

WHICH COMPETENCIES ARE ESSENTIAL TO ACHIEVING A PHD DEGREE? THE PERCEPTIONS OF PORTUGUESE PHD SUPERVISORS

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INTRODUCTION

The massification of Higher Education (HE) and the increased investments in doctoral education led to an escalation of the enrolments in doctoral studies over the last decades (Cyranski *et al.*, 2011; Kehm, Shin and Jones, 2018; Shin, Kehm and Jones, 2018).

This can be seen as a positive indicator, as doctorates contribution to nations' development and their importance in finding solutions for present and future challenges have been widely recognised (Cyranski *et al.*, 2011; Duke and Denicolo, 2017; Shin, Kehm and Jones, 2018).

However, this also represented additional challenges to HE institutions, as they need to address the challenges and issues resulting from the transformations in doctoral education. Among these issues are high attrition rates and extended time to degree (Spaulding and Rockinson-Szapkiw, 2012). At the same time, the investors' expectations in terms of the doctorates skills and their ability to perform outside academia have also increased the pressure on time to degree, while led to changes of the doctoral purpose and the doctoral training (Bernstein *et al.*, 2014; Durette, Fournier and Lafon, 2016; Kehm, Shin and Jones, 2018; Hasgall *et al.*, 2019).

Research on issues around doctoral education has pointed out different factors, which can be grouped into three main topics: institutional variables, supervision, and students' characteristics (Jones, 2013; Hunter and Devine, 2016; Geven, Skopek and Triventi, 2018; Sverdlik *et al.*, 2018).

Within the latter, studies have pointed out the importance of students' competencies in completing the doctoral degree (Buckley *et al.*, 2009; Durette, Fournier and Lafon, 2016; Sverdlik *et al.*, 2018). However, possibly influenced by the focusing on doctorates' training for the labour market, research has mainly targeted what competencies are being developed by students and valued by employees or what competencies should be developed by students (Buckley *et al.*, 2009; Mowbray and Halse, 2010; Baptista and Huet, 2012; Durette, Fournier and Lafon, 2016; Kariyana, Sonn and Marongwe, 2017; Jung, 2018).

The present study aimed to address PhD completion from the perspective of the early development of essential competencies (required to complete the PhD degree), assuring they are available when needed over the Ph journey. This study's objective was to conduct an exploratory study for obtaining PhD supervisors' perceptions of what students' competencies they point out as essential for completing the degree.

METHOD

Research design. The present study followed a qualitative approach, using semi-structured face-to-face interviews with open-ended questions. Data were analysed using thematic analysis.

Participants. Participants were a convenience sample of 16 PhD supervisors from the University of Aveiro. The sample included the director of the doctoral school, 5 directors of PhD programmes and 10 PhD supervisors from STEM and Social Sciences related fields.

Procedures. Participants were recruited by email. Each interview was scheduled after formal acceptance. All interviews lasted from twenty to thirty minutes and were audio-recorded.

Transcriptions were made using clean verbatim and sent to the respective interviewee for validation. NVivo 12 Pro was used for the thematic analysis, using a theoretical semantic approach, with the RDF (Vitae, 2011) as the theoretical framework.

RESULTS

Data revealed 23 competencies, grouped into 5 Domains.

The domain “Knowledge” included 4 competencies related to different kinds of knowledge that students should develop. The competencies grouped into this domain were: awareness about the meaning of a PhD; general knowledge about research methodology; theoretical topic-specific knowledge; and technical skills required to use instruments and techniques for the research project.

The domain “Personal characteristics” was composed of 7 competencies. These competencies referred to the students’: intellectual capacity; critical thinking; critical analysis; curiosity related to research; self-confidence; self-motivation and perseverance; and resilience.

The “Working Competencies” domain included 7 competencies oriented to task engagement and completion. The mentioned competencies were: autonomy to work independently; commitment and hard-working; self-discipline; time management; self-organization; ability to search, filter, and select suitable information; and ethical behaviour.

On the “Networking” domain, 2 competencies were referred related to: the ability to interact and work with others in the same team; and the ability to engage and interact with others outside own’s environment.

Finally, the “Dissemination” related to the skills required to present its project in different formats, namely: writing skills; oral communication skills; and English language skills.

DISCUSSION

This study aimed to approach doctoral completion from the perspective of the development of students key competencies. As mentioned by some participants, a wide number of students are not aware of what represents to do a PhD. Hence, it seems likely most students are unaware of the competencies they need to master for completing the PhD degree. Thus, if those competencies are not developed in time, students progression can be at risk due to delays or even the intention to abandon the studies.

Even when universities provide guidelines about the competencies to be developed, these aim for the professional development mentioned during the introduction. Therefore, facing all listed competencies, students may have difficulty identifying which ones will be required for completing the PhD and prioritizing their training, which may result in some crucial competencies being underdeveloped.

One good example of the length and complexity of the available lists is the Vitae RDF, composed of 63 descriptors, which is widely by universities in the UK (Vitae, 2011).

By identifying a list of 23 essential competencies, most of them overlapping with the RDF's descriptors, this study suggests that among the competencies expected from a doctorate, there are some indispensable for completing the degree, while others target post-doctoral career.

Furthermore, only a few differences were found between the results from STEM and Social Sciences supervisors, pointing out that despite the differences between the disciplinary fields, the perceptions about the students' required competencies are very similar. Resembling results were found in a study about the core competencies of doctorates, with authors identifying consistent results over doctorates from different disciplines (Durette, Fournier and Lafon, 2016).

Although these are encouraging results, the findings should be analysed taking into account the exploratory approach of the study. Therefore, since the study only targeted one

university and only two main disciplinary fields, results may not reflect the visions or perceptions of supervisors with different backgrounds.

As mentioned this exploratory study is part of wider research aimed at developing a framework of essential competencies and providing guidelines for helping students and supervisors in assessing students developing needs and finding suitable training. Thus, the framework may also be used by universities for reviewing their training offers.

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