PHD SUPERVISION: AN EXPLORATORY AND A PRELIMINARY STUDY ABOUT THE SUPERVISOR POINT OF VIEW

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Abstract

It is well known that PhD attrition is high, and that is a problem for higher education systems, but also to the society. The scientific and technological development (the research enterprise) of a society is intimately related to the knowledge that is developed and produced in higher education systems. The attrition is an obstacle to science and technology improvements since students don't develop and conclude their research project, which would bring new knowledge to society. From the students' point of view, this attrition has personal but also financial and career consequences. On opposite side is the excellence in supervision, which reduce attrition, promote a holistic formation of the students, as a person and as a researcher, and is a facilitator of learning and a sponsor of knowledge. There are few studies in Portugal related to the third cycle, and fewer related to supervision practices and experience. In this context and trying to identify the supervision practices and experience lived by the PhD students and supervisors, an exploratory survey regarding PhD supervision was developed, applied to Science Education PhD students and supervisors and analysed. Based on this exploratory study we developed another more extensive one - a preliminary survey- that was applied to Universidade Nova de Lisboa students and supervisors. In this paper, we will present the results related to supervisors. The results from the two populations have significant differences related to the

socialization/integration process in the research area, but above all it was not possible to perceive how supervisor monitor and evaluated the research process and progress.

Keywords

Doctoral Supervision, Supervisor, PhD Student, Supervision Practices

1. Introduction

The doctoral degree is the pinnacle of educational achievements and the thesis and viva voice are the capstone of the doctoral process in the majority of the countries (Park, 2005; Jones 2013). But to achieve the degree, doctorate has to accomplish a doctoral journey: which implies his integration in the culture of the research area, development of research and communication skills, training and research tasks, and must present learning outcomes and mastery in the doctoral area at the end of the path. However, these achievements depend not only of the student but also of the supervisor. The supervisor dependency of the doctoral journey /enterprise has been analysed (Halse & Malfroy, 2010; McAlpine & Amudsen, 2012) and it can be relate to supervision quality, supervisor-doctorate relationship and with the socialization process (Ali & Kohun, 2007; Gardner, 2008, 2008a and 2010; Halse, 2011). In this context is important to search the excellence in doctoral supervision, and to encounter the best supervision practices to help students to conclude this journey with success. Some researchers have studied the operationalization and the meaning of having "excellence in doctoral supervision" (Nulty, Kiley & Meyers, 2009; McCuloch, Kumar, Schalkwyk & Wisker, 2016). In 2013, Jones published a paper where he analysed 995 articles related to doctoral studies. He concluded that six major topics analysed were: Teaching (3% of the papers analysed), Doctoral program design (29 % of the papers analysed), writing and research (14% of the papers analysed), employment and career (post-doctoral) (13% of the papers analysed), student-supervisor relationship (15 % of the papers analysed) and doctoral student experience (26 % of the papers analysed). The excellence was a topic that hasn´t been discussed. The issues analysed in each of these major topics demonstrated that doctoral education is complex and it interferes in different ways in the academy life, but also interact with society through the industry, business and the innovations that implies. Regarding "student-supervisor relationship" the topics where supervisory issues, supervisor perceptions of students, supervisor-doctoral students' interaction, students' perceptions of supervisor and feedback. In this context is important to emphasize the conclusion that Jones write "(…) there is a diminution in supervisory capabilities in most doctoral supervisors today, and while academics

have strengthened their abilities to write and publish, they have largely overlooked this fundamental role of mentorship. Further, there is a lack of suitable training available to fill the void. (…)" (Jones, 2013). Hyatt and Williams (2011) in an intensive analysis, elaborated a list of competencies that supervisors should have and they emphasize not only the teaching role competencies, but also the research role competencies, the advising role competencies, the service role competencies and the colleagueship role competencies, but the excellence in doctoral supervision was not referred. In 2013, Bruce and Stoodley, report a study where they analyse supervisors experience as teaching, and present a "picture of supervisors´ collective awareness of supervision as teaching".

One of the resources, that it is possible to used, to perceive what excellence in supervision means, his the code of practice from the higher education institutions. Nevertheless, they are practice recommendations, have strategies, proposal, tasks, attitudes, but do not define clearly the criteria that can be use to identify it. So although the codes of practice represent an idea of what is excellence, the criteria used to classify a practice of excellence is not clear. Another problem that could be addressed to this issue is the complexity of the doctoral process, which introduce more obstacles to perceive what excellence is in doctoral supervision; it should be taken into account the process itself, the diversity of PhD populations, the areas where is being developed, and the institution (Nulty, Kiley & Meyers, 2009; McCulloch, Kumar, Schalkwyk & Wisker, 2016). To perceive what is excellence in doctoral supervision, McCulloch et al (2016) analysed "codes of practices or frameworks of good or best practices" and "national awards for learning and teaching" in four countries (Australia, New Zealand, South Africa and United Kingdom). The authors concluded that, "some documents fails in defining the role". They are not explicit about the criteria that can be use to classify excellence in doctoral supervision. They do not give clear standards to identify individual excellence or supervisor role and thus have implications, "higher institutions will be unable to define clearly what constitutes competence in supervision", and as a consequence it will not be able to define what constitutes competence in teaching, supervision and in team works in the academy. So, it's possible to know the best practices to help students and to avoid the attrition (Latona & Browne, 2001; Lindsay, 2015), to be alert to the factors that can impact negatively the completion rate (Park, 2005; Martin, Maclachlan & Karmel, 2001; Rodwell & Neumann, 2008), but as McCulloch et al. refers "(…) rather than identifying excellence in supervision we can only respond to claims for excellence."

In this research paper, we present an initial study of the supervisor perspective related to the supervision process. In our literature research, we didn´t find another study with this purpose, being in this context the first one that is implemented in Portugal. This research work intends to contribute to perceive how the supervisors perceived the PhD supervision, search for excellence in doctoral supervision, and the tasks, the strategies that they used during that period. The research questions were: what are the supervision practices usually used? What are the instruments/practices that supervisor used to monitor and evaluate the students' progress? How supervisors develop excellence in doctoral research supervision? In the first phase, the exploratory survey was apply to a sample of PhD supervisors in a specific field, Science Education, which were enrolled in attending an early researcher's event in which they involve their PhD students. In a second phase of the project, the preliminary survey was applied to a sample of a specific supervisors' population (Universidade Nova de Lisboa supervisors).

2. Part I: Exploratory Survey Applied In the Meeting: "II National Meeting Of Young Researcher in Education-Braga"

In this first study, we analyse different domains related to supervision, from the supervisor point of view. The survey's elaboration construction was in Portuguese. This survey focuses on seven domains related to supervision: The type of contact, supervisor experience in supervision, doctoral project, monitorization of the research project, self-monitorization, supervision practices and socialization process. In order to answer the questions doctoral supervisors had to agree or disagree with positive and negative statements.

2.1 Methodology

Twenty surveys were delivered, but only nine returned answer to the researcher of this project. The survey was applied to Portuguese educational science supervisors that participate in meeting related to the research in science education -"II National meeting of young researcher in education -Braga".

2.2 Supervisors' Profile

The supervisors were from seven different Portuguese universities, eight from public universities and one from a private, six were female and three were male. The middle age was fifty-three years old, but the younger was forty-two years old and the oldest sixty-two years old. Three had a supervision course and the others indicated that didn´t have any training/course in supervision.

On average, these supervisors have completed their PhD for fourteen years ago; the one that concluded the longest time was thirty years ago and the most recent were at twelve years ago. On average, supervisors have been supervising for ten years (the oldest supervisor supervised since twenty-eight years ago and the youngest at five years ago). One supervisor didn´t answered to these questions.

2.3 Results

The type of contact was analysed. All nine supervisors indicated that use Skype or similar programs to speak/communicate with their PhD students. All the nine supervisors that answered the survey refer that is not necessary to know previously the students or had worked with than previously; all accept students that don´t know before starting the doctorate.

Regarding supervisory experience in supervision, five denote that supervisor should have experience in supervision and four refer that is not necessary. Six supervisor refer that they feel they are workload /have many works to do but and few times to do the supervision. Seven supervisors refer that supervision should be monitored, and seven refer that it needs evaluation; nine indicate that is important to exchange supervision experience with peers, referring that usually spoken and have meetings with peer. Six assignable that is important to know how manage conflicts.

Concerning to the doctoral project, eight of the nine supervisors indicate that the supervisor doesn´t need to know the doctorate project in details to supervise it. Eight supervisors refer that it is important have a balance between team work (supervisor and doctorate) and the doctorate independence; six consider that is not necessary the doctorate follow strictly the PhD proposed plan and seven indicate that follow the restricted supervision orders are not essential to conclude the PhD. Nevertheless, all agreed that is necessary have meetings/encounters between students and supervisors to plan the activities that students must do in the PhD.

From our data, it is not clear how supervisors do the monitorization of the research work. They indicate that don´t need to communicate daily with the doctorate informally (six supervisors). Or meet with students, to clarifying doubts related to the research work (six supervisors), or even to do perceive the students´ work done (six supervisors), or listen to a presentation of a writing work made by the doctorate (seven supervisors); but a formal conversation is also not enough to perceive the students' progress (six supervisors). Four supervisors indicate that have meetings with doctorates with the registration of specific topics/situations; three refer that don´t have this kind of meetings and, two supervisors assign the

option don´t know/ don´t answer. For Supervisors, University fees (payment) are an external mechanism that helps to monitor the PhD process.

Regarding self-monitorization, five supervisors refer that they encourage the use of a research matrix (with research questions and strategies to use) and four indicate that don´t use it. Almost all supervisors don´t encourage students to write weekly resumes of the work that they have done to make self-situation points (eight supervisors).

The supervision practices that are implement in the supervision research process are: write papers (seven supervisors), and regular written reports (seven supervisors), regularly monitor (3 in 3 weeks) the student´s activities (all supervisors). Nevertheless, seven supervisors refer that don´t request student´s to do diary logs (with the activities resumes with the registration data). Usually they have individual meetings (seven supervisors) and/ or group meetings (five supervisors); in these meetings, there are no document elaboration related to the things/ topics/ themes that are discussed. Eight supervisors consider important that doctorate makes oral presentations to discuss their work with the supervisor and with peers ("private" seminaries).

Regarding socialization process is compromised, all supervisors indicate that don´t encourage doctorate to participate in the investigation group meetings were students is inserted and belong.

2.4 Discussion

The main aim of this work was to construct an initial survey that could give some clues related to supervision practices. The middle age of this supervisor is high, fifty-three years old, but this reflects only the aging of the Portuguese population. These supervisors have completed their PhD degree fourteen years ago, on average, and have been supervising, on average, for at least ten years. This data indicate that none of these supervisors and start supervised immediately after the degree acquisition. It´s interesting to highlight that five supervisors consider that is important for a good supervision, supervisor have supervision experience (four didn´t consider it important) but all supervisors give importance to peer exchange experience. Regarding previous interaction before students' acceptance by a supervisor, none of the supervisor considers important to know students previously. Almost all supervisors considered that it was not necessary to know the student project in details to supervise it. They consider important have a balance between teamwork (student-supervisor) and the autonomy/independence of the student. It was not possible to perceive how supervisor monitors the students' research work and evaluate

it. Usually all supervisor contact students via Internet, but they also do face-to-face and individual meetings, group meetings, and oral presentations to discuss the students' work development. With this data, it was possible to perceive that the departmental integration or research group integration is not a priority for this supervisor. It is important to note that this option has implications for students' career – life fit and balance (Golde, 1998). It can cause attrition or even the premature abandon of the course (Ali & Kohun, 2007; Gardner, 2008; Jairam & Kahl, 2012).

Following the exploratory study, we focus on a specific supervision population; they were a sample of a major study, which is carry out in Universidade Nova de Lisboa (UNL).

3. Part II: A Preliminary Questionnaire Applied To A Sample Of Supervisors From The NOVA Lisbon University

3.1 Methodology

The first survey (the exploratory survey) was slight modified: the number of sentences by domain increased in some of them. This survey was also construct in Portuguese. If necessary, to clarify the ideas, questions will be translated to English. This new survey focuses on the same eight domains: students and supervisor profile, supervisor experience in supervision, research project supervision (autonomy, management, planning, monitorization and evaluation), supervision practices, PhD aims, socialization process. Some sentences were rewritten, and the scale was also changed to be clearer for the reader. In order to answer the questions doctoral supervisors had to agree, partially agreed, partially disagree or disagree with positive and negative statements. The scale´s internal reliability, Cronbach's alpha was 0.960.

3.2 Supervisors' Profile

All supervisors were from Universidade Nova de Lisboa (UNL): one from Faculdade de Direito (FD) - Law school, two from Faculdade de Ciências Sociais e Humanas (FCSH) - School of Social Sciences and Humanities and nine from Faculdade de Ciências e Tecnologia (FCT) - Scholl of Science and Technology. The middle age of nine supervisors (the others didn´t answer the question) was forty-seven years old, but the youngest had thirty-eight years old and the oldest sixty three years old. Three had participated in a one day course for supervisors in the doctoral school of UNL and the others indicated that didn´t have any specific training/course in supervision.

Nine supervisors indicated that they completed their doctorate more than ten years ago, two indicated that they completed their doctorate in an average time between six to nine years and one between three and five years. Two supervisors assign that they have done supervision at more than ten years, three indicate an average time between three and five years and three specify a period between six and nine years old. Four supervisors didn´t answer the question.

3.3 Results

Ten of the supervisor answered that to supervise and guide students in the research is necessary a regular contact (face-to-face conversations, exchange e-mail, meetings via Skype).

Regard to supervision experience, all twelve agree that exchange supervision experience is not only useful in the beginning, six refer that have regular meetings with peers. Concerning to monitorization, eight of twelve supervisors indicate that is necessary. Only four disagreed with the sentence that refer that evaluation is not necessary and six partially disagree. Supervisors consider very important know how to manage conflicts, to student complete the PhD (five agree and five partially agree). Eight supervisors accept students who didn´t supervise previously. Only two supervisors agree with the sentence: "I have a lot of work and a little time to supervise the doctoral students" (five partially agree), though four supervisors refer that doing supervision overloads the work of researcher or teacher (four partially agreed). Two supervisors consider that the supervision is the most demanding task of the university teaching process; five partially agreed with it and three disagreed. Four supervisors agreed that *knowing how to teach* is essential to do supervision, six partially agreed. In this context, one supervisor agreed with the sentence "The supervisor's main function is to show the tools that the student can use in the development of his PhD project" (translate sentence), and nine supervisors partially agreed. None of the supervisor agreed that "he/she is supervisor to have more publications/papers" (translate sentence) and six disagree with the sentence. One supervisor agrees that he/she his is the co-author of the doctoral research, seven partially agree with it. Eight supervisors agreed that the student is the author of the PhD theses (four partially agree). Three supervisors consider that the PhD project should be clearly articulated with the supervisor's research interests (six partially agreed, two disagreed and one partially disagreed).

Student´s profile: Regarding the expression "PhD Students are future higher education teacher or researcher", four supervisors partially agreed, three partially disagreed and five didn´t respond. The supervisors in this study don´t see PhD students as future researcher or teacher in

higher education or as future colleagues/ collaborators or peers. Four supervisors consider that some PhD students don´t have the competences to complete the degree.

Eight supervisors refer that students must know to communicate (they must have oral and writing skills). Concerning students self-reflection, nine supervisors consider that it is essential to develop the research project. It is interesting to note that although supervisors consider that PhD students must be available to receive the supervisor feedback (know listen), they don´t consider it, as one of the most important characteristic of PhD students.

Concerning supervisor profile, five supervisors agree that supervisors should be patient and nine agree that the capacity to motivate is very important. It is very interesting to see that only four supervisors agree that creativity and innovation of the supervisor are very important to resolve problems and six partially agree with it. Eight assign that feel rewarded / fulfilled when they supervise.

Responding to the supervision process, seven refer that partially agree that "following strictly the supervisor's orders is essential for completing the degree" and this idea is reinforced by other response, only two disagree with the sentence and five partially disagree "Doctorate must accomplish rigorously the plan defined by me". So there is a contradiction between the intentions of promote autonomy and what supervisors demand. In this context six supervisors disagree that "the execution of the research project is only students responsibility". In the same context only one supervisor disagree and four partially disagree with the sentence "The research work is the responsibility of the supervisor".

Regarding the attitude of the supervisor related to the research process, one agrees that supervisor shouldn´t interfere with it, four disagree with this approach. Five supervisors agree that for the completion of the PhD the interpersonal relation between student and supervisor must be good (six partially agree).

Regarding time management, ten supervisors partially agree that is the most difficult thing in the PhD. And in relation to the research planning six agreed that it should be made together with student (four supervisor didn´t answer). Concerning to monitorization of the research process two supervisors agree that fees are regulatory mechanisms for the conclusion of the degree and only three disagree. Six supervisors agree that to know the work develop by the students is necessary making situation points related to planning (four supervisors partially agree). Five agree and five partially agreed with the sentence "Failure to monitor the work done by the student may lead to the non-completion of the PhD."

Three supervisors agree with the assumption that refers "to assess the student developed work, the student must deliver a written assignment (monograph / report / article /resume) or a portfolio to the supervisor each semester" (four partially agree, and three partially disagree). To perceive the quality of the work done by students five supervisors agree that supervisor should schedule a public presentation with the presence of external evaluators, four partially agreed.

Regarding PhD aim, all supervisors refer that the students' autonomy development is a priority. Seven supervisors consider that the development of the research competence the principal objective of the PhD (four partially agree); six supervisors consider that the most important aim is to form a capable research (six partially agree). Eleven supervisors agree that writing articles is one of the learning outcomes that must occur in the doctorate. Only nine supervisors consider that resilience is a characteristic that should be developed during the PhD.

To understand what supervision practices are being used, some sentences related to it appeared in the survey. Seven supervisors agree that is important students do oral presentations followed by a debate with peers and supervisor (four partially agreed). Only three supervisors agree that is important for the student to elaborate logs or diaries of the research or laboratory books/ register (four partially agreed). Seven supervisors indicate that meet regularly and individually with the students (three partially agree), although none of them agree that should be elaborated a document with the resume /summary of what was discussed in meetings. Two supervisors agree that in every meeting with students they do a writing registration with the resume of the topics/ themes that were discussed (six partially agree). Two supervisors agreed that encourage the writing of resumes, of the work that student has been done as a strategy for self monitorization. Only one supervisor used group supervision. Ten of the supervisors agree with the sentence: "The supervisor should encourage the participation of the students of doctorate, in meetings of the research work group where it is inserted during the doctorate."

It is interesting to highlight that seven supervisors disagree and no one agrees with the sentence "To guide students in the doctoral research project, the supervisor does not need to know the student's project in detail".

Four supervisors disagreed that the doctoral journey is a lonely journey (process), two partially disagree, and six partially agreed. Ten supervisors encourage students to participate in research group meetings, allowing their integration and facilitating the socialization process.

Three open questions were also proposed in the survey; only seven of the twelve supervisors answer it. In the question: "When you accept a student to do a doctorate, what

information / aspects you consider important?" The answers were: Personal motivation of the student (referred to by four supervisors); level of preparation (technical and academic) (two supervisors); work capacity (two supervisors); *curriculum vitae* (three supervisors); school pathway in higher education (two supervisors); empathy (a supervisor); reading skills, interpretation and analysis of articles in English (a supervisor); quality of the doctoral project (a supervisor); relationship between the PhD student's doctoral project and the supervisor's research interests (one supervisor).

Regarding the question: "What are the biggest difficulties in the role of supervision?" The answers were: supervisors lack of time (three supervisors); doctoral students lack of time (dispersion in several activities) (two supervisors); time management by supervisor (two supervisors); mental availability to think about the problem that student is working on (a supervisor); financial difficulties / material and equipment acquisition/ financing (two supervisors); maintenance of the hierarchy *vs.* good relationship (one supervisor); conflict management (a supervisor).

The answers to the question: "How do you organize and develop supervision activities?" The responses of the supervisors were very different. One supervisor referred that have systematic meetings to perceive the research progress (usually monthly) and that make comparisons between the developed work plan and objectives. One supervisor refereed that have regular meetings with students and encourage the writing of articles as milestones of work and also that promote of student autonomy. Three supervisors did not specify the tasks and respond that depends on the profile of the student, one supervisor referred that depends on the work phase and two indicated that depends on the theme. Two supervisors specified that initially they have a very intense contact until the research project is elaborated and then they have one-on-one conversations and readiness to exchange impressions whenever necessary. One supervisor also indicated that organize the supervision with planning and trying to be methodical.

3.4 Discussion

The preliminary survey was more extended and gives more information. Four supervisors considered that sometimes students don´t have the competences to conclude the degree. But if we consider the open questions it is important to emphasize that the most mentioned aspect/information to a supervisor to accept a student to supervise is the motivation (refer by four of the seven that responded) and that the level of preparation were mentioned only by two of the seven that responded and the previous curriculum was only specified by three of the seven that

responded. In conclusion the competence that students have before starting the PhD is not important to these supervisors; they suppose that students will develop the research competence that they need during this period. So we can infer that some supervisors consider that some students' don´t develop the competence during the PhD time.

It is also important to point out that only seven supervisors agreed that the principal aim of the PhD is to develop research competence and that six that is to form a skilled researcher, so another question arise: what is the main goal of the PhD for these supervisors? Regarding learning outcomes almost all supervisors consider that write articles is one of them, as also to know communicate the research work.

It is interesting to note that eight supervisors consider that student is the author of the theses, but seven partially agrees that they are also co-authors of it, and one agreed. In this sense, when the theses are evaluated, aren´t only the students' research work, originality, creativity that is being assessed, but also the supervisor work (this is corroborated by the response given by six of the supervisors referring that execution of the research project is also theirs responsibility). So it is possible evaluate supervision work by the theses (since they feel that they are co-authors). So the question that arises is: how the students' work is evaluated? Five supervisors agree (four partially agreed) that to perceive the students work quality, students must make a public presentation with the presence of external evaluators.

Regarding the type of contact, all supervisors refer that they meet regularly with students face-to-face/ or using the Internet services (e-mail, Skype), individually or in groups. The monitorization the research process is important to conclude the degree, but is difficult with this data perceive how supervisors do it. The supervision practices are based on meetings; few supervisors' requests written work like reports, logs, resumes or papers.

4. Conclusions

The main aim of this work was to construct a survey that could give some clues related to supervision practices. The two surveys showed to have reliability and could be used to perceive the supervision process.

It is possible to perceive that in the first questionnaire (exploratory survey) the supervisors on educational sciences don´t consider important the integration process of the student in the academy live, but on the opposite position are the UNL PhD supervisors where the majority of them promote students' integration in the research team units. This can be related to

the students' career after the PhD; in Science Education, the majority of the students already have a profession (teacher in secondary schools) so the carrier will not depend on it, but in science and technology almost all students want to enter in the academy, so integration and socialization are very important.

Another important issue in doctoral education is the need for students to write well and publish, in fact, to enter into the research community it is necessary to publish. The concern with the development of communicating (oral presentation to peer or community) and especially writing skills (writing papers) is clear in both supervisors groups once they encourage students to make oral presentations and write papers related to their PhD work. It is not so visible in the collaborative work between doctorate and supervisors, but is implicit since the paper usually has the two as the authors. It is interesting to point out that none of the supervisor refers, do supervision to have papers, but it can be a criterion of productivity and mastery in supervision.

At this point it is important to highlight, that to be a doctoral supervisor in UNL (and in almost all Portuguese Universities) isn´t necessary have any supervision course or know-how (Ribau & Alves, 2017), so there experience as supervisor in the beginning is there one experience, related to there doctoral supervision process when they were PhD students. But times are changing and challenges occur in all knowledge areas and as Carter, Kensington-Miller and Courtney, reported in 2018, "supervisors benefit from generic workshops with peer from across campus despite obvious discipline difference in practice". This training is starting being developed in UNL, promoted by the UNL Doctoral School since 2013, which consist in an optional supervision one day course,. But in countries like Australia this is a practice implemented at more than ten years (Kiley, 2011). As Kiley reported in 2011, the most common topics of workshops and seminars implemented in Australians Universities, between 2000 and 2010, were "supervisor/student relationship, clarification of various expectations; milestone and monitoring progress; roles and responsibilities of supervisors, candidates and institutions, and policies" which still actual not only in Australia but also Portugal. In the Portuguese context is necessary the supervision courses be implemented and diffuse all over the higher education system.

The attrition rates in UNL, reported in an earlier study presented in a international conference in October 2017 (Ribau & Alves, 2018), underlined the importance of perceive what were the doctoral supervision practices in that University. The good supervision practices should be related to the lower attrition rates. So is important to identify it. As we can see in this paper,

the difficulties in supervision can be related to communication, project management (students and supervisors), writing skills, integration and are the some reported in another studies related to these issue (Carter, Kensington-Miller & Courtney, 2018; Kiley, 2011).

It is interesting to reflect about the differences in supervisor experience. If they have a great experience in supervise PhD student´s, they may have more options regarding strategies to conduct the supervision, but the results of this research mainly shows how supervision is inflected by individual differences, so that ideas of consistent standards of best practice may always be impossible to achieve. Although it is possible to perceive the supervision practices that most of the supervisor undertake.

Another point that must be emphasised is the dilemma lived by Portuguese supervisors: prepare PhD students to be academics in higher education or to have research skills and competence to work in the industry. This dilemma is a result of few positions in higher education. So find a purpose for the doctorate is too a challenge to Portuguese supervisors. As Loxley and Kearns (2018) emphasise " this is underpinned by a complex and arboreal narrative (…)" but it be related to four discourses, that reflect the purpose for the doctorate and can be connected to the notions of doctoral education related to "Human capital and knowledge economy discourse; To divergent career pathways discourse; The institutionalisation discourse" and to "The purpose and process discourse" (Loxley & Kearns, 2018).

It should be stressed also the instability that some supervisors also live (some of them aren´t integrated in the institutions in the higher education system, they still have "pós-doctoral scholarship" (scholarship given by a Portuguese public foundation "Fundação para a Ciência e Tecnologia") and still depend on others senior supervisors. This situation promotes instabilities not only of the supervisors but also influence the enrolment and engagement of the Portuguese supervisors in doctoral supervision process.

Nowadays another survey, related to supervision, is being applied to doctoral students and supervisor in all the nine schools that are part of the Universidade Nova de Lisboa (UNL). It is our intention to deeply study the supervision in UNL.

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