

Chapter 17

The Development of a Master Thesis Mediated Through Technology: Challenges Felt in the Master of Administration Assistance

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ABSTRACT

It is not always easy to start a research process. When doing a master thesis, it is necessary to take into consideration that there is no previous experience in the scientific process. Usually, during the development of a master thesis, student and supervisor work side-by-side or at least with a stronger support from the side of the supervisor. It is expected to have the supervisor close by to clarify doubts or point ways. But what happens when student and supervisor are not close by? When they communicate at distance, using different means to reach their purposes? How to help the student to find his/her way and, even more important, to keep him/her motivated in this solitary road? In this chapter, the authors present a situation where supervisors and students are separated by an ocean. They describe the challenges faced by both supervisor and students and give some recommendations in order to help other similar key players to overcome the difficulties and be successful.

INTRODUCTION

Nowadays, in order to acquire the knowledge and develop the necessary skills to enter the job market, more and more students that complete their graduation look for a program of studies at a Master level. This is due to the decrease level of salary of undergraduate citizens when compared with those holding a Master (Almeida et al, 2017). There are also evidences that a diploma of graduation (Master level) is useful to avoid the risk of a citizen to occupy jobs that are less well paid and less attractive. Moreover, a student with a Master degree seems to be more employable than one with less studies (Ravazi, 2014).

DOI: 10.4018/978-1-5225-5936-8.ch017

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This happens because a postgraduate student develops other types of skills and abilities such as time management, self-discipline and working within deadlines. Master degrees are also highly regarded by employers (European Commission, 2017). They are a way to gain deeper or additional skills and knowledge to help a citizen to develop his / her career while contributing to professional status.

The beginning of a Master Thesis (MT) is not easy, not only because a research process encompasses several challenges but, also, due to the lack of experience and practice of the student to perform such activities. To be successful in the MT, students count on the support of the supervisor with whom he / she expects to have discussions and several meetings during the research phase. However, in a globalized world, where students enroll in courses in one country while living and working in another country, this process may be more difficult. Meetings are not easy and discussions occur remotely (via email or videoconferencing) with all the challenges this may represent. As Winchester-Seeto et al (2014) refer, the increasing number of international students, set new requirements for supervisors who are expected to be more culturally sensitive, among other characteristics.

In this scenario, it is important to know if this relationship, that is mediated by the technology, is as good as the student expects it to be or if this entails challenges and presents new barriers that need to be addressed by both student and supervisor. Moreover, although Master degrees have undergone extensive growth over the last decade, little is known about students' experience of research or research supervision, a central component of the degree. In fact, research on Master degrees remains limited, in particular on thesis writing supervision (Filippoua, Kalloa and Mikkilä-Erdmann, 2017). This lack of research is even more evident for remote supervision of MT.

In this chapter, after a literature review about Master degrees and the role of the supervisor, a case study is presented where students and supervisors are not close by and where communication is done remotely. The objective was to identify the challenges faced by students during the development of the MT, in particular when both actors interact and communicate remotely during all the process.

BACKGROUND

The Master's Degree and Its Importance

To complete the Master degree, students need to write a MT. This project can be characterized as having a substantial research component in which the direction is determined by the author / student, with prolonged engagement, and with the support of a supervisor (Todd, Bannister, & Clegg, 2004). Usually it requires the integrated application of most learning outcomes acquired in the previous courses. Students also need to do commitments in order to meet the goals established, while they manage their own time to reach them. This is also a collaborative work, at least with one supervisor, for several months. Finally, it requires the writing and exposition of the acquired knowledge. Although the supervisor guides students in the development of the MT to ensure they meet the objectives in terms of learning outcomes and quality of work, students encounter several difficulties when adapting to the particularities of this kind of subject (Triviño & Martin, 2014). The quality of the supervision process is deemed one of the most important factors contributing to a successful research project (Drennan & Clarke, 2009).

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Research Supervision at a Master Level: The Role of the Supervisor

Supervision is a complex social process. Its quality depends on several factors including the characteristics of the student and the supervisor. According to Triviño and Martin (2014, p. 2) “*Students maintain an extreme position for the work planning both in the short term, what to do every day, and in the long term, a period of months*”. As a result, they can be “quite optimistic”, thinking “they will do too many things in a short period of time”, or just the opposite, being “pessimistic”. They are not “*used to do a realistic planning for their work, which causes frustration when they fail to fulfill their deadlines*” (op. cit., p. 2). On the other hand, supervisors can also feel being overloaded, depending on the students’ attitude. The workload of the supervisor is contingent on the students’ autonomy (the ability of the student to solve the problems him/herself), the meetings, the correction of students’ writing and the guidance in the oral presentation (Triviño and Martin, 2014). Another factor that may interfere in the relationship between the student and supervisor is the engagement of the supervisor in research. Other practices perceived as beneficial include prompt feedback, balance between direction and independence, regular meetings, appropriate expertise of the supervisor, and ability to suggest alternative designs if problems arose (Vos, 2013).

Meetings and a good communication are key aspects in the MT development (Filippoua, Kalloa and Mikkilä-Erdmann, 2017). Most of the complaints of both students and supervisors are related with how these usually occur. According to Triviño and Martin (2014, p. 2) “*from the student’s point of view, he / she usually reckons that their problems / questions are not answered appropriately, or the supervisor defers his / her answer. On the other hand, the supervisor feels that the meetings demand excessive time in their busy schedule*”.

The emotional aspect of the relationship between student and supervisor is also key in this process. Supervisors have to coach students and deal with their emotions, whether these are related with frustration, negativism, anxiety or insecurity (Triviño and Martin, 2014). They need to guide and encourage students to complete the work and not to give up.

One of the problems of the Master is the completion rates. Only a reduced number of students end with success this process. According to McCallin (2012) this lead to supervision debate, student and institutional factors. More recently, the debate focusses onto supervision pedagogy, recognizing research teaching as a sophisticated skill. This also lead to an expansion of the supervisory role including now an advisory role, a quality control role, a supporting role and a guiding role. This idea is also endorsed by Mhunpiew (2013) who says that the supervisor may act in many roles such as a coach, teacher, friend, colleague, trainer and guide. Besides coaching and training, the supervisor also acts as a good role model who listens and guides the student to achieve the goal.

On their turn, students complain that the problem with timely completion of the MT is inadequate supervision. According to Gill and Bernard (2008), the major determinant of student success is the effectiveness of the student supervisor working relationship. Good relationships lead to success while bad or poor relationship promote negative results. Moreover, the lack of experience from the side of the supervisor may contribute to supervision problems. This situation may be worsened when a student has personal problems, or there are supervision problems, project management issues and difficulties accessing support from the faculty research culture (McCallin, 2012).

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According to Conrad, Haworth and Millar (1993), good-quality supervision and the completion of a research thesis have been associated with a number of positive outcomes, including the development of personal and professional capabilities such as problem-solving, the ability to write, to analyze, and to plan and develop work. There are many ways to supervise a student and many distinct roles that a supervisor can have. Each student is different and unique and requires a customized support. There are students that handle the process very well, that have a willingness to learn for themselves and good judgement about when to stop and ask for feedback, and where each party learns from the other. On the other hand, there is the student “*who doesn’t take the initiative about anything, who needs constant feedback, active encouragement and who appears to expect a worrying degree of spoonfeeding*” (Rugg & Petre, 2007, p. 34).

Other roles include (op. cit, p.34):

- **Specific Technical Support:** This is related with the specific skills the student needs to develop such as the use of a specific software, how to search for literature, how to use the library, how to network and get contacts in the field of research, how to do critical reading, among other skills;
- **Broader Intellectual Support:** This role concerns the capacity to help the student to develop his / her own critical thinking and discussion by providing or guiding high-level knowledge about the field and about research issues in the field, as well as access to specialized expertise in the field of study;
- **Administrative Support:** Activities in this role comprise the help to find other resources. It also covers to deal with regulations and some administrative difficulty in the school. Finally, it can also encompass the publication of the work;
- **Management:** This role includes the structure (meetings, deadlines, goals) and the enforcement for the deadlines;
- **Personal Support:** Finally, personal support deals with emotional support and counselling, motivation, encouragement, giving advice, listening to the personal issues.

Finally, McCallin (2012) refers three types of supervision:

- **Traditional Model:** Involving a dyadic relationship between a supervisor and a student;
- **Group Supervision:** In which a relationship exists between a supervisor and a student and between a student and a student, and
- **Mixed Model:** Being a mixture of the above two and incorporating new technologies, including the use of online programmes and teleconferences.

The stages in the research process can be illustrated as 1) selection of research problem, 2) literature review, 3) formulation of research problem / hypothesis, 4) Preparing research design, 5) development of the tools to collect data / sampling, 6) data collection, 7) data analysis, 8) hypothesis testing, 9) interpretation and generalization, 10) preparation of the report (Farooq, 2013). The cycle that moves on each stage is accumulated with experiences of previous stages of cycle as confirming and reflecting for the new knowledge. Furthermore, a good supervisor needs to master a set of skills (Joshi, 2013): personal skills (emotional balance, proactivity, creativity, mental agility, learning habits and self-knowledge), managerial skills, technical skills (proficiency in a specific activity), human skills (ability to work with, understand, motivate and communicate, to solve conflicts and discipline), conceptual (ability to

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understand abstract or general ideas and apply them), diagnostic skills (ability to analyse the nature of a problem with people, ideas, things or events), political skills (ability to acquire the power needed to achieve one's objective).

According to McCallin (2012, p. 66), when supervision pedagogy is emphasized, it is assumed that *“research students need to be taught how to research, how to write a grant proposal, how to prepare an ethics proposal, how to review the literature, how to write, how to analyse data and how to manage a research project”*. Thus, the supervisor feedback, good access, academic advising and personal touch are among the most important variables influencing student satisfaction and success (Arambewela and Hall 2008). These authors suggest that students want both structure and support, which may challenge some supervisors who see their role as moving the novice student through dependency and interdependency to full independence as a researcher.

CHALLENGES

The completion of a MT requires support and supervision, including regular discussions with the supervisor, meetings and networking with peers, feedback, training, as well as access to bibliographical resources (Unwin 2007). According to Andrew (2012), there are no requirement differences to complete the degree on campus or at distance. However, one needs to consider that time and space bring new challenges to this process, both for supervisors and supervisees. For instance, this may represent a problem when finding a mutually convenient and productive time to connect. As the contacts may not be so frequent between them, there may be a lack of good personal knowledge about each other with negative consequences for the interactions, results and completion of the research activities. As Nasiri et al. (2015, p. 1964) say *“It drives the supervisory conversations towards a formal format and makes it harder to create an informal environment for discussions”*.

Usually, distance is bridged using technology. However, its use may represent a source of distraction for the users. Moreover, differences in the characteristics of computer and software can introduce additional difficulties in the communication process. This is even more evident when supervisor and supervisee are in different countries. According to Nasiri et al. (2015, p. 1964) say *“In case of master's programs, this poses a more serious challenge with part-time students who are working professionals and have very limited time to spend on IT learning”*. This also represents an increase in the workload and in the blur of the borders between work and leisure time since supervisors are expected to be available and open to requests from the students. Additionally, the supervisor represents, quite often the whole educational institution since it may not be very easy, for this student, to contact the institution. This means that the supervisor needs to be updated and prepared to guide the student, even concerning administrative issues.

Other challenges are related to the access to library services, funding opportunities, research seminars and training. Distance students also do not have as many opportunities to interact with their peers for feedback and guidance which may lead to some isolation feeling and much reliance on the supervisor, promoting a sense of dependence instead of critical thinking.

When the student is from a different country this may represent an additional challenge, not only due to the cultural background differences but also due to language barriers. Sometimes, even when the language is the same (e.g. Portuguese from Portugal and Brazil), there are some vocabulary that is different leading to misunderstandings in the decoding of messages.

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Nasiri et al (2017, p. 1965) also refer the feedback as a problematic aspect of distance supervision. When supervisor and supervisee are distant they “*tend to be distracted from each other and forget about the mutual expectations in their relationship. This could translate into a reduction in the frequency and quantity of feedback. This creates a domino effect and makes it even harder to maintain quality feedback, as with fewer interactions, both parties have to deal with more misinterpretations and varied expectations*”.

Finally, we refer the issues related with personal costs. Besides consuming personal time, it creates the need for both to be equipped with adequate computer and software to manage the interactions from home.

Strategies to Overcome the Challenges

Literature refers some strategies to overcome the challenges. One of them consists to balance the workload of the supervisor by providing a blend of different feedback approaches in terms of speed, length, and depth. This includes short and quick messages for simple consultative and administrative issues, use of track changes on students' reports and submissions which require longer feedback, and exchange of digital audio monologues when in-depth and opinionated feedback is needed (Nasiri et al., 2015). Nevertheless, students do not understand these suggestions as an opportunity to reflect and discuss, accepting the track changes and eliminating any constructive follow-up and debate. One possible solution to avoid this, consists in incorporating bubble comments along the text to encourage and initiate the dialogue and debate. Moreover, to balance the supervisor's workload, the students may be assigned deadlines to submit a progress report via email, Moodle or Dropbox with the expectation of receiving the feedback by a given date, arranged according to the length and the number of reports submitted (op. cit.). Supervisors may also create email lists helping to share information, documents or articles with a group of students. He can also organise virtual peer meetings with students promoting the exchange of feedback.

RESEARCH DESIGN

The aim of this study was twofold: 1) to identify and understand the challenges faced by students during the development of the MT and 2) to understand the role of technology and communication in the supervision process in the MT, in particular in one where interaction occurs remotely.

To address these goals, we selected the Master of Administrative Assistance of the Porto Accounting and Business School, since here, the majority of the students are from Brazil meaning that they develop their MT remotely. In the next section the Master studied is described.

The present study is explorative in nature and does not aim to test but rather to develop hypothesis and directions for future more large-scale studies.

The research occurred in 2 phases. In phase one, the aim was to identify the main challenges and barriers that students faced in the research process. For that, a questionnaire was developed. It comprised 2 questions: 1) taking into consideration the timeline and stages of a research process (cf. Farooq, 2013), students were asked to identify those stages in which they were facing more difficulties (closed questions) and 2) they were also asked to identify the most important difficulties in writing academic documents (open question). In phase 2, the aim was to understand the role of communication and the technology in the supervision process and to identify and understand the main challenges that students faced or were still facing. The questionnaire had 4 parts: 1) students were asked if they had already submitted their MT or if they intended to do it within the deadline (close question), In case the answer was negative (not

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expecting to deliver the MT within the deadline), students were asked to explain why; 2) Communication – students were asked about the frequency of communication with the supervisor, the speed of the answers, the quality of the answers, detail of the answers and finally, to rate the overall quality of the communication with the supervisor; 3) Technology – students were asked about the role of technology in the MT and the role of technology in the communication with the supervisor; 4) Finally, they were asked about the main challenges and difficulties felt in the development of the MT. Except for the questions related with communication, all the others were open.

Phase 1 occurred in May 2017 and phase 2 in September 2017. The same class participated in both phases (the same student answered both questionnaires). The deadline to deliver the dissertation was 2nd October 2017. It was then postponed to the 31st October. Students that participated in this study were those enrolled in the academic year of 2016 – 2017, in the 2nd year. They had to deliver the MT till the end of the academic year (31st October).

CASE STUDY: THE MASTER OF ADMINISTRATIVE ASSISTANCE

The Master in Administration Assistance, offered by the Porto Accounting and Business School of the Polytechnic Institute of Porto (<https://www.iscap.ipp.pt/cursos/mestrado/20000289>) aims to bring together conceptual knowledge, critical thinking and practical application of the fundamental curricular units concerning business administration (including firms, companies, organizations and institutions). This master comprises areas such as Executive Management and Communication, Management, Economy, Accounting, Information Systems, Law and Social Sciences and intends to develop a specialization in functional aspects through the acquisition of advanced competences by the professional. This cycle of studies aims to pursue the specialized training obtained in the under-graduation course, preparing the student to become Administration Managers. This Master also prepares students to deal with uncertainty in a flexible way, without losing the necessary speed to solve problems.

The Master is structured in 2 years. In the first-year students attend a set of curricular units covering the main scientific areas related with the course. In the second year, they are offered a unit related with technology applied to administrative assistance as well as a seminar. Finally, they have to develop a Master Thesis (MT) that has 48 ECTS. Students can choose any topic for their MT. Usually the process of identification of the topic is twofold: a) whether the students present their ideas and the Director of the course identifies the supervisor in the area chosen by the student or b) the student chooses a topic and supervisor after a session where all potential supervisors present their research interests. Anyway, in both cases, after the selection of the topic and supervisor, it is possible to have some adjustments since, in some cases, some of the students' ideas are not interesting or researchable or even being researchable, they are not doable within the time frame of the MT.

This match between supervisor and students' topic is done in the curricular unit of Research Methodologies. In fact, in this unit, one of the evaluation and assessment items concerns the development of a Dissertation Project (DP). This document represents almost half of the main work of a MT. It comprises the Introduction (contextualization, identification of the problem, gap and formulation of research question), the Literature Review, the Research Design (with the identification of problem, objectives and formulation of hypothesis, if this is the case, development of the tool to collect data and identification how data will be analyzed) and Expected Results. Finally, students are also expected to develop a chronogram and identify the resources needed and the way they will access them.

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During the development of the DP, the supervisor is already involved. The lecturer of Research Methodologies concentrates the effort in the Research Design and Methodologies while the supervisor contributes and helps with the content related with the topic.

When the moment of the MT comes, the student has an initial face-to-face contact with the supervisor but the remaining contacts and dialogues are done at distance. All projects and essays are also done at distance.

The curricular unit of Research Methodologies is organized as follows:

- During the first contact, the teacher starts to understand what students already know about how to do research. Usually their previous knowledge about this is very reduced.
- Teacher also try to elicit if they already have a topic / problem they would like to research in their MT.
- Class is also organized in groups. Each group will prepare an article that will be delivered to the teacher at the end of the semester. Within the group, students need to find / define a problem they would like to solve / an area to research. And this can be related to the topic chosen for the dissertation.
- During the classes, the contents of the program are presented. After each topic / content students are invited to apply the knowledge in the article / research they are developing in group. Individually they also think about how the content can be used to develop the topic for the dissertation (MT).
- All classes comprise a theoretical / tutorial moment and practice. All groups are accompanied by the teacher. She discusses with the students how the assignment is evolving, what are the difficulties found and how students can solve them.

At the end of the semester

- Whenever possible, they have to present the article (team work) in the classroom and answer some questions. All students are encouraged to ask questions to the group that is presenting the work. Students are also encouraged to submit their work to some conferences.
- At school, a group of teachers has been organizing a Master Colloquium, where students that have their work in an advanced level, present it to other colleagues (from other classes) as well as to other teachers who are invited to ask questions. This way, they feel and experience a different environment, have a different type of audience and different way of asking questions.

As said above, these students do not have any experience of research. They stay in Portugal for a period of time, after which they return to their country. From that moment, all contacts with the supervisor are done at distance, using the technologies. As for supervisors, they do not receive any training regarding supervision. Since they hold a PhD, they are expected to know how to supervise in all its dimensions.

PRESENTATION AND DISCUSSION OF RESULTS

The population of the class is 30 students. From these, 20 answered the questionnaire in phase 1. Only 4 had some previous experience in writing academic documents. In question 1, students were presented

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the research process, with the different stages, and were asked to identify in which stages they had more difficulties. Answers are presented in Figure 1.

We remind that this questionnaire was answered in May. At this moment, students were not expected to have conclude all the research. They were still at different stages in the research process. Results show that the most important difficulties were related with the identification of ideas for research, the literature review, the research design and the writing of report.

When asked what were the most important difficulties felt concerning the research process, these comprised the “difficulty to understand the subject under study” or even to “define the scope in research”, “difficulty to identify the adequate bibliography”, “to define the parameters in order to choose the adequate research methodology”. Other difficulties are related with lack of time, lack of mastering the APA rules or the structure of a scientific document. The difficulties concerning the relationship with the supervisor were also mentioned by some students. Table 1 presents a summary of the main difficulties advanced by the students.

These results are in line with those observed by Vos (2013, p.6). As a matter of fact, this author refers that key challenges include the intellectual challenges students face when choosing and narrowing down a topic for research, time management and being analytical and critical in their work.

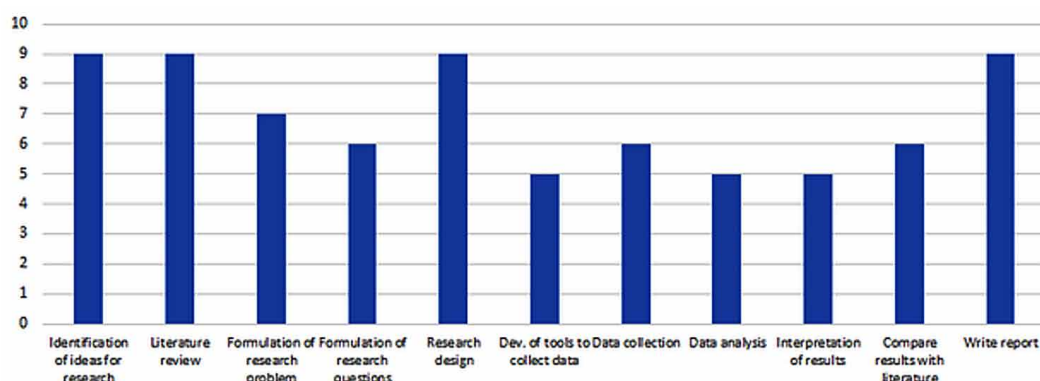
Other difficulties are related with problem definition and even finding a viable topic area to research, that will lead to a conceptual framework. Vos (2013) adds that in most cases students come to the first meeting with the supervisor with a topic area that is broad and inadequate for a dissertation.

Besides the challenges related with the research process, some refer those related with supervision, in particular communication and the management of the relationship with the supervisor. This is also in line with Nasiri et al. (2015). Students need to deal with the research process but also with the relationship with the supervisor which is not always easy and frequent and desirable / expected. And of course this may represent additional problems.

In phase 2, 27 students answered the questionnaire. In September, only 37% of the students predicted to deliver the dissertation till October 2. Till 31st October only 15 students finished the MT (50% of the class). The remaining 15 decided to postpone the delivery of the MT one more year.

Students referred several reasons to justify the fact that they were not delivering the MT within the deadline of 31st October. One of the main reasons concerned the research itself associated with the bureaucracy in Brazil. Moreover, they found more difficulties during the development of the MT than they

Figure 1. Difficulties felt in the research process



The Development of a Master Thesis Mediated Through Technology*Table 1. Summary of the main difficulties found by the students*

Category of the Difficulty	Difficulty
Related with the subject	<ul style="list-style-type: none"> • Understand the subject • Define the scope of the topic
Techniques of research	<ul style="list-style-type: none"> • Identify bibliography • Search the literature • Select the best methodology • Formulate the research questions
Formal techniques	<ul style="list-style-type: none"> • Understand and use APA rules • Structure of the document • To cite / quote
Personal skills	<ul style="list-style-type: none"> • Lack of scientific vocabulary • Connection between ideas and comparison with others' work • Academic writing • Differences between Portuguese and Brazilian norms
Supervisor	<ul style="list-style-type: none"> • Manage the relationship • Communicate
Time	<ul style="list-style-type: none"> • Read • Write • Work / dedicate to the research • Conciliate work / MT / family

anticipated. Another motive is related with the difficulty to have access to the companies to administer the questionnaire. Companies are also resisting to answer questionnaire. As students say:

The difficulty to have access to the companies to administer the questionnaire is big. At this moment of crisis, there is more resistance to participate in studies.

Difficulties are related with the bureaucracy to submit the project to the Ethical Committee in Brazil and the delay in the answer from the Committee, delay in the obtain the permission from the institutions where the questionnaires will be administered.

I depend on the data provided by the Institutions. Here, in Brazil, the access to information is very burocratic and my requests take months before being answered

Another reason was the balance and reconciliation between studies and work. Some of the students were having difficulties in conciliating the responsibilities at work with the necessary time of reflect and digest the documents they are reading to develop the MT. As some students refer:

I am having a lot of activities at work which depend on my ad I am very tired and stressed.

I have two jobs.

I work 10 hours / day, leaving me with no time to write.

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The relationship with the supervisor, usually related with lack of time for communication is also another challenge. Supervising a MT means extra work for the supervisor and he / she may not be able to answer the questions and requests of the master student as quick as he would like to. And of course, this delay provokes some stress in the student. As students say:

It took me more time to get answers from the supervisor.

Difficulty in communicating with the supervisor. Only with the academic vacations they have been paying more attention to me.

Communication

Knowing that communication plays an important role in the development of the MT, we wanted to know more about this. Questions covered the frequency of communication with the supervisor, the speed of the answer of the supervisor, the quality of the answers provided by the supervisor and the depth and detail of the answers of the supervisor.

As for the frequency of the communication with the supervisor, answers vary: in average once a month, or every 10 days, during 6 months between 5 and 8 times. One student refers 10 times, another one 20 times. Anyway, almost all students refer having had a regular contact with the supervisor. Only 2 students mention that there was almost no contact and in one case the problem lied on the side of the student (he still feels lost and do not know what to say or ask to the supervisor) and in the other case, the problem concerned the supervisor (health and family problems).

We also asked about the speed in the answers and more than 50% consider it was good or very good (in a scale between 1 and 5 – where 5 is very good – the sum of the 4 and 5 is 55,7%)

As for the quality of the answers, 65,4% considers that the quality of the answers of the supervisors are good or very good.

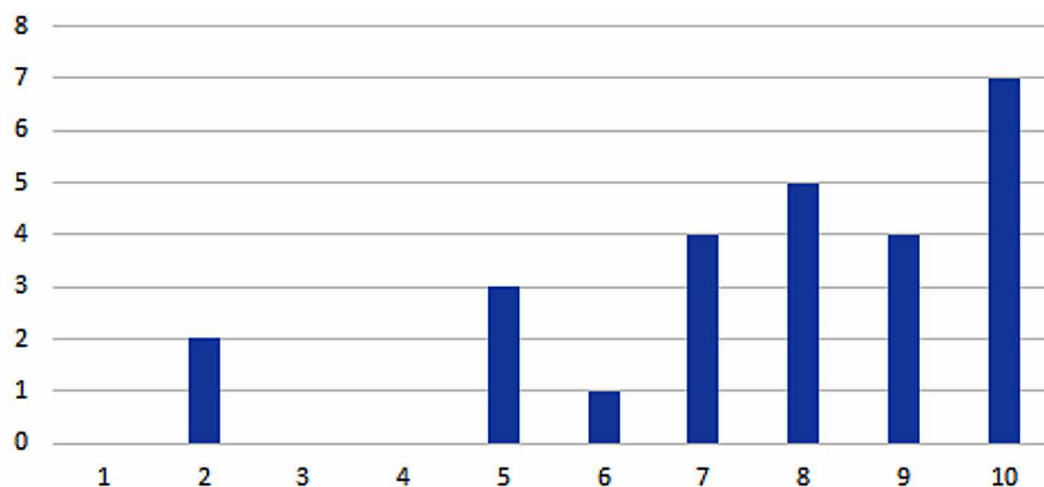
As for the depth and detail of the answers, 61,6% considers good or very good.

Finally, students were asked to rate the communication with the supervisor. Results are shown in graph 2. As seen, students classify the communication as good / very good (21 students out of 26), revealing that although they complain, the communication was good. Only 2 students classify this communication as bad (grade 2).

Technology

Technology played an important role in this Master and in the research process. The role could be: 1) administer the questionnaire (e.g. using LimeSurvey), 2) have access to the data bases to search for the literature review, 3) do the interviews and 4) be in contact with the supervisor. This last aspect is extremely important since these students are located in Brazil while the supervisor is in Portugal. Technology also played an important part in the classes since part of them were delivered at distance.

As for the contact with the supervisor, it was done by email, skype and Facebook. This means that the technology plays a crucial role since there is no other way to communicate with him / her. The word processor was also used with the functionality of track changes. This allowed the student to see clearer where the supervisor had doubts or wanted changes. One student referred that the difficulties with the

The Development of a Master Thesis Mediated Through Technology*Figure 2. Assessment of the communication with the supervisor (rate between 1 and 10)*

technology were mostly on the teacher's side: *"Everybody knows that the supervisor has some difficulties to deal with the technology"*.

It is curious to not that some students say that with the technology they never felt alone. On the contrary, they felt some pressure to finish the work:

I never felt alone. On the contrary, I even felt pressure to perform tasks. It helped a lot the work.

Another student reports:

It met the expectations. The sound was not good all the times and I was somehow shy in the communication.

Finally, the students were asked to describe the main difficulties felt in the research process. One student suggests that there should be a schedule of meetings between student and supervisor prior to the supervision process starts. This in line with the results of Nasiri et al. (2015) and Triviño and Martín (2014). In fact, there are two issues here: the communication, its frequency and richness and the relationship between supervisor and student. Of course, the final result of this relationship depends on the characteristics of both participants – is the student able to be independent and autonomous or is he / she dependent on the guidance and support of the supervisor? If the student is autonomous and independent he / she doesn't need so many contacts and guidance from the supervisor. He is able to find the solutions and needs the supervisor only to be sure he is going in the right direction.

They also refer (again) the difficulties concerning the access to companies to complete the empirical studies and those concerning the research process. As a matter of fact, as some students say *"this is something that they only know when they start doing the research"*. The challenges related with the personal skills are also mentioned, such as the lack of knowledge to write in a scientific way. The lack of time is again referred. And finally, the communication with the supervisor:

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Not all the instruction sent by the supervisor were clear.

Not so many contacts with the supervisor.

At the beginning, I had some difficulties in the communication with the supervisor. There were times that I waited 20 days for a reply.

I think that one of the difficulties concerns the absence of face-to-face contacts. Although we have communicated using the technologies, I believe that face-to-face meetings are better. The personal contact allows more discussion and deeper ideas about the content of the research. Sometimes, when I was writing I missed the discussion to debate ideas. Doing this by email is more difficult”.

Lack of feedback from the supervisor.

Although the 2 countries have the same language, there are some norms to develop academic work that are different.

I believe that the face-to-face contact with the supervisor could facilitate and expedite the clarification of doubts, debate of ideas and research development.

The distance and personal contact with the supervisor makes more difficult the development.

The results found are in line with those found by Vos (2013, p.4). According to this author, “students expected their supervisors to provide more support with research techniques, to be more explicit about the criteria upon which their work would be judged and to provide feedback on their work more promptly”. On the other hand, in his work, the author found that supervisors “complained that students were poorly prepared for the dissertation, failed to take their comments and feedback into account when revising and that poor language skills on the part of the students meant that the supervisor had to spend a great deal of time on editing and correcting students’ work”. One possible way to help in this process and to prevent these difficulties is by identifying student expectations and give clear guidance on their role and the input they provide.

Other recommendations include meetings with small groups as this allows students to share their problems and solutions and in building their confidence. Supervisor, very often forget that students feel lonely during the MT development, in particular when they are international students.

CONCLUSION

Limitations and Future Work

The development of a MT is, most of the times, a solitary work. Communication is done mostly (and in many cases solely) with the supervisor who plays different roles during the research process – coach, mentor, tutor, supervisor, just to name a few. His / her support needs to cover different areas such as

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specific technical support, intellectual support, administrative support, management and personal support. The main difficulties a master student faces, besides those related with the research itself, concern the relationship with the supervisor. In the case studied, this relationship is aggravated by the fact that student and supervisor are not located in the same city. In this case, the role of the supervisor is even more important as the student depends on it to feel more confident and encouraged to proceed. Moreover, the lack of communication, whether this is by email, skype or Facebook, exacerbates the feeling of loneliness and despair as there are no other way to overcome this distance. This means supervisors need also, somehow, to be prepared for these situations. As one author advances, it is necessary to prepare supervisors for supervision by providing a set of good practices, by understanding the expectation and needs of these students and by providing clear guidance in this process.

We recommend that more studies, with other Masters and students should be carried out in order to identify other factors that may be interfering in this relationship. This should be complemented with the perspective of the supervisor in order to know what challenges they face in this process as well as if they need some preparation or training in order to play this role. And then, develop the set of good practices that the supervisors could use as guidelines to help master students to reach their goals smoothly and with success.

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KEY TERMS AND DEFINITIONS

Coach: Someone that teaches how to improve at a sport, skills, or a school subject.

Competency: A skill needed to perform a job, a talent, an ability.

Mentor: A person, usually more experienced, who gives another person (usually less experienced) some help and advice, related to work or school, over a period of time.

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Research Process: A set of systematic steps followed by a researcher in order to produce knowledge which the community will consider to be worthwhile within the field.

Research Supervision: Process by which the supervisor gives some guidance, counselling, and support to a student during the development of a research. In this process, the supervisor helps the student with time management, makes them aware of intermediate and final deadlines, and ensures students get the most of their projects and have the necessary resources.

Supervision: The activity/act of watching a person or activity, making sure that a certain activity is done correctly and safely, meeting the requirements and deadlines.

Supervisor: Person that supervises someone of something.

Tutor: Person who teaches someone outside the school in order to give the student an extra help with a certain subject in order to obtain particular results.