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A mixed-method research on Thesis supervision and Research productivity in a Physics/Mathematics University faculty

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and is considered worthy of approval
in partial fulfilment of the requirements
for the degree of

MAESTRÍA EN LA ENSEÑANZA DEL INGLÉS

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Abstract

Research productivity (RP) and thesis supervision are two extremely important tasks for for academics and high education institutions. In an attempt to shed more light on processes associated with RP this mixed method correlational study investigated the possible relationships between thesis supervision and RP of research active physics and math academics in a Mexican higher education institution. For the purpose of this study, thesis supervision and research productivity were linked with two variables: the number of theses successfully supervised to completion and the number of years in thesis supervision. Research data were collected via academics' PRODEP curriculum. This research also focused on academics' beliefs, strategies and emotions about thesis supervision. The data for this portion of the study were collected through interviews following the Elicitation Array Protocol.

The findings from this study revealed that the years in thesis supervision and RP were shown to have a positive correlation between thesis supervision and RP. It was also shown that the number of theses successfully supervised by the participants was the variable with the strongest positive correlation with RP. Finally, the array data showed a set of beliefs, strategies and emotions about thesis supervision focused on ensuring the success of the student mainly and the contribution of their research to their fields of knowledge secondly. This study has contributed to an unexplored area of the ELT field in terms of the relationship between thesis supervision and RP as well as the physics and math. The correlational study finds confirm a previous thesis study involving ELT practitioners. However, searches of the literature in supervision and in the area of RP revealed no additional correlational studies. Thus, this study has attempted to fill this gap.

Acknowledgements

I would like to express my special thanks to Mtra. Gicela Cuatlapantzi Pichón, my thesis director, for all her expertise, experience, dedication, support and patience over the period of my MA thesis project.

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I wish to express my thanks to participating academics in my research. It was them that made this project possible.

Dedications

This thesis is dedicated to my family and friends who have been there when I have needed them. To my husband Ruben who has supported, encouraged and has always been there for me. To my children, Canek, Ollin, Nicte and Itzia who encourage me to be a better person everyday and give me the strength to achieve what sometime seems impossible. To my mother who has been an example of courage, strength and hard work.

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CHAPTER ONE: INTRODUCTION

1.0 Introduction

In public Mexican universities, professors are accustomed and expected to conduct academic research as well as to participate in thesis supervision. This could be as part of a school policy requirement or just part of an institutional culture; either way scholars dedicate a lot of time to these activities.

Thus, research productivity is an important part of researchers' lives. This is because by generating new knowledge researchers get national and international recognition in their field, obtain prestige and earn grants. Furthermore, universities also encourage the production of research by making it part of a requirement in order to obtain a better salary or to move up the employment ladder. A high level of research production also gives prestige to the institution and sometimes that translates into monetary benefits such as grants.

As part of the graduation requirements, students of different majors in public universities need to come up with a thesis project. For this difficult and sometimes unfamiliar endeavor, students need a companion and a guide to help them along the way. Thesis supervisors are that person.

In order to guide a student through a research project, it is logical to assume the thesis supervisor has experience with research and is an active researcher. In many academic disciplines it is customary for research students to work within the supervisors' research projects. Therefore, it is difficult not to wonder if these two activities are related in some way. For this reason, this research will try to explore the possible correlation between research productivity and thesis supervision. To try to understand this topic, the current study is part of a larger multi-university study, which explored various other potential relationships associated with research productivity.

The remainder of the chapter will give an account of the purpose and the perceived significance of the study along with the context, research methodology, aims and specific research questions.

1.1 Study justification

This study is part of a larger multi-university study project, which explored the potential relationships between research productivity and thesis supervision, at the time my thesis supervisor was part of a research group that focused on research, literacy and teacher development. This study has a great impact in the English language teaching area because successful practices may help teachers and students from various academic areas to improve their research productivity and thesis supervision practices.

This study originated for many reasons. The principal reason was to test out possible relationships between these two activities: research productivity and thesis supervision. Another reason was the desire to explore thesis supervision in a Physics and Math faculty to look for models of successful supervision and see if those compare to other models of supervision. In regards to the last reason, one student from the previous generation of the master's program 2011-2013 (Lezama de Jesús, 2013) carried out a quantitative correlational study between thesis supervision and research productivity in a language faculty. In it, she suggests as further research a similar study that should be carried out in other academic areas to be able to compare the results. Furthermore, this research will also try to explore the supervisors' feeling towards thesis supervision. Finally, this study will try to fill the gap in the literature on this topic using a mixed method methodology.

1.2 Study significance

Little research has been done in this particular topic, so the results of this investigation will help us understand thesis supervision as a central factor in successful program completion. The present study will consider the importance of research to university teachers to propose a positive relationship between these two activities. Finally, it will propose interventions and ways to help thesis students and supervisors.

1.3 The context of the research

This study falls into the wider context of similar research in several theoretical areas. These are briefly reviewed here to show the relation of the wider context to the study research questions. These topics are discussed in more detail in the following chapter.

When we talk about humans and how they do what they do and why they do it in a specific way, we have to talk about culture. Culture can be defined as a way of living and a way of life. It refers to the traditions, customs, ideologies, traditions that a group of people share amongst them. To this respect, Williams (1995) states that "culture is a description of a way of life" (p.41). The term academic cultures, refers to certain behaviors, attitudes, opinions, practices, conventions and customs that institutions as well as academics share with each other. Academic cultures can be defined by institution's policies and requirements and others because it is just part of academics' practices in that specific context. In addition, the process of enculturation is the process of learning how to be a competent member of a specific culture or group. It is the process through which we learn about the culture we live in. Through enculturation we learn what behaviors, values, language and morals are acceptable in society. On the other hand, the process of acculturation refers to the process of cultural transfer from one

group to another. In essence, acculturation is a way to describe the adaptation process of diverse individuals to the dominant culture. In other words, it is when individuals or a group of people transition from living a lifestyle of their own culture to moving into a lifestyle of another culture.

The different topics above establish the theoretical framework that shapes research productivity and thesis supervision. Research Productivity is the totality of published articles in journals, magazines, book chapters, conferences among other things that academics generate in a given time period. Supervision is an on going learning process and provides the supervisor with the opportunity of correcting mistakes. It requires over-seeing someone with less experience to try to guide and provide feedback. Finally, thesis supervision is the ongoing process of guiding, correcting, and motivating students, so that students can produce a quality piece of research at the end. During this process students need to feel supported and challenged to learn.

1.4 Background of the researcher(s)

At the time of this study I was a student in an ELT graduate program in a Mexican university. I got interested in studying and conducting research on thesis supervision and research productivity when I was looking for a thesis director. Because I was familiar with the context, I had learned from a professor and former student of this faculty that students as well as professors did not have any subjects or proper instruction on how to conduct research or on how to publish articles, books, and so on, and that everything they did/do was through imitation. Therefore, I started questioning about the research production processes and its relationship with thesis supervision. Furthermore, as mentioned before, this research was part of a larger multi-university study project, which explored the potential relationships between research productivity and thesis supervision. Finally, I must say that right away I liked the research topic

because I think that it is an area were much needs to be done and the results of this project could help institutions, teacher and students.

1.5 Research location

The study reported in this thesis was carried out in a Physics and Math faculty at a public Mexican university in the central part of the country. This university was chosen because it provided the necessary and qualified participants, settings and context. The students and academic staff members in this faculty were engaged in a high level of research production in Physics and Mathematics on national and international levels (described in more detail in Chapter 3). This faculty offers BA degree programs as well as MA and PhD. Hence, professors were also engaged in thesis supervision. The faculty was chosen specifically because of the level of research done by the academic staff.

1.6 Aims

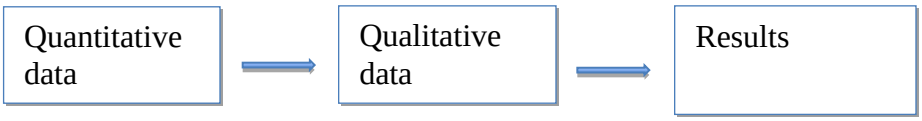
The aims of the study were first review the literature on enculturation, institutional culture, research productivity and thesis supervision to construct a theoretical framework for understanding possible correlations between thesis supervision and research productivity in a Physics and Math faculty. It also aimed to explore the thesis supervisors' beliefs strategies and emotions regarding thesis supervision.

1.7 Objectives

1. To distribute a self-completion questionnaire to my target population.
2. To ask for and collect PROMEP CVs from participants for further analysis.

3. To conduct individual interviews using the elicitation array interview protocol to Physics and Math faculty members.

The aims and objectives of the methodology design Research model



1.8 Research questions

To be able to fulfill the established aims the following questions were developed:

- RQ1 Is there a possible correlation between research productivity and theses successfully supervised to completion?
- RQ2 Is there a positive correlation between research productivity and years in thesis supervision?
- RQ3 What are the supervisors' beliefs strategies and emotions about thesis supervision, and how do they relate to the findings of RQ1 and RQ2?

1.9 Chapter summary and overview of thesis document

This chapter provided an introduction to the topic. It began with an explanation of the purpose of the study, provided the overall theoretical and methodological background, and briefly introduced the data sources including the participants. In Chapter 2 the theoretical framework will be presented in much more detail. In Chapter 3 the methodology used to collect data and answer the research questions in Chapter 1will be described.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

Sometimes humans have the necessity of migrating to other places far or near. This might be because of work or pleasure and most of the times people need to adapt and adopt other beliefs, customs, and ideas to be able to be part of that community or culture. Professors and educational institutions are not the exception to this rule; they have their own set of rules, beliefs and ideas on how things work and should be done. This institutional culture in which academics work has a great influence on how much, what type and kind of research is produced by the members of that community. To have a better understanding of these features in this chapter we will review some literature regarding academic cultures, the process of enculturation, research productivity, and thesis supervision.

2.1 Culture

Culture has been one of the most difficult concepts to define. Erickson (1997, p.35) stated that "even the experts have not been able to agree on what culture really is" despite this view, culture can be defined as the ideas, traditions, values, knowledge and habits shared by a particular group or society. Culture is the way of life of specific groups of people. Sometimes culture is learned in a natural way, while others can be learned and adopted to be part of a community. Along this view on culture, González, Lau, Murry, Piña, and Barrera, (n.d) view culture as a complex construction that describes the characteristics of a particular group of people, defined by everything from language, religion, cuisine, social habits, music and arts. A distinct group of people (a tribe, an ethnic group, professional organization, a nation) can be described as a *"having culture*", meaning that its members share a collective system of values, beliefs, expectations and norms, including traditions and customs, as well as sharing established social networks and standards of conduct that define them as cultural groups. Becher and

Trowler (2001, p. 23) refer to cultures as "a set of taken-for-granted values, attitudes and ways of behaving, which are articulated through and forced by recurrent practices among a group of people in a given context". In the area of education, Kuh and Witt (1988) define culture as "the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups in an institute of higher education and provide a frame of reference within which to interpret the meaning of events and actions on and off campus" (p.12). This last definition of culture gives us an insight to academic cultures in higher education institutions.

2.1.2 Academic cultures

In all higher education institutions there are certain behaviors, attitudes, opinions, practices and customs that are shared among academics. On occasions these practices are performed as part of the institution's requirements and others because it is just part academics' practices in that specific context. Academic cultures are the rules, behaviors, beliefs, practices and traditions that members of an academic institution share among each other. When referring to members we are referring to teachers and students that share goals, that know what is acceptable or not and that maybe share academic interest. The culture of a department or institution also has been found to be an important factors determining research performance of individual faculty. Culture relates to shared attitudes and values in an academic unit. A research oriented culture exists when all faculty and administrators are socialized to be strong researchers during their graduate training, value research and maintain continuous internal and external communication with other researchers, and hire new faculty with strong research credentials (Creswell, 1986).

Clark (1980) divides academic culture into four different categories:

The culture of the discipline is the category where members of the discipline are called specialists and are predetermined members of a disciplines and professional fields. The identity of the specialist is acquired by socialization into the particular field as a student and on the job socialization of doing one´s work and interacting with disciplinary colleagues. The learning and assimilation of the theories, conventions, beliefs and opinions of the specialty help to give a sense of place and to define a way of life.

The culture of profession provides a general identity referred to by the phrase "academic man." Clark (1980, p.6) remarks that "this general culture contains rich ideologies, referred to in such well known phrases as freedom of research, freedom of teaching and community of scholars. The culture makes much of personal autonomy and collegial self-government by downgrading bureaucratic controls and forms of "external supervision". It represents selfless commitment on the part of academics. It tries to show that for academics the highest form of service to society is crating knowledge, transmitting the culture, teaching students so they can have a successful academic development.

The culture of the enterprise refers to how institutions try to make academics part of the institution itself by creating a bond including them in the process of solving problems of the institution, this helps the enterprise or institution because it exacts loyalty and commitment in consequence academics feel that they have contributed to the success of the institution. Along this lines Clark (1980, p.13) states that "Those who worked together for a decade are likely to develop some shared feelings about their organization, a set of beliefs that help to define their place in life and give meaning to the fact of having contributed so much time and effort to a particular institution". This means that when academics see themselves as part of the

construction and struggles of the institution they are less likely to leave the institution. This type of enhanced culture helps the institution turn into a community, emotionally warming the institution and giving individuals a sense of place.

The culture of the system is how the national academic systems work and are organized and how academics as well as institutions have to follow their conventions and requirements. Clark (1980, p.15) mentions the following:

> National systems are characterized by observable features of academic beliefs and related styles of behavior which do not stem from the cultures of discipline, profession, and enterprise, but rather in a major part have their source in the larger national context or in the way the system as a whole has been traditionally organized.

2.2 Process of enculturation

The process of enculturation is when a person learns and acquires the culture through experience, observation and instruction to be able to function and participate in all aspects of their own culture. Enculturation is also defined as "the process of learning about and adapting to one's ethnic culture, potentially leading to the adoption of beliefs, values, behaviors and language of that culture and to one's ethnic identity" (Roosa, Dumka, Gonzalez, & Knight, 2002, p.7).

Furthermore, enculturation refers to the process of learning how to be a competent member of a specific culture or group. It is the process through which we learn about the culture we live in. Finally, Brown, Collins, & Duguid (1989) describe the enculturation process as "a process of learning to become a particular kind of person, who has developed a sense of belonging in a particular academic or research community" (p.153). Through enculturation we learn what behaviors, values, language and morals are acceptable. Enculturation provides the means to become functional members of our society. Without enculturation, humans are unable

to think, behave, and develop emotionally in order to function in society and the academic setting.

2.2.1 The process of Acculturation

Acculturation is when members of one culture adopt beliefs and behaviors of another culture. The majority of the times the minority culture is the one that adopts the parts of the dominant culture. According to Berry (2005)

> Acculturation is a process that continues for as long as there are culturally different groups in contact; some longer-term adaptation to living in culture-contact settings takes various forms usually resulting in some form of longer-term accommodation among the groups in contact. This often entails, for example, learning each other's languages, sharing each other's food preferences, and adopting forms of dress and social interactions that are characteristic of each group (p.458).

Another view of acculturation is that acculturation is comprised of those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both group. Under this definition, acculturation is to be distinguished from culture change, of which it is but one aspect, and assimilation, which is at times a phase of acculturation (Redfield, Linton, & Herskovits, 1936, pp. 149–150).

In Academic settings, when integrating into a new academic community, professors are expected to acculturate or absorb some of the values, cultural traits, belief systems and characteristics of the institution and as a result, professors are expected to perform academically like others. In most higher education institutions, research has become an essential part of their culture. In order to succeed, newly hired professors must acculturate to the conventions and norms of how research is done in that institution.

2.3 Research

Research has been part of humans' everyday lives, from investigating ways to solve common and simple problems to more complex and complicated enigmas. We acquire knowledge through research. This knowledge allows for a broader scope of ideas, objectivity and way of understanding something. The Organization for Economic Cooperation and Development (2015) provides a definition of research as "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of human, culture and society, and the use of this stock of knowledge to devise new applications" (p.18). Creswell defines research "as a systematic process of collecting data and analyzing information in order to improve our understanding of a topic of issue" (2005, p.3).

2.3.1 A brief history of research in Mexico

Research in México has been slowly growing and sometimes it has stopped completely. In 1929, small groups of researchers started to appear at the Universidad Nacional Autónoma de México (UNAM). Despite great challenges, different science departments opened their doors; for instance, the National Observatory of Astronomy, the Biology Institute and the Geology Department. Between 1929 and 1950, more science departments opened their doors; to conduct research, for example; the Geology and Physics Institute, as well as the Mathematics Institute. All of these institutes and departments suffered from small and few research teams as well as, little or no funding and lack of laboratory material (Peña, 1995).

In 1954, the first fulltime researchers were appointed. This was because there was an immediate need to innovate and form research teams. Experienced researchers encouraged novice teachers to conduct research and to enroll and finish a PhD outside México. When novice

teachers came back they were eager to apply what they had learned and also wanted to keep working on ongoing research projects. The problem with this was that there were no funds to work on the research and/or scientific equipment. As a result of these difficulties, sciences such as Physics developed only in one aspect: the theory; while the practice and experimentation aspect was not developed. In other areas like Chemistry, if researchers were lucky, hospitals would allow them to use their laboratories to conduct their research (Peña, 1995).

As time passed, different recognized UNAM researchers tried to obtain funds and infrastructure but without much success. Also, diverse research groups, like Biochemist and Physiology tried to establish a research association but they did not last long. It was not until 1961 when the "*Centro de Investigación y de Estudios Avanzados del Politécnico*" opened. This research center looked for funds from international associations and was the first to build first-world infrastructure for research. At the beginning, this research center had a difficult time since others were skeptical about the seriousness and efficiency of this place. But it was demonstrated that with the right infrastructure and funding México could compete with other research centers around the world (CONACYT, Estadística Básica, 2011).

The seventies and the early eighties were a time were research received the funding that was much needed. Also, more fulltime research positions were open at the UNAM as well as an increase of salaries was made. In 1984, the "*Consejo Nacional de Ciencia y Tecnologia*" (CONACYT) started operating. This council gave scholarships to students so they could travel outside the country to study and conduct research, also CONACYT used their funds to encourage students to be interested in research and science, but most important it was the first time that money was given to a research group (CONACYT, Estadística Básica 2011).

This time in period marked a new era for research because before, research was centralized and only done in México City, but this changed and different research institutes and associations opened in different states. For example, in San Pedro Martí, an astronomy observatory was built, the research Institute of Applied Mathematics in México, in Mazatlán Marine Biology stations were created and the first oceanographic ship was acquired. As research decentralized, research groups started appearing around the country, but the ones that were supported and recognized the most were the one that belonged or had a tie with CONACYT, UNAM, CINVESTAV and for the social sciences the "*Secretaria de Educación Publica*" (SEP). According to a study made by CONACYT, in 1984 there were in México City 3,252 SNI researchers while in others states were 2,981, and in 2011 México city had 7, 236 SNI researches and in others states there were 10, 401 (CONACYT, Estadística Básica, 2011).

This climate of abundance only lasted for ten years or less, financial crisis hit México and it was extremely difficult to recover from it. Equipment and funding were taken away and it was tough to get it back. Nevertheless, research has grown all over the country, not as fast at it should but at a steady pace. Different institutions have been making great efforts over the years to encourage and support research in all levels. For example, SEP has created a program *Programa "para el desarrollo Profesional Docente"* (PRODEP). This program looks to give professional status to fulltime higher education professors for them to reach their full capacities in research, teaching, technological development and innovation, and with social responsibility, bring them together and establish research groups with the purpose of creating a new academic community capable of transforming its environment. The CONACYT still exists and as mentioned before this council provides students with scholarships and support to travel outside México and study and collaborate with other researchers. It has also created a monetary fund of two hounded

thousand pesos that is offered to graduate students that are studying a post doctorate in another country to come back to México and stay here (Fondo mixto CONACYT- Gobierno del Estado de Puebla. Convocatoria 2012-01).

2.3.2 Research in Puebla

The "*Fondo Mixto*" is a monetary fund that is provided part by CONACYT and other organizations by the State of Puebla. This mixed fund was created by an agreement between the state government, the federal government and the CONACYT, to support research projects that generate new and useful knowledge to cover the current needs of the state of Puebla, to create new quality researchers, to support, establish and help grow research and technology groups, and finally, these institutions want Puebla to be able to be competitive within and out of the state (*Fondo Mixto CONACYT- Gobierno del Estado de Puebla. Convocatoria* 2013-01).

The Benemérita Universidad Autónoma de Puebla has created a department called *Vicerectoría de Investigación y Estudios de Posgrado* (VIEP) whose mission is:

> To promote the development of research and graduate studies, to foster national quality and internationally recognition in order to advance the frontiers of knowledge about nature, man, culture and society, and enhance scientific vocations among the young, as dynamic environment that requires us to improve, correct and above all accelerate the pace, identifying alerts in different areas of daily life in order to find solutions to problems related to the scientific, technological and social development of México and the State of Puebla in particular (Mission of the VIEP, 2015).

The VIEP describes research in the BUAP:

> Research in the BUAP is consolidated and is internationally recognized for its pioneering point in the different disciplines, so that the generation and use of knowledge define significantly advances in the field of production, technology, social and human development, health and communications, among others; which they are achieving solutions to the central problems of development of the state and the region. Most educational graduate programs are recognized as consolidated programs and international competition, which incorporate teacher-researchers of the highest academic levels organized in research groups or consolidated academic bodies and involve students in scientific or professional work, promoting scientific vocations (Vicerrectoría de Investigación de Estudios de Posgrado, 2015).

Puebla is ranked among the top four states that have the most BA students enrolled - 154,361 students. It is important to mention that a great number of these students are enrolled in social sciences and administration (61, 699) and just a fraction focuses on natural sciences and engineering (10,424). Due to this phenomenon, the state of Puebla came up with an educational plan 2011-2017 that focuses on two main aspects: First, to support the development of strategic projects that seek the improvement and capacity of the State of Puebla in regards to the production of human resources with a high level of specialization in the areas of science and technology. Secondly, to guide the State of Puebla in supporting science and technology programs by distributing the funds provided by the CONACYT. (Fondo CONACYT del Estado de Puebla. Convocatoria 2013-20011).

In light of the information presented in this section we can see that research has been steadily developing in México. Academic staff is expected to engage in research. Their students are also required to do research throughout their programs and at the very least they are required to produce a thesis research project at the end of their studies. The overall aim of the national and institutional research requirements is to create knowledge and to look for solutions to problems facing the nation and the world. The term 'research productivity' as used in this study refers to the amount of research carried out by a group, academic, or student as measured by the products: journal articles, patents, books, book chapters, presentations and other such things. The concept is discussed in further detail in the following section.

2.4 Research productivity

At many higher educational institutions, professors are required to produce research and create knowledge in their areas. Usually, this is measured by published articles in journals, magazines, book chapters, conferences among other things. Research production is part of many professors / researchers everyday lives, since sometimes they are evaluated and even awarded for the amount of publications they have. Along these lines, Xie and Shauman (1998) state that "research output is commonly measured by the number of publications" (p.849). Furthermore, it has been found that generally full and more senior professors tend to have accumulative advantages over most assistant and associate professors that result in higher levels of productivity (Cole &Cole, 1972).

Print and Hattie (1997) define research productivity "As the totality of research performed by academics in universities and related context within a given time period" (p.454). In many higher education institution, it is important to quantify the amount of research that is being done individually as well as by departments, this is done through performance indicators. Regarding this matter, Cuenin (1987, p. 120) states that "numerical values provide a measurement for assessing the quantitative or qualitative performance of a system and which can be derived in many ways." Franklin (1988, p. 44) mentions that "performance indicators are comparative measures which allow you to say that a certain level of activity is more or less (better or worse) that another". Print and Hattie (1997) identified three main categories of performance indicators: research grants, research students and publications.

Since Research grants are a means to conduct research and as well as to show research productivity, these play an important part in academic life. Research grants are awarded to one individual or a group of individuals that have had a productive amount of "output" in the past

and that are currently engaged in this task. The amounts of these grants vary depending on the Research project. Grants are extremely important to institutions because the amount of grants helps calculate the research funding for Universities.

According to some authors, another way to measure research productivity is to look at postgraduate students' research. Print and Hattie (1997, p. 457) state that "The supervision of postgraduate research students can be an important component of research activity of academic staff. As an indicator it has credibility among academics as well as status within universities" (Grigg &Sheehan 1989; Hattie et al. 1991; *National Board of Employment, Education and Training* 1993: *Performance Indicators Research Group* 1991). The number of doctorates awarded each year, for example, can be an indicator of the amount of research conducted by research students (*National Board of Employment, Education and Training* 1993). Similarly, the total number of all postgraduate research degrees awarded each year, measured as supervision to completion of degree, can be a useful indicator of research productivity.

While some argue that the number of research students negatively affects faculty member's research productivity (Cave at al.1988), education academics are increasingly following their colleague in other faculties and integrating their students' research with their own research, thereby improving research productivity.

2.4.1 Publications as research productivity

Many higher education institutions research productivity is measured by the amount of written published work done by researchers/professors. "Publications are acknowledged to be the most valid, fair and direct measure of research performance amongst academics (Grigg and Sheehan 1989, Performance Indicators Research Group 1991; Hattie el al. 1991; Hattie et

al.1994: National Board of Employment, Education and Training 1993, 1994). The National Board of Employment, Education and Training (NBEET) studies (1993, 1994) indicate that, "within education, journal articles, books, conferences presentations and chapter books are highly valued indicators of research performance." (p.457 and 458).

For a majority of science professors, research productivity is a lifelong process with a distinct life cycle profile: it sharply increases to a peak early in life and the gradually declines (Stephen and Levin 1992).

2.4.2 Factors that may affect research productivity

Studies have examined a wide range of factors affecting faculty research productivity. Early work from Bell and Seater (1980), Braxton and Bayer (1986), Clark and Lewis (1985), Creswell (1986), Levin and Stephan (1989), Lewis and Becker (1979) show that the effects of age, gender, socioeconomic status, and educational background were some mayor factors that affected research productivity among professors in higher education institutions.

There are many factors that influence the research production of researchers, for example; age, gender, number of years of experience and expertise the field, marital status among other factors. To this matter, it has long been researched and debated that gender is an important factor in the amount of productivity that a person has during their career. Zuckerman (1991) states that "women publish fewer papers that men of the same ages, on average, 50-60 percent as many" (p. 43). According to Xie and Shauman (1998) "More than 50 studies covering various time periods and fields of science report sex differences in published productivity, more specifically, that men publish more than women, even when age and other important social attributes are taken into account." (pp. 847). Other variables such as difference in teaching

responsibilities, access to research funds, and opportunity to collaborate with other outstanding scientist might account for the differences in published productivity of men and women.

Albornoz, (2010) carried out a comparative study between México and Venezuela. It studies researchers' behaviors to determine what the factors are that encourage a low or high research production and the insertion of researchers in the academic production chain. Albornoz (2010, pp. 65-93) classified some factors that influence research productivity into three categories: external with five questions, institutional with six questions and personal with 5 questions. The findings of this investigation suggest that for the external factor section what strongly influences research productivity is public politics for the Mexican researchers as well as for Venezuelan researchers. The factor that affect research and that was chosen the least by researchers in México was public security and for Venezuela academic freedom.

For the institutional factors, both countries agreed that having a stimulating work environment affects research production. The least voted was efficient management, for both countries. For the personal categories achievement motivation was highly picked by Venezuela participants while work independence was highly picked by Mexican participants. And the least voted from both countries was life expectations.

Finally, another important factor that has affected research productivity is that the role of the professor has change over the course of time. Teachers, before used to be 'knowledge transmitters' and students were passive. They would receive and memorize the knowledge given by their teachers but now, even though some of those teachers still exist, universities have stopped being places of quietness and individuality and have become centers were knowledge is created Tindemans (2005). This more active role of teachers, students and research has led to an increased interest in understanding relationships between them via the concept of supervision.

2.5 Supervision

Supervision is defined as the task over-seeing someone to check their work. Supervision is also seen as a process of on going learning and provides the supervisor with the opportunity of correcting mistakes and providing feedback. Furthermore, supervision is formally defined by Pearson (2006) as a relationship between senior and junior member(s) of a profession that (a) is evaluative, (b) extends over time, (c) serves to enhance the skills of the junior person, (d) monitors the quality of the services offered by the junior person, and (e) acts as gatekeeping to the profession.

Barber and Norman (1987) define supervision as "an interpersonal process where a skilled practitioner helps a less skilled practitioner to achieve professional abilities appropriate to his role. At the same time they are offered counsel and support" (p.3). Bernard and Morrison (1993) define supervision as "the process through which one, more senior person, facilitates the growth and development of another colleague, in a professional and educational context" (p. 90).

Supervision in any context is not a simple task, as we have seen it requires someone with experience, time, and willingness to provide feedback and to help others grow. It seems that professors in higher level educational institutions take on a great responsibility when supervising a thesis.

2.5.1 Thesis supervision

To be awarded a degree in higher education students first need to be able to produce a piece of research. This is done with the help of a more experienced person (professor). Thesis supervision is the ongoing process of guiding, correcting, and motivating students, so that students can produce a quality piece of research at the end. In this process the supervisor plays an

extremely important role since he has to provide a context where students feel supported and challenged to learn (Daloz, 1999).

Connell (1985) described supervision as a genuinely complex teaching task. It requires a substantial commitment of time and energy. “It involves dealing with a considerable range of problems, from technicalities of research design to the morale- and sometimes health-of the student. And it never stands still, as the character of the relationship changes markedly over the years of candidature” (p.38).

Gray and Smith (2000) identified the following qualities of an effective mentor: approachable; confident in their own ability; good communicator; professional, organized; enthusiastic, friendly, possessing a good sense of humor; caring; keen; enthusiastic; good role model; patient and understanding. These qualities can be easily attributed to that of an effective research supervisor. Zhao (2001) reports that “in the view of the students, the ideal supervisor helps them to achieve a scientific, professional or personal goal, and to learn about research and how to conduct research against the quality standards of the system” (p.2). Higginson (1990) suggests that when considering the choice of supervisor, the less tangible qualities are the most important, such as knowledge, enthusiasm, willingness and availability.

There is a vast range of literature looking at the similarities in the roles of supervisor and mentor. According to May et al, 1982; Merriam, 1983; Darling, 1984; Wilkin, 1992; Reiman, Thies-Sprinthall, 1998; Down et al, 2000; Rose and Best, 2005; Manathuga, 2007; Burn et al. 2012 among others, the role of the mentor/ supervisor should be one of a supporter, an exemplar or role model, Counsellor Guide, advisor, inspirer, investor and trusted friend.

Mentoring is viewed as a long term adult developmental process with active involvement in a close personal relationship. Mentors serve as counselors, teachers, sponsors, and guides for

neophytes learning about their professions and how to cope with dynamic workplace realities. Additionally, Vance (1982) notes that a mentor may serve as a role model, guide, teacher, tutor, coach, confidant and visionary. Gray and Roy (2005) found that faculty as well as students agreed that the following qualifications were essential for a mentor:

- A doctoral degree
- Publication/ recognition for research and scholarship
- Awareness of the scope of the discipline and state of knowledge development and of given areas.

As we have mentioned, thesis supervision is not an easy task to take on. It requires the ability to build relationships with others, it requires time, dedication and compromise. It requires someone to take on different roles and to know when to apply each role. When supervising a thesis, supervisors are not only teaching students about research but also about life skills.

2.6 Conclusion

This chapter reviewed some of the literature related to the essential concepts for this thesis. It began with the discussion by revising the concept of culture, enculturation and acculturation. Then it continued with the discussion of academic cultures, thesis supervision and finally, research supervision. In the following chapter the research methodology will be described.

CHAPTER THREE: THE RESEARCH METHODOLOGY

3.0 Introduction

As presented in Chapter One, the main purpose of this study was to identify the relationship between thesis supervision and the levels of academic production of thesis supervisors in higher education. In order to accomplish this aim it was necessary to follow certain steps**.** In this chapter, the setting, participants, the approach and the instruments used in this study are described. There is also a description of the data collection and the analysis procedures that were used to conduct the research. Finally, some expectations of data analysis and conclusions are provided.

3.1 Research Location

The research was done at a math and physical sciences faculty, which is part of a public university located in the central part of México. The mission of this faculty is focused on the formation of future researchers in a number of scientific areas and prestigious quality research. At this faculty undergraduate, graduate, and post-graduate programs are offered in Physics and Mathematics. The mission and vision of the faculty state that the students receive an integral education. Throughout their years of preparation, they acquire abilities and competencies that help them succeed in different areas (teaching, research, and technological development).

The math and physics faculty were this research was done has faculty members vastly qualified to conduct national and international high quality research. At the time of this study, there were 114 faculty members from whom 90 were holding a PhD degree, 20 a masters' degree and 7 a bachelors' degree. At the time of the study, 61 faculty members were part of the *Sistema Nacional de Investigadores* (SNI; National System of Researchers) at their different levels. Also, there were 11 "*Cuerpos académicos"* (CAs) research groups at different stages of consolidation.

I chose this particular site for the research for several reasons. The first reason was primarily because I wanted to explore the possible relationship between RP and thesis supervision at this particular faculty. Related to the first reason, I know that this faculty has a high level of research, so would be a fruitful location for confirming results from a previous study on the same topic. Also, I am familiar with the environment and the researchers working there which made data collection more feasible and convenient.

3.2 Participants and the selection of the sample

The participants for this study were in-service professors that have been conducting research and that also had taken the difficult task of supervising theses in the undergraduate and graduate levels in this department. At the time of the research all the participants had PRODEP (*Programa para el Desarollo Profesional Docente*) profiles and were members of the SNI program. The research sample consisted of 14 males and 2 females. Their ages ranged from 34 to 65 years old. Their nationalities were Mexican 15 and Croatian 1. All of them possessed a PhD degree.

3.3 Study methodological approaches

In light of the discussion so far, this section will describe the general methodological approaches used in this study. This section is included in this chapter to link the theoretical discussion presented to the empirical part of the study presented in the remainder of the thesis. The broad description of the approaches used will also provide a justification for their use in the study.

3.3.1 Correlation

A correlation refers to a relationship between two variables. Correlations can be strong or weak, as well as positive or negative. In other cases, there might not be a correlation at all between the variables of interest. The correlation method involves looking at relationships between two or more variables. While researchers can use correlations to see that a relationship exists, the variables themselves are not under the control of the researchers.

There are three possible results of a correlation study: a positive correlation, a negative correlation, and no correlation. The correlation coefficient is a measure of correlation strength and can range from -1.00 to +1.00. A positive correlation is when both variables increase or decrease at the same time. A correlation coefficient close to +1.00 indicates a strong positive correlation. A negative correlation indicates that as the amount of one variable increases, the other decreases. A correlation coefficient close to -1.00 indicates a strong negative correlation. Along these lines, the correlation coefficient states the degree of relationship between variables in terms of both strength and direction of relationship (Jackson, 2009).

Correlations are found via quantitative measurements of the variables associated with the study. Many researchers in the social sciences use statistical software to assist in the analysis of the data. One of the most commonly used software programs is SPSS (*Statistical Package for the Social Sciences*). This was used for the study reported in this thesis.

In addition to the quantitative data collected, qualitative data were also collected to help show the findings further. The methodological approach is explained in the following section.

3.3.2 The experiential array

According to Gordon and Dawes (2005), the elements most useful for modeling human behavior fall into four principal categories: *beliefs*, *strategies*, *emotions*, and *external behaviors*. These categories are arranged in the array from left to right and indicate the dynamic nature, or flow, involved in an activity. These categories are briefly explained in the following sections.

Beliefs: All beliefs fall into one of two categories: *cause and effect* beliefs (x is the result of y / y causes x) and *equivalencies* (y is equal - similar to x / y describes x in some way). Beliefs are thought to underlie most of our behaviors and actions and therefore are placed in the array in the left-hand side to show the dynamic or flow relationship between beliefs and the other factors in the array.

Criterion: In the center of the beliefs category is the 'criterion', defined as the primary standard of evaluation when the exemplar is engaged in the activity in question. Interview protocol items that elicit the criterion are: 'When you are [engaged in the ability – in the case of this study 'thesis supervision'] what is important to you? Or the alternative question, 'When you are [supervising a thesis] what are you evaluating?

Equivalencies – evidence: The evidence for the criterion is found in what the exemplars *see*, *hear*, and/or *feel* (the 'embodied' element of human experience) that lets the exemplar know when they are supervising a thesis.

Cause & effect -- Enabling belief: This belief class represents the exemplars' opinions regarding what enables *someone* to write well. The interview item uses 'someone' rather than 'you' to help the respondent state their global beliefs regarding the activity criterion.

Cause & effect -- Motivating belief: This is the only section in the interview protocol that asks 'why': 'Why is [thesis supervision] important?' Or 'What does [thesis supervision] lead to or make possible?'

Primary strategy: The interview protocol for this section asks: 'What are you doing on the inside and outside to [supervise a thesis]?

Secondary strategies: Secondary strategies are employed when the primary strategy fails in some way. In the array, there are three levels of secondary strategies: 1) when the primary strategy is not working well enough, 2) when it is not working at all, and 3) when it cannot work. All three levels are elicited in the interview, but exemplars might not have secondary strategies associated with all three levels.

Sustaining emotion: The sustaining emotion is the emotion that is associated with the activity and is present whether the exemplar is engaged in the activity or not.

Signal emotions: All emotions provide feedback or signals to us that serve to indicate the status of events or conditions. These emotions signal that we can carry on or that there is something that needs our attention and some kind of change is called for. Signal emotions in the array are those associated specifically with the activity and inform whether the activity is being carried out according to the individual's standards.

External behavior: Finally, the interview elicits those external behaviors associated with engaging in the activity. Many of these responses tend to come out as part of the *external* actions elicited in the *primary strategy*. This section has provided a brief review of the interview (Bazerman, Keranen, and Encinas (2012).

Both methods are described in detail specific to the study in the following chapter.

3.4 Methods of data collection

To be able to answer my RQs the methodology used for this research project was the mixed-method approach. This was done with the intention of obtaining and expanding our knowledge on all aspects of the research problem. Creswell (2005) defines mixed-methods approaches as the combination of quantitative and qualitative approaches but not limited to the collecting and analyzing both data but as the way in which a mixed-methods research can enhance, support and strengthen research results. For this study, both research approaches were combined for the data acquisition.

Three principal methods were used to collect the study data. Each method corresponds to the study research questions[1] as explained in the following sections.

3.4.1 Documents (PRODEP CVS) – RQ1 and RQ2

Some of the quantitative data was gathered using participants PRODEP CVs. The reason for this was that this document provided and accurate account of the years that the participants have been conducting research, the type of research and it also includes information on how long have they been engaged in thesis supervision, and gives data on the number of theses supervised to completion. This information was needed to answer the first two research questions, which sought to identify a positive correlation between the independent variables *years in thesis supervision* and *number of theses successfully supervised to completion* and the dependent variable *research productivity.* The sections used were 1) Academic production (*producción académica*) where data associated with research production were gathered and 2) Individual

[1]RQ1 Is there a relationship between research productivity and theses successfully supervised to completion?
RQ2 Is there a relationship between research productivity and years in thesis supervision?
RQ3 What are the supervisors' beliefs strategies and emotions about thesis supervision, and how do they relate to the findings of RQ1 and RQ2

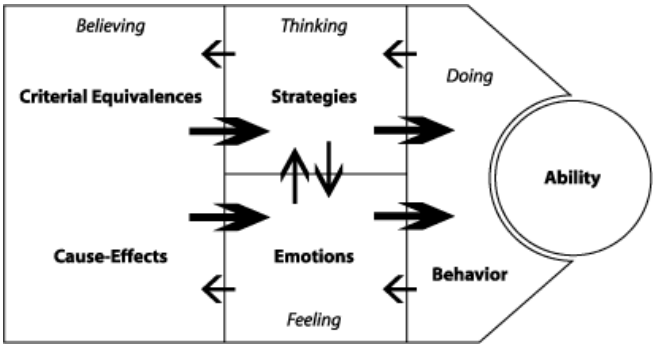
direction (*dirección individual*) where the variables 'years in thesis supervision' and 'theses supervised to completion' were identified.

The PRODEP Curriculum Vitae is a document that contains a person's career history. The persons who hold this type of CV are people who are part of a national program "*Programa para el Desarrollo Profesional Docente*" and the institution in charge of this program is the Secretary of Public Education (SEP). This program is designed to encourage fulltime higher public education teachers to not only teach but also conduct research. It also urges teachers to join or create research groups and to collaborate with different educational institutions; this is done through monetary incentives. For the purpose of this study PRODEP CVs were used since they are a way to know what the researcher has done in terms of production, supervision, and how long he or she has been doing it. The use of the PRODEP CVs also guarantees a certain level of trustworthiness of the CV data because all of it must be verified with the SEP before the PRODEP certification is awarded. The CV must be updated every three years.

3.4.2 The experiential array – RQ3

To be able to answer RQ3 an interview was conducted. Since beliefs, strategies, and emotions were the information that was needed, it was decided that the experiential array (Gordon & Dawes, 2005) was the appropriate instrument to gather that data (see Figure 3.1 below). A series of questions regarding the target ability was used to guide participants and the array was co-constructed with the interviewee. Gordon and Dawes' (2005) experiential array is designed to elicit beliefs, strategies, and emotions associated with the enactment of a particular ability (see 2.5.1 above for the theoretical discussion).

Figure 3.1 The Experiential Array



The array provides a template for the interview protocol sequence, collecting and arranging the elicitation interview data, and for collaborative construction. It is based on the 'map' and 'model' concept. As a map, per se, it does not represent the individual completely in performance of the ability, but it provides a sense of the person and his/her ability. Likewise, a 'model' is a condensed representation of the original system designed in some way that it becomes *useful* for the purpose it was constructed (Gordon & Dawes, 2005). A map / model of one exemplar's ability could contain much more information than a map of two exemplars. Making a model of the ability, means a reduction of data to create a general picture of the ability. This is discussed in more detail in the analysis section below (3.5).

3.4.3 Questionnaires – participant background information

As I mentioned earlier, this research project was part of a much larger study. Because of this, a questionnaire was administered to the math and physics faculty members with doctoral degrees and who were engaged in thesis supervision. The main purpose of this questionnaire was to explore practices associated with thesis supervision in a number of university departments. The questionnaire consisted of five sections (see Appendix D):

1. Demographic information,
2. Professional information,

3. Thesis supervision information,
4. Institutional elements associated with thesis production, and finally
5. Elements associated with specific thesis supervision practices.

There were a total of 47 items in a combination of multiple choice and closed-ended items. At the end of the first four sections of the questionnaire there were four areas were participants could add comments regarding the items in each section. I used some of this information to broaden my view of the type of participants and also to support some of the qualitative data.

3.5 Data collection procedures

This section describes the procedures designed and carried out related to the data collection. It is presented in the same order as above. First I describe the procedures associated with the documents, then the interviews, and finally the questionnaires.

3.5.1 Documents (PRODEP CVS)

These documents were stored electronically in the PRODEP / SEP website. Academics have a username and password and access their CVs via the internet. Before the interviews, the participants were asked to access their CVs and to copy the two parts relevant to this study: academic production and individual direction. The sections were copied into a Word document and then emailed to me. This worked well with many of the participants, but it was a difficult task because it was necessary to remind them to send it promptly.

3.5.2 Experiential array interviews

To obtain the data few steps were taken. First, an initial contact was made with participants through an email, phone call or office visits to invite them to participate in the research. During this first contact important topics were addressed like the background, objectives, and methodologies of the research. Anonymity and confidentiality were discussed at this time as well. After we came to some agreements a second face-to-face meeting was arranged and a date, place and time were set. All of the interviews were carried out in the participants' offices. At the beginning of each interview the procedure was explained (methodology and tape-recording). After checking comprehension, the interview was conducted. It started with small talk and an offer for something to drink. All of the above steps were taken to ensure that participants felt in some control over the process. Since this research was part of a larger study, at this point the questionnaires had already been applied and even analyzed.

3.5.3 Questionnaires

To be able to obtain more information, the questionnaires described above were administered to the target population. This was done in two different ways, one was through the use of technology where teachers had to answer an online version of the questionnaire (see Appendix E) and the other way was through walk in office visits and asking participants for their cooperation by taking the time to answer the questionnaires. The purpose of the study was explained as well as its length (between 40 and 60 minutes) and anonymity. While participants responded to the questionnaires they asked questions and even made some observations regarding the questionnaire.

3.6 Data Analysis

This section will provide a description of the data analysis procedures. First, it will describe the Elicitation array interview analysis. Second, the CVs analysis and, finally, questionnaires analysis will be addressed.

3.6.1 Documents (PRODEP CVS)

For the correlational design the data were collected using the participants' PRODEP CVs. The CVs were used in order to gather information about the participants' research production, the number of theses they had supervised successfully (those that indicated *completed* in the CV) and the number of years they had been involved in thesis supervision. The participants' PRODEP CVs were used to control the quality of the variables (as mentioned above, CV data is verified with original documents for the triennial PRODEP evaluation).

After the CVs were collected they were analyzed using established criteria. The data used from this instrument included the number of years in thesis supervision, the number of thesis successfully supervised to completion and participants' research production history. These were put into Microsoft Excel for the initial organization of the data. Next, the figures were entered into the program SPSS (ver.21) (*Statistical Package for Social Sciences*) which is computer software that aids researchers in the social sciences analyze their data more accurately using statistic. Because of the characteristics of the data, non-parametric Spearman's Rho correlation tests were used. Analysis steps in SPSS were carried out according to Pallant (2007).

3.6.2 The experiential array

For the analysis of the experiential array several steps were taken. First, after the interview was over, final notes were made to the array. After, the audiotape was heard again and was transcribed to ensure the accuracy of the information. Later on the interviews and the construction of the array data and notes were compared with the participant to ensure accuracy. Following, the results were shared with participants to make sure that the information was true and accurate.

3.6.3 Questionnaires

The analysis of the questionnaires was done by the theses supervisor because as mentioned before this research was part of a much bigger study.

3.7 Conclusion

In this chapter, I described the context of the research, the participants and the data collection instruments, the data collection procedures and the data analysis procedures. In the following chapter, I present the results of my study.

CHAPTER FOUR: STUDY RESULTS

4.0 Chapter introduction

As mentioned above, in this research the intention was to construct a theoretical framework for understanding possible correlations between thesis supervision and research productivity in a Physics and Math faculty. It also aimed to explore the thesis supervisors' beliefs strategies and emotions regarding thesis supervision. In order to fulfill the aim of the study, a mixed-method research was used. A quantitative method was adopted to answer RQ1 and RQ2, which were related to the participants' academic history and research productivity. A qualitative method was used to answer RQ3, which was related to the beliefs, strategies and emotions of participants regarding thesis supervision. This chapter will present the data analysis and the results for the information collected via the methods described in Chapter 3.

4.1 Research questions

The research questions that facilitated the guidance of this research were the following:

RQ1 Is there a relationship between research productivity and theses successfully supervised to completion?

RQ2 Is there a relationship between research productivity and years in thesis supervision?

RQ3 What are the supervisors' beliefs strategies and emotions about thesis supervision, and how do they relate to the findings of RQ1 and RQ2?

4.2 Theses successfully supervised to completion and Research productivity

The data for RQ1 is presented in the form of charts, graphs and discussion. This section offers a description of the research sample in terms of years in thesis supervision, number of theses supervised to completion, and the number of research products for the years 1990-2015.

The thesis data was obtained from the PRODEP CVs section *dirección individualizada* and the data for the research came from the CV section *Producción académica*.

Figure 4.1 Number of years in thesis supervision (1999-2015) (n=14)

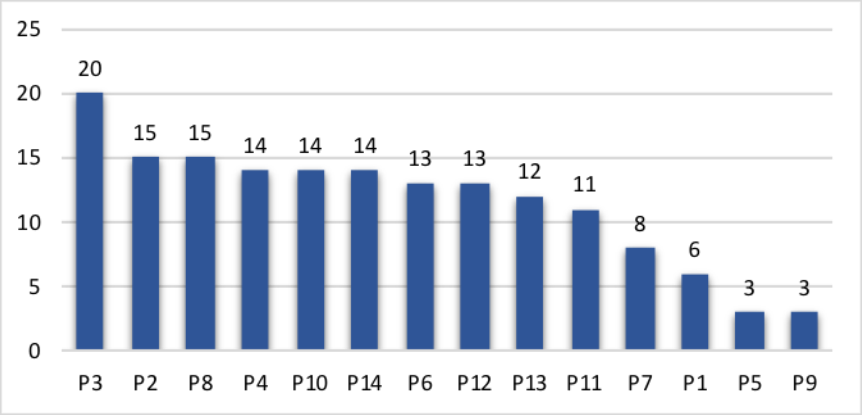


Fig. 4.1 shows the experience of participants supervising thesis in a sixteen-year period. It shows that the least experienced participant in thesis supervision has only 3 years and the participant with the most experience in thesis supervision has 20 years of experience and the overall medium is 11.5 years. In addition, the following graph shows the specific years of experience in thesis supervision.

Figure 4.2 Years in thesis supervision- percentages of the sample (n=14)

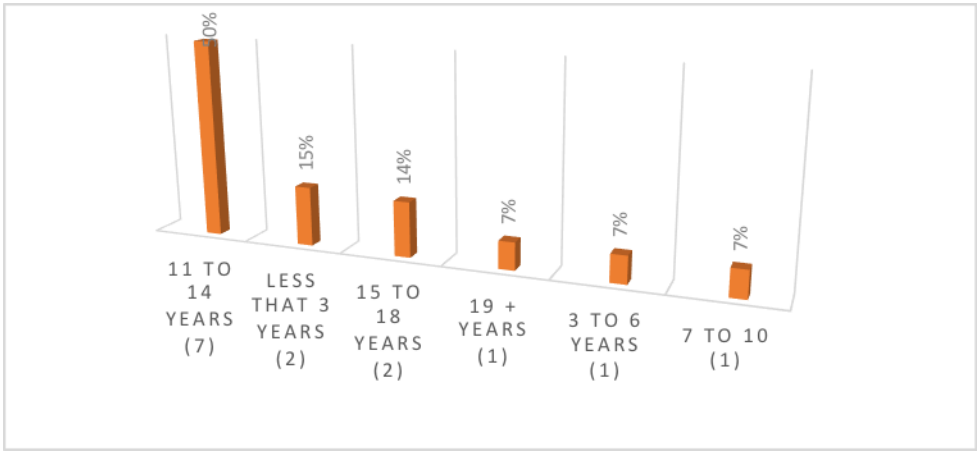


Fig. 4.2 shows the percentages of participants in years in thesis supervision. We can see that out of the 14 participants 15% have supervised theses for less than three years and that 7% of the participants have supervised theses for longer periods –3 to 6 years. Participants that have supervised thesis from 7 to 10 years make up 7%, the majority of participants have supervised thesis between 11 and 14 years with making up 50%. Furthermore, 14% of the participants have supervised thesis between 15 and 18 years. Finally, 7% have supervised thesis for 19 years or more.

Theses supervision is a common practice among higher education faculty because most higher education programs require that students produce a quality piece of research at the completion of their academic program. Students are able to complete this task with the help, support, and guidance of an experienced person, in this case the professor (Daloz, 1999). In fact the number of thesis undertaken by supervisors is abrege. This is shown in the following graph.

Figure 4.3 Theses supervised to completion (n=14) (1995-2015)

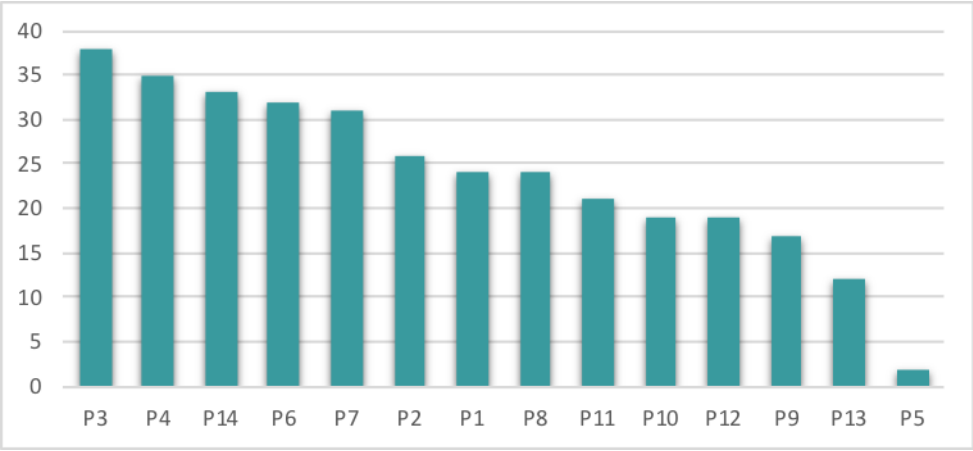


Fig. 4.3 Shows the amount of thesis successfully supervised to completion over a period of 20 years. We can see that the participant with the least ammount of thesis supervised is

participant number 5 and that the participant with the most supervised thesis is participant number 3 with 38 thesis. The medium for supervised thesis per participant is 23.3.

4.3 Research productivity and years in theses supervision

The data for RQ2 is presented in the form of graphs, charts and discussion. The following section offers a description of the research sample in terms of years in theses supervision and the theses supervised to completion, number and type of theses supervised, academic production in a fifteen year spand, research production and categories. It also discribes the research in terms of the years in theses supervision, number of theses supervised and research productivity. The theses data was also obtained from the PRODEP CVs section *dirección individualizada* and the data for the research came from the CV section *Producción académica*.

Figure 4.4 Years in thesis supervision and the theses supervised to completion (n=14) (1995-2015)

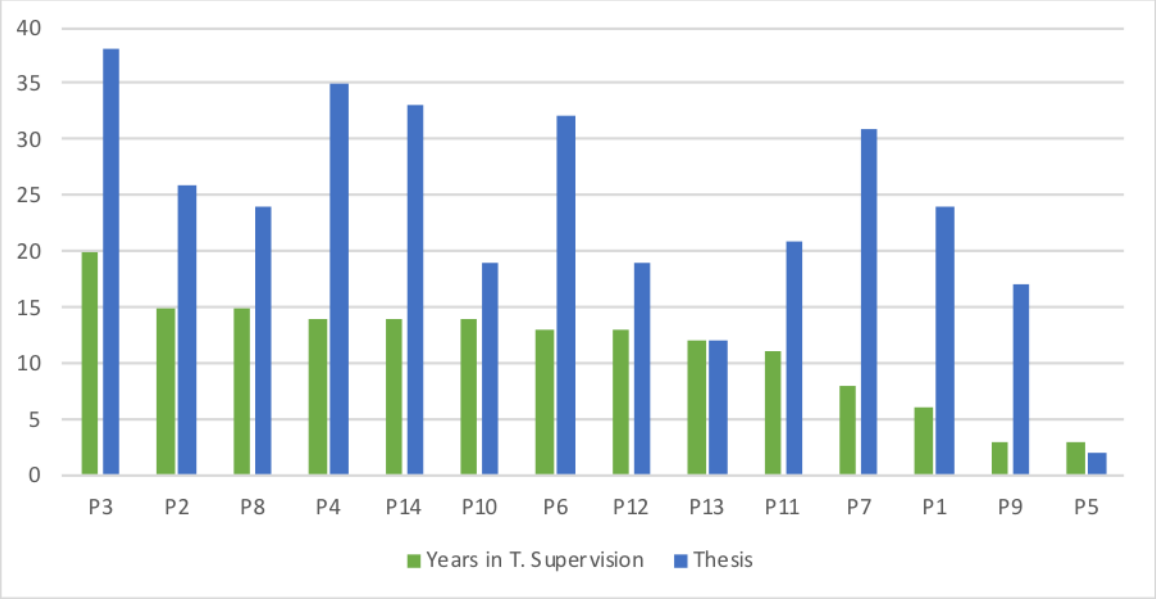


Fig. 4.4 shows a comparison of the years in thesis supervision and the number of thesis successfully supervised to completion over a period of twenty years. At first glance, it can be interpreted as if P3 has been the most productive in theses supervision over the course of 20 years. However, when analyzing this graph it can observed that P7 with only eight years of experience has supervised 31 theses, that makes 3.875 supervised theses per year. While P3 has produced 38 theses, that is 1.9 theses per year.

Table 4.1 Number and type of theses supervised by participants.

Participants	Years	BA theses	MA theses	PhD theses	Total
P1	2008-2014	20	3	1	24
P2	1999-2014	19	5	2	26
P3	1995-2015	15	17	6	38
P4	2000-2014	27	5	3	35
P5	2010-2013	1	1	0	2
P6	2000-2013	13	11	8	32
P7	2006-2014	9	14	8	31
P8	1997-2012	10	10	4	24
P9	2012-2015	8	5	4	17
P10	2000-2014	7	7	5	19
P11	2002-2013	12	6	3	21
P12	2001-2014	7	8	4	19
P13	2002-2014	11	1	0	12
P14	1999-2013	25	5	3	33

Table 4.1 shows the years in which participants have supervised theses. Also, it has the total amount of theses supervised by participants and they are classified into three different categories; Bachelors theses, Masters theses and PhD theses. The participant with the most supervised theses is P3 with a total of 38. Meanwhile, P5 has the least number of theses supervised: 2. This can be because P5 has only been supervising theses for only 3 years while P3 has 20 years of experience. After analyzing the data, it can be concluded that the level of

education where most theses are supervised is Bachelors level and the least amount of theses are supervised at a PhD level.

As I previously stated in chapter 2, research productivity is difficult to define and agree on. For this reason and for the purpose of this research the NBEET definition was taken into account. According to the NBEET, journal articles, books, book chapters and conference presentations are the most valued indicators of research productivity in the education field (NBEET 1993,1994).

Figure 4.5 Academic production (n=14) (1990-2015)

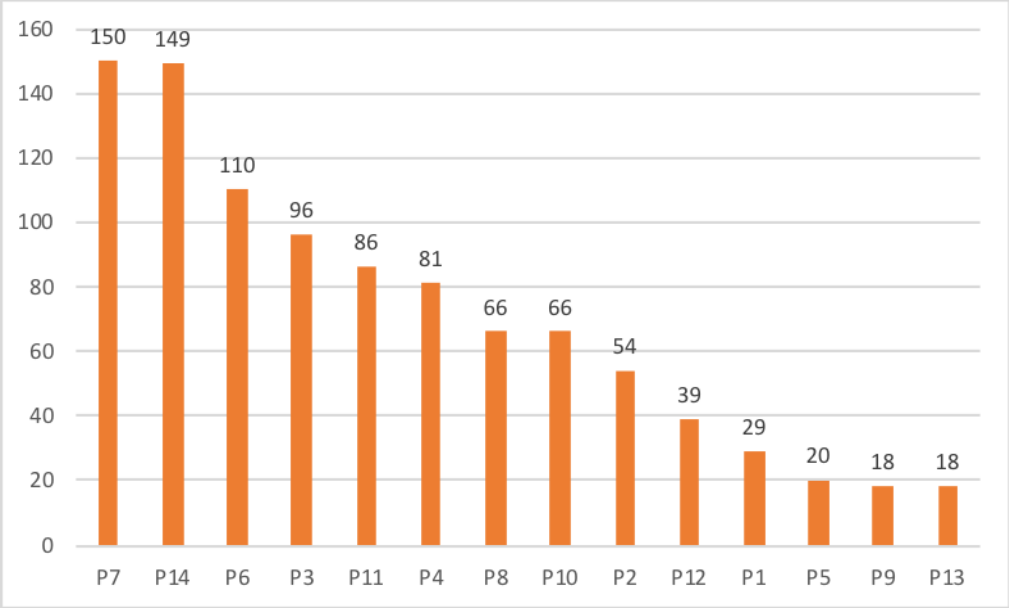


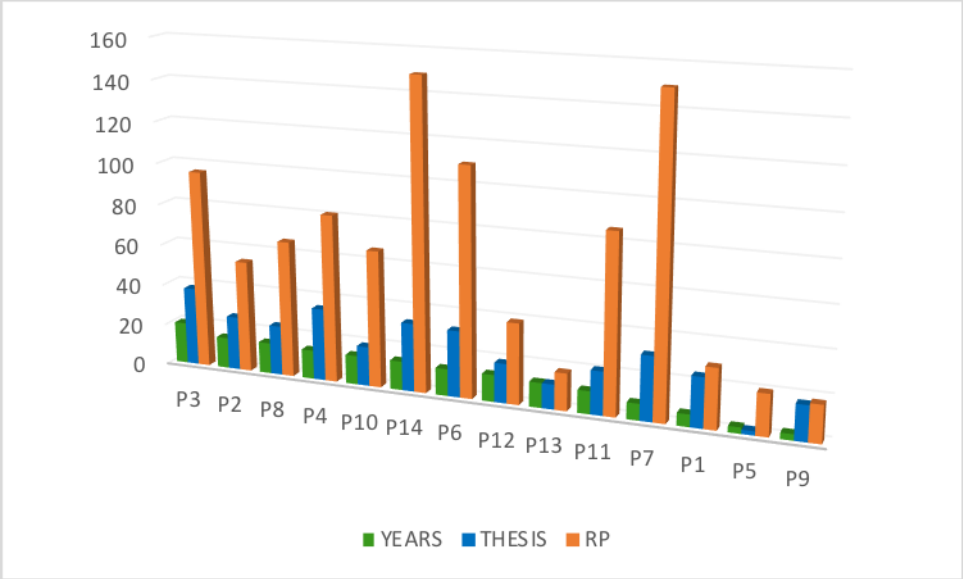
Fig 4.5 shows the amount of academic products that participants have produced in over a 25-year period. The participants with the least academic production are participants 9 and 13 with 18 products. The participant with the most products is participant 7 with 150 products. The medium for research production is 70 products.

Table 4.2 Research production and categories.

Participants	Years	Articles	Book chapters	Books	Others	Total
P1	2005-2014	25	4	0	0	29
P2	2003-2015	26	4	2	22	54
P3	1996-2014	15	6	8	67	96
P4	2001-2014	23	8	1	49	81
P5	1990-2012	10	8	0	2	20
P6	1990-2013	92	0	0	18	110
P7	1996-2015	144	0	0	6	150
P8	1997-2012	45	12	0	9	66
P9	1990-2015	8	5	0	5	18
P10	1996-2015	31	4	1	30	66
P11	1999-2014	82	0	0	4	86
P12	1998-2015	39	0	0	0	39
P13	1996-2014	17	1	0	0	18
P14	1999-2013	110	10	4	25	149

Table 4.2 shows the years that participants have been engaged in Research productivity (Rp) and the categories where they have been more or less productive. Rp is classified into four categories: articles, book chapters, books and others (creating teaching materials, talks, seminars). The category where participants had the most production was in articles. Participant 14 is the one that has had the most published articles: 110 to be exact. The category with the least amount of products is published books.

Figure 4.6 Years in thesis supervision, number of theses supervised, and RP (n=14) (1995-2015)

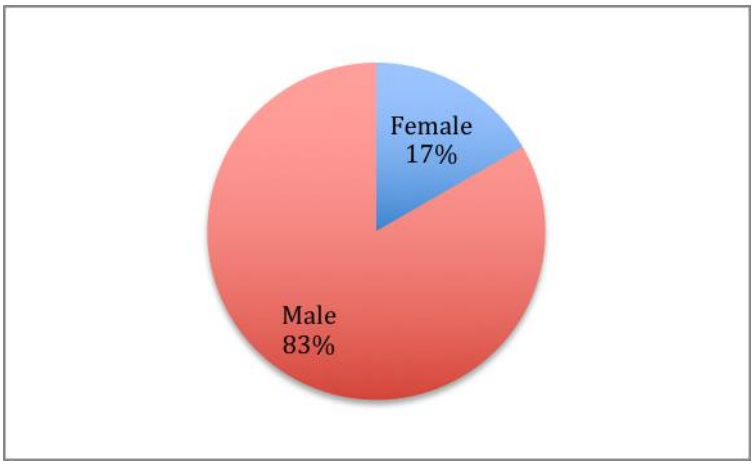


The above graph shows that the participants that have the most Rp are P7, P14, and P6. While the participant with the least amount of RP are numbers P13, P12 and P2. As it can be observed, even though P7 has only eight years in thesis supervision, he has 150 products and has supervised 31 theses. This means that P7 production per year is 18.7 and supervises an average on 3.8 theses. Likewise, P14 also has a high number of products (149) and has supervised 33 theses but this participant has fourteen year in thesis supervision, almost twice as long compared to P7. Furthermore, P6 has 13 years in thesis supervision and has 110 products and 32 supervised thesis. In contrast, we have participants that have a low production and low theses supervision. For example: P13 has twelve years in thesis supervision and has 18 products and 12 supervised theses. This means that P13 produces 1.5 pieces published research and supervises only 1 thesis per year. Additionally, P12 has 39 products and 19 supervised theses in a thirteen-year period. It can be analyzed that P12 has produced 3 published pieces of work per year and supervises 1.4 theses in average. Finally, P2 has 15 years in thesis supervision and has 54 products and has

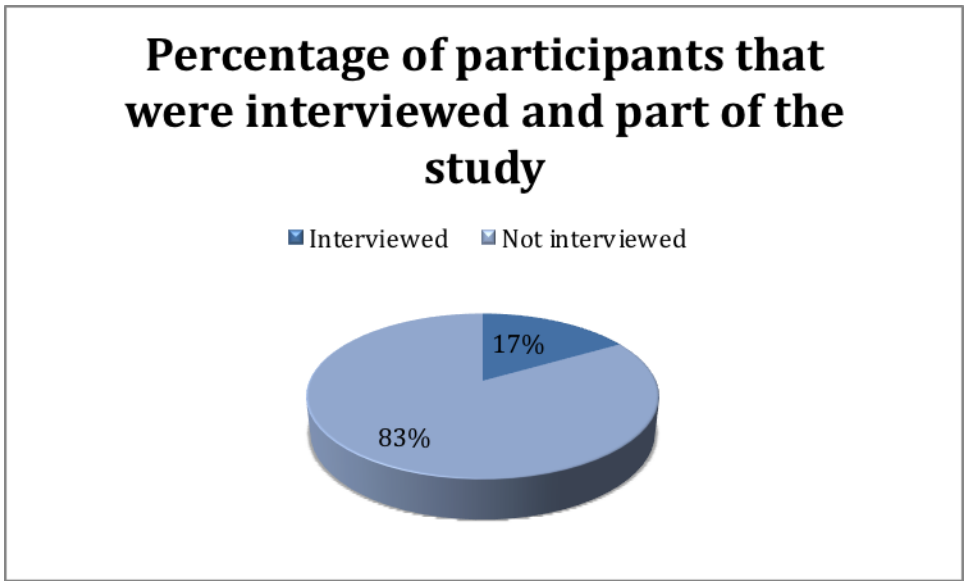
supervised 26 theses. Per year, P2 produces 3.6 pieces of published research and supervises 1.7 theses. It is significant to discover by analyzing the above graph that the more products a participant has, the more thesis participants tend to supervise.

At the Physics and Mathematics faculty where this study took place there were 114 professors in total, from which 90 possessed a PhD degree at the time of the study. For the purpose of this study we will focus on the participants with PhD. As shown in the next figure 4.7 83% out of the 90 participants were males and 17% females. I attribute the low percentage of female participation to the fact that for a long time, hard sciences (in this case math and physics) have been a male predominant area.

Figure 4.7 *Percentage of male and female participants*



The Fig. 4.8 below shows how from the 90 professors with a PhD degree 17% were interviewed and were part of this study, while 83% were not.



4.4 RQ1and RQ2 Correlation between research productivity and number of thesis successfully supervised to completion.

To be able to establish a relationship and strength between of the data previously presented above, Spearman's *rho* test of correlation was used. Correlation test were carried out on the variables identified in the hypotheses: RP, number of thesis successfully supervised and years in thesis supervision. The results are reported in the following tables.

Table 4.3

Correlation Between Research Productivity and the Number of Thesis Successfully Supervised to Completion.

			Research productivity	Number of thesis successfully supervised
Spearman's rho	Research productivity	Correlation Coefficient	1.000	.788**
		Sig. (2-tailed)	.	.001
		N	14	14
	Number of thesis successfully supervised	Correlation Coefficient	.788**	1.000
		Sig. (2-tailed)	.001	.
		N	14	14

**. Correlation is significant at the 0.01 level (2-tailed).

The relationship between Research productivity and the number of thesis successfully supervised to completion was investigated using Pearson product-moment correlation coefficient. As shown in the previous table 4.1 there is a 62% variance, statistically significant (p=.001) Strong positive relationship. Pallant (2007, p.1329) suggests the following guidelines determine the strength of the relationship: small r/rho = .10-.29; medium r/rho= .30-.49; large r/rho= .5-1.0.

Table 4.4

Correlation between research productivity and years in thesis supervision.

Correlations

			Research productivity	Years in thesis supervision
Spearman's rho	Research productivity	Correlation Coefficient	1.000	.406
		Sig. (2-tailed)	.	.150
		N	14	14
	Years in thesis supervision	Correlation Coefficient	.406	1.000
		Sig. (2-tailed)	.150	.
		N	14	14

The relationship between research productivity and the years in thesis supervision was explored also using Pearson product-moment correlation coefficient. The results shown in table 4.2 suggest that there is a 16% shared variance- small positive relationship.

4.5 RQ3 Supervisors beliefs strategies and emotions regarding theses supervision.

After having presented the results for the CVs in the previous section, the results from RQ3 the Elicitation Interview Protocol (Gordon & Dawes, 2005, pp.194-195) was used to collect the data. The interviews involved 14 participants. The following sections present the central tendencies found in the array data and then those findings are tied to RQ1 and RQ2 to create an overall image of the researchers. The raw data can be found in Appendix A.

4.4.1 Beliefs

Beliefs are thinking patterns. These thinking patterns develop from many sources and effect behavior. Understanding beliefs can therefore help us understand why people do what they do. In the elicitation array, beliefs fall into one of two categories – equivalency beliefs and

cause and effect beliefs. Central to both of those two belief categories is the *criterion*. It is the basis of evaluation of an ability. This refers to someone's assessment about his or her performance of the ability. In the case of the participants in the study, this ability was their thesis supervision. The generalized findings from the criterion are presented in the following section. This is followed by the presentation of the other two belief categories.

Criterion.

Most of the criterion beliefs expressed were related the supervisors' assessment of their thesis students. The most commonly reported element was the supervisors' assessment of the ability of the student to engage in thesis work. Their assessment was related to *adequate time available* and *personal disposition* of the students to do the work required. Other comments along these lines were related to the *student's adequate knowledge of the area* – having enough knowledge to be able to conduct research in the area. So in sum, most of the supervisors said that their central concern or what was most important to them was their perceived assessment of their thesis students' abilities to carry out research based on a number of characteristics.

Definition. When asked how they defined the criterion, their answers were centered at, logically, the student. By far the majority said that their definition was that the students dedicated what the supervisors regarded as sufficient time to their research – reading, writing and carrying out the research. Quite a few of them indicated the importance of the students' work as being aimed at making a contribution to science. But most of the comments were related to the students' willingness to learn, to dedicate him or herself, being able to deal with difficulties and setbacks, and being motivated.

Equivalencies-Evidence. The evidence that supervisors looked for is related to actual observation of their students. The supervisors schedule regular seminars; students do oral

presentations. They have a constant stream of reading and writing tasks which the supervisor assesses closely, and one participant described the evidence as being the student's independent problem-solving competence. In sum the evidence described by the supervisors indicates a very close contact and constant contact between supervisor and student.

Cause and effect -Enabling belief. The belief category elicits the supervisors' beliefs related to what someone needs to do to be a thesis supervisor. The most common belief mentioned was that a supervisor needs to have knowledge of what the student is researching. They felt this was *essential* to successful thesis supervision. A supervisor also needs the ability to listen and to dedicate the time to listening to her or his thesis students. And along these lines, a supervisor needs *empathy*. The supervisor needs to be a researcher, needs to know how to set goals and objectives. A supervisor needs to have experience as a supervisor. Finally, there were many comments about emotional aspects of supervision – a supervisor must be the kind of person who derives joy and satisfaction from helping students and must have a good attitude.

Cause and effect Motivating belief. This array category asks the participants to express *why* they supervise theses. Again the comments were centered around the students. Most said that they do it because they want to contribute to student development, to guide students, to help them understand often complicated topics and areas, to cultivate good reading and writing habits, and to encourage students to continue their educations. The supervisors also expressed being interested in helping to develop future competent researchers, to develop research groups, to transmit qualities of responsibility, tolerance, and patience – those qualities they feel are essential to scientists.

A few supervisors also listed instrumental reasons such as maintaining their membership in the SNI, to get grant money, and to have a positive effect on the common low graduation rates.

From their comments, it is apparent that most of the supervisors are motivated by intrinsic reasons and show a very clear desire to help students and to contribute to science.

4.4.2 Strategies

When anyone engages in an ability, they must also have some performance strategies developed to help them through the ability and to help them when their performance fails or is not satisfactory in some way. This section reports on the findings of the supervisors' strategies they hold and engage when supervising theses.

Primary Strategy.

Having regular meetings with thesis students was the most common strategy for ensuring successful thesis supervision. Around the meetings, the supervisors mentioned constantly supplying their thesis students with readings and tasks related to their work and then providing feedback to those activities. They also strongly encourage their students to participate in conferences, paper publishing, and going to seminars and talks. They also felt that frequent oral presentation of their work is essential for thesis students. Many mentioned things like having set times to meet with students, setting goals – short and long term, and working closely and collaboratively with their students.

Secondary strategies.

Secondary strategies are those that are engaged when primary strategies fail. The more secondary strategies there are, the more someone is able to perform an ability competently. When the primary strategy fails, the majority of the supervisors said they attempt to contact the student by phone and attempt to find out what the problem with them is. Some reassess the difficulty of the thesis topic, and when necessary revise or rethink the topic to make is more feasible according to the student's ability. Some said they look for ways to motivate the student – finding research money or modelling the research by showing examples in an attempt to reignite the student's interest. Interestingly, three supervisors expressed that they would drop the student or suggest the student look for another supervisor. One supervisor said he or she did not have any secondary strategies – viewing any attempts to get the student working as excessive pressuring which would be undesirable.

4.4.3 Emotions

The enactment of every ability involves emotions. Positive emotions are generally associated with competence in the ability. In other words, when we like to do something, we generally do it well. The opposite is also true. When we have negative emotions towards the enactment of an ability, we tend to avoid doing the ability at all costs.

Sustaining emotions.

This class of emotions are those that we hold towards the ability whether we are engaged in it at the moment or not. The supervisors said they felt mostly *satisfaction* from thesis

supervision. Other positive emotions expressed were: *happiness, joy, pride, gratification, pleasure, motivation, excitement, enthusiasm,* and even *vanity.*

Signal emotions.

These emotions provide feedback about the level of performance of the ability. As would be expected these range from positive emotions which signal competent performance to negative – *frustration* and *conflict* – when things are not going as expected.

4.6 How do the array findings help shed light on RQs 1 and 2?

The array data interpreted in the light of the theories on research supervision presented in Chapter 2, paint a positive picture of supervisors and students working together in successful research relationships. As indicated in the CV data, all of the participant supervisors had a large number of thesis successfully directed and had been engaged in the activity for a number of years[2]. As the findings for RQ2 indicate, there was a strong positive correlation between RP and number of theses successfully supervised. What appears from the array data is a set of beliefs about thesis supervision centered on ensuring the success of the student mainly and the contribution of their research to their fields of knowledge secondly. Thus, it could be claimed that according to the findings, those supervisors more intrinsically motivated and truly interested in their students will also have the same motivations and attitudes towards their own research. It has been shown and established through many years of research on motivation that intrinsic motivation is often a more successful gauge of success than extrinsic or instrumental motivation. In other words, when we do things because we are moved to do them from an internal source, we

[2] Two of the interview supervisors were not included in the CV data set but were known as competent and successful thesis supervisors in their particular research context.

tend to achieve better and more lasting success than when we are driven by external factors.

So the array data seem to have given us a possible *why* or an *explanation* for the correlations observed in the CV data. This idea is developed further in the following final thesis chapter.

CHAPTER FIVE: CONCLUSIONS

5.0 Chapter overview

This chapter presents the conclusion of the study. It explains the study findings and it also states the study contribution. It also shows the research limitations, possibilities or suggestions for further research. Finally, there is a reflective account and final comments about the research.

5.1 Findings

As previously mentioned, this study was carried out in a Physics and Math faculty**.** The main purpose of this research project was to identify possible relationships between research productivity and thesis supervision as well as to explore the supervisors' feeling towards thesis supervision. Due to the limited number of the sample no generalization can be made. A report of the findings based on the analysis of two sections of the participant's PRODEP CVs, and beliefs regarding thesis supervision are presented.

5.1.1 RQ1 Is there a relationship between research productivity and theses successfully supervised to completion?

The analysis reported in 4.1 revealed the number of theses supervised by the PROMEP academics during 1995-2015. The correlation test indicates a strong positive correlation between these two variables with a 62% variance, statistically significant (p=.001). Thus, findings provide support for research question 1 that the number of theses successfully supervised to completion has a large positive correlation with research productivity.

5.1.2 RQ2 Is there a relationship between research productivity and years in thesis supervision?

It appears from the information gathered on academic's PRODEP CVs that the number of years in thesis supervision varied greatly from one participant to another. Nevertheless, the correlation test reported in 4.2 suggests that there is a 16% shared variance- small positive relationship. Thus, research question 1 was supported within the limitations of this study- the number of years in thesis supervision is positively correlated to research productivity.

5.1.3 RQ3 What are the supervisors' beliefs strategies and emotions about thesis supervision, and how do they relate to the findings of RQ1 and RQ2?

Findings from the array show that there is a variety of beliefs, strategies and emotions that the participants have towards thesis supervision. Most of the supervisors said that what was most important to them was their perceived assessment of their thesis students' abilities to carry out research based on students' ability to engage in thesis work such as: time destined to their research project, personal disposition. That students devote sufficient time to reading, writing, and carrying out research. Furthermore, most researchers agreed that to be a thesis supervisor one needs to possess some essential qualities and abilities such as: have knowledge about what students are researching, the ability to listen, empathy, know how to set goals and objectives and to have a good attitude. Most supervisors are motivated to take on the tasks of supervising thesis by intrinsic reasons and show a very clear desire to help students and to contribute to science. When supervising thesis teachers have a set of strategies that helps students complete their thesis successfully. Teachers hold regular meetings with students, supply them with reading and writing task, encourage students' participation in seminars and talks. When the previous

strategies are not working, teachers implement a second set of strategies: contact students by phone, reassess the difficulty of the thesis topic and look for ways to motivate students. Three teachers did not have any secondary strategies. Teachers sustaining emotions towards thesis supervision are those of satisfaction, happiness, joy, pride, gratification. Nevertheless, there were emotions of frustration and conflict when things did not go the way they expected.

The findings for RQ2 reveal a strong positive correlation between RP and number of theses successfully supervised and that the findings from the array support it. Teachers' beliefs about thesis supervision are centered on making sure that students succeed and the contribution of their research to their fields of knowledge is secondary. Therefore, it could be claimed that according to the findings, those supervisors more intrinsically motivated and truly interested in their students will also have the same motivations and attitudes towards their own research.

5.1.4 Discussion

According to Connell (1985), thesis supervision is the on-going process of guiding, correcting, and motivating students, so that students can produce a quality piece of research at the end. Supervision is a genuinely complex teaching task. It requires a substantial commitment of time and energy. It involves grappling with a considerable range of problems, from technicalities of research design to the morale -and sometimes the health-of the student. And it never stands still, as the character of the relationship changes markedly over the years of candidature. (p.38). Print and Hattie (1997) define research productivity "As the totality of research performed by academics in universities and related context within a given time period" (p.454). These definitions and the findings summarized above suggest that there is a clear evidence that thesis supervision is an activity that improves academics' performance in the

research area. In other words, thesis supervision and the number of thesis supervised has a positive effect on academics' research productivity. The definition about thesis supervision implies some difficult task, however the time invested could be quite beneficial for research productivity.

5.2 Study contribution

This mixed method study about the relationship between thesis supervision and research productivity among PRODEP professors has made a useful contribution to an unexplored area of the ELT field as well as the Physics and Math field. Researchers of literature in supervision and in the area of RP reveled no similar studies looking for correlations between these variables. Therefore, this study has attempted to fill this gap.

The present study confirmed that the number of years the professor has been involved in thesis supervision is correlated with his research productivity. It was also found that the level of research productivity of each participant shows a strong correlation to the number of theses he has successfully supervised. This study has also helped shed some light on the professors' beliefs, strategies and emotions about thesis supervision and how they affect on professors' research productivity.

5.3 Limitations of the research

One of the limitations of this research was the sample size, only 16 out of the 90 professors who held PhD degrees at the time participated in this study, this means that only 17.7% of the total population participated. With this small percentage the results cannot be generalized to a wider population. Another limitation was the number of females that

participated in this study in comparison the male counterpart, only 2 out of the 16 participants were females, this means that only 12% of the data came from female participants. It would have been interesting to see a more balanced participation and to be able to compare male and female views on thesis supervision. The data collected for the quantitative part of the research came from two sections of the PRODEP academics CVs, there is a risk that the information may not be updated at the time the study was carried out. As a result, the research productivity and thesis supervision data may not be complete. Finally, the quality of academic production is unknown, since the PRODEP CV's were used only to collect numerical data and not to assess the research quality.

5.4 Suggestions for further research

Future research should include a larger number of participants to be able to use the results to make generalizations and it would also try to include more female participation. More research is needed when it comes to thesis supervision in different disciplines, to be able to learn and compare the different successful practices that are carried out by thesis supervisors. Another reliable data collection instrument is needed, besides the PRODEP academics CVs, to be able to compare and obtain updated and complete data.

5.5 Reflective account

When I started the MA program I was currently working for the *Programa Nacional de Inglés en Educación Básica* so I kind of knew that I wanted to do something in that context but as time passed by I realized that I was more interested in other academic areas. What made me decide my thesis topic was that once my thesis advisor and another professor came to talk to us

about a big project that they were doing in collaboration with other universities and that had to do with thesis supervision. After I had decided on the topic, I started planning my research project which I modified many times. The most difficult part of writing this thesis was establishing the theoretical framework because I had to develop specific skills that were needed such as: being organized, patient and the commitment to read with discipline. Deciding on the methodology and data collection instruments was not difficult at all because at that point in time I had already taken a research methodology course and was familiarized with the different research methods. Collecting and analyzing the data were the most difficult and time consuming task of all the research project. I had to send many emails, make phone calls and I also, had to wait for professors for long periods of time outside their offices to invite them to participate in my research project, some were hesitant to share their PRODEP CVs with me and I had to manage with rescheduling and even canceling many interviews. Furthermore, the data analysis took time and patience because I had to count each of the research products from the PRODEP CVs, and had to transcribe each of the interviews and listen to their recording just to be more accurate. My overall experience with this work has been a pleasant one since I have met and talked to people in the Physics and Math disciplines that have forever changed my perspective in regards towards them and the work they do.

5.6 Final comments

As stated at the beginning of this research project, this study originated for many reasons. The principal reason was to test out possible relationships between research productivity and thesis supervision. Another reason was the desire to explore thesis supervision in a Physics and Math faculty to look for models of successful supervision and see if those compare to other models of

supervision. Additionally, this research tried to explore the supervisors' feeling towards thesis supervision. Despite the limitations, this study has met its objectives. Research is an essential part of professors' careers in higher education institutions, so it is important to look for factors that may hinder or encourage research productivity such as thesis supervision.

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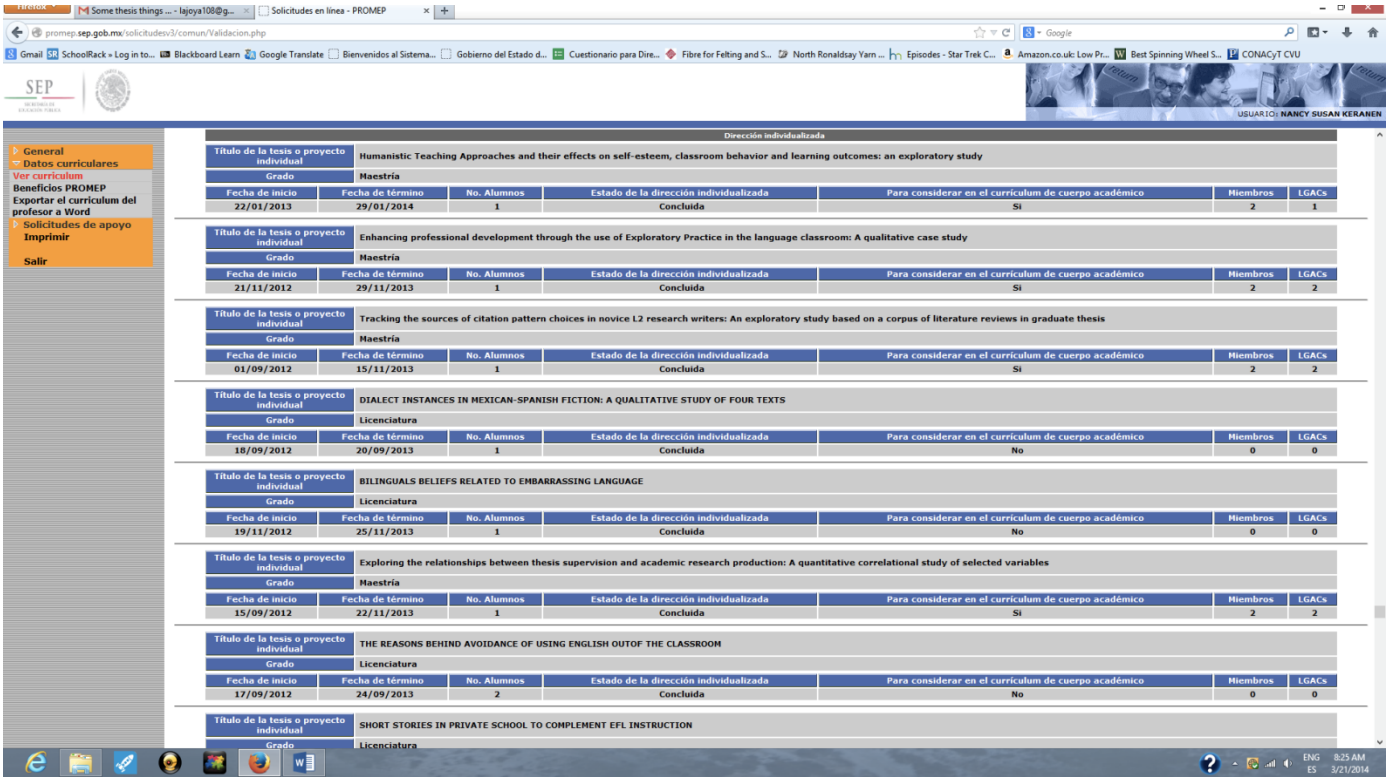
Appendix A- Sample of individual direction (PRODEP CV)



promep.sep.gob.mx/solicitudesv3/comun/Validacion.php

SEP

USUARIO: NANCY SUSAN KERANEN

- General
- Datos curriculares
- Ver curriculum
- Beneficios PROMEP
- Exportar el curriculum del profesor a Word
- Solicitudes de apoyo
- Imprimir
- Salir

Dirección individualizada

Título de la tesis o proyecto individual	Humanistic Teaching Approaches and their effects on self-esteem, classroom behavior and learning outcomes: an exploratory study					
Grado	Maestría					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
22/01/2013	29/01/2014	1	Concluida	Si	2	1

Título de la tesis o proyecto individual	Enhancing professional development through the use of Exploratory Practice in the language classroom: A qualitative case study					
Grado	Maestría					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
21/11/2012	29/11/2013	1	Concluida	Si	2	2

Título de la tesis o proyecto individual	Tracking the sources of citation pattern choices in novice L2 research writers: An exploratory study based on a corpus of literature reviews in graduate thesis					
Grado	Maestría					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
01/09/2012	15/11/2013	1	Concluida	Si	2	2

Título de la tesis o proyecto individual	DIALECT INSTANCES IN MEXICAN-SPANISH FICTION: A QUALITATIVE STUDY OF FOUR TEXTS					
Grado	Licenciatura					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
18/09/2012	20/09/2013	1	Concluida	No	0	0

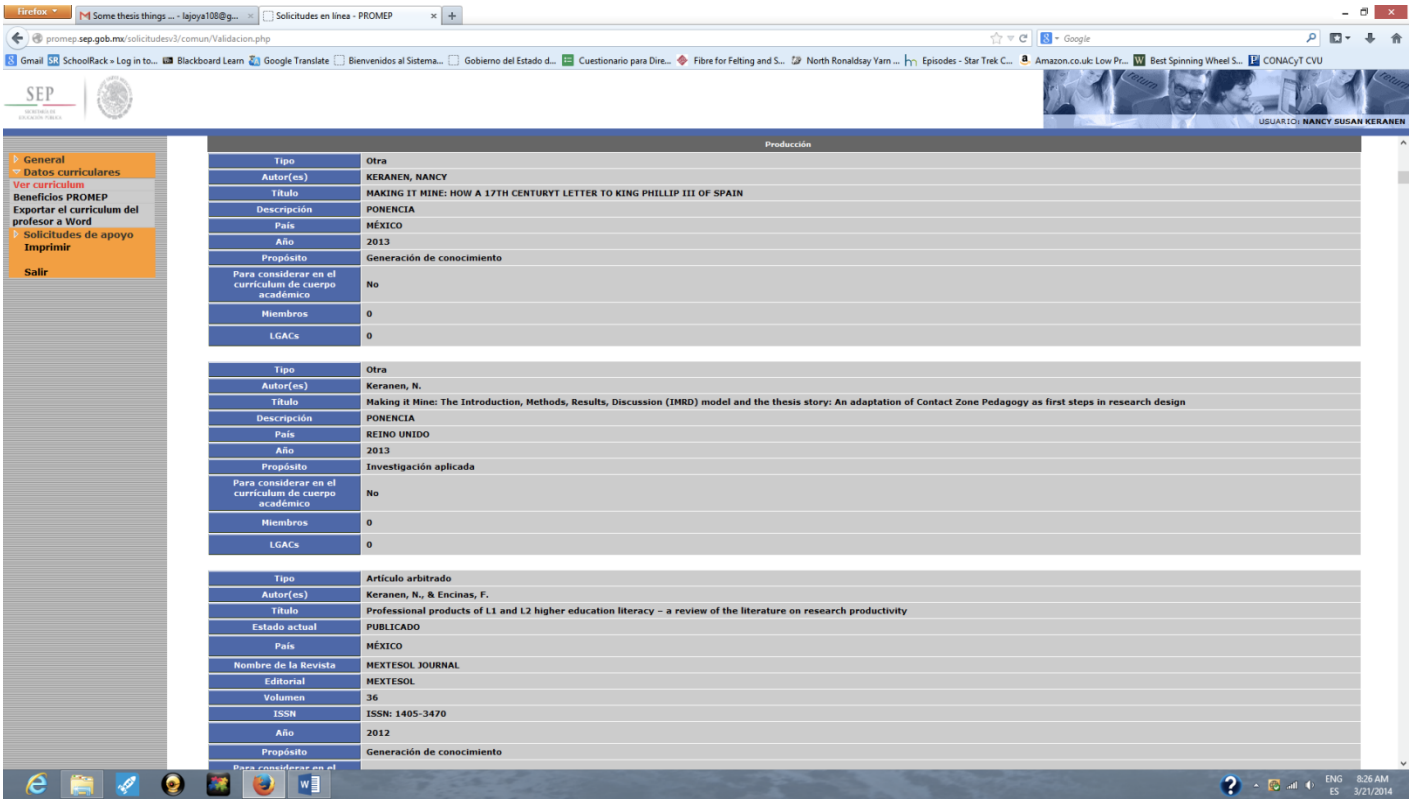
Título de la tesis o proyecto individual	BILINGUALS BELIEFS RELATED TO EMBARRASSING LANGUAGE					
Grado	Licenciatura					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
19/11/2012	25/11/2013	1	Concluida	No	0	0

Título de la tesis o proyecto individual	Exploring the relationships between thesis supervision and academic research production: A quantitative correlational study of selected variables					
Grado	Maestría					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
15/09/2012	22/11/2013	1	Concluida	Si	2	2

Título de la tesis o proyecto individual	THE REASONS BEHIND AVOIDANCE OF USING ENGLISH OUTOF THE CLASSROOM					
Grado	Licenciatura					
Fecha de inicio	Fecha de término	No. Alumnos	Estado de la dirección individualizada	Para considerar en el currículum de cuerpo académico	Miembros	LGACs
17/09/2012	24/09/2013	2	Concluida	No	0	0

Título de la tesis o proyecto individual	SHORT STORIES IN PRIVATE SCHOOL TO COMPLEMENT EFL INSTRUCTION
Grado	Licenciatura

Appendix B - Sample Academic research production section (PRODEP CV)



General
Datos curriculares
Ver curriculum
Beneficios PROMEP
Exportar el curriculum del profesor a Word
Solicitudes de apoyo
Imprimir
Salir

USUARIO: NANCY SUSAN KERANEN

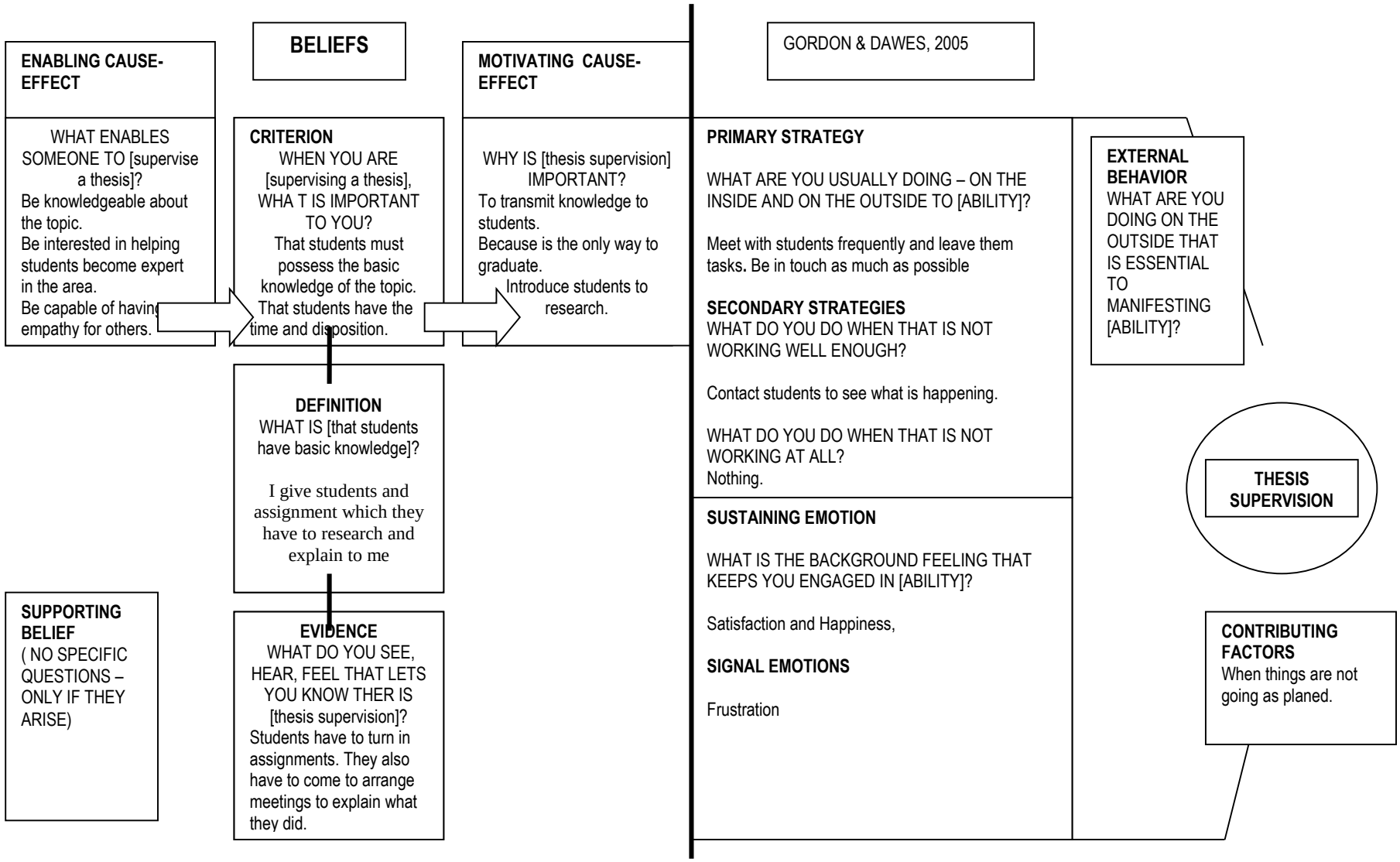
Producción

Tipo	Otra
Autor(es)	KERANEN, NANCY
Título	MAKING IT MINE: HOW A 17TH CENTURYT LETTER TO KING PHILLIP III OF SPAIN
Descripción	PONENCIA
País	MÉXICO
Año	2013
Propósito	Generación de conocimiento
Para considerar en el curriculum de cuerpo académico	No
Miembros	0
LGACs	0

Tipo	Otra
Autor(es)	Keranen, N.
Título	Making it Mine: The Introduction, Methods, Results, Discussion (IMRD) model and the thesis story: An adaptation of Contact Zone Pedagogy as first steps in research design
Descripción	PONENCIA
País	REINO UNIDO
Año	2013
Propósito	Investigación aplicada
Para considerar en el curriculum de cuerpo académico	No
Miembros	0
LGACs	0

Tipo	Artículo arbitrado
Autor(es)	Keranen, N., & Encinas, F.
Título	Professional products of L1 and L2 higher education literacy – a review of the literature on research productivity
Estado actual	PUBLICADO
País	MÉXICO
Nombre de la Revista	MEXTESOL JOURNAL
Editorial	MEXTESOL
Volumen	36
ISSN	ISSN: 1405-3470
Año	2012
Propósito	Generación de conocimiento

Appendix C- Elicitation Interview Protocol (Gordon & Dawes, 2005, pp.194-195)



Appendix D - Questionnaire for thesis directors

Núm: ____

Cuestionario para Directores de Tesis

Un grupo de investigadores, del país y del extranjero, nos encontramos investigando las prácticas de dirección de tesis en las instituciones de educación superior. El propósito es conocer algunos de los aspectos socioculturales que contextualizan la investigación que se escribe para la obtención de un título universitario. Dado que usted es profesor universitario con doctorado y seguramente dirige tesis, le pedimos nos responda el cuestionario que continuación se presenta. Su identidad se mantendrá en total confidencialidad. Los resultados se empelarán para sugerir políticas que contribuyan a que se facilite y se mejore la dirección de tesis.

Por favor seleccione o escriba la respuesta qué más se acerque a su situación como director de tesis. Agradecemos sinceramente su contribución a esta investigación.

➲ **Universidad & Facultad, Escuela, Instituto o Unidad Académica:** _____

SECCIÓN I DE V. INFORMACIÓN DEMOGRÁFICA			
1.1	**¿En qué rango de edad se ubica Usted?**	**1.3**	**¿Hace cuantos años obtuvo el grado de doctor?**
1	26 a 30	1	De 0 a 3 años
2	31 a 35	2	De 4 a 6 años
3	36 a 40	3	De 7 a 10 años
4	41 a 45	4	Más de 10 años
5	46 a 50	**1.4**	**¿En qué país obtuvo el grado de doctorado?**
6	51 a 55	**1.5**	**¿Es Usted miembro del SNI?**
7	56 a 60	1	SI ¿Desde qué año?
8	Más de 60	2	Nivel 1 2 3
1.2	**¿Es Usted...?**	3	NO
1	Mujer	¿Comentarios?	
2	Hombre		

SECCIÓN II DE V. DATOS PROFESIONALES					
2.1	**¿En qué área de conocimiento desempeña funciones de profesora investigadora?**	**2.5**	**¿Es usted el líder de ese cuerpo académico?**		
1	Ciencias Sociales	1	SI		
2	Ciencias Jurídicas y Administrativas	2	NO	3	N/A
3	Ciencias Exactas	**2.4**	**En total ¿cuántos artículos ha publicado en los últimos 10 años?**		
4	Ciencias Naturales	1	Ninguno		
5	Ingeniería y Tecnología	2	Entre 1 y 5		
6	Ciencias de la Salud	3	Entre 6 y 10		
7	Educación y Humanidades	4	Entre 11 y 15		
2.2	**El programa en que trabaja es principalmente ...**	5	Entre 16 y 20		
1	de investigación	6	Más de 20		
2	de profesionalización	**2.5**	**¿Cuántos libros ha publicado?**		
2.3	**¿El programa es reconocido por CONACyT?**	**2.6**	**¿Cuántos capítulos de libros ha publicado un los últimos 10 años?**		
1	SI	**2.7**	**¿Publica en un idioma distinto al español?**		
2	NO	1	SI ¿En qué idiomas?		
2.4	**¿Está usted en un cuerpo académico?**	2	NO		
1	SI – En formación ( ) En consolidación ( ) Consolidado ( )	¿Comentarios acera elementos en esta sección?			
2	NO				

1

Núm: _____

SECCIÓN III DE V. SUPERVISION DE TESIS			
3.1	**En promedio, ¿cuántos tesistas atiende por año como supervisor?**	**3.4**	**¿En cuántos programas de estudio tiene funciones de supervisor de tesis?**
1	De 1 a 2	1	En 1 programa de estudio
2	De 3 a 4	2	En 2 programas de estudio
3	De 5 a 6	3	En 3 o más programas de estudio
4	7 o más ¿Cuántos?	**3.5**	**¿De qué nivel(es) de estudios son sus tesistas? Puede marcar más que una opción.**
3.2	**¿Aproximadamente cuántas horas a la semana destina a la dirección de tesis?**	1 licenciatura	2 maestría
1	De 0 a 5 horas	3 doctorado	4 post-doctorado
2	De 6 a 10 horas	**3.6**	**En promedio, ¿qué porcentaje de sus tesistas presentar el examen de tesis?** (Una estimación de todas las tesis que ha supervisado)
3	De 11 a 15 horas	1 licenciatura ☐ %	2 maestría ☐ %
4	De 16 a 20 horas o más	3 doctorado ☐ %	4 post-doc ☐ %
		3.7	**¿Trabaja Usted en un equipo de tutores para la asesoría de tesis?** (trabajo colaborativo de tutores p.ej., en un laboratorio o con seminarios semanales o mensuales)
¿Comentarios acerca de esta sección?		1	**SI**
		2	**NO**

SECCIÓN IV DE V. ELEMENTOS INSTITUCIONALES			
4.1	**¿Existen en su institución opciones de titulación que desalientan la producción de tesis?**	**4.4**	**¿Existe en su institución o unidad algún documento que define los distintos aspectos relacionados con la producción de tesis? (por ejemplo: estructura, ética, tiempos, responsabilidades de tesistas, funciones del director)**
1	**SI** ¿Cuál?	1	**SI**
2	**NO**	2	**NO**
4.2	**¿Existen en su institución cursos o talleres de escritura de tesis?**	**4.5**	**¿Existe en su institución una política de fomento a la producción de tesis?** (p. ej. Puntos en evaluación docente para tesis dirigidas)
1	**SI** Curriculares y/o Extra-curriculares	1	**SI**
2	**NO**	2	**NO** 3 **NO SE**
4.3	**¿Existe en su unidad académica alguna política, ya sea explícita o implícita, o para que los tesistas publiquen en inglés?**	**4.6**	**En general ¿considera que los alumnos de su Unidad académica reciben el apoyo suficiente para producir Tesis?**
1	**SI**	1	**SI** - ¿Qué tipo de apoyo reciben?
2	**NO**	2	**NO** - ¿Qué tipo de apoyo debieran recibir?
¿Comentarios acerca elementos en esta sección?			

Núm: _____

SECCIÓN V DE V. FACTORES ASOCIADO CON SU SUPERVISION DE TESIS						
INSTRUCCIONES IMPORTANTES PARA ESTA SECCION Por favor, marque con una X el nivel de estudios en que elija: **licenciatura, maestría, doctorado, post-doctorado.** Responda a los siguientes ítems desde la perspectiva de SÓLO el nivel que marco anteriormente.						
5.1	¿Las tesis que dirige están directamente vinculadas a su línea de investigación?	0%	40%	60%	80%	100%
5.2	En general ¿considera que hay vinculación entre los contenidos de los planes de estudio y los proyectos de tesis que dirige?	0%	40%	60%	80%	100%
5.3	En general ¿terminan sus alumnos la tesis en el tiempo estipulado?	0%	40%	60%	80%	100%
5.4	En general, ¿se dedican sus alumnos de tiempo completo a su trabajo de tesis?	0%	40%	60%	80%	100%
5.5	¿Con qué frecuencia colaboran sus alumnos, unos con otros, en sus proyectos de investigación para la tesis?	0%	40%	60%	80%	100%
5.6	En general, ¿participan tesistas a su equipo de investigación o cuerpo académico?	0%	40%	60%	80%	100%
5.7	Busco a mis tesistas cuando se retrasan para conocer las causas del rezago.	0%	40%	60%	80%	100%
5.8	Con qué frecuencia hace comentarios por escrito sobre los avances de tesis de sus alumnos?	0%	40%	60%	80%	100%
5.9	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para definir el problema de investigación?	0%	40%	60%	80%	100%
5.10	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para formular las preguntas o hipótesis de investigación?	0%	40%	60%	80%	100%
5.11	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para redactar la justificación del estudio?	0%	40%	60%	80%	100%
5.12	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para comprender la literatura sobre el tema de investigación?	0%	40%	60%	80%	100%
5.13	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para distinguir los contenidos que se deben incluir en cada capítulo?	0%	40%	60%	80%	100%
5.14	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para argumentar por escrito?	0%	40%	60%	80%	100%
5.15	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para conectar ideas o secciones de la tesis?	0%	40%	60%	80%	100%
5.16	¿Con qué frecuencia encuentra usted que sus tesistas tienen dificultad para desarrollar sus ideas por escrito?	0%	40%	60%	80%	100%
5.17	¿Publica usted con sus tesistas?	0%	40%	60%	80%	100%
5.18	¿Publican sus tesistas en forma individual durante o al término de su tesis?	0%	40%	60%	80%	100%
5.19	¿Publican sus tesistas en inglés?	0%	40%	60%	80%	100%
5.20	¿Participan sus tesistas con usted en congresos y foros académicos?	0%	40%	60%	80%	100%
5.21	¿Presentan sus tesistas, en forma individual, en congresos mientras se encuentran realizando su tesis.	0%	40%	60%	80%	100%

Muchas gracias por su valiosa participación en este estudio. Si nos proporciona su correo electrónico, le haremos saber de los resultados.

Email: _____

3

Appendix E: Online Version Questionnaire

https://docs.google.com/forms/d/1c6m4_wnxy8L169E4QFuQjgxVUp65y2Wwq6YC1ttsIE0/viewform