Handbook of Research on Reinventing Economies and Organizations Following a Global Health Crisis

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Chapter 19
Contributions of the Pandemic to the Redefinition of Quality Management Systems in Higher Education:
The Case of the Polytechnic Institute of Setúbal

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ABSTRACT

The COVID-19 pandemic required quick responses from the organizations, making it necessary for them to reinvent and rethink themselves. This reality was also evident in the higher education context, where the institutions had the need to assure the continuity of their activities remotely, without compromising the quality of the provided services (the educational and the support ones). This was a major challenge for the institutions' quality management systems (QMS), unusually designed to respond to rapid changes, especially in what concerns to an effective response to the students' needs. In the case of the Polytechnic Institute of Setúbal, the institutional response resulted from an action plan based on two major principles—the use of the existing quality's structure/instruments and its integrated reflection—in order to find improvement inputs to the system's performance. The results evinced a globally positive response but also the need to adjust the QMS to better serve the academic community's needs, particularly those of students.

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INTRODUCTION

The COVID 19 pandemic, experienced worldwide, required organizations to respond quickly and effectively to a radically different context. Facing a totally unknown reality, the organizations had the need to reinvent themselves, as well as their practices, giving more adjusted responses to the new challenges brought about by the pandemic. Thus, mobilizing their internal abilities for change and innovation, the organizations provided answers, in which their effectiveness depended on the level of development of their internal competences.

This situation was also evident in educational institutions, namely in Higher Education, where the need to provide an effective response to students' needs – so that they could continue their studies and, at the same time, ensure administrative responses – became urgent. This situation implied that Higher Education Institutions (HEI) had to mobilize, in a short period of time, a set of material, technological and human resources that would allow a rapid paradigm shift, in order to enable Distance Learning (DL) throughout all its training offer. A reality that put under pressure the entire functioning of the HEI. If, on the one hand, it was inevitable to continue its operation, on the other hand, the ability to maintain the levels of quality in its processes proved to be an enormous challenge. In particular for the HEI that were not prepared to operate exclusively on-line and for its Quality Management Systems (QMS) that normally have a strict structure, with limited capacity to respond to rapid changes and that are pretty much based in formal and bureaucratic processes.

The general perception is that, during this exceptional period, the HEI had an enormous capacity for change, definitively putting aside the idea of organizations that are stuck in time and with minor capacity to react to the society's challenges. It also demonstrates an enormous maturity in institutions' internal development and management and the important role played by the QMS. Taking into account the specific characteristics of Education, with high levels of flexibility, autonomy and skills of the main players, namely the teachers, it was possible to quickly adapt to the new reality, without significantly lowering the costs and, above all, with the quality standards normally required. However, not everything went well and there were several difficulties. What were (and still are) HEI's real capacities to respond to the students' needs, in a context that anyone were aware of? Was the process structured enough so that it did not become an informal superstructure in which the students felt lost and unprotected? And what were the mechanisms that guarantee that the evaluations maintained the levels of demand and robustness against fraud?

This article describes the Polytechnic Institute of Setúbal (IPS) response to the exceptional and changing context, resulting from the pandemic, the contribution of its QMS and the transformational challenges that arise in the near future.

QUALITY MANAGEMENT SYSTEMS IN HIGHER EDUCATION INSTITUTIONS

European and National Framework

The increasing encouragement of the implementation of Quality Management Systems (QMS) by Higher Education Institutions (HEI) at European and national levels – especially since the beginning of the twenty-first century – has allowed institutions to have the necessary framework to implement QMS, according to their organizational contexts. A framework and support for the certification of these systems

has also been created in several European countries, through accreditation agencies, responsible for the accreditation of the courses and for the certification of the internal quality assurance systems. It is, therefore, within this framework that Portuguese HEI have been encouraged by the Higher Education Assessment and Accreditation Agency (A3ES), through a voluntary certification process, operating since 2012, which allows HEI to certify their QMS, in accordance with a national referential framework (A3ES, 2016) adapted from the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ENQA, 2015).

It is, therefore, in a context of some diversity, that the Portuguese HEI have been adapting their organizational strategies, in order to implement QMS adapted to their contexts, implementing a set of measures in the area of quality management, applied to its different processes, although a bigger focus on teaching and learning process, as well as on research and development/ knowledge and technology transfer – "core processes" of all HEI – remains visible (Gonçalves, Ribeiro, & Serrano, 2017). This is an idea also mentioned by Manatos, Sarrico and Rosa (2017) that highlight that several quality management approaches in Higher Education seem to be learning-oriented, focusing on the students' learning experience and educational development. At the same time, HEI have been submitting their QMS to certification, which have been contributing to a growing trend in the number of certified institutions in the last few years, being, at the moment*, 27 Portuguese HEI certified by the national Agency. However, it should be noted that the teaching and learning process seems to be the only "mission area" with a consolidated level of development in the certified QMS, evincing the other two (R&D and interinstitutional/ community collaboration) lower levels of development, revealing the need for further consolidation (Gonçalves, Ribeiro, & Serrano, 2018).

The Bologna Process, which has taken an essential role in the European transformation of Higher Education, has given special attention to the new perspectives for teaching methodologies and practices and to the desired transition from a teaching system based on transmission of knowledge to a system based on the development of students' skills, in which the components of experimental or project work, among others, and the acquisition of transversal skills must play a decisive role[†‡]. However, the evaluation of the effectiveness of this process remains weak and unstructured and cannot be concluded by its success or failure. If the entry level into the market of qualified professionals seems to be achieved – essentially, by shortening the courses – regarding pedagogical methods, it seems that few changes have been made (Bernardo, et al., 2018).

Thus, and being normally associated with the implementation of this type of systems a set of advantages such as accountability, detection of weaknesses and, simultaneously, the introduction of transparency and equity mechanisms (Duarte, et al., 2016), it is also true that sceptical criticisms continue to exist in the Higher Education context, underlining the fact that these systems may not represent the internal needs of the organizations, neither guarantee the response to the needs and expectations of the stakeholders, namely in what concerns the educational process. Also Pires and Saraiva (2018) – comparing the requirements of ISO 9001 and the A3ES referential framework and studying the QMS of six Portuguese HEI – found that those systems evinced difficulties in managing the teaching and learning process, often at administrative level (Table 1), also highlighting the need to reinforce stakeholders' participation and involvement. Accordingly, the authors also refer the importance to investigate other forms of QMS's intervention, as well as HEI's internal organization and external positioning, in order to improve the effectiveness in fulfilling its mission.

Table 1. QMS main difficulties and limitations

Theme	Common Difficulties	Comments
Strategic Plan (SP)	■ The information to be used (to formulate the strategy) is not defined, nor the methodology for preparing the SP (the theoretical approach followed is not identified) ■ SP's monitoring is null or insufficient ■ The contribution of the General Councils is irrelevant	■ SP prepared by HEI responsible, based on their management objectives ■ Some guidelines should exist: context analysis (internal and external issues)
Courses' Conception	■ Without methodologies supported by scientific knowledge ■ Teaching charges decided through "balance"/negotiation between scientific areas/departments/schools ■ No validation of solutions	■ Methodologies with theoretical support ■ Courses and structures validation can be carried out using known methodologies
Students' Surveys	■ Assessment based only on students' perceptions ■ Surveys' representativeness not assured ■ Instruments that analyze the "historic" (e.g. last semester) ■ Instruments that tend to detect only extreme situations (often already known)	■ Perceptions' assessment should be complemented ■ Surveys can be planned and subject to validation and statistical treatment ■ Other real time instruments may have more advantages
Poltics Results	■ Results are not intended and therefore cannot be monitored ■ Its effectiveness is not assessed	■ Policies and guidelines should be periodically evaluated.
HEI's Comparisons	■ No comparisons are made	■ Different levels comparison (e.g. curriculum, teaching methods, results, indicators) allows to minimize deficiencies in course's design/ operation ■ Self-assessment also requires external comparisons
Monitoring	■ Focused on the teaching-learning process ■ In many cases, without quantified results ■ Approaches' effectiveness not assessed ■ Processes' variables not investigated (e.g., results)	■ Teaching-learning processes can be the object of scientific research, as well as some of the most relevant issues (e.g. failure, dropout, employability) ■ Approaches can be evaluated
Technical-scientific Councils (TSC)	■ TSC are "out" of QMS ■ They do not even guide or monitor the R&D activities, being very reduced to the careers' management	■ Refer to administrative and management activities (juries' approvals, deliberations) ■ Don´t guide R&D and its results, ■ No defined R&D policies and guidelines ■ Teachers integrate external R&D centers in the absence of other guidelines
Educational Project	■ The training offer tends not to be focused on differentiating scientific areas	■ It results, either from deficiencies in the strategic orientation, and from the management bodies' weakness. ■ Focus on few areas could improve R&D and contribute to the courses' statement.
Information Systems	■ Insufficient systems, both from the QMS and the general management perspectives	■ QMS development's levels are strongly conditioned by the functionalities of the computer and information systems.
QMS's Structure	■ Usually a quality office with technical staff: in some cases, commissions for specific purposes (e.g. evaluation)	■ Minimal support structures that limit QMS development ■ QMS are still not seen as management bodies' support (additional tasks)

(Pires & Saraiva, 2018)

The Stakeholders as Improvement Elements

Williams (1993) had already identified the three main entry routes for HEI quality's approaches, namely:

1) the participation of people from the business world in the management bodies of the HEI, carrying positive experiences on quality's benefits; 2) the explicit pressure from governments, in the search for new financing methodologies, that have encouraged the HEI to a mass higher education without the corresponding increase of resources; and 3) the rapid diversification of several HEI's functions during the 1980's, which took them, for example, beyond having the normal degrees of education and conventional research, to also have learning and research contracts.

In fact, the satisfaction of the stakeholders' interests and expectations is inseparable from the principles of quality management, also in the context of Higher Education. However, what happens is that the answer given by the HEI is not always the most appropriate, becoming essential that this organizations can collect and use, more and more, information from their stakeholders, in order to enhance their involvement in the academy´s activities. An idea also mentioned by Tavares, et al. (2017), who stressed the importance of using information to induce changes in teachers' perceptions of the teaching/learning process, when they feel more involved in the development of quality assurance.

This question takes us to the conceptual challenges created by the third generation of quality management (Table 2) and to the idea of Foster and Jonker (2020, p. 686) when they refer that "*To better understand the third generation theory of quality management – including the pivotal role that it gives to stakeholders and the changing perceptions of organisations and their societal connections – requires a new perspective on "the firm*".

Table 2. Characteristics of the three generations of quality management

Characteristics	1st Generation	2nd Generation	3rd Generation
Perspective on quality	Process	Holistic	Relational
Focus	Measurement	Assessment	Understanding
Type of action	Reactive	Proactive	Engagement
Criterion for success	Reliability	Efficiency and effectiveness	Accountability and transparency
Orientation	Production	Processes	Relationships
Basic assumptions	Control	Manageability	Inter-connectedness
Change	Improvement	Change	Transformation and transaction
Stakeholder relationships	Non-existent	Peripheral	Embedded
Characteristic of engagement	Non-existent (and/or) philanthropically	Deal-making (and/or) community involvement	Complementarity and sensemaking
Conceptual nature	Tools and techniques	Techniques and methods and principles	Theory re "fit" of organization and context
Culture	Irrelevant	Unity of sameness	Unity of diversity

(Foster & Jonker, 2020)

Beyond the importance of the stakeholders' involvement, the *third generation of quality* (Table 2) also highlights two essential aspects in the decision-making process. The *relational component* (perspective on quality), where it becomes necessary for the different actors to have the ability to relate, regardless their formal skills and functions, and the *understanding component* (focus), according to which it is

essential to go beyond the relationship, and seek concerted and articulated decisions, considering, as much as possible, the different perspectives. ~

In this sense, the way the HEI are managed is also a determining factor, making, as recognized by Sarrico, Veiga and Amaral (2013), that balanced and adequate management systems can be seen as a necessary requirement for the production of results related to quality improvement. In fact, within the scope of the quality movement, at a general level, it is recognized that the quality of services is increasingly moving upstream, that is, towards proximity to society, the market and its needs. As such, QMS should establish practices and/or procedures for study that deepen these needs, based on structured methodologies capable of transposing them to training offers (Lourenço, et al., 2019).

The governance of HEI in the European framework has registered a trend towards the valorisation of collective bodies, with representation of external members, who assume the central responsibility for the strategic definition of the institution, for the monitoring and supervision of its success and for its reporting. One of the fundamental principles on which these bodies are based is rooted in the HEI's autonomy movement, to which a set of mechanisms of accountability has progressively been associated, in a perspective of reinforcing transparency and a bigger openness to society, seen as the third vertex of the governance of these institutions (Lourenço & Mano, 2017)

According to Pedrosa, Santos, Mano & Gaspar (2012), the major change that has taken place in the internal governance structures of European HEI, particularly after the Bologna Process, has been the increasing level of participation of external elements in their governance, in some situations with the consequent decrease of internal representativeness. A reality that, according to the authors, brings to the institutions' boards a higher demand and responsibility in the exercise of their functions, taking into account that they have to be able to combine academic interests, with the contributions of external elements and with an efficient management of resources.

Regarding HEI's autonomy, there was a significant increase, comparing to previous laws, with the emergence of four new types of autonomy: definition of the mission, academic, cultural and diversity of organization. The autonomy related to the internal governance structures was already included in the Autonomy Laws of 1988 and 1990, with RJIES[1] having deepened and clarified it. In addition to the mandatory bodies, the General Council, the Rector/President and the Management Council, provide that higher education institutions are organized freely and in the way they deem most appropriate for the accomplishment of their mission.[2]

Based on three of the internal QMS's fundamentals, namely, the response to external standards, the provision of information for decision making and being a source of information that allows academic development (Elken, Frølich, Maassen, & Stensaker, 2020), it is important that the coordination and involvement of the different actors in the decision-making processes is real and effective. Thus, being true that HEI have implemented QMS in order to be more competitive, it is also true that it will be necessary to adopt a more holistic perspective and to have a more inclusive and comprehensive approach to QMS in the Higher Education sector (Nasim, Sikander, & Tian, 2020).

Quality Management Systems and the Pandemic

The Quality Management System assumed an important role in the management of organizations during the pandemic, particularly in Higher Education Institutions. In addition to allowing greater stability to all processes, responding to formal requirements, reinforcing competitiveness and anticipating different scenarios and solutions (Oliveira, 2020), also enhanced the planning, the identification of improvements

and, above all, the narrowing of relations between the different actors (Gusso, et al., 2020). In fact, one of the essential questions that the QMS raised during this period was the importance of people inside the organization, and the need to respond to the human aspect, highlighting the skills of empathy, co-operation, communication, serenity, resilience and the capacity of relationship between the teams, as key pieces of success. According to Tapper e Asrani (2020), in an approach more linked to the health area, the essential thing is that the Quality Management System adapts, based on four key points: 1) proactivity, that is, the ability of people to act before problems exist, even if this implies actions that do not correspond to what is defined in the internal systems, as long as they are actions with the capacity to anticipate problems; 2) modify the type of intervention, that is, be willing to do it differently, in order to respond to the effective needs of the different stakeholders, in a logic in which it is the organization that adapts to the interested parties; 3) integrated perspective, that is, the performance must be seen in an integrated way among all the actors, so that the actions do not have a particular view, but a global view; and 4) coordination, that is, the ability to place those primarily responsible for coordination actions that give meaning to this global vision.

For this integrated and coordinating perspective, a coherent response from all areas of organizations is essential, in an articulated perspective of the different approaches to quality systems, not only from an internal perspective, but also from an external perspective, involving suppliers and service providers. (Salimi, Sampaio, & Golmaryami, 2020). According to the United Nations Industrial Development Organization (UNIDO) (2020), the UN agency which aims to promote and accelerate Sustainable and Inclusive Industrial Development, identifies quality infrastructure as essential in this pandemic period, looked as a systemic and holistic approach, in a way that, at the same time, quality systems work efficiently and economically, but also suited to their purpose. The training and cooperation are the essential mechanisms for the development of quality standards along the value chain.

Central to this whole process associated with COVID-18 is the issue of information, not only in the logic of the essential quality requirement associated with the fact-based decision-making process, but also in the digital transformation and the integration of technology in the different processes organizational (Samartinho & Barradas, 2020). According to the authors, this reality implies profound changes in terms of technology, culture and operational activity of the organizations, in order to make them more agile, more competitive and with a greater capacity to adapt to the requirements of interested parties. In the area of teaching, the great transformation in the use of learning management systems was evident, with the widespread use of available technological tools, and the significant improvement of collaborative work, both within the HEIs and between HEIs, in this learning processes that has to be very fast (Jena, 2020)

Polytechnic Institute of Setúbal Quality Management System

Assuming quality management as a central element of the institutional strategy for the continuous improvement of its activities, IPS defined a QMS, organized according to its organizational context. This system, which identifies the responsibilities of the different bodies and services in this area, as well as the participation of students and other stakeholders in quality assurance processes, follows from the IPS's Quality Policy.

The IPS's QMS is based on four fundamental elements. Firstly, it follows a process-based approach, organized according to the traditional classification: *strategic management*, *main* and *support* (Pires & Lourenço, 2010). Second, it follows a PDCA cycle with annual cycles of definition of system improvement objectives (per process) and validation of compliance. Third, it is a system established on a fact-

based management, whether they are performance indicators or evidence of the actions implemented. And finally, it is based on a management structure (Figure 2), that, in addition to a central unit, includes a coordinating body that integrates students and the different organizational decision makers, namely the Schools' Principals, and a set of local structures that guarantee the operational component.

Based on the principle that what is unknown cannot be managed, the basic element of the IPS's QMS is a monitoring system based on the information available in the different schools and services. Based on a process-based approach and a systemic view, the priorities were, since the first moment, related to the establishment of an information system that would support all levels of decision and, at the same time, adding knowledge, based on applied research, carried out in the context of the organization, as well as other theoretical contributions.

Process Approach

Considering the IPS's Quality Policy and Objectives, the QMS processes are in line with the National (A3ES, 2016) and European (ENQA, 2015) referential frameworks for quality assurance. Following a process-based approach (Figure 1), the system integrates a set of interrelated processes of four types: 1) *Strategic Management Process* (which defines the development and continuous improvement policies; 2) *Main Processes* (which frame the activities developed in the areas of: *Teaching and Learning*, *Research & Development*, *Interinstitutional and Community Collaboration* and *Internationalization*); 3) *Support Processes* (which support the main processes of *Human Resources*; *Material Resources and Services*; *Information Management*; *Public Information*); 4) *Process of QMS Review and Continuous Improvement (*that evaluates the effectiveness and efficiency of the system). These processes are periodically monitored and evaluated by performance indicators, according to the organizational structure.

Organizational Structure

For the operationalization of its QMS, IPS defined an organizational structure (Figure 2), which is permanently adapted to the needs of the monitoring and the managing of the processes. The responsible for the QMS is the IPS President, who coordinates the Quality Council, the body responsible, among other powers, for analysing the proposals for revising the system. This also integrates a central structure (Quality Assurance Central Unit), a coordination structure (Quality Management System Center) and seven Units of Continuous Improvement (UMC), one per School, one on the Central Services and one on the Social Services, which guarantee the local implementation of the system.

One of the main characteristics of the IPS quality structure is the integrative perspective of the different bodies, not only because it integrates representatives of the different decision-making bodies, but also because it provides for the recurrent participation of students in the different structures, whether in the Quality Council, either in the coordination unit, or in the local structures. Student's participation is one of the essential recommendations for the HEI's QMS, either at National (A3ES, 2016) or European level (ENQA, 2015), an aspect that stems from the fact that students can be understood as a special type of stakeholder (Lourenço & Mano, 2017). If, on the one hand, students are external stakeholders, who use the HEI's services, on the other hand, they are internal stakeholders that actively contribute to the provision of that services, both at the level of their own action and at the level of the decision-making process.

Figure 1. Polytechnic Institute of Setúbal QMS (Process Approach)

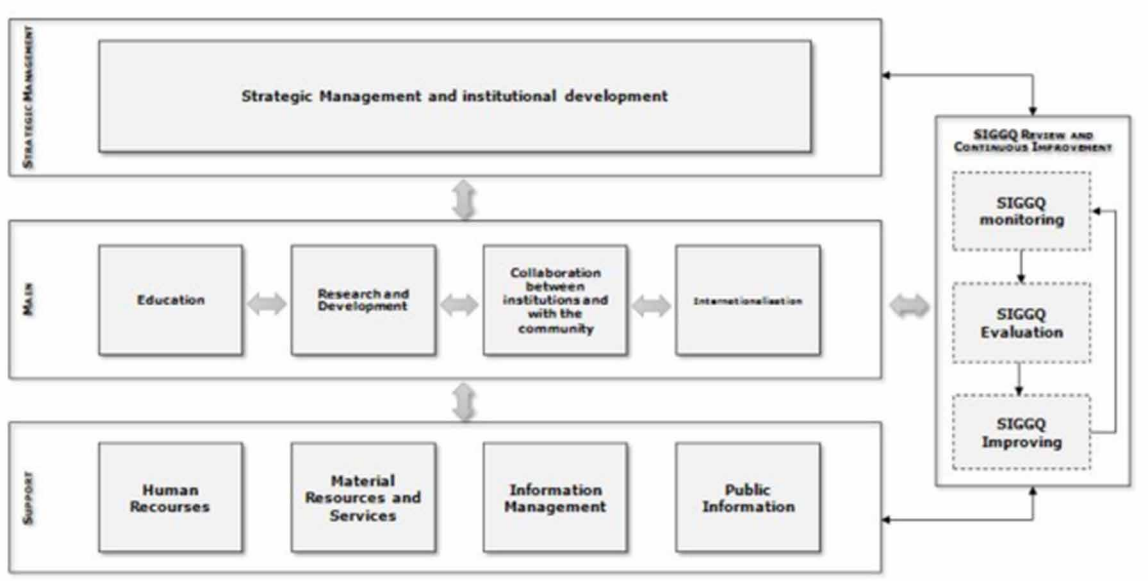
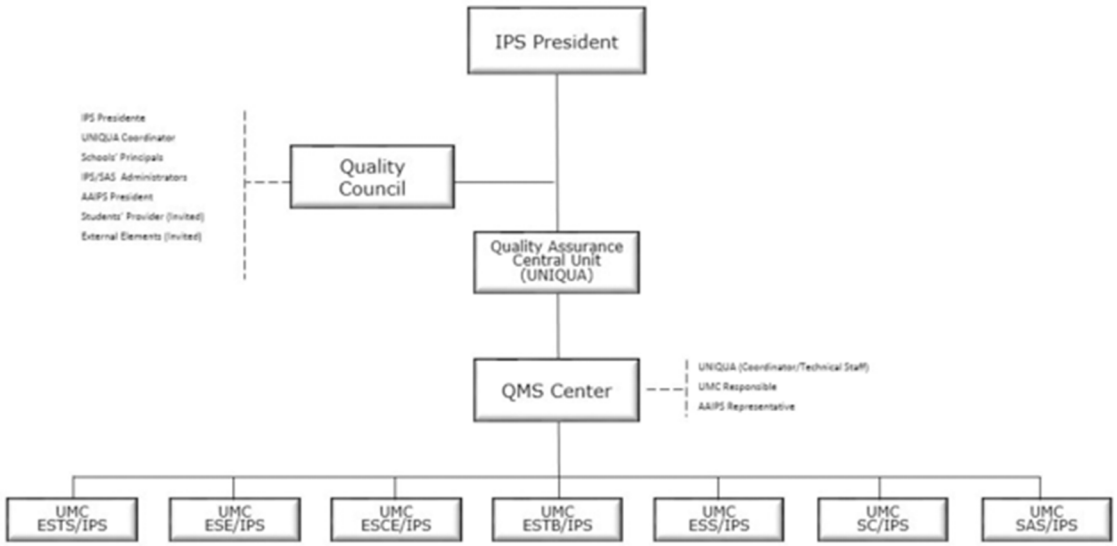


Figure 2. Polytechnic Institute of Setúbal QMS (Organizational Structure)



Integrated Response to the Pandemic

The Covid-19 pandemic directly affected HEI around the world, which required exceptional measures that would allow the continuity of educational processes without major shock. In addition to the need for alternative solutions that provide effective responses to the needs of students, it has become important

to carry out studies that make it possible to understand and document the impacts of the pandemic on the education systems, as well as the creation of greater flexibility in its functioning, namely in their curricula, with a greater capacity to respond to students' learning needs, far beyond conventional classrooms (Toquero, 2020).

IPS focus was to keep all teaching activities in operation (with the best possible response) and, at the same time, all administrative responses to students remain operational. This is because, in terms of the organization, it is considered that distance learning does not only mean students' access to classes and assessment moments, but also that they have access to services directly involved with the teaching and learning process, such as libraries and IT resources.

IPS understand, therefore, that distance learning is not limited to ensure that teaching and learning activities are carried out at a distance. It is important, but not enough. All support services must also be guaranteed at a distance and if it was relatively easy overnight to start classes online – IPS had, like many other institutions, tools like Zoom, Teams or Skype – in other services the answer would not be that immediate. Even so, this change became possible and, for example, at the level of the academic services, individual attendance with students was virtually made, by appointment.

The services that IPS provide to its students go far beyond teaching and learning activities and that is precisely the institution's perspective when thinking about its quality management system: the need to always act in an integrated way. For this reason, and in this exceptional situation, IPS concern was, from the first moment, to give students the maximum of online facilities, very close to those they were used to having in person.

Intervention Phases

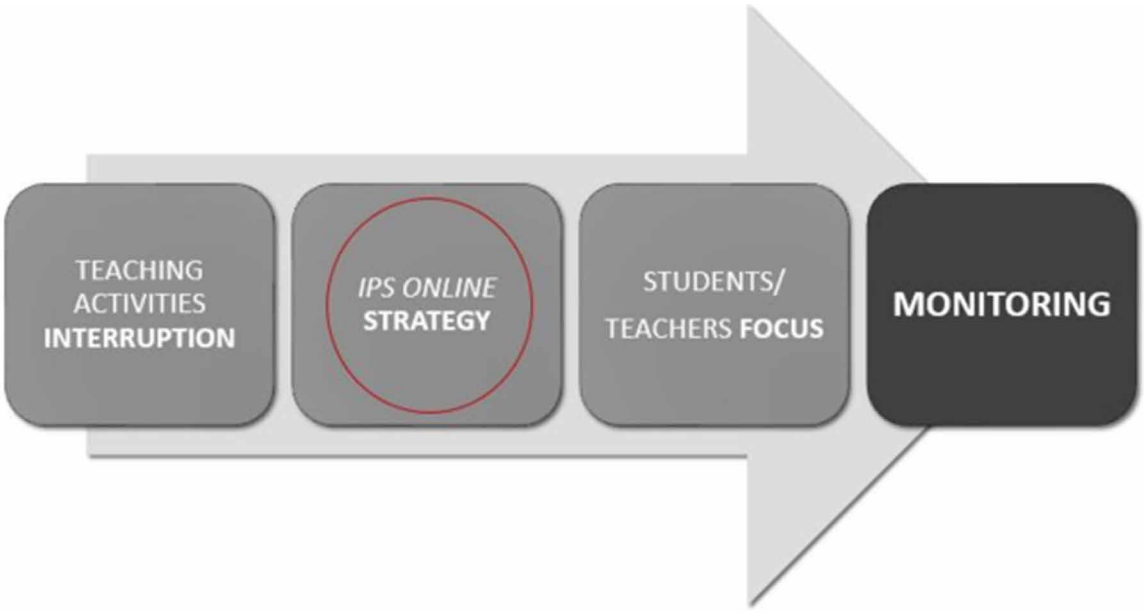
The organizational response was articulated between the top management and the responsible for the QMS processes most directly related to the pedagogical component – *Teaching and Learning* and *Material Resources and Services* – involving and holding accountable those whose responsibilities were in the main action areas. The intervention, that lasted about 4 months, included four distinctive phases (Figure 3):

The process started with the *Interruption of all the teaching activities* (**Phase 1**), in order to prepare the online mode and allow the adaptation of all the activities to Distance Learning (DL). This included all the activities within the scope of teaching and learning, as well as the ones related to the support services provided to students. This preparation phase, during the interruption, allowed the implementation of the "IPS online strategy" (**Phase 2**), providing this form of access to all the activities and services. During this phase, the most important was to assure the students that there was an organizational response and purpose and a good coordination behind all the steps that were been given, so that they can felt more confident and comfortable in this complex process. It was also with this purpose that **Phase 3** was the *Focus on the students' and teachers' needs*, ensuring that all the necessary resources were made available.

During this phase, they were given access to all the necessary IT tools, being also provided support programs for deprived students. In this third phase, IPS reinforced the teachers' pedagogical training plan, redirecting and focusing the existing one to the use of DL platforms and methodologies and produced guiding documents on best practices in the teaching area, interaction and evaluation in the context of DL. Regarding students, a very strong campaign was made to minimize the impacts of distance learning and social inequalities, with a computer loan program (by IPS, by students or by third parties) as well as a broadband provision by the Students Association. Concerning the *Monitoring of the DL adaptation* (Phase 4), the focus was to monitor the entire teaching learning process, so a follow-up group was

created with that propose, with weekly meetings assuring a permanent analysis of the situation. It were also defined weekly meetings with the Students Association that also produced a weekly report where the students identified the most complex situations. Surveys were also prepared for teachers and students where it was possible to verify the greatest difficulties of both groups.

Figure 3. Intervention Phases

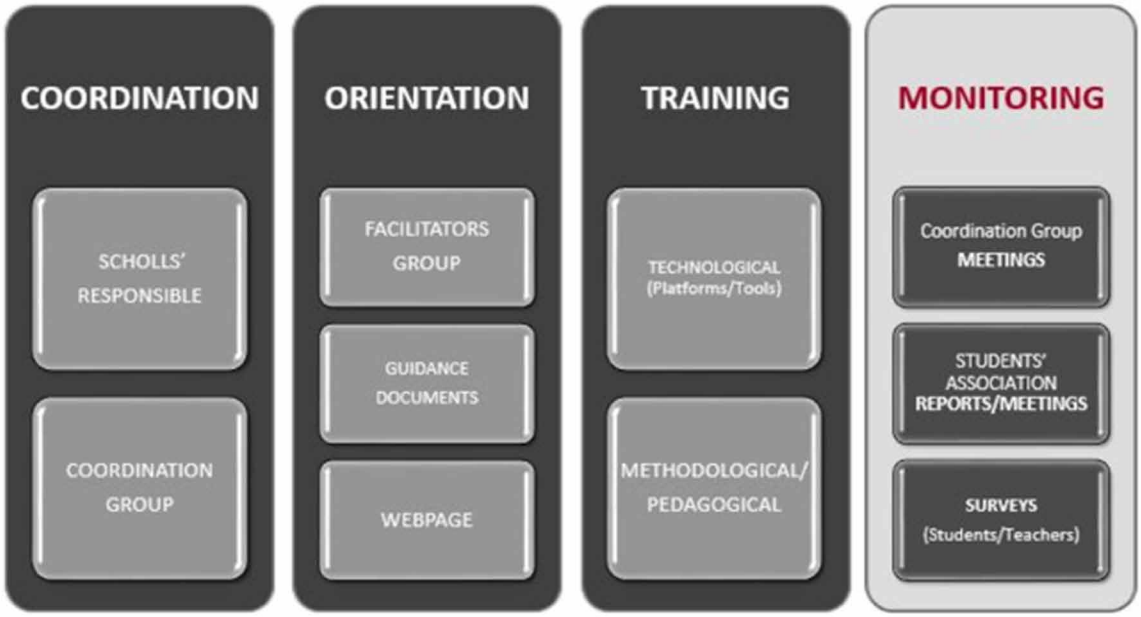


Action Plan

Considering the different levels of action and responsibility, the organizational response included an Action Plan based in four elements (Figure 4):

The *Coordination* **(Element 1**) process was crucial to the effectiveness of the organizational response. The Action Plan integrated the creation of a coordination group responsible for the DL process and the first concern was to permanently communicate with the different actors throughout the process. IPS knew that if this communication was not fast and fluid enough, the organizational response would be highly compromised. Each school identified a member of its management body that would be the (local) responsible for the implementation of distance learning. This *Distance Learning Coordination Group* met weekly with the person in charge at organizational level (a member of the Presidency) to analyse the entire transition process. Besides allowing to have access to information about the process, to be able to respond, it was also possible to discuss many of the issues associated with distance learning, which allowed IPS to gain a lot of knowledge about it.

Figure 4. Action Plan Elements



Regarding *Orientation* **(Element 2**), IPS invested in the creation of guiding documents and a webpage on distance learning. This set of global guidelines for orientation allowed teachers to have common understandings on the same themes, supported by a group of facilitators within each school. This facilitators – expert teachers in the field of distance learning, recognized as such by peers – allowed another crucial contribution to the organizational response in two levels. Regarding the definition of the guidelines that were created in terms of the organization's response, but mainly in relation to the teachers themselves, because it facilitated and streamlined the responses between teachers, instead of waiting for the structure's responses.

The creation of reference documents was an essential contribution, but above all, the fact that the specialist teachers sought to give recommendations, with concerted examples of how to apply different methodologies, techniques, tools and technologies in the service of distance learning, was fundamental. In this regard, the fact that collaboration between teachers has been remarkable throughout the process is underlined. In turn, and with regard to the major difficulty, it was at evaluation process level. A difficulty essentially due to the lack of experience – despite previous experience in distance learning, the evaluation was traditionally in person – but also due to the enormous distrust of the possibility of fraud by students.

The *Training* **(Element 3)** was based in a teachers' training program, in technical, methodological and pedagogical contents on distance learning, that also integrated the organizational response. The training plan was essential. The IPS had one in the pedagogical area of teachers since 2015, and currently more than half of its teachers have completed one or more training courses in the pedagogical area. It has been a very big gamble. When IPS faced the pandemic, the institution immediately redirect its training plan. In a first phase, it was made a quick training in Moodle and TEAMS platforms, for those who had never used those tools. Then, it was created an internet page with a set of resources on distance learning, so

that all teachers could equip themselves with a vast set of theoretical concepts, practical applications and tools associated with distance learning. After that, IPS moved on to a training plan in distance learning methodologies, with a group of specialists in the area, and trained about 120 teachers in these type of methodologies. Finally IPS moved on to a more advanced training in Moodle, mainly focussed to distance assessment methodologies. It was a very enriching and very satisfying process for teachers.

And what has happened is that this training plan has proved to be an essential element. IPS has an Institutional Pedagogical Training Plan for Teachers since 2015, and since then it has been a strong endeavour for the organization. However, in an unpredictable and unexpected situation such as the pandemic, the need arose to redirect and adapt this training plan immediately, with a view to an effective response to the current needs of teachers and which are based, to a large extent, on distance learning content.

In a first phase, a quick training was done in Moodle and Ms TEAMS, for those who had never used these tools, and in a second moment, a web page was created with a set of resources on distance education, so that all teachers could have access to a wide range of theoretical concepts, practical applications and tools associated with distance education. In a third phase, a training plan for distance learning methodologies was adopted and, using specialists in the field, it was possible to train around 120 teachers in these methodologies. Finally, more advanced training in Moodle was started, mainly aimed at the distance assessment process. It was a very enriching and very rewarding process for teachers.

Regarding the *Monitoring* (**Element 4)** was mainly based in meetings with the coordination group and the Students´ Association, and surveys applied to students and teachers. This last phase of the plan allowed the organization to obtain in real time – from the various elements of the academic community – an important feedback on the work that was being carried out, which allowed the identification of strong areas and areas that need further improvement.

Integration With the Quality Management System

Regarding the organizational response of the "IPS online strategy" integration with the QMS, it cannot be said that there was a strategic explanation. In unpredictable situations, like the pandemic one that is being experienced worldwide, decisions are (inevitably) made at the moment. But the most important was the strategic orientation and that was very clear, since the first moment: respond to the students' needs. The main concern was to have an extended alignment between the different actors – school directors, pedagogical councils, course coordinators, teachers and workers – assuring that it would be as broad as possible. That was the strategic orientation and the identification of this orientation was considered essential to have an articulated response capacity.

What this experience (and organizational response) allows us to prove is the fact that if, in normal times, strategic alignment is fundamental, in crisis situations, this alignment becomes even more fundamental. Only an in-line orientation between all stakeholders allows a joint and in-line response. In strategic terms, this implies thinking also in terms of Quality Management, in particular, in terms of QMS, which allow it to be managed in an integrated way. It is not possible to think one thing without the other and it was based on this assumption that the organization acted throughout this process. The organizational response was as integrated as possible, starting from the QMS itself and from the strong systemic component that was at its base and that the organization always tries to keep, both centrally and locally, in the various schools and services, in a very strong relationship between all performance variables.

RESULTS

The feedback obtained from students and teachers during the monitoring phase (by survey and in the meetings that were held with the coordination group and with the Students' Association), demonstrated that the results of the plan were globally positive, highlighting, on the one hand, some more developed aspects and, on the other, others that need further consolidation.

Strengths

1. Students' information technologies needs response
2. Teachers´ commitment and support
3. Teachers' use of Information Technologies
4. Clearly defined responsibilities
5. Coordination capacity
6. Better-informed decision-making process
7. Teachers' training plans procedures
8. Focus on new teaching methodologies

For the identification of these *strengths,* it was also possible to verify the contribution of the QMS (Figure 5), which has assumed itself as an important facilitator of the whole process. Following a process management, with clearly defined responsibilities and mechanisms for monitoring the teaching and learning, in addition to procedures associated with teacher training plans, it is a system adjusted to the institutional context, which allows quick and flexible responses, adjusted to concrete situations.

Figure 5. Quality Management System contributions for the Action Plan

Weaknesses

The feedback from students and teachers also made it possible to identify aspects to improve, namely with regard to the operation of the QMS. It was possible to identify a few areas that need further consolidation in the system's scope, not only due to its importance for the institution's performance, but also due to its still little optimized functioning, namely:

1. How to evaluate and adjust the excessive workload of students

During this period, there was an excessive growth in the learning activities. All teachers created different activities, with the aim of diversifying the evaluation mechanisms, using as less as possible the most traditional one, the tests. This was a positive aspect and one of the recommendations of the coordination group. However, in a situation where "all teachers do the same", it is understandable that, from the student's perspective, they perceive that there is a significant increase in academic activities. This modification may not mean a real increase in the number of working hours, but the increase from three to nine activities, even with less associated work, is understandable considered, by students, as a significant increase in the workload. [Furthermore, the authors highlight the fact that, due to the general confinement, many students had to share their study/workspace with their families, and in some situations with limited access to information technologies. An aggravated situation in the case of the working students who had to reconcile their different life's spheres (family, professional and academic).]

Regarding this, it was possible to verify that IPS was not using any mechanisms to evaluate the students' workload, during the continuous evaluation process. Normally, the institution has this regularly approved and evaluated at the beginning of the semesters, either by the Pedagogical Council or the Course Coordinators, however, in exceptional situations (like the pandemic), the process revealed to be no longer fast and expeditious enough to analyse the changes that are effective in the scheduled evaluations. A possible solution to this problem could be the possibility of the information system allowing the teachers to register all the assessment moments, with the measurement of the associated workload and the weight in the assessment. This would be an important help in understanding (and quickly decide on) that workload.

2. How to validate the student's evaluation mechanisms

Teachers' difficulty in implementing evaluation mechanisms: this was clearly the most complex aspect. The evaluation, mainly based on tests, made the transition from the classroom context to the DL format not easy. There were situations as disparate as the obligation for students to keep the camera on and record assessments – which raised data protection issues – even in the situations where the tests were sent to students' e-mails and they had a day to complete it. Thus, it was necessary to give some guidance to teachers and make some recommendations such as tests with consultation and/or tests on digital platforms. But the change process was so fast that adaptation was naturally slow, with some constraints, typical of a new process. In spite of everything, the enormous teachers' effort of adaptation stands out. It was, also on their part, a very significant investment and, in most situations, with very positive results.

3. How to consolidate the formal participation of the students and coordination structures in the monitoring of the teaching and learning process

Another difficulty that it was possible to detect during this period of exception was the difficulty to formalize students' participation throughout the monitoring process. The fact that the structures in which they are represented (Student Association, Schools management bodies, Course Evaluation and Monitoring Committees, Course Commissions, and the QMS itself, among others) are too rigid, in "emergency situations", they prove to be not very flexible and with limited action capacity, which caused the need to revise its framework, in order to enhance the students' intervention.

Improvement Areas

The plan allowed IPS not only to follow its response to emergency situations, as happened with the current pandemic, but also to know better the pedagogical activities and resources used in the teaching and learning process, with several implications for the performance of its QMS. Thus, the questions raised during this process allowed the identification of two important topics of reflection, beyond DL, which also allowed the identification of some areas for improvement:

- How does the QMS's monitoring of the teaching and learning process allows rapid action mechanisms?
- How do QMS respond more effectively, with enough flexibility, to HE students' needs, improving their academic results?

RAPID ACTION MECHANISMS

a. Flexible Organizational Structure of the QMS

Being the QMS based on well-defined responsibilities, it is considered that making it more flexible will be advantageous, in operational terms. To explain this, the authors refer two examples: 1) *Less bureaucratic processes*: as it is important the existence of evidences, it is also important that processes can provide quick (and timely) responses, especially in unforeseen situations like a pandemic, and, at this stage, the institution believes that quick responses are the most important; 2) *Effective information management*: without useful information and available in a timely manner, decision-making processes are always slow or poorly reasoned. During the pandemic, IPS found that its QMS's information gathering processes were too slow, so the improvement of this subject was identified as a priority need.

b. Integrated Monitoring of Pedagogical Activities

The QMS integrates a set of monitoring instruments on the teaching and learning process (Courses Evaluation and Monitoring Commissions; Course Monitoring Reports; Pedagogical Surveys; Curricular Unit's Identification, based on academic results and pedagogical surveys' results; Improvement Plans). However, the information available is not integrated and sometimes it differs, depending on where and when it is collected. For this reason, it was also defined as a priority the consolidation of the existing

mechanisms, in order to have more reliable information, so that the monitoring of the processes – namely the ones related with the pedagogical component – can be progressively more consistent.

c. Autonomy in Decision-Making Process

IPS identified the need to create mechanisms to promote proximity to students, considering their perspectives in decision-making processes, in an effective way. To accomplish that, the institution must guarantee that the mechanisms to implement will be as close as possible to the problems evinced by the students, in order to ensure that it is possible to intervene in a timely manner. Considering the importance of the course coordinators and those responsible for the curricular units, decisions cannot be taken in isolation and should be integrated (and framed) by a coordination process at a higher level of responsibility, where the guidelines must be well defined and very clear to everyone.

EFFECTIVE RESPONSE TO STUDENTS' NEEDS

a. Focus on Students' Needs

IPS has a set of mechanisms for listening its students. But this mechanisms are mainly focused on their perception on teaching-learning process and not on other academic or social spheres of their lives, which can be very limited. For example, dropout situations are often related with economic difficulties that require many students to have a professional activity, so having mechanisms to better understand the students' real needs is essential. So, having formal and integrated mechanisms to better understand the (real) students' needs is an essential element to identify this type of situations and act in useful time, if necessary. It is also essential that students' participation, both in the management bodies and in the QMS, would be more effective and also more recognized by teachers and the academic community in general, ensuring that their perspectives were effectively considered and implemented.

b. Students' and Teachers' Engagement

There is the need to create more and better mechanisms for students to participate more actively in the institution's academic life. The development of formal instruments and proximity mechanisms between course coordinators, teachers and students – and even among the students themselves – is something that is fundamental. Integration programs, tutoring activities, volunteer activities, actions with the academic community and integration activities among students during and since the first year, are some examples. Only with the students' involvement from the moment they enter the institution is it possible to enhance their collaboration both in improving measures and in participating in decision-making bodies and processes.

c. Continuous Improvement

Continuous improvement is a very important buzzword, but in the case of the teaching-learning process it is an effective challenge. What does it represent effectively? How is it measured? How does the institution know if the process is really improving? There are two essential aspects. On the one hand,

it is important to assure an effective monitoring of ongoing assessments. What happens today is that continuous assessments are essentially individual processes, enabling a global view of the student. That is why it is so important to be able to clearly understand students who are struggling, both in terms of attendance and in terms of approval in the evaluation process. On the other hand, it is essential to have a longitudinal analysis of the results (academic results, surveys, meetings, etc.) of the problems identified. Being able to understand how the results evolve over time is essential to understand whether the processes of continuous improvement are in fact happening.

Future Challenges

In a context of uncertainty about the times to come, QMS in higher education face significantly greater challenges than they have hitherto. Thus, and among the different challenges that are presented to them, the most important will certainly be the need for these systems to progressively abandon the procedural logic and focus, more and more, on the students' real needs and expectations. Students who are, at the same time, internal actors – capable of making decisions and directing the internal processes of the HEI – and external actors, as users and clients of the services of these organizations. For these reasons, it is essential that HEI increasingly see students as the true focus of their activities, with emphasis on those of its QMS.

This intervention in the mechanisms of quality management and assurance will necessarily pass – either in the case of the IPS, or in the case of other HEI in which the same limitations are observed – by a concerted action at two levels: by the operationalization of *rapid action mechanisms* and by the *effective response to students' needs and expectations*. With regard to the former, it will be important to ensure greater flexibility in the organizational structure of the QMS, integrating, on the one hand, the effective monitoring of pedagogical activities (as a fundamental area of the HEI) and, on the other, guaranteeing autonomy in the decision-making process, ensuring that the mechanisms implemented are as close as possible to the situations experienced by students, in order to allow their effective responses, in a timely manner.

In turn, and with regard to the effective response to the needs and expectations of students, it is essential that HEI maintain (and increasingly enhance) their focus on them, fostering *students' and teachers' engagement* and *continuous improvement* through monitoring of ongoing assessments and longitudinal analysis of the results of the problems identified. Only this way, with a concerted action, and necessarily framed by the QMS, it will be possible to make these systems to effectively contribute to the improvement of the processes and activities of the HEI, but above all, to the fulfillment and satisfaction of the expectations of HEI main stakeholders.

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ENDNOTES

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† Academic Degrees And Higher Education Diplomas (Decree-Law No. 74/2006)

1 Portuguese Legal Regime of Higher Education Institutions (Law nº 62, 10/9/2007)

[2] Portuguese Legal Regime of Higher Education Institutions (Law nº 62, 10/9/2007) – Article 12, p.6360