QUALITY ASSURANCE OF DOCTORAL EDUCATION IN PORTUGAL: A RETROSPECTIVE OF THE FIRST ACCREDITATION CYCLE

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Abstract

In the last decades, the assurance of doctoral education’s quality and their respective external quality assurance (QA) systems have been on the agenda of many European countries. Portugal is no exception, with doctoral education being envisaged by the national study programmes’ accreditation system. This study aims to discuss both the forms assumed by the QA of doctoral education within the scope of a tightly regulated system, such as the Portuguese one, as well as the effects or impact of such a system in this education level. In trying to explore this impact, particular attention is given to the accreditation results (full accreditation, conditional accreditation and non-accreditation) of the doctoral programmes according to their scientific area and higher education sector (public and private). Overall it is possible to conclude that the Portuguese QA system has been contributing to the reorganisation of doctoral education, both by excluding programmes that do not meet a set of minimum quality criteria and by promoting the enhancement of the remaining programmes, through the enforcement of improvement measures. This reorganisation seems to differently affect doctoral programmes from distinct scientific areas as well as from private and public institutions.

Keywords: Doctoral Education; Quality Assurance; Accreditation.

1 INTRODUCTION

In the last decades, due to the influence of multiple factors, doctoral education has been under considerable transformation: the massification of higher education which induced the growth of doctoral education, reflected in the increase in the number of doctoral students, programmes and universities offering doctoral degrees; the diversification of doctoral candidates’ profile, not only in demographic and educational terms, but also regarding career aspirations; or the increasing assumption of doctoral education as a strategic resource for the knowledge society and economy, as a way to feed knowledge and innovation systems ([1]).

These issues have led doctoral education to become increasingly the target of public concern and under the scrutiny of external QA ([2]; [3]; [4]; [5]; [6]). The ultimate goal is to ensure and promote the quality of the various aspects of doctoral education namely those related to student recruitment and selection, doctoral training, research, assessment, supervision and mentoring, skills and competences ([7]; [8]; [9]). External QA of doctoral education varies widely across Europe in terms of processes, procedures, criteria and indicators ([10]; [3]; [11]), framed by QA systems with different regulation degrees and purposes. In Portugal, doctoral education is subject to tight regulation, driven by accountability purposes ([1]). Doctoral education is mandatorily included in the assessment and accreditation of study programmes carried out by the national QA Agency. Doctoral programmes’ accreditation is guided by criteria both common to the first and second study cycle programmes and specific to doctoral education ([1]).

The aim of this study is to discuss both the forms assumed by the external QA of doctoral education within the scope of a system as regulated as the Portuguese one, as well as the effects or impact of the external QA in this education level. In trying to explore this impact, special attention is given to the accreditation results (full accreditation, conditional accreditation, and non-accreditation) according to the scientific area and the higher education sector (public and private) of the doctoral programmes. In what follows, a brief description is made of the Portuguese system for the external QA of doctoral education. Then the data and methodology used in the study are introduced, followed by the presentation of the main results. The paper ends with a discussion of the main conclusions regarding the impact of this system on doctoral education.
2 EXTERNAL QA OF DOCTORAL EDUCATION IN PORTUGAL

Established in 2007 (Law 38/2007) and coordinated by the Agency for Assessment and Accreditation of Higher Education (A3ES) (Decree-Law 369/2007), the Portuguese QA system is based on the assessment and accreditation of higher education institutions and first, second and third-cycle study programmes. Programmes’ accreditation is organised in two moments: the self-assessment, by the institution, with the drafting of the self-assessment report; and the external assessment, coordinated by the A3ES and conducted by external assessment panels through site visits and the drafting of external assessment reports. The accreditation process begins with an application from the institution and ends with the accreditation decision, which is a responsibility of the Agency’s management board, based on the external assessment report as a way to ensure the impartiality and objectivity of accreditation’s results ([12]).

Accreditation is based on a guideline common to all study cycles and comprising several assessment criteria, which include: the study programme’s general objectives; internal organisation and QA mechanisms; material resources and partnerships; teaching and non-teaching staff; students and teaching and learning environments; processes; results; SWOT analysis; and improvement proposals. In general, this was the guideline used for first accreditation regular cycle started in 2012 and ended in 2017 ([13]). For the second accreditation regular cycle – 2017/2022 – small adjustments to this guideline were introduced, and henceforth an introductory part of it consists of the characterisation of the programme’s evolution since the previous assessment. The remaining criteria were maintained almost unchanged ([14]).

In addition to the previous criteria, doctoral programmes’ accreditation requires specific evidence on two particular aspects: the institution’s human and organisational resources required for conducting research, and its research experience (on its own or through collaboration with other institutions) duly evaluated and reflected in relevant scientific production within the scientific area(s) of the doctoral programme(s). So, regarding doctoral degree’s assessment, teaching staff qualification and research (reflected in their scientific production) emerge as primordial.

A doctoral programme’s teaching staff must be constituted by a minimum of 75% full time teachers hired by the institution. Moreover, teaching staff must be academically qualified, i.e., integrated entirely by doctoral degree holders. Teaching staff must also be specialised, i.e. consisting of a minimum of 75% doctoral degree holders within the scientific area of the doctoral programme ([15]). Furthermore, the teaching staff has to have an active, relevant and internationally recognised role in the research developed within the doctoral programme’s scientific area. Namely, a minimum of 75% of the teaching staff must be integrated into research units classified with a minimum mark of ‘Very Good’ in the research units’ assessment promoted by the Foundation for Science and Technology (FCT) (Decree-law 65/2018).

Doctoral programmes’ accreditation is also dependent on the existence within institutions of adequate and high level research environments, namely taking into account the results of the FCT research units’ assessment (Decree-law 65/2018).

As in the case of first and second-cycle study programmes, doctoral programmes’ accreditation can have three possible results: accreditation (usually for 6 years), non-accreditation and conditional accreditation. Dependent on the fulfilling of the conditions, conditional accreditation is given in general for a period of one or three years. To ensure consistency, the Agency has been steadily awarding one-year conditional accreditation when the problems to overcome relate to the composition and qualification of the teaching staff and three years conditional accreditation when improvements needed aim research. However, the level of exigency for a doctoral programme is higher than for a first or second-cycle programme. For instance, if no high-level research (including relevant publications) exists the doctoral programme’s accreditation is not granted ([16]).

In the case of non-accreditation, study programmes can no longer be offered and receive/enrol new students. Moreover, the programmes can only remain in operation for two more academic years, allowing enrolled students to conclude the degree ([17]). This period may be extended where justified by special circumstances, related to both the programme and the students enrolled ([17]). In addition, accreditation may be revoked in case of study programmes not receiving new students. The Agency management board determines the review of the accreditation of the master and the doctoral degrees in which the enrolment of new students is not verified during three consecutive years ([18]).

Due to its aforementioned characteristics, and similarly to what happens in countries such as Italy or Sweden, the Portuguese QA system for doctoral education can be thought of as a tightly regulated...
one, driven by accountability purposes: doctoral programmes are reviewed by the QA Agency before being allowed to operate; detailed regulations, quality criteria and procedures exist addressing these programmes.

3 DATA AND METHODOLOGY

The massification and expansion of the Portuguese higher education system in the aftermath of the 1974 democratic revolution, combined with a first QA system (1995-2005) that did not produce tangible results, led to an excessive, unregulated and, in some cases, a rather low quality provision of higher education, including at the doctoral level. This called for a more robust initial intervention by the Agency when the actual QA system was implemented (2007).

Before the Portuguese QA system started operating (2009/10), an analysis of the study programmes’ registered in the General Directorate of Higher Education (DGES) was carried out. Sixty-nine doctoral programmes with anomalies in terms of operation were identified and immediately closed. Moreover, following legislation requirements, the Agency was mandated to undertake a preliminary accreditation of all study programmes by the end of the 2010/11. Under this exercise, institutions were asked to assume responsibility for adjusting their educational provision to their development strategy and available resources, discontinuing study programmes considered to be no longer viable. At this stage, sixty-two other doctoral programmes were dropped. The analysis of the information provided by institutions on the programmes they wanted to continue offering further led to detect a further number of programmes raising doubts about their quality. Following a discussion between the Agency and the institutions, other sixty-nine doctoral programmes were eliminated. However, the Agency had serious doubts about the quality of an additional number of fifty-nine doctoral programmes which were sent to an immediate review process resulting in the closing of more twenty-five programmes. The remaining doctoral programmes were then included in the first regular accreditation cycle (19).

This first exercise, which led to close down a significant number of doctoral programmes, was followed by the first regular accreditation cycle, between 2012 and 2017. 405 doctoral programmes, both from public and private universities, were submitted to accreditation, grouped, each year, according to their scientific area. Currently, twenty-four universities award doctoral programmes, fourteen public and ten private. Public universities are responsible for the great majority of the programmes offered (92% of all existing programmes), which are mainly traditional research doctorates (PhDs) (20).

This study relies on the analysis of information on the doctoral programmes involved in the first regular accreditation cycle. Specifically, accreditation results have been collected and analysed. This analysis encompassed the systematisation of doctoral programmes according to the higher education sector – public or private – of the universities offering them and to their scientific area, based on the 9 areas defined by the National Classification of Education and Training Areas (CNAEF - Decree-law 256/2005) i.e. Education; Arts and Humanities; Social Sciences, Commerce and Law; Sciences, Math and Computing; Engineering, Manufacturing and Construction Industry; Agriculture; Health and Social Care; and Services. The number of doctoral programmes accredited, conditionally accredited and non-accredited was computed and a content analysis was developed to explore both the reasons justifying the non-accreditation and the conditions underlying conditional accreditation. The systematic coding of such reasons and conditions was performed followed by a counting of the frequency of occurrence according to the scientific area and sector of doctoral programmes.

4 RESULTS

From the 405 doctoral degrees submitted to accreditation during the first accreditation cycle, about 93% were from public universities. From these, 18% were conditionally accredited and 4% were not accredited. In the case of the private universities, these proportions increase with 33% of the programmes being conditionally accredited and 11% not accredited. This suggests that accreditation had more impact on the doctoral education offer of private universities than of the public ones.

Concerning the doctoral programmes’ scientific areas, their distribution differs according to the higher education sector (see Table 1). While in the public sector, there were doctoral programmes in all scientific areas, in the private sector there were no doctoral programmes in Education; Sciences, Math and Computing; and Agriculture.

In the public sector, Education; Arts and Humanities; and Health and Social Care were the scientific areas where conditional accreditation was more significant, with 31%, 33% and 24% of the
programmes receiving this result, respectively. Furthermore, it should be noted that in Education 25% of the programmes assessed lead to non-accreditation. In the remaining scientific areas, the proportion of non-accreditations was less relevant.

Regarding the private sector, the doctoral programmes in Social Sciences, Commerce and Law were the ones where accreditation had the most effect, as 46% of them were conditionally accredited and 23% were not accredited. Arts and Humanities was also a scientific area significantly affected, with 25% of the programmes receiving conditional accreditation. Additionally, the only doctoral programme within the Services scientific area was conditionally accredited. This is not entirely surprising since the expansion of the private sector was mainly done in these scientific areas even though not always with the adequate human (teaching staff qualifications and profile) and material resources.

Table 1 – Accreditation results.

<table>
<thead>
<tr>
<th>Scientific Area</th>
<th>Private sector</th>
<th>Public sector</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accreditation</td>
<td>Accreditation</td>
<td>Non-accr.</td>
</tr>
<tr>
<td></td>
<td>Conditional</td>
<td>Non-accr.</td>
<td>Total</td>
</tr>
<tr>
<td>Education</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Arts and humanities</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Social sciences, commerce and law</td>
<td>4</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Science, math and computing</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Engineering, manufacturing and construction industry</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Health and social care</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Services</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

4.1 Conditional accreditation

Irrespective of the higher education sector (public or private), the conditions imposed to the doctoral programmes under their conditional accreditation concerned aspects other than the ones strictly related to research and teaching staff, which, as previously discussed, configure the two primordial criteria when assessing doctoral education (Fig. 1). Hence, conditions also aimed at the doctoral programmes’ curricular plan, organisation, infrastructures and material resources, inter-institutional collaboration, supervision and third mission activities (e.g. knowledge transfer).

In relation to the curricular plan, aspects emphasised by conditions related mainly to the need for doctoral programmes to ‘review the set of curricular units of the study plan, explaining its objectives and its programmatic content’ with the aim of ensuring ‘for all the curricular units a level of third cycle of studies.’ Regarding doctoral programmes’ organisation, conditions warned about the need to ‘reduce’ and ‘redefine areas of specialisation’. Furthermore, doctoral programmes were required to define ‘the number of vacancies’ and ‘the conditions for enrolment’. In some other cases, the redefinition of the ‘name’ and the ‘duration of the doctoral programme’, as well as ‘the change of [its] main scientific area’ were also put forward as conditions for accreditation. With regard to research, it was often stressed the need to ‘increase the quantity and the quality of scientific publications in peer-reviewed international journals in the prevailing scientific areas’ of the doctoral programme, as well as the need to ‘increase’ the teaching staff and adequate their ‘qualifications and specialisations’ to the curricular plan. Finally, concerning the remaining conditions, Universities were mostly requested ‘to equip the library with the appropriate bibliography for research needs’, as well as ‘to increase the spaces for students’ work and study’ (infra-structures); to foster ‘cooperation with national and foreign entities that fully guarantee the quality and extent of student training’ (interinstitutional collaboration); or, specifically regarding supervision, to constitute ‘a thesis follow-up committee’ and clarify ‘the process of assigning students to supervisors’.

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The analysis of conditions according to the higher education sector (Fig. 1) shows that practically any condition was more often pointed out for doctoral programmes in private universities than in public ones. Moreover, in both sectors, the doctoral programmes’ curricular plan, organisation and research were the aspects mostly addressed by the conditions. Programmes from private universities were especially targeted by conditions addressing infrastructures and material resources, a quality aspect only marginally addressed by conditions targeting doctoral programmes from public universities. The same picture can be drawn for conditions related to the faculty, supervision and third mission, with doctoral programmes in private universities being more compelled to change issues related to these aspects. Also interesting is that conditions addressing interinstitutional collaborations only targeted doctoral programmes of public universities.

The analysis of the scientific areas of conditionally accredited doctoral programmes suggests that, irrespective of the higher education sector the conditions mostly emphasised, for most scientific areas, were related to shortcomings in the programmes’ curricular plan, organisation and research. In the public sector, concerns with the quality of the curricular plan were particularly evident in relation to programmes in the areas of Arts and Humanities; Science, Math and Computing; and Services. In fact, more than half of the conditionally accredited programmes in each of these areas were the target of conditions for improving these dimensions. Particularly, all the doctoral programmes in the Services, presented shortcomings regarding the curricular plan. With regard to the doctoral programme’s organisation in the public sector, the scientific areas seeming to raise most concerns and thus targeted by more conditions were those of Education; Social Sciences, Commerce and Law; and Science, Math and Computing. Moreover, Education; Health and Social care; and Services, were the scientific areas most targeted with conditions for improving research, with all programmes in these areas presenting shortcomings at this level.

In the private sector, the limitations pointed out for each scientific area were about the same as those mentioned for the public sector. In the Arts and Humanities, about half of the programmes presented shortcomings related to their organisation and research, while all the programmes had problems and received improvement conditions related to their curricular plan. Conditions imposed to the doctoral programmes in the Social Sciences, Commerce and Law, focused on these same three aspects (organisation, research and curricular plan), as well as on infrastructures.

### 4.2 Non-accreditation

The reasons justifying non-accreditation substantially replicate the conditions for conditional accreditation (Fig. 2), even though aspects such as the doctoral programmes’ research, teaching staff, curricular plan and organisation assume greater prominence in the programmes of both higher education sectors. This suggests the importance assumed by research and teaching staff’s qualifications and research performance for doctoral programmes’ accreditation. Additionally, third mission aspects (mentioned in the conditional accreditation conditions) were replaced (in the reasons...
for non-accreditation) by two other aspects, namely the number of students and their involvement in research, which are only highlighted in the case of the public sector.

![Figure 2 - Main reasons for non-accreditation.](image)

Aligned with the two particular requirements applying to doctoral programmes’ accreditation (i.e., teaching staff and research), all the eighteen non-accredited doctoral programmes (100%) revealed shortcomings in terms of research and its outcomes, with emphasis on the fact that ‘the teaching staff did not have a research and publication activity suitable to a third cycle level of studies’ and that the ‘scientific production with relevance and international impact [was] practically non-existent.’

The lack of adequacy of the teaching staff also constituted a limitation of most of the non-accredited programmes, with the recognition that these staff did not fulfil the legal requirements regarding the minimum number of doctors in the fundamental scientific area of the doctoral programme. This was especially relevant in the private sector, where 67% of the non-accredited programmes presented such shortcoming (against 42% in the public sector).

Some other reasons have also justified non-accreditation decisions. The poor quality or even the absence of a curricular plan was frequently emphasised as a limitation to the achievement of ‘the proposed objectives’ for the doctoral programmes, particularly in the private sector.

A relevant proportion of programmes in the public universities (42%) and all the programmes in the private ones also presented shortcomings in terms of organisation, namely the fact that the coordinator of the doctoral programme did not have a ‘doctoral degree in the programme’s main scientific area’, ‘the lack of definition of the number of vacancies’ and ‘specific conditions of enrolment’. Aspects related to supervision, as for instance ‘almost all supervisions’ being ‘concentrated in one supervisor’, were also referred for doctoral programmes of both the private and public sectors.

Although only in the programmes of the public institutions, interinstitutional collaboration also emerged as a reason for non-accreditation. The ‘lack of collaboration of experts from the main scientific area’, the difficulties in ensuring such collaboration and partnerships, and the ‘lack of effective involvement of students in the research related to the fundamental scientific area’ of the doctoral programmes, were some of the specific reasons stressed at this level. The low number of doctoral students was also a justification for not to accredit some doctoral programmes as it was considered as an indicator of the ‘lack of critical mass’, an aspect of primordial importance for doctoral training.

The analysis of the reasons for the non-accreditation according to the doctoral programmes’ scientific area patterns identical to those identified for the case of the conditions imposed within conditional accreditation. In the public sector, shortcomings in what regards research were identified in all the non-accredited programmes in Education; Social Sciences, Commerce and Law; Science, Math and Computing; and Services. Furthermore, shortcomings in the curricular plan justified the non-accreditation of all programmes in Social Sciences, Commerce and Law and most of the programmes
in Education. These latter programmes also presented limitations in terms of organisation, which also emerged as fragile in the programmes in Science, Math and Computing. The teaching staff was also frequently recognised as presenting problems in the case of the doctoral programmes in Education; Social Sciences, Commerce and Law; Science, Math and Computing; and Services.

In the private sector, all the doctoral programmes not accredited were in Social Sciences, Commerce and Law; the main reasons for this non-accreditation were similar to those highlighted for the doctoral programmes in the same area in the public sector, namely research and teaching staff.

5 CONCLUSIONS

According to the study, it seems that the Portuguese QA system in operation since 2009 has indeed been contributing to the reorganisation of doctoral education. This reorganisation included not only the close down of doctoral programmes that did not meet a set of minimum quality criteria (non-accreditations), but also the identification of conditions aiming programmes’ improvement (conditional accreditations). This process has nevertheless impacted differently doctoral programmes from different scientific areas and higher education sectors.

In this context, doctoral programmes from private universities were the ones most affected by the QA system. Indeed even though the number of the programmes submitted to accreditation was rather small (only 7% of the total number), the percentage of non-accredited and conditionally accredited programmes was higher than that of public universities. Moreover, most of these programmes were in the Social Sciences, Commerce and Law. In turn, in the public sector the programmes evidencing greater problems (conducting to conditional and non-accreditation) were those in the scientific areas of Education; Arts and Humanities; and Health and Social Care. One possible explanation for these results may be the fast expansion and massification of the Portuguese higher education, with many institutions mainly from the private sector, but also from the public one, offering programmes ‘more easy’ to establish due to the low requirements in terms of human and material resources. Apparently not enough attention was given by universities to the qualifications and the profile of the teaching staff, which led to doctoral programmes with significant shortcomings at this level.

The study also shows that there is an overlap between the reasons justifying programmes’ non-accreditation and the conditions put forward for their conditional accreditation. Regarding the conditions imposed for conditional accreditation, they mostly emphasised doctoral programmes’ curricular plan, organisation and research, being these aspects even more evident for the programmes of private universities. The reasons justifying non-accreditations also significantly stressed the teaching staff composition and gave more emphasis on research. While not so evident, differences in the reasons justifying the non-accreditation and the conditions underlying conditional accreditation also emerged according to the doctoral programmes’ scientific areas.

The study enabled to conclude that the external QA system implemented in Portugal indeed affected the quality of doctoral education. At the outset of the Agency’s operation, doctoral education was highly unregulated and in some cases of low quality, due to decades of rapid massification and expansion of the higher education system, allied with a relatively inconsequent previous QA system. So there was the need for a regulated system to be put in place, more robust and with tangible effects, which could contribute to reorganising a training offer that raised quality concerns. This reorganisation was then promoted through the improvement of conditionally accredited programmes and the close down of non-accredited programmes, thus contributing to the overall improvement in the supply of doctoral education.

As any other QA system, the Portuguese one is not static. It is then expected that with its evolution and maturity, the QA of doctoral education will vary from being more regulated and accountability driven to privileging institutional autonomy and quality enhancement.

REFERENCES


