

Educação Doutoral: Mais que um Passaporte, uma Ferramenta *Doctoral Education: More a Tool than a Passport*

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RESUMO

O objetivo deste artigo de opinião é abordar o assunto da educação doutoral de um ângulo específico – não apenas como um caminho único para entrar ou manter uma carreira dentro da academia mas, sobretudo, como ferramenta para desenvolver uma formação sólida em investigação e, independentemente do sector no qual os doutorados terão emprego, para preparar profissionais competentes e capazes de responder de forma criativa a situações de trabalho complexas e desconhecidas numa sociedade do conhecimento em crescente mudança. Não iremos referir domínios científicos específicos porque, neste caso, o mesmo racional pode ser aplicado em áreas científicas e profissionais diversas, do Direito à Engenharia ou à Economia, da Medicina às Ciências Sociais.

Baseado no princípio de que o principal resultado de um processo de doutoramento é o doutorado e não a sua tese, apresentamos o projeto da NOVA Escola Doutoral (Universidade Nova de Lisboa) como um projeto de formação complementar em várias competências profissionais e pessoais, de carácter transversal, oferecidas aos estudantes de doutoramento das nove Unidades Orgânicas da NOVA.

Palavras-chave: Currículo; Educação de Pós-Graduação; Educação de Pós-Graduação em Medicina.

Doctoral Education In Europe

In the last twenty years European Higher Education (HE) institutions suffered extensive changes due to different factors, from the massification of HE systems where new publics with varied origins and backgrounds demand innovative responses, to the changing nature of the labour market in the globalized economy.¹ In fact, the post-industrialisation era and the emergence of the knowledge-based societies have put HE systems at the centre of social development and universities in Europe had to face two apparently contradictory trends – to compete and to collaborate with other universities at national and international levels and decide on strategic approaches to these two trends.² Either to collaborate or to compete, most European countries and their educational

ABSTRACT

The main aim of this opinion article is to approach the issue of doctoral education from a specific angle - not as a single path to enter or maintain a career within academia, but mainly as a tool to develop a solid research training and, regardless of the sector in which PhD holders will be employed, to prepare skilled professionals, able to creatively respond to unknown complex work situations in an increasingly changing knowledge-based society. We will not refer any scientific domain because, in this case, the same rationale could be applied to different scientific and professional fields, from Law to Engineering or Economy, from Medicine to Social Sciences.

Based on the claim that the main outcome of a PhD process is the PhD degree holder, not the thesis, we present the project of NOVA (Universidade Nova de Lisboa) Doctoral School as a complementary training project in a wide range of transversal professional and personal competences offered to the PhD students of NOVA's nine Academic Units (Schools and Institutes).

Keywords: Curriculum; Education, Graduate; Education, Medical, Graduate.

systems carried out wide-ranging transformations, namely in the context of an intergovernmental European initiative best known as the Bologna Process. The main aims of this reform were to create the European Higher Education Area by aligning the European educational programmes and by promoting synergies and mobility (of students and academic staff) within the HE European space.³ Furthermore the process also aimed at enhancing quality and attractiveness of European HE institutions and at increasing employability of graduates.

This reform was primarily focused on bachelor and master levels. Doctoral education (the third cycle), by tradition highly protected within academia, was not targeted by the Bologna process.

Nevertheless in 2005 a conference dedicated to doctoral education was held in Salzburg. The central aim of the meeting was to discuss doctoral education and the role of HE institutions. The most important document issued contained the Salzburg Principles which were developed in 2010 by

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Table 1: NOVA Doctoral School courses

Research Skills Development	Building competencies and confidence in areas relating to personal and research effectiveness.
Science Communication	Oral and written techniques to meet both peers and lay audiences
Communicating Science Visually	Preparing visual or graphic materials.
Social Media for Scientists	The communication process on the web and the importance of properly managing online identity inside and outside social media.
Value Creation	Effective tools to solve problems/challenges across a wide range of fields (e.g., PhD research question, job search, service and technology-transfer, entrepreneurship).
Data Processing Automation	Introduction to the programming language of Python, with applications to file processing, data analysis and the creation of simple scripts.
Design Thinking	Tools and techniques to think differently, see new opportunities, and create innovative solutions with impact.
Research Ethics	Research ethics topics and case studies; management and evaluation of a research project from an ethical standpoint.
Project Management	Critical project management, useful methodologies and project tools.
Information Literacy	Information queries, search tools and strategies, information sources, plagiarism, citation and referencing, bibliometric and scientific publishing.
Finishing my PhD: the next 90 days	Understand, redefine and/or change the path of a professional career.
Intellectual Property	Connections between intellectual property and scientific works in two common categories: Industrial Property (mostly patents) and Copyright.
Research Data Management	The management of research data in compliance with financing agencies guidelines in order to make data discoverable and citable.
Scientific Text Processing with LaTeX	How to use the LaTeX for processing scientific documents, be it for writing papers, books and theses, or preparing slides.

Salzburg II Recommendations.^{4,5} These Recommendations were the outcome of an intensive consultation process within the members of the European University Association Council for Doctoral Education (EUA-CDE). A large consensus was established about the research basis of the doctorate and about original research as the core component of doctoral education. However it was also recognised that doctoral training should increasingly meet the needs of an employment market, wider than academia, and therefore include additional contents, such as career development and employability, transferable skills, science communication, teamwork, entrepreneurship, project management, ethics, cooperation with the non-academic sectors, just to give some examples.

This new approach considers the new doctorate holders as early stage researchers and the main outcome of doctoral education. It strongly advises that the PhD candidates may receive a solid academic preparation not only in research but also in broader competences, making them able to adjust to the demands of an extremely competitive changing labour environment and accepting the fact that the majority of them will not continue their career in academia.⁶

The existing training model in place in most European uni-

versities, without formalised training programmes and exclusively based on a close individual relationship between a supervisor and a PhD candidate, proved to be inefficient. It produced in most cases excellent academics, but ill-prepared candidates, not able to face an uncertain future, and ill-informed about a broad range of careers outside the university.^{7,8} Consequently, the European PhD programmes were improved and the traditional supervision model was transformed, integrating other forms of supervision and support, sometimes offered by interdisciplinary and also international supervision teams, rather than by a single person. Therefore, supervision also became a field of institutional investment, being considered a competence which can be trained and thus improved. Training courses for supervisors were launched in many European universities as it is the case of Universidade Nova de Lisboa.

Moreover, the institutional responsibility in investing in the personal and professional development of PhD candidates was also recognised. Universities started to offer structured doctoral programmes (aligning their goals and contents with other schools from Europe or outside Europe, enhancing mobility and training exchanges) and Doctoral Schools were

created in different models and shapes (“umbrella” university doctoral schools; department doctoral schools; thematic doctoral schools; joint schools of several departments and disciplines). Independently of the chosen model, the Doctoral School (called Graduate School in the US system) is an institutional organisational structure with a leadership (a director and professional staff) providing research support and transferable skills training for doctoral candidates and committed to ensuring quality of doctoral education by monitoring the training process and by training the supervisors.

Independently of the chosen format for doctoral schools (there is not a best solution and each university has decided about its most appropriate model), it is crucial that these schools “are embedded in an overall strategy for doctoral education, which defines their purpose and limits”.⁹

NOVA Doctoral School and its role in the University strategic approach will be described in the second part of this article.

NOVA Doctoral School

In NOVA’s strategic plan for 2012-2016 the university embraced, as a fundamental strategic option, the creation of a Doctoral School with the purpose of promoting PhD quality, interdisciplinary education and the internationalization of its doctoral programmes. So, aligned with the Salzburg principles and EUA recommendations, NOVA launched in 2013 its Doctoral School. Although recognizing that the advancement of knowledge through original research is the core component of a PhD education and that NOVA’s Academic Units (AU) were already offering high quality 3rd Cycle education, NOVA assumed that PhD studies should facilitate additional personal and academic skills development opportunities.

Without interfering with the structured PhD programmes of each AU, NOVA’s Doctoral School provides complementary activities to support the acquisition and development of transversal generic skills in different domains such as ethics and social understanding, oral and written scientific communication, personal effectiveness and development, team working and leadership, career management and entrepreneurship. The courses are attended by students coming from different backgrounds and scientific domains thus creating a multidisciplinary learning approach and a cross fertilization atmosphere within NOVA. In what concerns the professional development of academic staff, Nova Doctoral School also offers a course for supervisors.

The main goals of NOVA’s Doctoral School are, therefore:

- To provide additional training to PhD students and supervisors, enhancing their personal and professional effectiveness;
- To organize common academic and scientific activities with the purpose of avoiding the compartmentalization of scientific areas, creating an open space for discussion and creativity;
- To share best practices (within NOVA’s doctoral programmes and with partnerships with other Higher Education Institutions);
- To forth rationalization and sharing of resources by creating synergies that will benefit all NOVA’s doctoral programmes;
- To contribute to attract the best students to our PhD programmes, either in Portugal or abroad, specially including students from the Portuguese speaking countries;
- To create mechanisms of collaboration with enterprises and the society in general.

NOVA Doctoral School offers 14 courses in transversal skills with the maximum duration of three days each. In this article, we briefly present the courses designed for PhD candidates and PhD holders, a group that was recently integrated in our target public: Research Skills Development, Science Communication, Communicating Science Visually, Social Media for Scientists, Value Creation, Data Processing Automation (Python), Design Thinking, Research Ethics, Project Management, Information Literacy, Finishing my PhD: the next 90 days, Intellectual Property, Research Data Management and Scientific Text Processing with LaTeX (see Table 1 with the main objectives of each course).

The selection of the themes of the courses was made by the Coordination of the Doctoral School and also by the Professors’ and PhD Candidates’ Commissions which are composed by one professor and one student from each AU.

The training courses are free of charge and voluntary. They are held in English when at least one participant does not speak Portuguese and take place in different AU according to our decentralization politics.

In 2016, NOVA Doctoral School held a total of 33 editions of the courses of its training offer with a total of 535 participants.

From 2013 to the end of 2016 NOVA Doctoral School held a total of 128 editions with a total of 2021 participations (NOVA has a total of 2000 enrolled PhD candidates and each student may attend as many courses as he/she wants).

Following good practices in this field, we collected the PhD students’ opinions about the training courses, namely if the courses had fulfilled their expectations, if they thought they had acquired knowledge which will be useful in their personal and professional lives, if they have gained more understanding of the subjects, if they thought the learning experience had been of high quality and if the length of the courses had been adequate. For most these parameters, more than 83% of the participants agreed or totally agreed with all the statements and around 25% thought the length of the courses could be extended. Also, their comments to the open-ended questions showed they thought the courses had been useful to their PhD process and had promoted networking. This fact was specifically considered an added-value as the PhD process can be an isolated one. Finally the participants considered that the attended courses had contributed to upskill their

capacities in what concerns facing the labour market either within or outside academia.

To conclude, and in our opinion, the almost five years of experience of NOVA Doctoral School highlight the importance of the development of transversal skills as well as of specific research skills in a doctoral process. The interaction in the same transversal courses among PhD candidates from different AU has contributed to enhance an atmosphere of collaboration and to deepen the spirit and culture of NOVA. ■

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