by student survey, in relation to services provided (overall), with a slight increase from 82.2% to 82.7% in the period 2017-2018 (ISEL, 2018). The above-mentioned operational efficiency meets the needs mentioned previously by Maslow et al (2006), since it is possible to promote Quality in HEIs by evaluating their performance through the creation of models and indicators ( eg the EFQM model), which support a very specific culture and dynamics, helping the institutions to assume their responsibility to their stakeholders, already mentioned previously. Such needs arise in the context identified by Rosa et al. (2007), where at a time of reduction of public funding to HEIs, is notorious worldwide, the same authors emphasize the importance of quality as one of the most relevant aspects related to the reform of higher education, particularly in what concerns the promotion of efficiency and funding of private financing. According to Soeiro (2011), the operational efficiency identified here allows us to attest to the quality of the management practiced in the HEI study, which is materialized by the certification under the EFQM model.

#### **4.2. Difficulties obtained in the implementation of the model**

Among the difficulties encountered in implementing the model, in terms of impact to the organization, the following stand out:

- Lack of management tools that act as EFQM support models

This school, like all HEIs, does not have plans, supported by management techniques, that are enough evidence to satisfy certain subcriteria within the framework of the EFQM model, given the differences in the techniques of public and private administration, the latter being, the initial purpose of the EFQM model. Nowadays, and in favor of greater administrative autonomy on the part of HEIs in relation to the State, and in response to the State's greater demands for efficiency and effectiveness, a new "transition phase" begins. in the reduction of dependence on the management of HEI in relation to public administration, and to the detriment of the adoption of new techniques of management of private administration (SWOT Analysis, among others). In this sense, and because many HEIs are still in this "transition phase", this absence constitutes a barrier in the implementation of an IQAS under the EFQM model. Although it is not a difficulty pointed out in the literature, there are ways to overcome it, and in the following section, a set of recommendations will be made accordingly.

- Resistance to change by employees

This difficulty is strongly related to the previous one, since it is essentially related to the use of models, supported by private management techniques. Because the training and experience of many employees is based on public administration procedures, changing some of these procedures when implementing the EFQM entails the assimilation of new skills, such as using the Balance Score Card, or managing the Social Responsibility, recently implemented in the organization (ISEL, 2011), and as such, there is some inertia in its adoption, which causes some delay in the implementation process of the EFQM model, namely at the level of self-evaluation processes. Another aspect is the assimilation of minimum skills by the employees of the organization, with a view to a broader understanding of the model, thus allowing more

effective self-evaluation. It is a difficulty, partly pointed out in the literature by some authors such as Campatelli et al. (2011), when mentioning, among other aspects, the lack of experience in process improvement, and the lack of training in the scope of adopting private management techniques, resulting in this way, favoring a certain resistance to change, as previously reported, through Abbott (1995) and Campatelli et al. (2011).

#### **4.3. Ways to overcome difficulties encountered**

As a way of solving the difficulties mentioned above, some solutions are presented to overcome the difficulties encountered, namely:

- More appropriate and timely organization and planning in the implementation of EFQM

As with the implementation of the model in private organizations, also in public organizations, it is of special relevance an adequate planning, which prevents in a timely way the implementation team of the MIGA, about the possible requirements for the elaboration of the IQAS. A team consisting of external / internal elements with technical skills of private management and experience in the implementation of the EFQM is also required, in order to work with elements with public administration skills, and in conjunction with Quality Managers and other representative elements organization.

- Dissemination and provision of training within the EFQM to officials and holding regular meetings to monitor their implementation.

The prior disclosure of the intention by the leadership bodies would allow a first approximation of the employees with the EFQM model and their specificities. In that sense, and at a later stage, the employees would be given an introductory training course, followed by a training plan appropriate to each functional area, to assimilate the skills developed in the management techniques used in the organizational framework at the level of the EFQM model. Such a solution would reduce employee adaptation time to new procedures, ensuring a better execution of the model after its implementation.

#### **5. CONCLUSIONS**

It was verified that, like the general public HEI, the school under study, did not have plans supported by private management techniques, which were sufficient evidence to satisfy certain subcriteria, within the scope of the EFQM model, making it difficult, the task of implementing the model, since it was originally developed for institutions supported in private management models.

However, as discussed in this paper, this difficulty can be overcome if there is a greater organization and preparation in the planning of the EFQM implementation, allowing for the anticipated difficulties associated with the prior and integral implementation of the necessary private management techniques, and training actions for the organization's employees, both within the framework of the general concepts inherent to the EFQM model and in the scope of management techniques directed to each functional area of the organization. Such solutions also

make it possible to mitigate the effects of resistance to change on the part of the employees, being another difficulty found in the course of the implementation process.

The second question related to the way in which the IQAS to be implemented can be framed within the strategic guidelines of the organization. In this respect, it was possible to verify, based on the perceived advantages with the work, that there was compatibility between the implemented IQAS, the Strategic Plan and the organization's QUAR.

This advantage is particularly important because it indicates that given the nature of the EFQM model, there is an adequate alignment between it and the design form of the School Strategic Plan, as well as the organizational QUAR, due to the unfolding of the strategy developed, "strategic objectives", "operational objectives", "actions" and "expected results", the latter being monitored and validated through indicators associated with predefined objectives, and in accordance with that set forth in QUAR.

The last question related to the advantages that different stakeholders could obtain with the implementation of an IQAS under the EFQM model. In addition to the abovementioned framework, the EFQM model with the different school management tools (Strategic Plan, Activity Report, Budget, etc.), it can be seen that gains in efficiency and effectiveness can be obtained through, for example, reduction of operational costs, without affecting the needs of the different stakeholders involved. In this context, it was concluded that there was a (preliminary) success in the implementation of the proposed IQAS, due to the framing of the specificities of HEI within the scope of the nine criteria associated with the EFQM. In summary, it is thought that the study contributed some answers to the problem initially raised about the feasibility of the implementation of the EFQM model in an HEI, having obtained favorable results, pointing to a comprehensive and comprehensive implementation of all HEIs, successful in the future.

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