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POSTGRADUATE EDUCATION – FORM AND FUNCTION

FOREWORD BY
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Contents

Quality of Doctoral Supervision: Supervisors' conceptions of learning, supervision and students' profiles

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Introduction

Internationally, the Higher Education (HE) agenda is revealing a growing concern with the extension and impact of research at postgraduate level. Doctoral studies are acquiring a renewed conceptual understanding and are gaining a greater significance and value (Chambaz, Biaudet & Collonge, no date). Simultaneously, we are starting to assist to the rising of *"epistemological questions"* about the *"nature of the doctorate"* (McAlpine & Norton, 2006:4). These aspects highlight the necessity for continued research in this area, and particularly in engaging the academic community from diverse HE institutions around the world in deeper discussions and reflections.

The international and particularly the European contexts emphasise the existence of an increasing number and a greater diversity of research students enrolling in postgraduate studies in general, and in doctoral programmes in particular, after finishing the master programmes (Harman, 2003; Pearson & Kayrooz, 2004). The 'boom' of doctoral programmes is promoting more discussions and enriching reflections within *Academia*. The growth of different forms of doctorates and the diversity in students' profiles (full and part time students as well as mature students) reinforces the need to redefine and continue the discussion about the understanding of quality in the research supervision process at a doctoral level (Brew, 2001; Enders, 2005; Park, 2005; EUA 2009 meeting in London; Frick, 2009). Consequently, a bigger effort and commitment from doctoral students and supervisors, as well as HE institutions, is required. Discussions

about conceptions, practices and experiences regarding the optimisation of skills and competences involved in doctoral studies are essential. The supra-national character of this issue indicates that the quality of doctoral programmes is considered to be a highly relevant issue to most countries and HE institutions around the world, and in particular in the Portuguese context.

This chapter aims to present the voices of supervisors regarding their conceptions about doctoral learning and supervision, and the competences students and supervisors should develop to enhance the quality of the research supervision process. This approach intends to contribute to the design of a reference framework about the quality of the research supervision process. In the mid-term, it will be important to support the design of an evaluation model and instruments that can be used for systematic and cyclic evaluation of practices regarding this process.

This chapter starts by taking a theoretical approach to concepts like quality, research supervision and learning, as well as students and supervisors' profiles and competences. This will be followed by a presentation of the design of the study, which was conducted at the University of Aveiro. Thereafter, a conceptual exploration and interpretation of the data collected in focus groups will be presented. Finally, we systematise supervisors' conceptions as the first outputs that will contribute for the design of the reference framework about the quality of the research supervision process.

Quality (and) evaluation of research supervision

Quality is a "*keyword, a goal, a horizon*" (Pérez Serrano, 2000:9) which can be identified in the discourse of numerous disciplines. Even though it has been greatly explored, this concept is still understood as multi-dimensional, complex, multi-faceted and hard to define (Green, 1994; Cheng & Tam, 1997; Mizikaci, 2006; Houston, 2008). The definition of conceptual borders is even more difficult to achieve, since societies and institutions are emerged in a complex, dynamic and changeable context (Barnett, 2000; Brew, 2007). However, attempts to conceptualise and define the factors, based on empirical studies, of research supervision quality are being internationally researched (Cullen *et al.*, 1994; Pearson & Kayrooz, 2004; Green, 2005; Park, Hanbury & Kulej, 2007; Engebretson *et al.*, 2008; Vilkinas, 2008).

The educational discourse clearly highlights the importance that concepts such as evaluation and quality acquire nowadays. The discussions around concepts such as 'quality evaluation', 'quality

assurance' and 'quality standards' related to several pedagogical processes and levels are increasing. Frazer (1994) reports that society and diverse stakeholders are asking for quality based-evidence regarding the work developed at HE institutions. The emphasis on quality has been reinforced by two reports from the European Universities Association (2010a, 2010b) as well as a study by Gibbs (2010). Research products and the research supervision process are considered relevant to be evaluated for formative and summative purposes (Henkel, 1998; Aspland *et al.*, 1999).

Within this broader context, it is considered that, even though complex, quality evaluation on research supervision process (particularly at a doctoral level) is an essential task. In Portugal, several authors have already worked on the concept of supervision (Alarcão, 1996; Vieira, 2002; Vieira, 2006; Sá-Chaves, 2007). The conceptual borders of these studies are, however, focused on pedagogical, curricular, institutional, and professional supervision. This evidence leads us to observe the absence of both theoretical and empirical research regarding the quality of postgraduate research supervision in the Portuguese context.

At the international context we can find isolated questionnaires to assess the quality of research supervision that are not always supported by an integrated model of evaluation nor an understanding about the construct of quality when referring this complex phenomenon. We consider that research must be designed which takes account of the variables, their weights, and the characteristics involved in the construct of quality of doctoral supervision. After the design of such a holistic and integrative reference framework it is then essential to design proper and suitable evaluation models that integrate validated perspectives based on theoretical and empirical findings. These models can then be used for systematic and cyclic evaluation, so that the process can be further enhanced. This framework will incorporate different factors that may influence the quality of the doctoral supervision process, and will promote an *"interaction of a constellation of dynamic factors"* (McAlpine & Norton, 2006:5) so we can better understand this complex phenomenon, not only in Portugal but also abroad.

Doctoral students and supervisors' profiles

Several authors (Brew & Peseta, 2004; Vilkinas, 2008; see in this book the chapter by Picard & Warner) emphasise the necessity for discussions on the development of a different set of skills and

competences of doctoral students and supervisors, which will be essential to improve the quality and effectiveness of research supervision practices. We consider the definition and understanding regarding the skills, responsibilities and profiles that both doctoral student and supervisor must develop as absolutely necessary to be discussed and clarified. This student-supervisor (dyadic) relationship must be integrated in a broader dynamic which is constituted by (i) the HE institution, the policy and institutional culture (Hon Kam, 1997; Nulty *et al.*, 2009), and (ii) the research group (Kiley, 2009; Trafford & Leshem, 2009). The research supervision activity needs then to be understood through the lens of an integrated, contextual and dynamic approach (Figure 1) where all those aspects must contribute to the optimisation of research supervision quality.
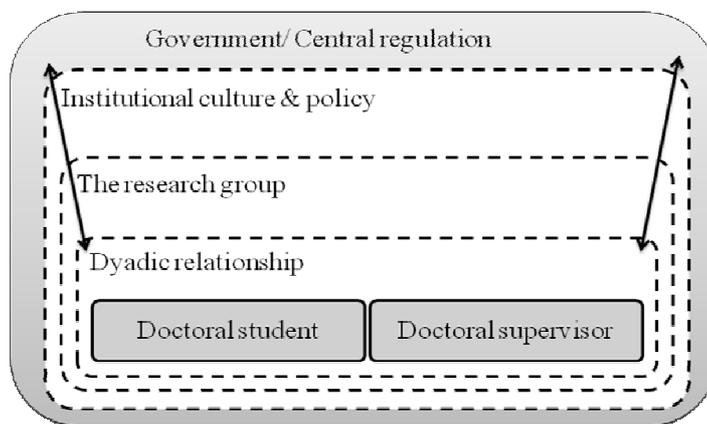
Figure 1: Integrated and dynamic perspective about the research supervision process

It is essential to highlight that, even though visually organised, the interdependence of those aspects, as well as the flexibility of those borders, are inevitable. This may lead, many times, to a difficulty in isolating and identifying the variables or characteristics that belong to each 'sphere'. However, when theoretically and empirically understanding what is involved in quality of the research supervision process, the interconnected perspective must be assumed, so that the complexity of this issue continues to be observed.

The dyadic relationship between the student and the supervisor is still considered as the most important factor of success for the supervision process (Brew & Peseta, 2004; Wisker, 2005; Murphy *et al.*, 2007; Eley & Murray, 2009). Even though in this chapter we present and focus on supervisors' voices (who participated in focus

groups), it is clear that we must assume a dynamic perspective when discussing the profiles that each actor in the dyad need to enhance (see in this book the chapter by Friedrich-Nel). The holistic nature of this relationship will have to take into account the close link established between the interpersonal and communicative dimension, the intrapersonal dimension, and the academic and research dimension. Consequently, a complex and interconnected perspective will be considered throughout this study.

Design of the study

The research approach chosen to this research is the case study, which Yin (1994:8) defines as "*a contemporary event that cannot be manipulated*" (Yin, 1994:8). Our research questions are centred on the 'how' and 'what' of a contemporary reality:

- What are doctoral supervisors' conceptions about the concepts of doctoral learning and supervision?
- How do doctoral supervisors experience the supervision process?
- What are doctoral supervisors' conceptions about the competences that both students and supervisors should develop to enhance the quality of research supervision process?
- What are the first indicators to be considered in order to build the reference framework about the quality of doctoral supervision process?

To answer the above-mentioned questions, the research was conducted at the University of Aveiro (UA). This is a Public Foundation since 2009 that has defined its major goal to be the achievement of excellence in postgraduate studies. This research was carried out in this Portuguese institution, because (i) this is a research-intensive university, (ii) doctoral programmes and research are the cornerstone of the mid- and long-term objectives, and (iii) it will be important to control factors such as institutional policy and culture, that could influence the first data analysis and results.

The data was collected through focus groups with doctoral supervisors (n=25) of all academic domains. This allows us to answer the research questions that guide the investigation. This strategy of data collection was adopted, because it stimulates interaction, discussion, self- and meta-reflection among the participants, particularly regarding the quality of research supervision. Also, conceptions about the understanding of doctoral quality are shared, and learning and supervision concepts emerge as interconnected. Due to

"*the dynamic nature of the process*" (Greenbaum, 2000:13), the research benefits from this qualitative research technique which enriches the research findings, enabling and encouraging participants to be actively involved and 'think conceptually' (Greenbaum, 2000).

Heterogeneity of each group was considered a factor that needed to be assured. Therefore, six focus groups were carried out. The discussion in each group had the duration of approximately two hours. Each group was constituted by supervisors with diverse experiences at different stages of their academic and professional career. The focus groups did not have the same number of participants: two groups were constituted by five supervisors, three groups with four supervisors, and one group with three supervisors.

From the content analysis we can highlight the emergence of four categories, which will be explored in the next section ('data analysis and discussion'):

(i) Conceptions on doctoral supervision;
(ii) Conceptions on learning at a doctoral level;
(iii) Conceptions on students' profiles;
(iv) Conceptions on supervisors' profiles.

A CAQDAS (Computer Aided Qualitative Data Analysis Software – NVivo 7) was used to support the content analysis and to organise data, promoting better organisation and systematisation, search of patterns and data relationships across categories (Richards, 2002; Johnston, 2006).

Data analysis and discussion: supervisors' perspectives
Initial remarks

After analysing supervisors' responses and discussion within the focus groups, we become aware of the importance in reflecting about the categories already mentioned. Even though the dynamics established within each group was different from one another, it must be emphasised that the findings we present in this chapter reveal supervisors' common perspectives.

In addition, the categories and findings we highlight are interconnected and it is therefore difficult to isolate and understand the value of each category *per se*. The texture of the data is semantically rich and consistent, contributing to the understanding and design of the construct of supervision quality. However, to explore the quality of this process it is essential to try to isolate each category, so that we can better understand and contextualise not only its particularities, but also the generic construct. Therefore, when presenting our data analysis,

that semantic dialogue and interrelations will be explored, since the complex nature of this concept must be assured.

Conceptions on doctoral supervision

It is consensual that doctoral supervision is closely related to the conceptions supervisors have regarding the roles, responsibilities and profiles that both themselves and the students have to assume in the process. Other factors, such as the research environment, and the institutional culture, vision and lines of action are evident. Supervisors' conceptions on doctoral supervision are then linked to the categories explored further on: conceptions on learning, on students and supervisors' profiles. Perhaps this difficulty shown by supervisors in conceptually defining 'doctoral supervision' is closely related to (i) the lack of discussions regarding this subject either in formal meetings or informal conversations with colleagues, and (ii) the absence of systematised workshops or courses, training or development programmes directed to new and/or senior doctoral supervisors.

Nevertheless, supervision is understood as a path of shared responsibilities and a common goal: to develop and grow, not only from scientific and cognitive points of view, but also from personal and social perspectives. In this line, the metaphor of a path towards knowledge and the journey through intense personal and cognitive development and knowledge suits itself of a deeper significance and understanding (see in this book the chapter by Rensburg).

One supervisor emphasises that the student-supervisor relationship is quite challenging for both of them: there is not an absolute formula that, when followed and applied, assures that the relationship will be successful. Also, it is highlighted that the supervision process is understood as a relationship at several levels: social, intrapersonal, cognitive, professional, and academic. Consequently, this process is made of unpredictable moments. This supervisor reinforces that the supervision process is made of a joint perspective, where students and supervisors are (must be) fully involved in learning and growing.

> *"It* [the supervision process] *must be constituted by a supportive, enriching and positive relationship where conditions to transfer and understand knowledge are created, as well as conditions for professional, academic and personal development. It is a dialogic relationship that requires joint discussions, reflections and critical analysis. It is also characterised by joint stimulating relationships with mutual growing as well as curiosity, desire of*

knowing and engagement. This is considered a relationship which is not always deliberately designed: this relationship and growing happen in the moment".

Considering this statement and the overall discussion within the focus groups we may stress that most supervisors agree with the idea that doctoral supervision is not an 'easy task'. It is challenging and it always involves a collective project to which supervisors and students need to be deeply connected with. This connection allows them to grow academically, professionally and emotionally.

Conceptions on learning at a doctoral level

Closely linked to the previous category are supervisors' conceptions on learning at a doctoral level. The supervisors in this study agree with the idea that research and learning need to be understood holistically in terms of space and time - a space of intra, interpersonal, ethical and scientific development. This space and time provided by doctoral research may be considered an enriching context to be stimulated (Figure 1) where (i) meta-reflection and growing in several spheres can occur; (ii) creation, innovation and development must happen; and (iii) individuals can optimise their own attributes, particularly creativity, criticality, openness to newness and unpredictability, and proactivity. One supervisor emphasises that learning, at a doctoral level, should be understood as a process developed within a context that promotes the enhancement of Science that must have a great impact on society and generic well-being:

> *"Learning and research at a doctoral level mean to develop high level knowledge in a certain area and be able to transfer that to innovation and subsequently to well-being".*

In this sense, Science, 'scientific products or outputs' and its impact is not only a feature of the so-called hard sciences or engineering. Most supervisors agree that doctorates in Arts and Humanities give an essential contribution to social well-being and identity. Consequently, when analysing supervisors' perspectives, it seems that the concept of learning is clearly interconnected with the concept of research, as well as with the pedagogical dynamics that is involved in the entire process of doing a doctorate. The conceptual and semantic link among those concepts leads us to conclude that the doctorate is culturally, socially, economically, professionally and academically embedded. Therefore,

learning is not only understood through a personal and cognitive perspective (which is particularly intense to doctoral students), but also through a social engaged point of view.

Thus, research, learning and supervision at this level are seen as a social activity, where networks and synergies developed among senior and junior researchers optimise all the process in which doctoral students and supervisors are involved. Hence, supervisors' understanding about the concept of learning, research and doctoral supervision (as process and product) needs to take into account both social and personal processes. As a supervisor clearly stated:

> *"Nowadays, a doctorate is (…) a privileged place (…) to intensively create, construct and develop intelligent, reflective, critical and engaged people, who consciously intervene in social issues, (…) who have defined goals, and are actively involved in constructing our world".*

Doctoral students and supervisors' profiles, as we have mentioned, are considered to be dialogic and dynamic, since intellectual and ethical respect, mutual enrichment and growing, effort and mutual commitment, as well as empathy are essential characteristics that both have to enhance. Therefore, not only academic, scientific and technical competences emerge as essential, but also intra and interpersonal (social) ones are considered extremely relevant to be developed:

> *"Research at a doctoral level is a social activity. Even though one must be able to handle a problem, it is even more important to know how to deal with people who are around. (…) I may be perfectly competent from a technical and scientific point of view, but if I am unable to deal and contact with other colleagues, (…) I would say that it wouldn't result at all (…)".*

As a consequence, the discussion around the high quality profiles that doctoral students and supervisors must demonstrate and enhance, acquire a more important perspective.

Conceptions on students' profiles
Regarding students' profiles, all supervisors from the six focus groups mention as essential the existence of several interrelated characteristics and competences – a holistic mixture of instrumental, interpersonal and systemic competences (Tuning project, 2002). As expected, they

emphasise how important it is for students to demonstrate basic theoretical and disciplinary competences to support both personal and scientific advancement towards the unknown, creativity, newness and unpredictability in a certain area of knowledge. Additionally, they underline the importance of management and organisation skills, a certain level of independence and autonomy, making decisions, solving problems, demonstrating initiative, critical and reflective perspectives, as well as linguistic skills. According to supervisors' voices, these are the basic skills which will be intensively developed along the doctoral process.

Even though deeply associated with those aspects, supervisors emphasise the greater relevance of the following aspects:

- *"Intrinsic motivation"* and *"pleasure for discovery"*;
- *"Personal and intellectual availability"* as well as an intense curiosity, since a profound dedication to the process will be asked;
- A great will and determination;
- *"Passion"*: *"a sparkling light in their eyes"*;
- Joy and involvement about the research topic and also the entire process.

The supervision and research process, as well as the relationship with new and unpredictable things, the development of knowledge and cognitive and personal transformation can be a hard and demanding process. Supervisors underline the importance of students' intrinsic and intrapersonal characteristics to face both good and bad moments, successes and problems, desirable and undesirable things and transformations. Supervisors also consider this relationship with knowledge and research as a transformative process, both at cognitive and emotional levels, not easy for unprepared students to deal with. They mention that students have to demonstrate, since the beginning, an intrinsic and personal *"strength"*, as well as a deep *"passion"* and curiosity (asking *"naïve"* and also *"the right"* questions) regarding the entire process, otherwise they may fail or have a negative learning experience. Thus, students' *"personal and academic identification with the research project and the subject"* is essential and acquires a greater importance when contextualised with the previous conclusions.

Supervisors also point out the importance of social skills, such as team-work and also ethical commitment, and *"intellectual honesty"* (regarding other colleagues, knowledge and intellectual property). Both research and supervision are considered socially embedded, not only the process, but also the output: the contribution to knowledge

and to society is essential, even though in some areas (such as Literature, Culture, and Arts, for example) there are not visibly direct implications and consequences. The understanding and theorisation over certain aspects of the reality, at a doctoral level, must be considered indispensable for the advancement of knowledge, society, criticality and Science. One supervisor highlighted:

"I think that the doctorate is clearly engaged with a 'new' perspective about Science: (…) Science as a common good, (…) with an intense social engagement. (…) And this epistemological meaning is common to all scientific domains. (…) Therefore, within this framework people must broaden their understanding about Science that must be reflected in the social well-being (…)".

This last statement emphasises the interconnection and dialogic perspective already explored between the concept of learning at doctoral level and the profile that students must enhance.

Conceptions on supervisors' profiles

When supervisors analyse their own desirable profile it is underlined as an essential feature to scientifically dominate a certain area, so the negotiation and feedback process as well as students' support may achieve a high quality level. Moreover, they highlight the need of guiding the student through the research process, helping them to overcome difficulties involved in this demanding process. Nevertheless, they consider that the student must be able to deal with 'stuck-unstuck' (Kiley, 2009; Trafford & Leshem, 2009) and other challenging and difficult moments, so they have the opportunity to develop their own competences and personal experience and strength. However, supervisors see themselves as guiding students in the doctoral journey, developing a proper *"intellectual and emotional climate"* (Conrad, 2007) and helping students to experience the research and doctoral process by themselves. One supervisor stated:

"(…) there is at least one phase, and not only when the student is writing the thesis, when the doctorate is a solitary process. The student must have time to think, to reflect, to make decisions based on his/her criticality. (…) So, I believe it is very important to create a space devoted to thinking and reflection, because the doctoral process asks for it".

Supervisors mention the importance of being aware of both activities and the research stage in which the doctoral student is involved, in order to design proper strategies to optimise and help the student experience. Simultaneously, they consider fundamental to be available to engage in the entire process which is extremely challenging not only for the student, but also for themselves. One supervisor mentions that, interacting with doctoral students, allows him not only to learn about human relations, but also to grow at intellectual and cognitive levels:

> *"Scientifically, doctoral students also guide us through different and new paths that we have never thought before. They force us to evolve and grow with them scientifically".*

Supervisors emphasise that they have the essential role of creating an intellectually stimulating space and context where they must:

- *"Increase in the student a sense of belonging"*, helping the student to develop his/her own (academic/researcher) identity;
- *"Stimulate a creative environment"* or *"a favourable environment of (research and questioning) radiation"*;
- *"Spread (research and creative) ideas"*;
- *"Promote a provocative, dynamic and dialectic environment"*, where *"joint and critical analysis and discussions"* and *"prompt and quality feedback"* are inevitable, also to *"challenge the student"*.

Therefore, openness and flexibility to the entire doctoral supervision process, dynamics and personal profiles are two important characteristics, as well as intellectual respect for the process and those who are involved. Considering all these aspects, supervisors also point out the existence of a cohesive research team to better and more supportively achieve all those previous aspects as important: *"team work: this relationship is very important, since everyone learn a lot when contacting with others, even who are in different training levels"*. Finally, supervisors underline that they see themselves as guides, facilitators, companions and moderators.

First output to the reference framework

The qualitative data from focus groups with supervisors give us preliminary information to start the design of the reference framework about the construct of quality of doctoral research supervision. Thus,

we must recapture (i) the findings that emerged from the data analysis and discussion presented in this chapter, and (ii) the three interconnected dimensions referred in the theoretical discussion (topic 'doctoral students and supervisors' profiles'). Figure 2 represents a first systematisation about the quality profile of doctoral students and supervisors.
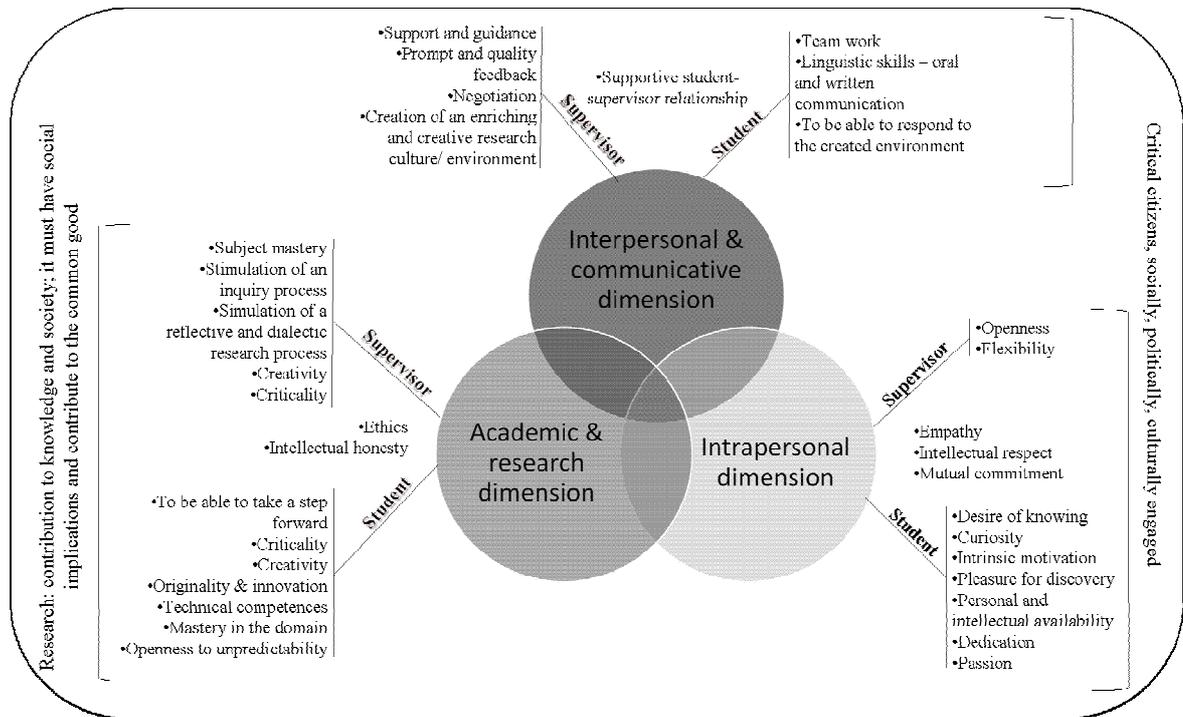

Figure 2: First semantic schema that will contribute to the design of the reference framework

This figure gathers supervisors' perspectives regarding the main indicators that both supervisors and students need to demonstrate and enhance along the research process. However, this first semantic schema needs to be enhanced as well as dynamically enriched and reviewed: doctoral students and university administrators' voices must be considered and included in that schema in the near future. The dialogue between this research and international investigations needs also to be assured. We need to follow this interconnected and cyclic perspective, so a holistic framework can be designed.

Final considerations
The major objective underlining this research is the mapping of supervisors' conceptions of the supervision process so the authors can start the design of a reference framework and an evaluation model to

monitor and assess the quality of the research supervision process at a doctoral level.

The results of this study highlight the interconnection of different dimensions (interpersonal & communicative, academic & research, and intrapersonal), depicted in Figure 2. In addition, the focus of supervisors' voices stresses the importance put on the student-supervisor relationship, as well as on the research group. Supervisors' responses emphasise that the main challenge to achieve success in a doctoral supervision process (among other interrelated aspects) is to assure the quality of the supervision relationship by (i) reflecting about their actions, (ii) tailoring their approaches when guiding each student, (iii) being open and flexible to changes and challenges embedded in the nature of this relationship (Nulty *et al.*, 2009; see in this book the chapter by Rensburg). Finally, from supervisors' voices it is also clear that the doctoral supervision process must be considered a scientific and emotional process, where inter and intrapersonal phenomena occur, not only between the supervisor and the student, but also between those actors and the research process, knowledge (re)creation, growing, development and transformation.

To conclude, we emphasise that this Portuguese investigation not only intends to provoke and encourage discussions at this specific HE context, where this subject still remains little discussed, but also to contribute to a broader reflection where national and international findings may dialogue. Conceptions of supervisors combined with the ones of students must be consciously analysed in further studies, so that an integrated perspective can be designed which may enlighten a holistic comprehension of the factors that influence the quality of the doctoral supervision process. Accordingly, we consider that the design of an integrative and systematic reference framework about quality not only will allow the design of grounded actions and research regarding this issue, but will also stimulate more discussions concerning the potential enhancement of quality of doctoral supervision from different perspectives.

Acknowledgments

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Bibliography

Alarcão, I. (1996). *Formação reflexiva de professores: Estratégias de supervisão*. Porto: Porto editora.

Aspland, T., Edwards, H., O'Leary, J. & Ryan, Y. (1999). Tracking new directions in the evaluation of postgraduate supervision. *Innovative Higher Education*, Vol. 24, No. 2, pp. 127-147.

Barnett, R. (2000). *Realizing the University in an age of supercomplexity*. Buckingham: SRHE and Open University Press.

Brew, A. (2001). Conceptions of research: a phenomenographic study. *Studies in Higher Education*, Vol. 26, No. 3, pp. 271-285.

Brew, A. (2007). Evaluating academic development in a time of perplexity. *International Journal for Academic Development*, Vol. 12, No. 2, pp. 69-72.

Brew, A., & Peseta, T. (2004). Changing postgraduate supervision practice: a programme to encourage learning through reflection and feedback. *Innovations on Education and Teaching International*, Vol. 41, No. 1, pp. 5-22.

Chambaz, J., Biaudet, P. & Collonge, S. (no date). Implementing Bologna in your institution: Developing the doctorate. http://phd.epfl.ch/webdav/site/phd/users/181668/public/Developing%20the%20Doctorate:%20Jean%20Chambaz%20et%20al%20on%20doctoral%20training%20plans [Accessed 29 January 2009].

Cheng, Y., & Tam, W. (1997). Multi-models of quality in education. *Quality Assurance in Education*, Vol. 5, No. 1, pp. 22-31.

Conrad, L. (2007). Developing the intellectual and emotional climate for candidates. In C. Denholm & T. Evans (eds.), *Supervising doctorates downunder: Keys to effective supervision in Australia & New Zealand*. Victoria: ACER press, pp. 36-44.

Cullen, D., Pearson, M., Saha, L., & Spear, R. (1994). *Establishing effective PhD supervision*. Australian government Publishing Service: Department of Employment, Education and Training. http://www.dest.gov.au/archive/highered/eippubs/230/230_full.pdf [Accessed 6 June 2009].

Eley, A. & Murray, R. (2009). *How to be an effective supervisor: Best practice in research student supervision*. Berkshire: Open University.

Enders, J. (2005). Border crossings: Research training, knowledge dissemination and the transformation of academic work. *Higher Education*, Vol. 49, No. 1-2, pp. 119-133.

Engebretson, K., Smith, K., McLaughlin, D., Seibold, C., Terret, G., & Ryan, E. (2008). The changing reality of research education in Australia and implications for supervision: A review of the literature. *Teaching in Higher Education*, Vol. 13, No. 1, pp. 1-15.

European Universities Association (2010a). EUA Policy Statement on Quality and Quality Assurance in the European Higher Education Area. http://www.eua.be/Libraries/Publications_homepage_list/ EUA-QA-Policy-2010.sflb.ashx [Accessed 22 November 2010].

European Universities Association (2010b). Examining Quality Culture. http://www.eua.be/Libraries/Publications/Examining_ Quality_Culture_Part_1.sflb.ashx [Accessed 22 November 2010].

Frazer, M. (1994). Quality in Higher Education: An international perspective. In D. Green (ed.), *What is quality in Higher Education?* Buckingham: Open University Press, pp. 101-111.

Frick, L. (2009). Improving students' learning outcomes: What about doctoral learning outcomes? In C. Nygaard; C. Holtham & N. Courtney (eds.), *Improving Students' Learning Outcomes*. Copenhagen: Copenhagen Business School Press, pp. 33-48.

Gibbs, G. (2010). Dimensions of Quality. York: The Higher Education Academy. http://www.heacademy.ac.uk/assets/York/documents/ ourwork/evidence_informed_practice/Dimensions_of_Quality.pdf [Accessed 3 October 2010].

Green, B. (2005). Unfinished business: subjectivity and supervision. *Higher Education Research & Development*, Vol. 24, No. 2, pp. 151-163.

Green, D. (1994). What is Quality in Higher Education? Concepts, Policy and Practice. In D. Green (ed.), *What is quality in Higher Education?* Buckingham: Open University Press, pp. 3-20.

Greenbaum, T.L. (2000). *Moderating Focus Groups: A practical guide for group facilitation*. Thousand Oaks: Sage publications.

Harman, G. (2003). PhD student satisfaction with course experience and supervision in two Australian Research-intensive Universities. *Prometheus*, Vol. 21, No. 3, pp. 312-333.

Henkel, M. (1998). Evaluation in Higher Education: conceptual and epistemological foundations. *European Journal of Education*, Vol. 33, No. 3, pp. 285-297.

Hon Kam, B. (1997). Style and quality in research supervision: the supervisor dependency factor. *Higher Education*, Vol. 34, No. 1, pp. 81-103.

Houston, D. (2008). Rethinking quality and improvement in higher education. *Quality Assurance in Education*, Vol. 16, No. 1, pp. 61-79.

Johnston, L. (2006). Software and Method: Reflections on Teaching and using QSR Nvivo in Doctoral Research. *International Journal of Social Research Methodology*, Vol. 9, No. 5, pp. 379-39.

Kiley, M. (2009). Identifying threshold concepts and proposing strategies to support doctoral candidates. *Innovations in Education and Teaching International*, Vol. 46, No. 3, pp. 293-304.

McAlpine, L. & Norton, J. (2006). Reframing our approach to doctoral programs: an integrative framework for action and research. *Higher Education Research & Development*, Vol. 25, No. 1, pp. 3-17.

Mizikaci, F. (2006). A system approach to program evaluation model for quality in higher education. *Quality Assurance in Education*, Vol. 14, No. 1, pp. 37-53.

Murphy, N., Bain, J. & Conrad, L. (2007). Orientations to research higher degree supervision. *Higher Education*, Vol. 53, No. 2, pp. 209-234.

Nulty, D., Kiley, M. & Meyers, N. (2009). Promoting and recognising excellence in the supervision research students: an evidence-based framework. *Assessment & Evaluation in Higher Education*, Vol. 34, No. 1, pp. 1-15.

Park, C. (2005). New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management*, Vol. 27, No. 2, pp. 189-207.

Park, C., Hanbury, A., & Kulej, M. (2007). Postgraduate Research Experience Survey. http://www.heacademy.ac.uk/ourwork/ supportingresearch/postgraduate/alldisplay?type=resources&newid =ourwork/postgraduate/PRES_2007_FINAL_REPORT&site=york [Accessed 5 November 2010].

Pearson, M. & Kayrooz, C. (2004). Enabling critical reflection on research supervisory practice. *International Journal for Academic Development*, Vol. 9, No. 1, pp. 99-116.

Pérez Serrano, G. (2000). Presentación. In R. Pérez Juste; F. López Rupérez; M.D. Peralta & P. Municio (ed.). *Hacia una Educación de Cadidad. Gestión, Instrumentos y Evaluación*. Madrid: Narcea, pp. 9-12.

Richards, L. (2002). Rigorous, Rapid, Reliable and Qualitative? Computing in Qualitative Method. *American Journal of Health Behavior*, Vol. 26, No. 6, pp. 425-430.

Sá-Chaves, I. (2007). *Formação, Conhecimento e Supervisão: Contributos nas áreas da formação de professores e de outros profissionais*. Aveiro: Universidade de Aveiro.

Trafford, V. & Leshem, S. (2009). Doctorateness as a threshold concept. *Innovations in Education and Teaching International*, Vol. 46, No. 3, pp. 305-316.

Tuning project (2002). Tuning general brochure. http://tuning.unideusto.org/tuningeu/index.php?option=content&tas k=view&id=155&Itemid=182 [Accessed 18 January 2008].

Vieira, F. (2002). Pedagogic quality at university: what teachers and students think. *Quality in Higher Education*, Vol. 8, No. 3, pp. 255-272.

Vieira, F. (2006). Para uma pedagogia transformadora na formação pós-graduada em supervisão. In F. Vieira; M.A. Moreira; I. Barbosa; M. Paiva & I.S. Fernandes (eds.), *No caleidoscópio da supervisão: imagens da formação e da pedagogia*. Mangualde: Edições Pedago, pp. 151-187.

Vilkinas, T. (2008). An exploratory study of the supervision of Ph.D./Research students' theses. *Innovation in Higher Education*, Vol. 32, No. 5, pp. 297-311.

Wisker, G. (2005). *The Good Supervisor: Supervising Postgraduate and Undergraduate Research for Doctoral Theses and Dissertations*. Hampshire & New York: Palgrave Macmillan.

Yin, R. (1994). *Case study research: Design and methods*. Thousand Oaks: Sage Publishing.