Undergraduate Educational Research Experiences in the Study of Interior Design

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UNDERGRADUATE EDUCATIONAL RESEARCH EXPERIENCES IN THE STUDY OF INTERIOR DESIGN

by

Julia Virginia Pimentel Jiménez

A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Educational Leadership, Research, and Technology Western Michigan University April 2020

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Designers create social constructions (experiences and interactions) for human beings among themselves and with and within interior environments to enhance meaning in people’s lives (Poldma, 2011). Those social constructions are created through the design process developed by the interior designer; that process relies heavily on design research. Therefore, it is at the undergraduate level that the passion for research should start for interior design (ID) students. Faculty in ID programs need to encourage that passion by engage students in meaningful learning experiences such as how to ask questions about users, functions, activities, and aesthetics.

This study explored what types of undergraduate research experiences (UREs) faculty incorporate into the ID curriculum, and the perceptions of both students and faculty regarding the usefulness and educational impact of UREs. No previous studies have examined the issue of UREs within ID programs. There is no current knowledge regarding the degree to which current Dominican Republic (DR) ID faculty are providing their students with research experiences, nor information from students who are engaged in such UREs.

The themes provide details regarding an overall sense among faculty and students of the need for development of formal design research and implementation of strategies associated research in ID projects. The role of the university in supporting UREs, as well as the need for ID research leadership emphasize the importance of developing an adequate structure for research
that empowers faculty to create meaningful research experiences for students. Faculty are considering ways to support the production of knowledge in a collaborative, team approach. UREs connected the students to the discipline itself, in their own words. Students are conscious that research helps design decisions, and research is different from the design process.

The internship, the opportunity of practice was the most relevant component of the program according to the students. They explained the internship grounded the design research. Internship represents the real life, the real world. The practice gave them confidence as future practitioners. The findings from this study can open and inform professional and academic practice of faculty regarding UREs provided for the students, concerning the impact of their instructions on research skills achievement. The future of the ID curriculum, as considered by students and their faculty in their interviews, rests on research as the way to develop a body of knowledge for the field, and in the creation of a Dominican identity.
This dissertation is dedicated in memory of my grandfather, Dr. José de Js. Jiménez, M.D. My role model, whose example of limitless self-improvement, ethics and integrity, represents the reason to pursue this doctoral degree. Your spirit will always be by my side, guiding my steps.

Your life has been the inspiration to achieve my greatness.
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When I decided to start my doctoral studies, I never truly understood what I was facing at that moment. When we started the doctorate path we were expected to become experts in our field. At several points early on in this road, I was genuinely worried and overwhelmed whether I could ever live up to the expectations of others, and more importantly, myself. A true challenge for the body, the spirit and the mind. Exhaustion, countless sleepless nights, eternal days, uncontrollable tears and insane amounts of coffee. Five years ago, I started this Ph. D. in Educational Leadership, Research and Technology at Western Michigan University (WMU) with all the enthusiasm to contribute to my professional field. Five years since I went from being an individual contributor and moved into an educational-interior design leadership role.

I wanted to start these acknowledgements by taking a moment to be vulnerable and admit that my journey so far hasn’t been easy. But, thank God, these years have been full of support and I am sure this words will never adequately express my gratitude for those behind this achievement. I wish to deeply thank: My beloved husband and partner "in crime", my rock, Angel, for his unconditional support and love for better, for worse... My biggest encourager, who lifted me in my darker moments during the course of this Ph. D, and encouraged me through all the bumps and obstacles in this journey, specially stats! My father, whose spirit sustains me. My family, my furry kids and friends, sorry for all the time and space I took from you, where I was not present.

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Specially, to the participants in this research, faculty and students, whose love for the interior design profession filled the pages of this dissertation. I feel privileged to have you all as part of this reflection on undergraduate research experiences in the study of interior design.

Julia Virginia Pimentel Jiménez
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CHAPTER 1

INTRODUCTION

*Design IS problem-solving. Great designers ARE focused on making great products that solve people’s problems. The professional world simply needs to hit refresh on the definition of design. Yes, please: restructure! Make strong teams of collaborative problem-solvers from diverse areas of expertise. That IS design. So let’s call THAT “design-led” and move forward. (Baker, 2019, pp. 4-5)*

What is design? Is design as important as we think it is? According to Norman (2013), design is part of our everyday lives and a way of life. "We all experience the interior design of spaces daily" (Poldma, 2003, p.1). Everything that comes into our hands has design. And all that men and women have created has been designed. Design is a project activity that involves the conception of messages, objects and services. Design may have emerged as a response to a functional need, but it also satisfies the need for visual enjoyment -- aesthetics -- defined as the need to elevate the spirit through beautiful objects surrounding us. To design is one of the most important, complex and demanding tasks in human activities, and it has major effects on society (Norman, 2013). Designing demands high intelligence and skills (Yukhina, 2007). "Designing is commonly viewed as one of the most creative human behaviors. Many research efforts attempt to translate the designer’s way of thinking as an approach or methodology that drives human-centric innovation" (Hao, 2012, p. 15).

For Ching (2014), design is productive art, but it is also science. Design is, by nature, an integrative science because design requires creating something that actually works. The verb “to design” refers to the process of creation and development of a new object or means for the use of human beings. As a noun, design also refers to the final result of the process to design (Ching & Binggeli, 2018). While we are not always aware of it, design also becomes a vital element in the
everyday life of human beings to respond to the historical moment in which they live (Cross, 2017). In fact, a society could be known by the designs of its time and the designs will talk about that society’s identity. We can appreciate the utility of design all around us: from the spoon we use at breakfast to our toothbrush, the vehicle in which we move, the furniture we use, and the medical equipment that saves our lives.

A branch of design that often combines utility and meaning in the form of practical objects, while also reflecting the personality and aspirations of their users through its forms and themes, is interior design (ID). "We all experience the interior design of spaces daily" (Poldma, 2003, p. 1). The purpose of ID, in particular, is to increase the functionality, aesthetic enrichment, and psychological enhancement of an interior space (Ching & Binggeli, 2018). ID is about the relationship among human beings with the spatial environment (Poldma, 2003). Currently, ID goes beyond utility, styles and tastes to reflect how different cultures and individuals personalize objects. It also focuses on responding to environmental issues affecting the planet (Pimentel & Reyes, 2003).

Since design is affected by several factors including human, technological, contextual, socio-economic, and market forces, an interior designer requires an analytical mind and systematic thought, and needs to see him or herself as a life-long researcher (Pimentel, 2010). As a professional, the interior designer must be a keen observer, must learn to understand contexts and cultures in a schematic form, and be able to understand the reality of his or her surroundings. ID is a discipline that routinely is part art, part science and part technology. Hence, design is both a rational and experiential process. Design research is a knowledge-based method of structuring projects and using research to formalize multiple solutions to the same problem, solutions which may never be repeated from one designer to the next (Marenko, 2018).

According to Coleman and Magazine (2010):
The goal of design research is to test these relationships and to build a more credible basis for design decisions. This by no means denies the importance of intuition and new concepts in design. Intuition and imaginative leaps will always be present in good design—just as they are in good science. However, research will help to separate intuition that works from that which falls short of reaching design goals and objectives. (p. 330)

Therefore, the ID curricula of higher education programs equips future designers to perform effectively in new scenarios and prepare them for inevitable changes in the design process to occur. To meet the design challenges of these new scenarios, professionals should be trained with creative, and not merely reproductive capabilities and with rigorous scientific research to address and solve problems (Davis, 2008; Kitchell, 2014). To approach the complexity of contemporary problems in ID practice requires the development of a design research culture embedded within and from undergraduate ID programs (Davis, 2008). The design research culture constitutes a new paradigm that shifts the design process from objects and artifacts to experiences. It requires the production of new knowledge and methods to inform decision-making while designing. "It broadens the scope of investigation beyond people’s immediate interactions with artifacts and includes the influence of design within larger and more complex social, cultural, physical, economic, and technological systems" (Davis, 2008, p. 72).

**Background**

Over the course of a century, designers have gained mastery of a set of skills, that can be applied to complex social problems, strategic innovation and management in a productive way (Brown & Katz, 2011). Moreover, "design is not about creating things. It is about making decisions to solve problems. Design research is about fitting the right learning tools to the right kind of questions, doing the smart thing to derisk the decisions made" (Lambdin, 2019, p. 1).
Therefore, to make research a useful attempt for the practice of design (design research), a practical application of research is applied research, a methodology used to solve a specific, practical problem of an individual or group (Vink & Brauer, 2011).

With an increasing recognition of new ways of producing knowledge in a global knowledge economy context, there are essential skills required to be a successful designer at conducting applied research which is, "undertaken to improve the quality of practice of a particular discipline" (Merriam & Tisdell, 2016, p. 3). Because the creation of new knowledge is of vital concern across disciplines and is a key factor in the global economy (Guerin & Martin, 2010), academic training for future ID practitioners has to prepare them to solve complex interdisciplinary problems of human behavior and design. To achieve this aim, it is important to articulate the implementation of evidence-based design criteria and incorporate in the ID curriculum how research contributes to the body of design knowledge (Zimbardi & Myatt, 2012).

For Cross (2001), there is an intrinsic relationship between design and science. The design methodology lies in the scientific methods (i.e., systematic, reliable methods of investigation). The designer explores the problem through research, generating initial ideas for the form from a design concept, considering all implications in order to create a matching problem-solution (Cross, 2004). Wang (2007) describes research “as the generation of new knowledge which has application for a wide general domain, in a fashion as to be useful for multiple cases within that domain” (p. 34). Stolterman (2008) argues that designing constitutes a rigorous and disciplined process. An ID researcher designs and plans his or her research process to be consistent with the universal standards of science. A designer needs to undertake a design process that responds to the specific and unique demands of a given design problem.
Faste and Faste (2012) define research as a systematic inquiry to solve new or existing problems, to develop or to test new ideas and theories, and to establish novel facts (search for knowledge). They define design as an act of planning and communicating a plan of action developed through the creative exploration of an area of interest. Design is a generative, open-circular process that needs a phase of analysis, and a phase of synthesis, trial and error, and frequent reevaluation (Ching, 2014). Research is the core link of a project development process (design) and should be part of the overall design procedure (Shuying & Fan, 2015). Both inquiry methods, design and research, consist of planning, acting, observing and reflecting as a practice to create societal change.

Design needs numerous phases of inquiry, analysis, modeling, adjustments and adaptations to achieve the definitive production of the object or the final product. Design includes various disciplines and crafts depending on the object to design, as well as the participation in the process of one or several people (Ching & Bingeli, 2018). Blending the concepts of design and research together:

The term design research combines these two reasonably well-understood areas of practice, research and design, resulting in a seemingly meaningful merger roughly equivalent to the investigation of knowledge through purposeful design. In this regard, numerous authors have articulated design research as both the study of design and the process of knowledge production that occurs through the act of design. (Faste & Faste, 2012, p. 1)

Design research is a dynamic field in development, moving towards a more complex and central proposal (Sevaldson, 2010). From the arts to technology, the concept of design research has various definitions, fundamentally it is integrating research into the process of design; the research embedded within a process of designing something (Faste & Faste, 2012). Design
activity produces knowledge, and there are authentic opportunities to conduct formal research as part of design procedures in a broader and holistic perspective, as one of the most complex fields of knowledge production (Sevaldson, 2010).

Freach (2011) poses the question about the benefits of research and its use for the purpose of design. He considers research as a fountain to provide new ideas for designers. Carrying out a study will make a design project scientifically significant (Freach, 2011). Eaton (2015) considers design research as a fundamental part in solving relevant problems. The designer researches to understand the user’s needs in order to create products or experiences that respond to human demands. Eaton explains:

So why is design research so important? Design research allows us to understand complex human behavior by getting to the root of a problem by understanding a user’s needs, wants and goals. It also grounds us in what exactly shapes a user’s experience to help us solve for their top pain points. Overall, the data we collect through design research allows us to make decisions. This results in applying that data into useful applications that drive us to create products that are relevant, accessible and applicable for users and the people we work with, whether it be with stakeholders, product managers or other designers on a team. (Eaton, 2015)

For example, a micro-housing project in Hong Kong was conceived as the result of the study of Japan’s affordable housing crisis. It became a challenging design research problem. The modular home is made from a 2.5-meter-diameter concrete water pipe, a drastic design option for young people to live in a tiny footprint. The Opod Tube House is an experimental, low-cost, micro-living home with a petite living, cooking and bathroom facilities developed inside a 100-square-foot interior (Baum, 2018).
Resource Furniture is a furniture company that produces multifunctional transforming furniture that adds function and square footage to any space underserved by current housing options (Resource Furniture, n.d.). As the result of the study of American housing, the designers of the company worked on products to be sophisticated-designed but built for functionality (to have more than one practical function) to add space to their users’ space (Resource Furniture, n.d.).

**Undergraduate Research in ID**

For Denton and McDonagh (2003), there is a special importance to engaging undergraduate students in design research, a key attribute of any design project. Design research provides students with a better understanding of artifacts and products, within the frame of the social, cultural and historical context of the users. Design research, as a method for knowledge production, is a relatively new strategy to approach design from a systems-oriented design (SOD) perspective (Sevaldson, 2010; 2013). SOD is a methodology used by designers to better manage very complex issues where the design process is designed itself as a central strategy, and it is influenced and inspired by systems thinking, holistic analysis, and academic discipline (Sevaldson, 2010; 2013). The systems-oriented designer combines ethical matters with social, cultural and commercial factors, economics, new technologies, and sustainability; looking at limitless fields of patterns and interrelations. With a holistic overview, but attending at the details, the object of design (product, service or experience) is viewed from the broader system behind it (Sevaldson, 2010; 2013). For example, a project for a new payment terminal was developed through deep systems understanding of the shopping processes at super markets from a system for consumer empowerment. The consumers provided relevant inputs at the buying moment that contributed to the designer to make informed decisions during the design process (Sevaldson, 2013).
Zimmerman, Stolterman and Forlizzi (2010) considered the connection between Research Through Design (RtD), an action research approach used in the humanities and the social sciences that employs methods and processes from design practice as a legitimate method of inquiry for managing complex design issues. They were interested in a deep understanding of how theory, or knowledge, is produced from this type of design research (designing the design process) to support the design practice. For example, throughout history, designers have changed complex environments to align with humans needs and desires in a designerly approach. The City of Las Vegas is an example of a metropolitan city designed and developed as an oasis within the greater Mojave Desert, an arid rain-shadow desert and the driest desert in North America (MacKay, 2013) as the result of the practical interaction with the environment.

Undergraduate research (UR) is defined as an investigation or inquiry developed by an undergraduate student that produces an original, intellectual or creative contribution to the field (Wenzel, 2003). Involvement in undergraduate research experiences (UREs) is one vehicle to enhance the development of new professionals entering the labor market as practitioners in ID. To achieve such involvement in research, it is necessary for undergraduate ID instructors to engage their students in ID methods and processes (Poldma, 2008).

Unfortunately, undergraduate professional preparation programs find it challenging to prepare future design professionals who are able to function both as independent and strategic learners, as well as creators of the new knowledge via research demanded by their professions (Shaw, Holbrook, & Bourke, 2013). Particularly, knowledge creation is a major concern for programs that prepare ID professionals (Dickinson, Anthony, & Marsden, 2009) because design is the integration of technical, social and economic requirements, biological necessities, psychological effects, textures and materials, all interrelated with the environment. Design has the human being as its center, which implies a designer with a high level of ethical responsibility.
At the same time, it requires a high level of research (Cross, 2017), and research is science. As such, science leans on the scientific method for the production of knowledge, while design leans on the methodology of design for the same purposes, which are similar in the inquiry steps, but it does not necessarily imply rigorous research (Pease, 2014; Pimentel, 2010).

Focusing on ID undergraduate programs, Klingenberg (2009) considered that ID education must include teaching students to become researchers, which is broader than simply the training to become an interior designer. Klingenberg emphasized the need for the use of research to be stronger, so the ID profession can be recognized as a separate field of knowledge from Architecture. In a similar manner, Bates (2010) recommended that higher education institutions (HEIs) be responsible for engaging ID students in research activities related to innovation in the field of ID. To advance the field of study in ID, students must engage in research related to the built environment or built world involving any human-made setting destined for human activity (where people live, work, and recreate on a day-to-day basis) that ranges in scale from buildings to parks (Lee, Mikkelsen, Srikantharajah, & Cohen, 2012).

Research must be the grounds within any field of knowledge in the sciences or humanities disciplines, including ID. The UREs of students will provide an impactful teaching-learning foundation for faculty to emphasize a deeper development of inquiry skills, knowledge acquisition and knowledge production through instructional decisions at the curriculum level (Mendoza, 2015). The 21st century ID practice requires a re-examination of the traditional education of the field, to integrate research across the ID curriculum for both undergraduate students and faculty and the recognition of the importance of design research to current design practice (Davis, 2008). According to Davis, this will help to incorporate the notion of a design research culture as a major paradigm shift in the profession. ID is a field with a very short history of research, but a long history in know-how to solve problems (School of Bauhaus
tradition) from information inquired at the surface level (Davis, 2008). The foundation for the evolution of the discipline of ID is building theory and knowledge that can be generalized to many projects. As universities in Latin American are facing major changes in general (institutional and academic), the development of scientific research skills in undergraduate students is one important and needed strategy to improve the teaching and learning process (Alvarado, León, & Colon, 2016).

**Problem Statement**

Since the 1970s, the profession of ID has evolved dramatically from one based merely on aesthetics and an ornamentation curricular core, to being a certified profession based on designing environments for human behavior using applied scientific principles (Pable, 2009).

The ID discipline has become a very complex field and needs a research-based body of knowledge to respond to the users of interior spaces (Dickinson et al., 2009). According to Dickinson et al. (2009), it is not possible to expect the profession to value research if it is not taught or valued at the undergraduate level. Clearly, in higher education, academics tend to focus their teaching role on courses and their research role on final research projects or on research programs outside formal classes, but undergraduate students´ research engagement needs to permeate all curricular and pedagogical decisions (Brew, 2013). This is a particular case for undergraduate education and particularly in the DR, which is not the case for research universities abroad.

Balster, Pfund, Rediske and Branchaw (2010) consider undergraduate research (UR) a transformative experience, which increases students´ research competencies, and produces readiness for future postgraduate education. They also concluded that UR helps students establish positive relationships with their mentors, and create a learning research community. Lopatto (2006) considers undergraduate research experiences (UREs) the example of engaged
and empowered learning, attaining a wide range of educational goals. Recruiting undergraduate students to conduct research is a very important experience as it gives them the opportunity to engage in research before they enter postgraduate life; often students who make it to graduate programs have to start from scratch in developing research skills (Bowers & Parameswaran, 2013; Davis, 2008; Green, Lawrie, Myatt, Pedwell, Wang, Worthy, & Rowland, 2014; Lopatto, 2006; Pable, 2009).

**Practical and Researchable Problem**

The topic of engaging undergraduate ID students in the research of their discipline (as both consumers and producers of research) is just emerging in the ID research literature (Bowers & Parameswaran, 2013). There is some thought in the ID community that it is important to develop qualified ID educators who can provide their students with experiences contributing to research in the field as well as providing instruction on the established elements of the ID discipline (Guerin & Martin, 2010). It is necessary to reshape the future of ID education, specifically with training younger generations of educators in research (Kroelinger, 2007).

The definition of research is not clearly understood by the ID education community (Dickinson et al., 2009; Huber, 2018; Marenko, 2018). There is also confusion over the definition of research among ID faculty and students at the undergraduate academic level, and the profession has not developed consensus on this matter in the last 15 years. Dickinson, Marsden and Read (2007) asserted that ID students are not very clear about the differences between gathering information and generating knowledge.

Research in ID may not look like research in other disciplines. In ID, research focuses on the central notion of ill-structured problems or new problems that have no clear procedural or predetermined path to solve them, and they may have many different solutions, which is the very nature of design problems (Dorst, 2006). More recently, Avdiji, Elikan, Missonier and Pigneur
(2018) stated that the nature of design research depends on providing structure to a problem, because design consists of identifying and providing answers to a non-apparent (i.e., not evident or obvious) problem; design is inherently a problem-solving activity (Böhmer, Sheppard, Kayser, & Lindemann, 2017). For the purpose of a better understanding of the term problem in design, there is need for a clarification. Problem is related to a decision-making dilemma or a particular situation or issue to address.

Davis (2008) considered that both the incorporation of and development of research in design indispensable. Indeed, the integration of research in ID within undergraduate education via UREs should be explored in order to give the complex field of ID a research-based knowledge to respond to the needs of users of interior spaces (Dickinson et al., 2009).

Need for the Current Research

Several studies have investigated various aspects of the UREs. For example, Lopatto (2007) found that students in UR courses in science who are mentored by an experienced researcher gain a variety of competencies that include research design, data collection and interpretation, information literacy, communication, and computer work. Students also reported gains in independence, intrinsic learning motivation, and active participation after their summer UREs. In addition, Lopatto found that undergraduate students who experienced research continued to plan for postgraduate education in the sciences. Mendoza (2015) proposed the need to understand UR in the humanities disciplines, opposed to imposing a STEM (science, technology, engineering, and math) framework for unique learning experiences. For Brew and Mantai (2017) different practices and varying opportunities can be developed depending on those different definitions of UR.

UREs are examples of engaged and empowered learning, attaining a wide range of educational goals and engagement benchmarks (Lopatto, 2006). They include high academic
challenge, active and collaborative learning, intense student-faculty interaction, enriching educational experiences, and supportive campus environment (Lopatto, 2006). Studies analyzing a UREs model that engages students to undertake a research problem for a large period of time have revealed that exposure to research develops high levels of students´ commitment and results in greater academic success (Zimbardi & Myatt, 2012).

Russell, Hancock and McCullough (2007) found that undergraduate research opportunities (UROs) increase understanding and awareness for students. Their study affirmed that conducting a research project increased students´ confidence in their research skills, as well as their awareness of graduate school and related expectations. They also found that undergraduate students exposed to UROs are more likely to pursue advanced degrees and careers in science, technology, engineering, and mathematics fields. Other studies have found that students are not very clear about the differences between gathering information and generation of knowledge (Dickinson et al., 2007). Such findings have led researchers to conclude that research experience should be extended to the undergraduate level, regardless of the program students are undertaking (Shaw et al., 2013).

Research is sparse regarding the integration of research experiences in undergraduate ID programs (Dickinson et al., 2007; Dickinson et al., 2009; Rust, Mottram, & Till, 2007) and not available at all within the Dominican higher education literature. In addition, how ID instructors use UREs with their students and how ID students view such research has not been examined yet in the DR, even though research has been a discussion topic for several decades among faculty of schools of ID in the country. There is a considerable amount of data from case studies demonstrating that UR is a meaningful educational activity (Zimbardi & Myatt, 2012), yet the integration of research experience into undergraduate ID programs is relatively recent in general, and only currently being considered within the DR context.
Because UREs are a global phenomenon, and realizing that they are the highest quality in education (Lopatto, 2010), there is need of studies in many different kinds of professionals and sort of traditional undergraduate programs to best understand what their impact is. Most of the UR has been done on purer kind of sciences and less on applied research like could be found in design, art, engineering, where it is a heavy component. No previous studies could be found on this topic in the DR, studies are needed to explore and describe how ID students in the DR regard the importance of developing research by actually interpreting design research, and analyzing new information and methods. No research could be found that involved offering undergraduate ID curricula opportunities for students to conduct relevant research, and then capturing information from students about such experiences.

**Purpose Statement**

The purpose of this qualitative, instrumental case study was to describe the state of integration of research experiences into the coursework of an undergraduate ID program in the DR. The study sampled students and faculty of a private university in the DR that provides an ID undergraduate program to generate a full picture of where, how, and why faculty do or do not provide students with research experiences during the undergraduate ID program.

The case explored how students describe and ascribe significance to their experiences with research during their undergraduate studies. Through a case analysis, this study established a basis for understanding current practices in this ID program relative to faculty providing students with research experiences and to ascertain how students are responding to those practices.
Research Questions

The overarching research question for this study was: What kinds of UREs do faculty incorporate, and how do students and faculty regard their place in an undergraduate ID curriculum?

Additionally, this study was guided by the following two sub-questions about students and faculty and the subsequent questions for each:

Students

1. How do ID students describe their UREs?
   a) How do ID students believe their experiences with research contributed to their undergraduate coursework?
   b) In what ways do their experiences with research during their undergraduate work influence their dispositions toward involvement with ID research after graduation?

Faculty

2. What strategies do ID faculty utilize to incorporate UR in the courses they teach?
   a) How do faculty describe their own professional involvement with research in their field?
   b) How do faculty describe the ways they incorporate research into their ID courses?
   c) What do faculty believe is the role of original research in the ID undergraduate program and why?
Significance

The integration of research across the undergraduate curriculum should be considered more than just coursework for undergraduates, even though it is a mandatory subject for postgraduates and scholars and has important implications for undergraduates’ opportunities (Bowers & Parameswaran, 2013). Integrating the production of original research into undergraduate ID studies is an emerging idea, so it is important to explore how undergraduate students perceive research and respond when called upon to conduct research in their coursework. Learning more on these issues could help inform the way research should be approached in the future at the undergraduate level (Bowers & Parameswaran, 2013).

There is value to exploring how students within an ID undergraduate program in the DR understand the importance of using research as part of preparing new professionals to enter the labor market as practitioners in ID. There is a need, as an implication for practice, to have a coherent framework that can contribute to curricular and pedagogical decision-making for undergraduate student research (Brew, 2013). No less important, however, "there is a need to explore how faculty perceive research in their disciplines, the place of undergraduates in that research, and the structures needed for undergraduate researchers to be successful" (Mendoza, 2015, p. 59).

Such knowledge is important because in order to improve the education of interior designers, we need to provide ID students with a significant UREs (Green et al., 2014). There is a need for at least a baseline understanding of how ready ID students in the DR are to embrace the need for firsthand research experiences in undergraduate studies. There is also a need to explore how DR students respond when they do get opportunities to engage in original research within their ID coursework. Moreover, the entire ID community (design practitioners, professionals, graduate and undergraduate students; and design educators or faculty) could
benefit from such additional knowledge because the findings could be a useful guide for them to create systemic UREs within ID programs (Zimbardi & Myatt, 2012).

**Conceptual Framework and Narrative**

There are three theories which served as frameworks (lenses) for my research. First, Evans (2007) presented the role of research leadership among British HEIs to develop a *research culture* that derives from developing research capacity of individuals and research work-related attitudes. Second, Brew (2013) presented a critical examination of the literature surrounding the need for a coherent framework for curricular and pedagogical decision-making regarding undergraduate student research. Her meta-analysis focused on a framework that originated from UR literature in different countries, involving the engagement of students in research and the implications for practice: *The Research-based Learning Theory*. Third, Sevaldson (2013) developed a *Systems Oriented Design* (SOD) model to address the process of changes and challenges that designers face in their practice every day due to the increasing need for sustainable development and the increasing degree of globalization. The SOD model is a skill-based approach that is constructed on designerly skills (abilities or aptitudes of a designer), and inspired by modern systems thinking and systems practice.

The SOD model integrates systems thinking and management tools to improve and better train students when they deal with difficult and complex problems as designers (Sevaldson, 2013). SOD complements the design process through active inquiry and projection of several relations for specific design interventions. It helps designers to reach solutions that fuse ethical issues with global problems, such as sustainability, economy, the new technologies, etc., while incorporating social, cultural and commercial concerns. Using these theories as a lens, I fully illustrated the conceptual map for my study in Chapter 2.
Under the scope of UREs as a new paradigm for the generation of new knowledge, and the future of the profession in ID (Dickinson et al., 2007; Dorst, 2010), I emphasized on the experiences of students in taking UREs degrees as a foundational opportunity to exercise research skills to promote postgraduate decisions to continue research in ID (Guerin & Ranasinghe, 2010).

**Methods Overview**

This study was designed as a single, qualitative, instrumental case study with multiple data sources because I wanted to develop an in-depth understanding of the research experiences for undergraduate ID students within a school of ID at a private university in the DR. The purpose of this design was to describe the state of integration of research experiences for the students into the coursework of the program by the faculty. I generated qualitative inquiry data through interviews and the collection of relevant artifacts from the ID program.

The population pool from which the sample for this study was recruited was all students taking their final research project at a school of ID of a private university in Santo Domingo (currently 17 students) and all members of its ID faculty (currently 18 teachers). Data collection methods included: (a) a review of all ID program course syllabi, and final research projects; and (b) semi-structured, face-to-face planned interviews with seven students that participated in my dissertation field study to make a follow-up of their progress in research at the end of their ID program, and 13 members of the faculty.

Given the interpretive approach (qualitative in nature) of the study, the main method to collect data was semi-structured interviewing. This type of interview provided a holistic understanding of the interviewees´ point of view on how research is experienced by undergraduate ID students and faculty. In qualitative research, the researcher is the instrument, and I was fully engaged by deepening into the participants´ perspectives (Merriam & Tisdell,
2016), and allowing them to present their points of view regarding their own UREs in genuine, conclusive forms (Patton, 2014).

**Chapter 1 Closure**

The education of future interior designers requires them to learn to think in broader contexts of relations. It must lay the foundation of increasing awareness facing a reciprocal relation between human being and environment, natural and artificial surroundings, between past and present, tradition and innovation, between cultural identity and global objectives. This can only be approached through more research-focused instruction and learning opportunities.

This study allowed me to explore the experience of engaging undergraduate students in research (Hunter, Laursen, & Seymour, 2007) and faculty perceptions regarding UR (Dickinson et al., 2009). UR is considered a transformative experience that increases students´ productivity and research competencies, and readies them for future graduate education (Balster, Pfund, Rediske, & Branchaw, 2010). UREs help students to establish positive relationships with their teachers and create a learning research community where they feel they belong as members.

Therefore, with this study I better comprehended students and faculty understanding of the role and use of UREs in the study of ID. Academics and students that work together learn and solve problems with the vision of scholarly knowledge-building communities (Brew, 2013). Chapter 2 focuses on the literature review for my full dissertation on educational UREs in the study of ID. These themes are connected to my conceptual model for the study in a very concrete way. I present the results of my field study. Chapter 3 focuses in explaining the methods selected to collect qualitative data for my proposed study on educational UREs in ID. In this chapter, I explicitly address my own placement as a researcher. In Chapter 4, I present the case and in Chapter 5, I present the results of the data collected from these participants: the
emergent themes and sub-themes, and a recap of the research purpose and questions. Finally, Chapter 6 focuses on the discussion and recommendations.
CHAPTER 2
LITERATURE REVIEW

Everyday context of any design practice requires dealing with a design task affected by multiple and complex variables, such as demanding and stressed clients and users with insufficient information about their needs, using new technology and materials, under limited time and resource constraints, with inappropriate tools, and limited knowledge and skills (Stolterman, 2008). According to Nemeth (2014), "Interior Design (ID) practitioners do not conduct research in the traditional academic sense" (p. 6). Instead, design involves a process for generating new knowledge: design methodology.

The integration of research into ID curriculum has important implications for undergraduate learning opportunities, which is why ID undergraduates should be trained in and participate in UREs (Behrend, 2010). Even though some might view it as just more optional coursework for undergraduates, ID research is a mandatory subject for postgraduates and scholars (Bowers & Parameswaran, 2013).

In this chapter, I examine past research that explores UREs, with special emphasis on ID students and their faculty. First, I present the literature on ID practice and design process. Following by the ID education. Next, in order to understand how undergraduate students of ID experience research, I present the literature on UR in general, since little research exists specifically on UR in ID; how UREs has been studied and the UREs in humanities and the social sciences. I present the literature on methodology of design (rational problem-solving paradigm) or design research (Dorst, 2006), the nature of design problems (design thinking), and design strategies for research. I present the literature on curriculum development and redesign because curriculum development is an important decision-making process in HEIs. I developed these themes based on the need to see the academic plan as a heuristic method for guiding research on
curriculum and redesigning the ID curriculum at undergraduate level (Lattuca & Stark, 2011). As it relates to the study, my concepts of curriculum development and redesign are presented very central. Finally, I present the relationship between the literature review and my conceptual frame, and the results of my dissertation field study.

**Interior Design Practice**

Interior design is a discipline in evolution that can be studied on its own terms (Cross, 2001). According to Poldma (2003, p. 15): "Interior design is about seeing the whole and understanding simultaneously all of the parts." Poldma (2008) has asserted that the ID profession is very developed as a discipline, but there is still a concern about the profile of interior designers and what they do, so she proposed creating an identity for the profession. Poldma´s (2008) work focused on teaching students how to conduct research as one vehicle to produce new professionals entering the labor market as practitioners in ID, suggesting the need to have new educators in research to study ID methods and processes.

In a similar way, Klingenberg (2009) based her study on the consideration of interior architecture (IA) as a body of knowledge and a field for research: IA, a broader term for ID, is a field to create, solve problems, and transform situations. Klingenberg presented the framework for linking the two concepts closely, arguing that IA has a core body of knowledge that involves professional practice and research. IA is divided in six knowledge areas: (a) human environment needs; (b) design; (c) product and materials; (d) interior construction, codes and regulations; (e) communication; and (f) professional practice.

Klingenberg (2009) concluded that education must incorporate research, which is wider than the practical training for practicing IA. Emphasis was made on the need for research to be stronger within interior architecture to be recognized as a separate field of knowledge. Klingenberg´s work relates to my study because she considered that research must be the
foundation within our field of knowledge, IA. To accomplish that state, theory and terminology are needed for research design, and the way to achieve this theory is to do research. To give more foundation to this conclusion, in their work, Faste and Faste (2012) presented a definition of the practice of design: "Design is a holistic endeavor that involves the synthesis of numerous different concerns. It investigates and integrates disparate forms of knowledge, and necessitates research to advance understanding. The concerns of design include functional and technological systems, as well as empathy with human needs and the expression of aesthetic and usable forms and solutions" (p. 21).

Abercrombie (2018) emphasizes the importance of the way interior designers formulate theories for their own practice after the licensing of ID. According to Abercrombie’s study, ID is a venerable matter because "even GOD practiced it" (p. ix) and exists since the beginning of humanity, prior to architecture. Interiors have an influence over us because we spent a lot of time indoors. Therefore, interior designers must formulate individual philosophies and theories to redefine the body of knowledge of ID. Prior to this study and similarly, Zimmerman et al. (2010) affirmed that the theory for design is theory developed to improve the practice of design. For Marenko (2018), the professional practice of ID responds to the user needs, focusing in the creation and construction of interior spaces in the built environment, and applying creative and technical solutions.

**Design Process**

Our visual world is a composite image built through relationships between forms and the space containing them. The form is the first characteristic by which we distinguish one object from another. In each case, the shape is defined by the specific layout of lines or planes that separate a form from the space that surrounds it conforming the interior space that could be design (Pimentel & Reyes, 2003).
To create the interior space to support human activities, a designer investigates multiple aspects including user needs, building contexts, materials, color and lighting, space specific requirements, furnishing, social and cultural settings, under the scope of aesthetics (Poldma, 2011). Brown and Myatt (2010) affirmed in their study that design thinking is an integrative approach at the core of the design process. According to Nemeth (2014), an established design process is enhanced by the evidence-based design (EBD) approach because it obliges the practitioner to conceive solutions in the built environment based on credible research. This contributes to a culture of professional inquiry, adding value to the knowledge employed in ID professional practice.

As a designer, I am concerned about the design process, wherein the interior designed environment is created through a complex and rigorous process that includes an initial exploration of the user needs with a client, and followed through with the development of a concept based on many different requirements. The goal is also manifold, and depends on the particular problem at hand. Interior space is created through a movement from exterior to interior and back again, the evolution of an aesthetic concept, a conceptual understanding of the sensual experiences of human activities that take place therein and how the space can best support experience in space, over time and in response to functional requirements. (Poldma, 2003, p.3)

Marenko (2018) defined the design process as the creative process developed by a designer to accomplish a design project (collecting, storing, organizing and working with the gathered information) in a systematic way. In the design process, the designer works in a linear straight-forward approach, but also adding flexibility and adaptation (circular approach) depending on the changes caused by the context or site conditions, the clients, the users, lack of materials, etc. For Marenko, the integration of research is vital within the design process taught
in curriculum. Therefore, changing educational standards in design education are needed for undergraduates entering the workforce to be aware of how to conduct research in their design work.

**Interior Design Education**

Since the 1980s there have been efforts to incorporate research into the undergraduate ID curriculum. Franklin and Erickson (1987) published a paper pointing out the importance to incorporate research into the ID curriculum because of its relevance within the design process. Considering the fact that ID students are potential designers, they need to be aware of their role in systematically seeking information for reaching optimal design solutions. They also need to be aware through observation of the behavioral impact of design. The researchers proposed a URE focused on the development of a team research project in a simulated environment as the research laboratory.

The project was very successful, becoming the core of a required research course of ID where students work with a diversity of research methods and projects. The main objective of the course is to develop an understanding of the interdependence between research and the practice of ID through the development of research skills. This means that students learn to design while developing and implementing research projects employing primary sources, and the application to ID of the body of research. Franklin and Erickson (1987) concluded by suggesting the incorporation of UR methodologies to engage students in research that could be translated in the future in their professional activities.

Within ID education, it is relevant to develop skills and competencies in research. Barron and Darling-Hammond (2008) presented a literature review on inquiry-based and cooperative learning. Emphasis was focused in the consideration that if students want to succeed in the 21st century, they need to develop higher-order competencies in sustained engagement, research,
collaboration, and management of resources. Barron and Darling-Hammond examined the strategies for inquiry-based learning that include project-based learning, learning by design, and problem-based learning. The researchers concluded that inquiry-based and cooperative learning can be a challenge to put into practice because it requires to change curriculum, teaching and learning strategies, and evaluation. This approach focuses on the evidences of learning benefits that inquiry-based and collaborative educational approaches provide for students. Students must learn to learn to be able to fulfill the demands of the labor market: changing technologies and information; and social circumstances. Teachers as well, need to be instructed in this kind of learning.

Tarver’s (2013) dissertation research focused on the evolving stage of ID academic education, comparable to the profession of ID constant evolution. Tarver’s study took an in-depth look at the preparedness of recent ID graduates. The online survey targeted 764 ID undergraduate and first professional graduate student alumni who had finished their degrees during 2008 to 2012. The participants belonged to five regionally diverse, accredited ID programs of the Council for Interior Design Accreditation (CIDA) in the United States. Tarver’s study revealed that recent graduates in ID felt very well prepared for professional practice because they were exposed to optimal academic education, helping them to lead the profession into the future. This included research and analysis of client goals and requirements or programming, helping to modify and enhance the ID curricula. Also, improving educational areas that need of improvement and emphasis. Tarver concluded that design academic education helps to collect insight into the entry-level design professional’s perspective.

Not less important than the enhancement of academic education, is the development of faculty in teaching skills is crucial to achieve research preparedness for undergraduate students (Buller, 2013). Buller’s (2013) research examined 10 counselor educators recognized for
teaching excellence in an examination of meaningful lived experiences that contributed to their development as faculty in counselor education. Buller researched their experiences using qualitative phenomenological methods, and the findings support higher education literature on the need for teacher-mentors as models of excellent teaching, as well as the implications for counselor education research and practice are discussed. Through the process of interviewing award-winning faculty in counselor education, Buller (2013) collected descriptive data concerning the subsequent meanings participants gave to their experiences. Buller used a non-probabilistic method of selecting information-rich cases for study or purposeful participant sampling procedures. Participants were selected, and the initial contact was made via phone or email. The topics discussed were pedagogy, constructivism, qualities of excellent counselor educators, and teacher training. Teaching is described as a significant and necessary component of a counselor educator’s career, and also a valuable part of the tenure and promotion process for faculty in counselor education.

This dissertation adds rich descriptive strategies for teacher preparation in counselor education that could be important for my study. The author explains there is a limited amount of research on teacher preparation in counselor education, mostly dissertations are found on the topic; but there are a great number of excellent teachers in the field to be studied, evidenced by their peer recognition in the form of awards and nominations.

**Perceived Value of Research in ID**

Davis (2008) noted that demands of the 21st century ID practice require a re-examination of the traditional education of the field. Davis incorporated the notion of a design research culture, and the importance of design research to current design practice. The researcher reviewed a survey conducted by Manfra (2005) on the issue of research, published in September 2005, by Metropolis. The survey inquired 1,051 designers, design faculty and design students.
The purpose of Manfra’s work was to define the role of advanced programs and research in ID programs, and to promote the development of research cultures as international professional design associations are suggesting. The conclusion presented research programs as a necessary agenda, yet difficult and gradual to implement.

The intention of Dickinson et al. (2009) was to demonstrate how ID educators view research has not been examined yet; even though research has been a discussion topic for several decades within the faculties to examine their attitudes toward research. The problem was addressed due to the fact that the ID discipline has become a very complex field and needs a research-based knowledge to respond to the users of interior spaces. The purpose of this study was to examine ID faculty interest toward research, their perceptions on the differences between research and programming.

Dickinson et al.’s (2009) study used a mixed method approach because it involved the collection of both qualitative (open-ended) and quantitative (close-ended) data in response to research questions to 65 faculty members and included the analysis of both forms of data. Using a survey methodology, the authors distributed an online questionnaire and the ID educators were sampled to determine: (a) their definitions of research and programming; (b) their perceived value of research in ID practice and education; (c) their perceptions of who should conduct research; (d) the degree to which they are engaging in research; and (e) how they are incorporating research into the classroom. The findings suggest that there is confusion over differences between programming and research. They also found that it is not possible to expect the profession to value research if this subject matter is not taught at the undergraduate level. Dickinson et al. (2009) explained that additional research studies are worth undertaking and that there should be more research in the future identifying the need of research in ID.
Hayne (2010) presented a study on The Performance-based Research Fund (PBRF), a research assessment exercise at New Zealand to improve the quality of information for students to engage in research. This funding model implies the assessment of research performance: faculty engaged in research, research quality scores (research outputs, contribution to research environment and peer esteem), and money earned by universities on published thesis and dissertations. Hayne based her study on two stages of the assessment: 2003 and 2006. The staff evaluation was done on a person-by-person basis with 8,671 faculty members in New Zealand who had expertise in 12 basic disciplines (medical sciences, engineering, humanities and commerce). Those who were eligible to be assessed received quality scores on research outputs, contribution to research environment, and student supervision. Hayne found that 40% of the staff evaluated were research inactive, which posed a significant concern regarding the observance of the Education Act, which establishes that instructors must be engaged in research if they are to provide degrees. In her study, Hayne promoted the assessment of research quality at college level.

Bolt and Kett (2010) designed a pilot study into creative arts and research ethics. Bolt and Kett surveyed the faculty of visual arts at the University of Melbourne about their experiences as research supervisors in the areas of ethics for creative arts research projects. The study thematically analyzed data from a qualitative and quantitative online survey of 51 participants, and the data were organized to establish patterns across art forms and research experience. The greatest gains were found in the differences of researches who work quantitative or qualitative methodologies in leading students towards research, and researchers working in the field of practice led research. Faculty also expressed their dissatisfaction with the ethical regulation of practice-as research.
Bolt and Kett (2010) concluded that ethics protocols, research processes and procedures in universities are unspoken controls of content in creative arts research. Those controls restrict artistic freedom and experimentation at the heart of practice because "for some researchers, ethical regulation acts as an impost on artistic freedom and license" (Bolt & Kett, 2010, p. 119). The researchers considered practice research-based as an innovative approach to enhance research experiences for students. More recently, Marenko (2018) suggested that it is in the education of future designers where research will gain a better understanding on its application within the professional practice.

**Undergraduate Research**

Undergraduate Research (UR) is an effective methodology to actively engage students in the process of inquiry through a high-impact educational experience (Mendoza, 2015). More specifically, the Council on Undergraduate Research (CUR), a national organization founded in 1978 in the United States of America, defines UR as: “An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline” (CUR, 2013, p. 1). As a relatively new heuristic for undergraduate learning, the traditional undergraduate curriculum typically does not include a significant academic conversation for students regarding research and inquiry because, historically, research is a graduate competency.

**How UREs Has Been Studied**

Lopatto (2006) explored the importance and the benefits of undergraduate research experiences (UREs) in a study that involved conducting original research while being mentored by an experienced researcher. This study was based on the National Student Survey of Engagement (NSSE) benchmarks, including: high academic challenge, active collaborative learning, intense student-faculty interaction, enriching educational experience, and supportive
campus environment. For this mixed methods study, performed under the auspice of a National Science Foundation Research on Learning and Education grant, Lopatto gathered data from summer research programs in four liberal arts colleges over a span of three years. A total of 73 students in social science and humanities responded to the study’s survey.

Lopatto’s (2006) findings revealed that students within UR courses gained a variety of competencies that included research design, data collection and interpretation, information literacy, communication, and computer work. The majority of science students had their research project assigned by the faculty mentor, which was developed in direct contact with their mentors. Only 20% of science students reported working alone, while 58% of the social science and humanities students reported working alone. The researcher concluded that even though there were some differences between science students and social science and humanities students, they experienced almost the same results. They benefited from learning a topic in depth and developing better relationships with their mentors, and they also understood the research processes better.

Russell et al. (2007) conducted a nationwide evaluation of undergraduate research opportunities (UROs) including four Web-based surveys, conducted between 2003 and 2005 and including almost 15,000 participants. The researchers wanted to comprehend what effects the experience has on the students, and what factors favor positive outcomes. This approach drew attention to the role of research mentors, who they believe should combine enthusiasm with interpersonal, organizational, and research skills in order to facilitate positive outcomes for students participating in UROs. In their study, Russell et al. suggested that HEIs should foster the development of UROs in undergraduate programs and give extra support to those faculty members who play the role of mentors.
Polkinghorne and Wilton (2010) introduced a possible alternative to UR in the proposal of a research methods course design. The researchers examined data collected within an action research framework, and semi-structured post-course interviews with librarians, faculty and students in Alberta. Polkinghorne and Wilton emphasized the relationship between writing and critical thinking skills, and student success in an UR-based learning experience. This specific research methods course is a promising pedagogical approach to facilitate greater student research success.

Zimbardi and Myatt (2012) based their study on how UREs led students to be involved in high-impact experiential learning, becoming an educationally enriching activity across many disciplines. Through extensive interviews at a large, research-intensive, Australian university, 68 UR programs across 26 discipline-based schools were delineated, providing direction to academics, administrators and policymakers looking for enrichment in students’ access to UREs in their curriculum, instead of being offered as extra-curricular activities. Zimbardi and Myatt’s work contributes with a strategic framework and guidance to develop the engagement of undergraduate students with the research content and processes of their disciplines.

Shaw et al. (2013) conducted a study about the experience of students in an Australian university across a range of fourth-year UR programs, exploring how this approach prepares students for future studies where research is mandatory. The study was designed to target 295 respondents across eight disciplines in end-on programs based on research projects in different fields: (a) physical sciences; (b) technology and arts; (c) management and commerce; and (d) society and culture. Participants completed a survey that measured different perspectives of the URE, the high and lows. Shaw et al. proposed extending research experience to undergraduate level, regardless of the program students were undertaking. Several factors such as research self-
efficacy, research environment, and motivation were taken into account to develop the concept of UR preparedness.

To provide more insight in the matter of UREs, McDevitt’s (2016) phenomenological research study focused on the use of self-determination theory (SDT) within the science classroom to integrate intrinsic motivation into students’ identity. This experiential learning shaped students’ interests, identity, and intrinsic career aspirations of specifically undergraduate students within ecological or environmental sciences with the premise that they have involved in experiential learning through coursework, independent study, or employment that are meaningful to their career path. The purpose of McDevitt’s study was to determine how students’ experiences met three basic psychological needs outlined by SDT (competence, autonomy, and relatedness), to examine which regulators drove motivation. McDevitt used a semi-structured interview protocol for approximately 60 biology graduate students enrolled at a large, public university in the Midwestern U.S. McDevitt’s findings revealed that participants developed an appreciation for the discipline as they were engaged in more complex research experiences, identifying them as scientists.

Brown, Lewis and Bevan (2016) considered that UR, as an educational strategy, can be a pivotal experience. Students can develop critical thinking skills, as well as academic and professional skills. According to Brown and colleagues, "UREs are high-impact activities that improve the educational outcomes of students who participate" (p. 464). They gain experience in STEM disciplines as well in the areas of medicine, business, and the arts.

In a similar way in a previous study, exploring the literature on UR, Mendoza (2015) pointed out that UR that only focus in the experiences of established models in the STEM disciplines are incomplete. "A better understanding of URE in the humanities will allow practitioners to think more broadly about how UR is defined and possibly discover additional
models for UR. It also could provide justification for a different approach to training future scholars in humanities” (p. 15).

**Undergraduate Research Experiences in Humanities and the Social Sciences**

Undergraduate research experiences (UREs) in the STEM fields are quite common compared to those in the humanities and social sciences. Ishiyama (2002) claimed that there were not many studies regarding the relationship between participation in UR and the development of social science and humanities students, despite the interest in the impact of UR on students’ academic achievement. The dearth of literature on UREs outside of the undergraduate STEM fields continues today.

Commenting on UREs in humanities, Mendoza (2015) argues that the literature on UREs for students as apprenticing researchers outside of STEM is typically limited to faculty reflections and program descriptions. For Mendoza, the main distinction drawn between UR in the sciences and UR in the humanities lies in the fundamental differences between the pure-hard and pure-soft disciplines (i.e., the methods, teaching-learning goals and strategies, epistemologies, assessment, and the relationship between teaching and research).

Most recently, Walters (2018) has noted an incremental increase in student exposure to research in the undergraduate curriculum by higher education administrators over the last 20 years. The purpose of her dissertation study was to determine what actions have been taken in the humanities field to involve undergraduate students with research. According to Walters, "the natural sciences fields have been the most successful and efficient at implementing these changes to their undergraduate curricula, and that the humanities fields have been much slower to consider how their various departments should evolve to promote UR" (p. 1). For her, including UR in the humanities curriculum or experiential learning "is one of the best ways to develop as a student and make oneself more appealing and successful on the job market" (p. 34).
Smith (2013), a practitioner and educator of the Department of Apparel Merchandising and Interior Design at Indiana University, studied the impact of students’ perceptions of their experiences as an important outcome to design programs. The purpose of the study was to determine the barriers that prevent students from succeeding in their ID academic life. Smith’s research participants were recruited from a class of 20 undergraduate students enrolled in their final ID studio at a large public, Midwestern university in the United States.

After interviewing each student individually, Smith found that, although faculty spent a considerable time with their students, they did not necessarily have a recollection of the current learning situations and learning outcomes. The researcher concluded that it is very important for students to understand their own perceptions of their own educational experiences in order to understand what had impeded their success in the past as they progressed through the design curriculum. Smith proposed a better understanding of transformational experiences in early career stages to improve future teaching-learning experiences in the academic field of ID.

**Methodology of Design or Design Research**

Before discussing *methodology of design*, it is important to understand the concepts of research and research methodology. Stolterman (2008) considers the *scientific method* as the systematic pursuit of knowledge through principles and procedures that includes the recognition and formulation of a problem, collecting data through observation and experiment, formulating and testing hypotheses. For Merriam and Tisdell (2016) *research* is "the notion of inquiring into, or investigating something in a systematic matter" (p. 3), helping to inform our choices on a particular course of action. Research is categorized by *basic or applied* research.

Applied research examines a specific set of circumstances, and its ultimate goal is relating the results to a particular situation, uses the data directly for real world application (Yin, 2017). Consequently, "research methodology is the theory and analysis of undertaking a
research” (Bilau, Witt, & Lill, 2018). The methodology of design, then, covers how designers work and think (design process) to produce design knowledge to be applied to design problems (Vink & Brauer, 2011).

To understand the genesis of the methodology of design is important to trace its roots. In the 20th century a modern movement of design emerged and with it, eventually came the desire to scientize design around the 1920s. The scientization of design grew even more strong in the 1960s, especially in engineering and some branches of industrial design (Cross, 2001). Design becomes the answer to find solutions related to human needs, which are the base of the nature of design problems.

Dorst (2006) draws the attention to the consideration of the methodology of design (rational problem-solving paradigm) as the answer to problem solving while rationalization and communicating about design. Dorst explored the foundation of design activities to give answers to problem-based situations that could benefit other fields of knowledge, such as business. In ID, those activities are called design thinking. Design thinking is a process within design research, rather as a one-off decision, a way of reasoning, that have stages to go through to solve a problem, very close to a research methodology process in the sciences.

In the disciplines related to the field of design, from academia to industry, there has been a great interest in design research, used to describe the different approaches, philosophies, perspectives and methods to produce knowledge from design (Faste & Faste, 2012). Faste and Faste define research: "A systematic investigation that establishes novel facts, solves new or existing problems, proves new ideas, or develops new theories. Design is the act of planning and communicating a course of action to others, usually through the creative exploration of an area of interest” (p. 15). Design research combines research and design, the investigation of knowledge
through purposeful design. In academic circles, it could refer both to the study of design and the process of knowledge production that occurs through the act of design.

Designers´ nature of knowledge produced can be a new idea, way of working, but also a conceptually visionary experiment, directly influenced by the methods employed in their research practice (Faste & Faste, 2012). Design, viewed as a kind of research, belongs to a context that gives significance to the creation of knowledge. It involves educational, historical and critical approaches. It includes the study of materials and technologies, design theories and methodologies, manufacturing processes, the impact and implications of design on humans. Table 1 describes Faste and Faste´s (2012) significant categories of the term "design research," separating meanings: design as a "kind" of research, design research as an aspect of a larger design process. Faste and Faste assert that “Design is not research; research is design” (p. 1).

Table 1


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<tr>
<th>Categories</th>
<th>Definition</th>
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<tr>
<td>Empirically oriented</td>
<td>Based on direct observation of the physical world, it applies qualitative research to identify needs and frame opportunities by observing people in context. It is synonym of &quot;ethnographic research&quot; or &quot;qualitative fieldwork.&quot; It is a data gathering and a synthesis strategy in a human-centered design process. &quot;Design research is really about the design of design&quot; (Faste &amp; Faste, 2012, p. 17).</td>
</tr>
<tr>
<td>Aesthetically informed-giving &quot;craft&quot;</td>
<td>It is the prototyping of forms and experiences using field trials and participatory co-design sessions to delimit their utility. Design research is placed fundamentally in the real-world design practice context. It uses expression as a means and a variety of technology platforms. It also includes data from previous research studies and the employment of diverse design approaches: storyboard sketching, idea brainstorming, physical or interactive prototyping, manufacturing experiments, technology development, evaluation with the users, etc. It success depends on the process performed. The range of research methods approaches help to frame alternatives and generate guidelines to design.</td>
</tr>
<tr>
<td>Critical design</td>
<td>Theoretical and critical approaches to design. It involves systematic inquiry and interventions into cultural discourse and practice. The designer’s purpose, in this category, is to create functional objects or experiences that take into account the emotions and behaviors of the users.</td>
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For designers, design research is inherent to their practice and it is *creative research* (Faste & Faste, 2012). And also, like art, design is a practice-based discipline. "Thus while typical research tends to have the goal of narrowing its focus towards specific solutions to well-defined problems, design research often results in a broadened understanding of the problem domain and many alternative potential solutions. Science is one approach of many, to the practice of design. Scientific research uses known and replicable methods; 'design research' is often unreplicable and hard to pin down" (Faste & Faste, 2012, p. 18).

Horvath (2017) proposed a method for a systematized handling of research phenomena. The method is based in a design research framework to define a research model. Decomposition of a complex phenomenon by a combinatorial mechanism. This method is presented in a concrete case, placing the phenomenon in a local word, including the attributes, effects and relations for its applicability. "The mission of design research is to discover and investigate not or partially known phenomena, and to formulate statements concerning their manifestations and relationships with other phenomena" (p. 1).

For Horvath this knowledge includes the nature, methods, and values of design. Also, it explores principles and theories supporting creative human activities and processes through innovation and technologies to inform the design practice. Design researches should identify the research phenomenon (nature of design problems) as a promising opportunity to develop a disciplinary theory, the practical world of affairs, a personal experience, or professional insight within the practice of ID (Horvath, 2017).

**Nature of Design Problems: Design Thinking**

Dorst (2006) presented an alternative conceptual framework to approach design on the central notion of ill-structured problems. The purpose of his work was to propose an apprentice framework of different concepts to understand the nature of design problems, setting out that
both kind of problem solving are the same. For Dorst, the term "design problem" is hard to describe in the scientific field. She proposed design thinking as an innovative teaching approach in UREs. Therefore, it is very important to define the methodological, theoretical, and pedagogical implications of ID UREs to develop new knowledge for ID practitioners (Jennings, 2007).

Stolterman (2008) considers that any design practice that produces research outcomes must be grounded in the fundamentals of the nature of design. Design thinking as the proof of the rigor and discipline in design, based on intellectual foundations and fundamentals. For Stolterman, a designerly way of thinking and acting refers to the approach that designers who can handle complex design situations successfully use. The term design complexity was compared to the term complexity in science to prove how designers think and process information. For Stolterman it is important to understand how scientific methodological principles have been adapted and modified to better accommodate the design practice. Table 2 describes Stolterman’s (2008) comparison between both terms, providing us with representation of a well-known intellectual tradition and practice (science) facing another tradition of inquiry and action (design).

Stolterman (2008) draws our attention on that acting designerly requires one to be highly disciplined and go through a rigorous design process (design thinking) to deliver good design outcomes:

Design has its own internal structure, procedures, activities, and components that are well recognized by skilled designers. Design thinking is a designerly approach that has been 'used' by humans throughout history, at times when they have approached and dealt with an immediate, rich and complex environment, and have changed that environment to
align with their needs and desires. There are intellectual foundations and fundamentals that support design thinking and acting, and there is rigor and discipline in design. (p. 60)

Table 2

Comparison Between Stolterman’s (2008) Ideas on Complexity Between Design and Science

<table>
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<tr>
<th>Criteria</th>
<th>Design Complexity</th>
<th>Complexity in Science</th>
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<tr>
<td>Definition</td>
<td>It is the complexity a designer experiences when facing a situation. &quot;It is a classic problem that has been addressed in many academic design disciplines&quot; (Stolterman, 2008, p. 57). It is the ultimate particular or desired reality manifested. The artificial world is the realm of design.</td>
<td>It derives from all forms of scientific and research activities to explore, understand and explain the reality as it is while influencing it. It is the truth. The real world is the realm of science.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Potentially infinite and limitless sources of information, requirements, wants and needs, demands, opportunities, limitations and opportunities.</td>
<td>The knowledge or system of knowledge is obtained and tested through scientific method, covering general truth or the operation of general laws.</td>
</tr>
<tr>
<td>Role</td>
<td>The designer makes all kind of decisions and judgements: To frame the situation, what to pay attention to, what to listen to, what to dismiss, and how to inquiry from the potential sources and how to use that useful information.</td>
<td>The researcher formulates knowledge in the form of theories. It focuses on regularities, mechanisms, relationships, correlations and patterns.</td>
</tr>
<tr>
<td>Measurement</td>
<td>It is the designer’s subjective experience of complexity and it is not possible to measure it objectively. Designers do not experience a particular situation in the same way.</td>
<td>The knowledge is valid and true, something possible to reproduce or be tested by other researchers, independently of the time, and not influenced by the researcher.</td>
</tr>
<tr>
<td>Goal</td>
<td>To give designers rich and creative experiences and variation. &quot;Complexity is probably even a required condition for innovative and creative design to happen&quot;(Stolterman, 2008, p. 58). The goal is to create something non-universal with a specific context, client and user, with specific characteristics, limited time and resources. It is about the unique and the particular.</td>
<td>The purpose of science is to produce universal knowledge, explaining reality from a specific to a particular level. As a project, it has a continuum for as long as it takes the interest on a matter or situation. Science is a grand project where time and resources limitations are only temporary.</td>
</tr>
</tbody>
</table>
For Brown and Wyatt (2010, p. 32) “design thinking-in herently optimistic, constructive, and experiential-addresses the needs of the people who will consume a product or service and the infrastructure that enables it.” For Faste and Faste (2012), the term design thinking refers to: "Innovative thinking, delivering fresh design solutions, and informing new ways of evolving the research process” (p. 16). In the same vein, Hao (2012) provides an in-depth analysis of design thinking. For Hao: "The cognitive process of designing is typically described by the buzzword design thinking” (p. 12), which is known within the design research community as the cognitive processes or mental process that designers manifest when they engage in design activities. "When using the term design thinking, it is interpreted as: (a) the phenomenon: the specific cognitive or mental processes of designers during designing; (b) the understanding: a style of thinking and knowing, or a form of human intelligence that distinguishes design from non-design activities; and (c) the application: a structured innovation methodology or toolkit for innovation" (Hao, 2012, p. 13).

Kennedy-Clark (2013) considered design-based research a highly benefit educational approach in higher education: "To develop and refine the design of artifacts, tools and curriculum and to advance existing theory or develop new theories that can support and lead to a deepened understanding of learning" (p. 26). When implementing design thinking, it is recommended to use a structured approach, a combination of methods, procedures and/or strategies. The culture of professional inquiry developed within the ID professional practice can be increased by using a research approach (Marenko, 2018).

**Design Strategies for Research**

To understand the design strategies used by designers while researching, a great example is Yukhina´s (2007) work. The main purpose of her project was to explore the relationships and correlations between thinking styles of student designers, their personal aptitudes, and design
education. The principal assumption regarding the differences in designers’ individual problem solving strategies was that they are correlated to the differences in their learning styles and cognitive abilities. The study based the conclusions in the discovery of several groups’ learning styles and their cognitive abilities, establishing that they may play an important role in problem solving during administered design tasks; and the influence they may have on academic performance and quality of produced design solutions. Yukhina (2007) suggested the following:

Designers with different styles adopt different approaches to design situations and use different strategies during problem solving. It is possible to find the supporting evidence by investigating their performance on design tasks. Individual differences in design reasoning and problem solving could be correlated with the differences in individual cognitive abilities. It may be possible to find correlations between cognitive styles and cognitive abilities. It is likely that a number of visible or measurable qualities of students’ design drawings, would in some way reflect different characteristics of the above individual styles and abilities. (p. 4)

By drawing on the concept of design strategies, Wang (2007) argued that diagramming design research could be done using an analytical tool that could help design students to incorporate research into the design process in an easy-to-visualize diagram. Diagramming methods serve as a connection between research and a professional discipline such as design, because they could help the design process by the integration of research, establishing the design process as part of larges interdisciplinary bodies of knowledge.

Rust, Mottram and Till (2007) identified that practice-led research could be approached as a method for inquiry and practice in the professional disciplines of art, design and architecture. The outcomes of a 10-month qualitative research in the UK and beyond were presented to provide the scenery for a practice-led research. The methods included gathering and
analyzing data from members of the research community, practitioners and students who were interviewed. Rust et al.´s work relates to my study because the findings emphasized that practice-led research could be approached as a strategy for inquiry and practice in the professional disciplines of art, design and architecture.

In contrast to these previous studies, Solovyova (2008) proposed in her study to bring intuitive decision making back into ID as a verifiable design tactic for individuals to understand the composition of complex systems. Solovyova stated that several choices taken in ID are reached in an intuitive manner instead of reaching a rational process for relevant information. Solovyova´s work provided evidence on intuition as valuable for designing, recommending it as a more acquired knowledge. To develop skills in the ID discipline, through practice and experience, more intuitions approaches could guide students´ projects.

Ding (2009) presented an analysis of a 17-week long collaborative studio course, one of two sequential capstone course experiences for design solutions that engages students, faculty and practitioners. Students were encouraged to work independently on design in their specific interest, choosing a practitioner to review their projects and give them technical and professional perspectives. Ten senior students participated in this studio. Two qualitative research-grounded theory approaches circumscribed the study: (a) a final research project presentation evaluated by practitioners, and (b) a final evaluation analysis and grading of the project. Ding found an interdependence between technical content and design outcomes and emphasized that students´ competencies are developed in problem solving through inquiry, critical thinking, and graphic resolution. Ding´s research helped define how to implement research knowledge through the phases of an ID project, linking academic and professional design career.

Afacan (2011) designed an empirical study to create new knowledge in order to develop new innovative teaching strategies that incorporate research. The researcher proposed the in-
depth treatment of universal design within the design education curriculum at the Department of Interior Architecture and Environmental Design at Bilkent University. The study was based on the results of semi-structured interviews with 23 fulltime instructors and 79 fourth year undergraduate interior architecture students. The study revealed the courses about universal design issues were suitable to promote the development of creative teaching strategies within design studios and lectures. Afakan (2011) explored how students experience and perceive universal design values. He structured the design courses to enhance universal design education through new and innovative strategies within the ID program from the point of view of instructors and students.

The studies presented above provide important insights into the empirical investigation of design cognition, considered by Hao (2012) as: "One of the most important agendas in design research. It builds the foundation of elucidating the nature of designerly thinking and constructing general design theories, and bears implications for education and practice in design, as well as applying design thinking in other domains and disciplines" (p. 18). Another designerly approaches to perform research are found in the following strategies:

**Systems oriented design.** Sevaldson (2010) presented in his study a new strategy to approach design research from a systems-oriented perspective. Design research is a dynamic field in development, moving towards a more complex and central proposal in the approach of UR regarding design. Sevaldson elaborated a framework for design research as a method for knowledge production: The Systems Oriented Design Theory (SOD). The SOD theory addresses the problems facing the practice of designers forced by continuous change due to the accelerating degree of globalization and the proliferating need for sustainable development (Sevaldson, 2013). Emphasis was focused on the importance of discussing the development of design
research in further studies and the need for academic institutions to increase responsibility in this area of knowledge production.

**Research-based design.** Sevaldson (2010) stated that the design activity produces knowledge, and there are authentic opportunities to develop research by design as a procedure in a broader and holistic perspective, as one of the most complex fields of knowledge production. Sevaldson emphasizes the importance of discussing the development of design research in further studies and the need for academic institutions to increase this area of knowledge production. Zimmerman et al. (2010) consider RtD a research approach that belongs to the research-based design because it employs methods and processes as a legitimate method of inquiry within the design practice. Similarly, Nemeth (2014) defines EBD as a method which is research-based:

Using this type of research approach in practice contributes to a culture of professional inquiry and increases a practitioner’s as well as the profession’s knowledge of interior human environments. A role for research in the form of evidence-based design in ID education and practice will enable discussion about priority research areas and methods related to design, and identification of best practices in evidence-based design. An increased understanding of evidence-based design concepts and practices can add value to the unique professional knowledge base used in ID professional practice. (p. 6)

Kitchell’s (2014) dissertation research presented EBD as a trend in the ID business, which promotes the expansion of a body of knowledge, professional recognition, and the increase of decision making. Most professionals do not benefit from EBD as a tool because they are not conscious of its potential. Kitchell used a representative of practitioners of ID from around the United States to be surveyed. Kitchell’s research demonstrated the advantages of using EBD, analyzing the data from a one-time online mixed-methods of 135 surveys about
interior designer’s thinking and application of research-based methods to design. The inquiry was developed around the question: What is the relationship between researched design and empowerment of interior designers using research? Kitchell has shown that the use of EBD provides personal empowerment and self-efficacy to designers as entrepreneurs. This approach fills much needed gaps in available research regarding the methodology of design and the practice of ID.

**Curriculum Development and Redesign**

In a given academic curriculum all of activities: the extra-curricular activities, developmental and academic opportunities, the levels of knowledge and performance of students are needed for making important decisions in HEIs. It is the heart of education (Keeling, Wall, Underhile, & Dungy, 2008). Lattuca and Stark (2011) define curriculum as an academic plan that answers to a historical, social, and political context. Muir (2013) argues that curriculum has different definitions depending on the frame of reference: the combination of all courses at the institutional level, the courses focused on general education, a cluster of courses in a discipline that comprise a major, or it can refer to a single course.

Lattuca and Stark (2011) identify eight curricular elements to guide decision making that are addressed, intentionally or unintentionally, in developing all college courses and programs. For my study, the most important element they report is the promotion or development of complex views of knowledge. Students need to be knowledge producers instead of just knowledge consumers. Students must engage in collaborative, complex problem-solving activities, to enhance their academic experience. This will challenge them to apply, integrate, evaluate, and construct knowledge despite their different stages of epistemological development (Lattuca & Stark, 2011).
The curriculum is influenced by cultural and social trends, economic circumstances, and national and state policies that shape HEIs, including their academic programs (Lattuca & Stark, 2011). In a similar approach, one study by Yáber, Chaves and Csoban (2018) reports that higher education academic management challenges are faced by important resources such as curricular processes. Those challenges include responding to global demands to achieve a global positioning as a HEI, helping to contribute to the sustainable development of the society that responds to. This development involves knowledge production, including at undergraduate level (Yáber et al., 2018).

Understanding the importance of curriculum redesign, Oliver (2011) based her work in providing a guide to frame desirable graduate attributes or generic outcomes, emphasizing critical and analytical, creative and reflective thinking, and problem-solving skills, in order to enhance graduate employability. Oliver’s learning and teaching academic standards project (ALTC) scanned Australian universities’ graduate generic attributes in seven main areas, in a first national scoping study of work integrated learning. Oliver formulated standards, approaches and strategies to be integrated within a deliberately designed curriculum for a guide to assure graduate outcomes, combining theory and practice of work. As Oliver argues in her study:

Highly motivated teaching staff have and will continue to provide challenging and engaging learning experiences for students. Curriculum leaders spend countless hours aligning outcomes, assessments and experiences. These teaching and curriculum inputs are essential but insufficient. A most pressing challenge is to find increasingly rich and transparent ways of warranting graduate achievements, and at the same time ensure that graduates themselves are assured of their capabilities. (p. 6)

Muir (2013) interviewed curriculum designers from 10 institutions. The purpose of Muir’s qualitative research was to examine the characteristics for a curriculum design theory
development and the type of decisions that affect film production education specifically. The case was made to recommend changes to the intentionality, consistency and accountability of film production curriculum. The results revealed nine criterion of the curricular design process within higher education: (a) departmental structure; (b) institution’s location; (c) institutional and departmental mission; (d) liberal arts outcomes; (e) industry trends; (f) resources; (g) student demand; (h) technology; and (i) faculty beliefs. Muir recommended changes to a curriculum design process in three aspects: (a) intentionality, (b) consistency, and (c) accountability that would allow to take the steps of legitimacy in curriculum design.

**Relationship Between Literature Review with My Conceptual Framework**

As explained in Chapter 1, three theories served as lenses for my research. The first lens is *research culture* that derives from developing research capacity of individuals and research work-related attitudes (Evans, 2007). Evans defined the concept of research culture as “shared values, assumptions, beliefs, rituals and other forms of behavior whose central focus is the acceptance and recognition of research practice and output as valued, worthwhile and preeminent activity” (p. 2). Research culture is the result of a systemic series of strategic policies and actions. It implies challenges to face such as readjusting the educational conditions, particularly in those HEIs where research is new or still under development (Evans, 2007). It requires to improve four-phase research approaches within the academic environment: creation, growth, development, and nurture of a research culture to increase the productivity of research appropriately (Hajir, 2013). According to Davis (2008):

Growing research and research programs in design, therefore, is a necessary but complicated task. It is obvious that the proprietary behavior of design practitioners will not make new knowledge widely available, and that universities must take on the roles of knowledge generation and discrimination. At the same time, it is also clear that
development in this area will be slow without broader recognition that research matters to
the future of the design professions and that the outcomes of design decisions have
consequences in society. (p.79)

The second lens is *The Research-Based Learning Theory*. Brew (2013) presented a
critical examination of the literature surrounding the need for a coherent framework for
curricular and pedagogical decision-making regarding undergraduate student research. Her
meta-analysis focused on a framework that originated from UR literature in different countries,
involving the engagement of students in research and the implications for practice. Brew’s work
introduced a new circular model for curricular and pedagogical decisions to introduce research as
an URE: A wholistic model for research-based learning decision making. The concept of
"wholistic" comes from the integration of the words "wheel" and "holistic," and it emphasizes
how powerful research is for holding students’ attention and interest, and for challenging them
intellectually.

According to Brew (2013), if research is going to pervade the undergraduate curriculum,
it is a basic curriculum decision and a question of overall curriculum design. "Pedagogies of
student research inevitably rest on academics’ ideas about students and on students’ attitudes to
research" (p. 611). It is crucially important for students about to engage in research-based
learning to have positive attitudes. In addition, both faculty and students need to have
appropriate perceptions of research in order to avoid limitations on the ways in which students
develop research capabilities and learn through research. Brew argues that research-based
learning shifts students from consumers of knowledge into active producers of knowledge. It
includes opportunities for students "to gain experience in planning and carrying out research,
learn research skills appropriate for the discipline, and pursue and present research, that they
encounter during their degree" (p. 605).
The third lens is *The Systems Oriented Design* (SOD) model developed by Sevaldson (2013). The model was developed to address the process of changes and challenges that designers face in their practice every day due to the increasing need for sustainable development and the increasing degree of globalization. The SOD model is a skill-based approach that is constructed on designerly skills (abilities or aptitudes of a designer), and inspired by modern systems thinking and systems practice.

The SOD model integrates systems thinking and management tools to improve and better train students’ skills when they deal with difficult and complex problems as designers (Sevaldson, 2013). SOD compliments the design process through active inquiry and projection of several relations for specific design interventions. It helps designers to reach solutions that fuse ethical issues with global problems, such as sustainability, economy, the new technologies, etc., yet incorporating social, cultural and commercial concerns. Using these theories as a lens, Figure 1 illustrates the conceptual map for my study.

Within Figure 1 there are four major components, and the diagram moves from top to bottom, connected by arrows, and emerging from the lens of the Design Research Culture, the Research-based Learning Theory and the Systems Oriented Design Model. The two components at the top of the chart symbolize the interaction between the development of an ID curriculum redesign based on research as one component and faculty’s instructional decisions regarding UREs in ID as a second component.

The development of an ID curriculum redesign is composed of the following elements: (a) the body of ID knowledge; (b) ID competencies; and (c) practice and experience. The faculty’s instructional decisions regarding UREs in ID is composed of the following elements: (a) faculty beliefs and outputs; (b) design strategies for promoting research; (c) practice and experience, and (d) students’ UREs supervision and/or monitoring. Both components are
connected by a two-way arrow meaning they are intertwined. The interconnection between curricular decision-making and academic teaching strategies also interact with the third component, the nature of design problems that responds to design thinking as the base of the ID discipline.

Figure 1. Understanding undergraduate educational research experiences in interior design (Pimentel, 2018).

The forth component is affected by the ID curriculum redesign, faculty instructional decisions, and the nature of design problems. It represents URE’s potential effects on students’ learning, attitudes, and career choices, as a high-impact educational practice to achieve
excellence (Lopatto, 2010). The double curved connecting arrows indicate the continuous flow of design research permeating the student’s research experience. Research preparedness (Shaw et al., 2013) is the theoretical structure to examine the students’ experiences regarding UR. The four factors to determine research preparedness are: (a) learning motivation, (b) research environment, (c) research orientation, and (d) research self-efficacy.

Shaw et al. (2013) developed the following definitions for the factors that make up the construct of research preparedness: Learning motivation refers to the ways students approach the research projects: values, goals and beliefs about the skills needed to be successful in the course, and their learning strategies (cognitive and meta-cognitive); research environment is "the sense of belonging, including relationships and use of resources;" and research orientation is "the research understandings and feelings towards research" (p. 713). Finally, the students’ conceptions and expectations about their perceived abilities or skills to accomplish research tasks define the research self-efficacy factor.

Under the scope of URE as a new paradigm for the generation of new knowledge, and the future of the profession in ID (Dickinson et al., 2007; Dorst, 2010), the forth component also represents the experience of students in taking URE degrees as a foundational opportunity to exercise research skills to promote postgraduate decisions to continue research (Guerin & Ranasinghe, 2010). It is affected, in turn, by the three previously described components, developing together the future of design: the generation of new knowledge. In order to move beyond the analysis of the body of literature, I probed my conceptual framework by conducting a field study.
Dissertation Field Study

The literature sources I gathered provided the overall context for my dissertation field study. After I analyzed the data for my qualitative field study, a case study titled: "Undergraduate Educational Research Experiences in the Study of Interior Design", I chose an alternative method for representing some aspects of my findings, representing those findings in a way that is not usual written narrative summary of findings, a visual representation. I made a drawing on watercolor paper, format 12" x 16", using watercolor markers because drawing is the basis to design. Data were subjected to an artistic representation to briefly validate my conceptual framework from the students´ perspectives as a unit of research of my full-study.

Visual Representation and Narrative

The representation for my field study is depicted in Figure 2, and illustrates the findings of my first face-to-face interviews. This qualitative study aimed to develop an in-depth understanding of how faculty in an interior design (ID) program at on Dominican Republic (DR) university provided or not undergraduate research experience (URE) to their students as part of their ID coursework. Since current studies have not examined the issue of research within Dominican undergrad ID programs, there is no current knowledge regarding the degree to which current DR ID faculty are providing their students with direct experience conducting research.

To collect data, the original intent of the interviews was to develop an in-depth understanding on how is research experienced for undergraduate ID students. In qualitative research, the researcher is the instrument, and I was fully engaged by enrolling into the participants´ perspectives (Merriam & Tisdell, 2016). That is the reason the main figure in the drawing is me, the researcher, but also the interior designer, the artist, and the educator. At the same time, it represents all the participants in this study, students of ID. The drawing is framed within a Golden Ratio, also known as the Divine Ratio, the Golden Mean, The Golden Number,
and the Golden Section. A unique number that is present in Nature, and has been the base for design since the Ancient Civilizations as the Greek Civilization. All designers and artists, through history, have been used the Golden Ratio to design.

*Figure 2.* Visual depiction of findings of undergraduate educational research experiences in interior design field study (Pimentel, 2018).
As the eyes move from the figure of the representation of the researcher or interior designer, and the vision is captured by the center of the Golden Ratio at the right, it starts moving as it develops, visualizing elements present in every day designer’s life. The words represent the salient points of the interviews, but also represent concepts, because the work of an interior designer relays on the use of concepts. The visual world is, in fact, a composite image built through relationships between forms and the space containing them. My drawing is composed by representations of the findings that are, at the same time, the world of a designer. The purpose of ID is to increase functionality, aesthetic enrichment and psychological enhancement of an interior space (Poldma, 2003). The form, represented by the Golden Ratio, is the first meaning by which one object is distinguished from another (Ching, 2014).

I can refer to the outline of a line, the evaluation of a plane, or the three-dimensional limit of a mass. In each case, the form is defined by specific configuration of lines or planes that separate a form from the space that surrounds it. The drawing is also represented in color, another important element for the world of an interior designer. This representation seeks to inform about the relation of an interior designer with research through conceptualization, as my obligations and responsibilities to the ID community into which I enquire, and the medium is part of the message (Glesne, 2016). The visual depiction represents the essence of the findings and has significance because it summarizes the transformation of the curriculum of ID into an undergraduate research-based curriculum.

Results of Dissertation Field Study

I focused on developing an in-depth understanding of how faculty provide undergraduate ID students experience with original research as part of the ID coursework in an undergraduate ID program in DR. I conducted semi-structured, face-to-face interviews with seven ID students. The population pool from which this field study recruited were all 17 ID students taking the last
design course in Spring 2018. All participants were recruited by e-mail via the director of the program for use in scheduling private face-to-face interviews that lasted one hour each. Seven students volunteered for the study.

The findings in this study indicated disconnection between the way faculty was teaching research, the research design approaches, and what students talked about experiencing. They only have two formal classes in which they had a research-based preparation: research methodology and methodology of design. But all the students were required to do research in each design course they took as a mandatory step before they started a design project. In that sense, they confessed that their only source for references is the internet.

Shaw et al.’s (2013) construct of "research preparedness" including the four factors of learning motivation, orientation towards research, research environment, and research self-efficacy was used to categorized the data analysis. Students understood that the most important attributes that must characterize an interior designer are: (a) to be creative; (b) to know how to work in teams; (c) to always be updated or informed in his or her field; (d) to have a critical eye; and (e) to be very focused on the details.

These ID students, in general, as part of the use of different cognitive and metacognitive strategies in their learning motivation, expressed they like to use mood boards, do some field work, do sketches drawn by hand, and use a concept to start the creative process of a design project. The participants considered part of the values and goals to take integral design decisions and self-assess their design project before submitting the final product. The students defined that research is a first step to take when starting a design project, and it is a task a designer does before developing a project. They consider that doing research helps them to work easier. Learning motivation has been found to be fundamental of these students’ interest in developing research.
The participants expressed that there is limited research-related literature, in general, written by interior designers, and that needs to be changed. These students found research very valuable for their future as professionals, but the perception that students were not very clear about the differences between gathering information for a design project and generation of new knowledge for the ID field implies that further research in this area should be conducted.

To summarize the findings, all curriculum in ID must contemplate, with proactive thought, the performance of the future designer in new scenarios, prepared for possible changes to occur. According to these new scenarios, professionals should be trained with creative, and not merely reproductive capabilities, and with scientific research rigor to face and to solve problems (Pimentel & Reyes, 2003). My own experience with these interviews was a forum for reflection on ID as a research-based profession (Glesne, 2016).

The results of my dissertation field study informed my current study: I realized the equation between UR teaching and how the students experience it. These conclusions affirmed the value of such research and influenced my dissertation plan, with me adding the need to explore how faculty provide undergraduate ID students with direct experience conducting original research as part of the ID coursework in an undergraduate ID program in DR to understand the full scope to the situation.

**Chapter 2 Closure**

Recognizing the need for UREs in ID, the findings of this literature review signify that the future of the discipline is to research, to interpret, and to propose instructional models that make possible creative and innovating design confrontation with the industrial and economic rationality, harnessing a holistic approach, directed to generate, to find, and to systematize research. An authentic projective research culture able to create a synergy between the logic of the industry and the economy, through applied creativity for the conditions that the society
demands. All of these studies, among other many, indicate, and simultaneously specify the necessity to promote the discipline towards new fields of knowledge, often tie with authentic disciplines of the traditional scientific knowledge. Hence, the schools must be able to discover the connections, and the possible developments to create a theoretical and methodological body of knowledge that serves as support for the praxis, to go from a static design concept to a more dynamic one.

To advance within ID education means to deepen in this line of scientific rigor, considering different strategies, circumscribed phases from the projection (cultural, economic, technological, environmental, aesthetic aspects, etc.) that settle down in the design of a product, a space, or an object. The literature would benefit from an understanding and explanation of the challenge to rethink the ID field, its processes, directed to present and display a new leader proposal of higher education professional defined by ID research. The following Chapter 3 focuses in explaining the methods selected to collect qualitative data for my study on educational UREs in ID.
CHAPTER 3

METHODS

As discussed in Chapters 1 and 2, no previous studies have examined the issue of URE within ID programs in DR. There is no current knowledge regarding the degree to which current DR ID faculty are providing their students with direct experience conducting research, nor information from students who are engaged in such UREs. Studies in other contexts, such as science-based fields, suggest a link between students’ involvement in original research and development of critical thinking skills, and the ability to interpret design research and analyze new information and methods (Brew, 2013). Therefore, the overarching research question for this study is: What kinds of UREs do faculty incorporate, and how do students and faculty regard their place in an undergraduate ID curriculum? The purpose of this chapter is to explain the methods selected to collect and analyze qualitative data within my study in order to explore and describe the current state of affairs in that DR ID program.

Research Design, Approach and Rationale

To explore what kinds of undergraduate research experiences (UREs) faculty incorporate into the ID curriculum, and what perceptions students and faculty have regarding the usefulness and educational impact of UREs, I conducted a qualitative study, collecting detailed information over a sustained period of time, employing a variety of data collection methods (Creswell, 2014). To gain a more complete understanding of a case study, it is a tradition to collect multiple forms of data, either qualitative or quantitative (Guetterman & Fetters, 2018).

This study was designed as a single, qualitative, instrumental case study with multiple data sources used to develop an in-depth understanding of how research is experienced by undergraduate ID students and faculty at a private university in the DR’s higher education
system, how ID students describe their UREs, and strategies that ID faculty utilize to incorporate UR in the courses they teach. According to Grandy (2010):

An instrumental case study is the study of a case (e.g., person, specific group, occupation, department, organization) to provide insight into a particular issue, redraw generalizations, or build theory. In instrumental case research the case facilitates understanding of something else. The instrumental case offers thick description of a particular site, individual, group, or occupation. (p. 2)

Even though the case under study may not be representative of a wider educational setting, because it is particular and contextual, the study described the particular case in detail and can lead to theory development. In this research, the perspectives of students and faculty were collected using in-depth interview methods to achieve deeper insights and meanings of the subject of study. Interviews included one-on-one interviews with ID students and faculty. The interview strategy was supplemented by a review of the ID curriculum, academic program final research projects as primary sources of data, and for triangulation of data purposes.

The Researcher

In this study, I situate myself as a female interior designer, artist, and an instructor who is engaged as a researcher studying UREs in the study of ID as a discipline in constant evolution. In this context, I see myself as a learner within the process of teaching UR, but also as an expert in curriculum re-design.

I am a professional with a diverse background. I have a Bachelor of Fine Arts in Interior Design from Universidad Iberoamericana (UNIBE), one of the leading HEIs in the DR. I earned a Master´s degree in Higher Education from the same university, where I had an active career as a professor for 18 and a half years as a faculty member in the program of ID. I am a higher education administrator, fine arts artist, and cultural promoter. I am the founder and chair of the
first Dominican Association of Design Professionals (ADOPRODI) since 2004, and an active
member of several regional associations in the field of design. I was an ID practitioner for 23
years with my own firm, and currently, I am UNIBE´s registrar. Prior to working as an
independent interior designer, my work experience included two architecture firms where I was
part of the ID teams, respectively.

I considered in having a voice in ID education since 2001, when I embarked on a
Master´s degree in Higher Education, through which I started to communicate and express my
thinking in that matter. As a result of that study, I started a leadership role in ID which
exponentially expanded in 2007. I moved into a design prominence when I started concerning,
researching and writing about the role of a designer as a researcher. My research interest has
focused on new teaching and learning models for the 21st century interior designer. I have
presented my work in different specialized conferences in the United States, Cuba, México,
Nicaragua, Argentina, Costa Rica and in the DR.

These concerns have grown out of my own evolution as a design educator, practitioner
and researcher. I broadened my inquiry exceeding the limits of the results of my master´s work,
deciding to research students´ URE´s provided or not by their faculty. I have a responsibility to
ensure that my efforts will have the desired impact in the community of interior designers by
doing valuable work through the field of education.

During my years as a professor, I demonstrated real passion to teach and I became a role
model to inspire my students. In my faculty evaluations, students have stated that I am an
outstanding instructor, offering students the opportunity of engaging in a carefully planned and
creative learning process, supported by up to date teaching resources and technology. I received
a teaching award in 2003 from UNIBE.
From 2007 to 2014, I served as the university’s curriculum office coordinator, with the responsibility of planning and supervising the curriculum redesign projects of all undergraduate programs. This position allowed me to gain a thorough understanding of the teaching and learning trends in different fields, and to develop skills as an outstanding educational projects manager.

I have taught the ID course titled Final Project for 13 years. I have had the opportunity to observe ID students study new materials, approach new design processes, and benefit from new technological tools to design artifacts and projects in order to produce better environments and solve current design problems. In those 13 years as the final project course tutor, I have come to appreciate the importance of engaging students in both the consumption and production of original research knowledge at the undergraduate level.

I have seen students struggle with the idea of research in their final research projects because they did not have formal UREs leading up to this experience. Only few students were engaged in research for their final research project, and with proper guidance, they produced great ID final research projects. I felt very frustrated sometimes, because I understood the importance of incorporating UR into the educational experience at the undergraduate level, and I wanted to be part of a change in the way undergraduate ID programs could incorporate more research, but there were no propitious conditions to do so.

Understanding design as a great development tool has taken me to maintain a leadership in my professional area, and to keep me participating in conferences and world-wide design forums constantly. One of my great professional goals as an educator is to help to transform ID teaching and learning, creating new instructional models that allow design research contribute to the prosperity of the region.
I truly believe that the education of future designers requires thinking in broader contexts of relations between human beings and the environment, taking seriously and professionally carefully curating materials and exploring alternatives, as well as caring for sustainability. It also implies to create the foundations of increasing awareness of natural and artificial surroundings, between past and present, tradition and innovation, promoting cultural identity.

In my experience, it is imperative to redefine education and practice. Higher education in the Dominican context requires a critical look at UR. Every ID program must develop research-oriented interior designers to face and to solve problems regarding habitable spaces, to create a culture of applied research, aligning university and industry.

**Population, Sample and Setting**

According to Marshall and Rossman (2016), "case studies favor intensity and depth, as well as exploring the interaction between case and context" (p. 19). To characterize the case study (Marshall & Rossman, 2016; Merriam & Tisdell, 2016), the unit of analysis was the total of the case. I chose to use a single, instrumental case study with multiple data sources to create understanding of students and faculty UREs (Guest, Namey, & Mitchell, 2013).

**Site or Source of Potential Study Participants**

The population pool for my full dissertation research was all 17 ID students who took the last design course in Spring 2018 in a department of ID at a private university in Santo Domingo, DR. Also, the recruitment included all faculty in this ID department, which was a total of 18 members. In my field study, seven of the 17 students enrolled in their last design course at the department of ID volunteered to be interviewed in Spring 2018. They expressed their intention to also participate in the full dissertation study. I re-interviewed those seven students. I was particularly interested in them, because they had a more finished experience due to the fact that
they have already completed two levels of their final project course and their field experience. I also interviewed the 13 faculty members that expressed interest in participating of the study.

**Purposeful Sampling Strategy and Numbers**

For my full dissertation, I recruited again the students that participated from one ID department for my field study and I recruited all of the ID faculty to ensure results are not just a coincidence. To recruit the participants, I used the following steps:

1. I sent an invitation by e-mail to recruit the potential participants from the department of ID, setting the time and place for a first group meeting in order to explain my project.

2. I communicated with the students and faculty by e-mail or cell-phone. If individuals were interested in participating in the study, I arranged a time to review the consent document and proceed with the interview should they agree to participate.

3. At the beginning of each interview, participants were asked if they consent to be interviewed, and for the interview to be recorded using a digital tape recorder. The interviews were conducted at the university. The length of participation in the study required for each faculty was a 60 minute session. Equally, the length of participation in the study required for each student was a 60 minute session.

Following the steps explained above, I was able to identify more than enough participants for the study. To collect the student’s final research projects, I asked them during the interviews to provide me of a copy when they concluded the semester. To collect the ID curriculum and syllabi, I arranged a meeting with the academic director in which the director provided me a copy of both type of documents.

I obtained the university’s site permission from the appropriate administrators of the site to contact the students and faculty to procure a written consent to do the face-to-face interviews.
The approval was considered as part of the HSIRB. The research proposal was presented and approved by the Office of the Vice President for Research (Appendix A). I acquired a complete list of the population through the academic director, and I directly contacted, or re-contacted them by e-mail, explaining the purpose of the study, and attaching a letter to obtain endorsement, approval, and consent as called for prior to the interviews (see Appendixes B and C for faculty and student in both English and Spanish versions, respectively).

I explained the consent form (See Appendixes D and E for the faculty and student consent forms, in both English and Spanish versions). When faculty and students agreed to participate in the study, I acquired the participants’ signature prior starting the interviews. The individual interviews were scheduled per the previous agreement of the time that students and faculty were available to meet. See interview protocols for faculty and students in Appendixes F and G, in both English and Spanish versions, respectively.

**Data Collection Methods**

Because the richness of a case study is not to rely on a single data collection method (Creswell, 2013; Yin, 1984), I employed multiple data collection approaches. The main method to collect data was in-depth, semi-structured, individual interviews with each participant (Marshall & Rossman, 2016), students and faculty. In-depth student and faculty interviews helped participants fully express their experiences (Creswell, 2013).

In addition, relevant artifacts such as ID curriculum documents and final research projects of each student interviewed were primary sources of data and were used for triangulation of data (Creswell, 2014). These data assisted me, as the researcher, to build an in-depth picture of this case and provided insight into the integration of UREs in the study of ID.
**Student and Faculty Interviews**

The intent of the student and faculty interviews was to develop an in-depth understanding of any research experiences provided by faculty for undergraduate students. The student interviews were based on Shaw et al.’s (2013) construct of research preparedness to help organize the questions and ideas. Research preparedness was the theoretical structure to examine the students´ UREs. The four factors delimiting the construct of research preparedness were: learning motivation, the way students approach the research projects (values, goals and beliefs about the skills needed to be successful in the course, and their learning strategies); “research environment, the sense of belonging, including relationships and use of resources; research orientation, the research understandings and feelings towards research; and the research self-efficacy factor, the students´ conceptions and expectations about their perceived abilities or skills to accomplish research tasks” (Shaw et al., 2013, p. 713). See Appendix F for the student interview protocol in both English and Spanish version.

To categorize my faculty interview questions, I used the following faculty instructional decisions regarding UREs in ID: Faculty beliefs and outputs; design strategies for promoting research; contribution to research environment; and students´ URE supervision and/or mentoring. See Appendix G for the faculty interview protocol in both English and Spanish version.

To develop and conduct the interviews I followed Creswell´s (2013) procedures: (a) delineate the interview questions aligned to the purpose of my study; (b) identify the potential participants; (c) determine the type of interviews to be conducted; (d) decide the interviews recording methods; (e) design the interview protocol; (f) decide the site to conduct the interviews; (g) obtain site approval and participants´ consents; and (h) conduct the interviews respectfully. The in-depth, semi-structured interviews using open-ended questions provided the
desired depth of response and a holistic understanding of the interviewees´ point of view (Gall, Gall, & Borg, 2007).

To design the interviews, I prepared a basic checklist to make sure that all relevant topics were covered, and then, I formulated the questions for the interview guide within the parameters of the study. I kept the interview guide concise to allow the participants to develop their answers in a significant way according to their experiences.

Audio-recorded interviews with the seven students from the ID cohort that ended in December, 2018, and 13 faculty members of the private ID school were conducted using semi-structured interview protocols (Appendixes F and G, respectively), a guided approach with open-ended questions that allowed the participants´ points of view to unfold during the discussions (Marshall & Rossman, 2016). The students´ interviews took place in December, 2018, and the faculty members´ interviews took place between February and March, 2019. The interviews took place at a private space at the university, after a mutual date and a meeting time were determined with each study volunteer. These interviews were 45-60 minutes in length.

Information about the objective of the interview and overall study was provided to each participant while initiating each session. Confidentiality was explained. The interviews were recorded and transcribed by me as the researcher. I took notes during the interviews that were recorded as well my particular reflections of the interview process. As interviews progressed, I tested themes and ideas by proposing them to the interviewees, or by formulating more focused questions derived from the themes and ideas under development. The research questions defined at the start of the case study served as structure for the interviews.
**Final Research Project**

I asked the students to provide me a digital copy of their final research project. The final research project is part of the curriculum and an important part of an interior designer’s education in his or her undergraduate courses. It provides the opportunity to apply and extend students’ skills and knowledge undertaking an extensive and independent exploration of a particular topic (Karazi, Brabazon, Smyth, & Molloy, 2008). Additionally, in the final research project, ID students are supposed to develop skills in applied research, project management and technical communication. The review of the final project intended to have elements of the formal research process. See Appendix H for my analysis guide of such projects, in both English and Spanish versions.

**ID Curriculum**

The implementation of a program, the assessment of courses, and learning outcomes are essential to inform and improve the teaching and learning processes in higher education (Lattuca & Stark, 2011). Because I am interested on UREs development in the ID curriculum, the ID curriculum and courses syllabi, served to identify if there was an overall benefit regarding research in the program or to determine its curriculum potential. This allowed me to triangulate data to answer my overarching question of the formal research experiences students had while enrolled in the ID program, and the sub-questions of the ways faculty incorporated research into their ID courses. Whether or not it suits the specific URE educational context, this review was based on my own experience and intuition as a teacher of ID in the past, applying a set of explicit curriculum review criteria, adapted from the work of Wolf et al. (2006) as shown in Appendix I. To collect the ID curriculum and syllabi, the pertinent academic department of this private university provided me a copy of both types of documents after a meeting with the authorities.
Data Analysis

My interest for this study relies on the overarching question: What kinds of UREs do faculty incorporate, and how do students and faculty regard their place in an undergraduate ID curriculum? My conceptual framework provided me an overall visual picture and a point of departure to organize my ideas. It portrays the analysis that has been carried out of relevant concepts. It illustrates the relationships between curriculum redesign faculty instructional decisions in relation to UREs in ID, and the research preparedness construct, designed to draw attention to what was important regarding this case study. With this perspective and personal engagement in mind, my main concern was to produce valid and reliable knowledge within ethical parameters which are very important to establish the trustworthiness of the research project (Merriam & Tisdell, 2016).

The intent and purpose of a case study research with multiple data sources is to provide comprehension of real-life situations and to provide clarity when using many references for facts (Yin, 1984). Data derived from interviews, documents and artifacts (students´ final research projects, ID curriculum and syllabi, interview transcripts, records and individual notes) that were brought together to begin the data analysis (Merriam & Tisdell, 2016). I am using the syllabi as artifacts that provide me with better understanding of the ways faculty think about research.

The first step of the process of producing a detailed description of the case and its context (Creswell, 2013) was to create analytic memos after each of the interviews and to keep a log trail to be considered data to use for the analysis. Frequent memoing was used to obtain my observations, viewpoints, ideas and thoughts to sustain reflectivity, and to acknowledge any personal bias on my contextual assumptions ( bracketing) during the data analysis and writing process of placing this study together. The second step was data management: creation and organization of the data. Data were prepared for analysis by the researcher (Creswell, 2014;
Eisenhardt, 1989; Merriam & Tisdell, 2016; Yin, 2017). All interviews were transcribed verbatim and word-processed by myself.

To support triangulation and theory building, the document analysis was a complementary data collection procedure (Bowen, 2009). I reviewed the students’ final research projects. The more responsive to the topic and questions data, guiding my study, was organized according to source which was coded anonymously with a number to replace any identity. The data was read repeatedly to delimit a sense of what participants expressed prior to data reduction, and subsequently search for matching patterns, concepts and themes to find relations between them. The coding process initiated identifying in vivo codes to keep close conformability of meaning units of the transcribed and translated interviews using the NVivo Pro program (Version 11). I kept an open mind about I was noticing.

The third step of the process was to organize the uncover patterns, concepts and themes around the following steps:

1. Reading and memoing: reading through texts, making margin notes from initial codes. The first coding started with the use of different colors to identify emergent themes and sub-themes. My coding categories emerged as I learned from the data (Richards, 2015).
2. Classifying and establishing patterns around research preparedness (Shaw et al., 2013) and faculty’s instructional decisions regarding UREs in ID. As I noticed recurring patterns across varied points of data, I clustered those findings and created a category for them, considering how my categories addressed the questions guiding my research and its meanings in the project (Richards, 2015).
3. The categorical aggregation to determine themes, patterns and consistency for the emerging of issue-relevant meanings, and a correspondence between two or more
categories (Zucker, 2009; Stake, 1995) to examine the students´ experiences regarding UR were: (a) learning motivation, (b) research environment, (c) research orientation, and (d) research self-efficacy. The faculty´s instructional decisions regarding UREs in ID categorical aggregation were: (a) faculty beliefs and outputs; (b) design strategies for promoting research; (c) practice and experience, and (d) students´ UREs supervision and/or monitoring.

4. I kept examining the data using colors to identify the categories and to see how far they fit or fail to fit the expected categories determined and explained in my conceptual frame. The expected categories were distributed into a matrix (cluster analysis), devising the material into content analytical units "to create a manageable corpus which still reflects the original material" (Kohlbacher, 2006, p.12).

5. Representing and visualizing: presenting in-depth picture of the case using narrative, visual representation and tables. Using direct interpretation and developing naturalistic generalizations (drawing meaning from looking at a single instance) of what the researcher learned. For pulling the data apart and putting it back together in more meaningful ways (Stake, 1995), I draw a mental map to better understood the emerging themes and sub-themes as shown in Figure 3 that derive from the main aspects of my study: students, faculty and ID program. As a designer, I am a visual person and my brain works with the use of mental and visual conceptual maps, as visual thinking strategies such as diagrams to express my thoughts in a more abstract sense. I used visual tools as a means to interpret the data, as a visual dialogue with myself to support emerging ideas and concepts as shown in Chapter V, as a construction tool for the research as shown in Chapter VI.
Another step was the detailed reading of the final research project thesis for each student (document analysis), reviewed with a checklist designed for the purpose of its use as data (See Appendix H). Followed by the analysis of the ID curriculum, specifically the program and syllabi, reviewed with an adapted questionnaire structured with a basic checklist and 20 open questions (Wolf, Evers, & Hill, 2006), redesigned for the purpose of its use as data (See Appendix I). These documents were reviewed grounded on their pertinence to my study’s research problem and purpose. The review of the curriculum intended to inform about: (a) learning motivation, (b) research environment, (c) research orientation, and (d) research self-efficacy of the program and the courses. And also to inform about the formal research experiences students have while enrolled in the ID program, and the ways faculty incorporate research into their ID courses. “Document analysis involved skimming (superficial examination), reading (thorough examination), and interpretation” (Bowen, 2009, p. 32).

My overarching research question was the guide to organize the data derived from the documents into categories. This step of the process consisted of:

1. I read all the documents. First, I focused in small parts of the documents to better understand the whole. I identified relevant texts and main points expressed in the documents. As I read, I kept thinking about my central research question and kept an open mind considering all the evidence.

2. To ensure accountability, I completed by myself all the checklists for the final research projects analysis and the program and syllabi review questionnaires.

3. Coding of data from document analysis. Pattern recognition within the data with colors. I did a more focused reading and review of the data at this point. Codes used in the interviews were also applied to the content of documents.

5. Identifying themes related to the students and faculty’s interviews through the scope of my conceptual framework.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Mental map to better understand the emerging themes and sub-themes after coding (Pimentel, 2019).}
\end{figure}
Trustworthiness

To refine the accuracy and the rigor of the findings in qualitative approaches to research, Lincoln and Guba’s (1985) criteria, including credibility, dependability, confirmability, and transferability were used. To establish trustworthiness (controlling and understanding threats to validity and reliability) in the process of data collection analysis I pursued several procedures (Merriam & Tisdell, 2016).

Validity and Reliability

The system for validating the data for this research was triangulation or cross verification of the case study from different outlooks (Yin, 2003; 2014) and contrasted with credibility procedure (Zucker, 2009). As triangulation enabled me to have a trustworthy groundwork for the findings and the contribution of knowledge (Yin, 2017), I used data source triangulation of different types of data sources: interviews and documents. Also, I wrote about my relation to my research (reflexivity) kept in a log trail for further claims of my thoughts, theories and conclusions (Richards, 2015). The case reliability was contrasted with the dependability procedure to establish rigor. "The researcher´s processes were consistent and reasonably stable over time and across researchers and methods" (Zucker, 2009).

Credibility

Before data collection, I was very aware from the beginning to clarify my own bias by reflexivity, a thorough literature review, and an alignment between research questions and interview questions to ensure credibility, because my voice and my identity have shaped my overarching research question through the process of creating my epoché (Marshall & Rossman, 2016).

To increase the credibility of the data during data collection and analysis, I kept constantly reflecting on and mentioning my biases and personal perspective. I used constant
memoing to audit the constructs I was elaborating, paying attention to any changes that may occur, including my own experience since the beginning of the study until I finished it. I conducted a thorough literature review, developed an audit trail, and triangulated data collected (interviews) from people with different perspectives with the final project artifacts and curriculum documents (Merriam & Tisdell, 2016).

**Dependability**

To ensure dependability, I established the consistency, accuracy and repeatability of my findings. The purpose of this procedure was to verify that the findings match the raw data collected, and evaluated by other researchers, including my advisor and the members of my dissertation committee. I wanted to make sure if they looked over the data, they arrived at similar interpretations, findings and conclusions. This helped me to assure that there was no misleading in my final report or nothing missing from my study, building a stronger case for my findings.

**Confirmability**

Also, during data analysis, to ensure confirmability, I developed an audit trail and peer audit (Creswell, 2013; Lincoln & Guba, 1985). The data were interpreted through the research preparedness construct. From the original source in the interviews, I identified the salient points directly from the text of the interview. I also organized those codes into groups to create categories, themes and sub-themes until I concluded with the possibilities of grouping the coded meaning segments.

**Transferability**

I addressed the transferability of the study’s findings by describing them with the depth (thick) and richness needed to be relevant to other contexts, situations, times, and people (Lincoln & Guba, 1985), and member checking to enable the reader in ascertaining whether or
not the findings can be transferred (Creswell, 2013). I established transferability addressing the
degree that findings of this study could be potentially replicated on other programs for future
research by an adequate description of the data provided in the study for critical review of the
findings by other researchers. “It is, in summary, not the naturalist’s task to provide an index of
transferability, it is his or her responsibility to provide the data base that makes transferability
judgements possible on the part of potential applicers” (p. 316). All the strategies presented above
provided my study with the credibility, dependability, confirmability, and transferability required
to establish trustworthiness.

**HSIRB and Data Storage**

Western Michigan University Institutional Review Board (IRB) protocols and policies
were followed. Informed consents were obtained from participants of the study. Subjects were
informed of the right to withdraw from the study at anytime for any reason with no
consequences. To ensure the privacy of subjects and confidentiality of information, many steps
were undertaken to guarantee the safety of the data:

1. For audio-recording purposes during interviews, I used a Samsung voice recorder
version 21.0.22.166, and I kept both hard copies and electronic copies for all data.

2. I developed a list of all the data gathered, and I gave a code for each participant to
keep the data separated from the list of participants.

3. Archives for them to store for at least three years after the close of the study. After the
study has been closed for at least three years, the data will be destroyed.

The data storage procedures while on location were: (a) hard copies such as interview
notes and audio tapes were kept securely locked away in a locked filing cabinet that could only
be accessed by agreed members of the research team while on location; (b) files containing
personal or identifiable data were password protected, and only accessed by agreed members of the team; and (c) direct identifiers (personal information) were removed.

Data was only accessible to team members. The team work (researches) across the two institutions set up secure systems to both computer servers: (a) to ensure that other staff within their respectively institutions cannot access the data via the shared researches drives, and (b) to ensure secure data transfer between institutions via the shared researches´ drives.

**Limitations and Delimitations**

The limitations and delimitations are reflected in the research questions and the extent of the case study. The select group of students and finite group of faculty limited the study to describe the complete scope of UREs. Another limitation was the timing of the students´ invitations to participate due to a delayed timeline, the invitations were sent practically at the end of their last semester at the university. This situation did not compromise the interviews, but a solicitation earlier in the semester may have provided the opportunity to be part of the audience in their final research project presentations, which would have enriched the case study. The third limitation was some faculty members´ prior commitments that precluded them from participating. A request at the beginning of the Fall semester may have contributed to a different or a larger participant pool.

A number of delimitations naturally followed, due to the small sample selected and the procedures for this instrumental, descriptive case study. The study intended to accomplish a full picture of the state of integration of research experiences into the coursework of an undergraduate ID program of a private university in the DR. This study did not intend to cover more students than the selected group of participants that volunteered for my field study because I wanted to have their perspectives as they navigated from their last design studio course to their final research project presentation. To have more volunteers at the end of their final project
course would have been not directly relevant if they did not participate of my dissertation field study.

Although there is not any intention to claim generalizability of these findings as a representation of a wider educational setting (Stake, 1995), this research could be replicated for an extensive set of disciplines, within national context, because it is the first study to characterize the degree of exploring research experiences for ID undergraduate students and their faculty in DR.

**Chapter 3 Closure**

This study was designed as a single, qualitative, instrumental case study with multiple data sources because I want to develop an in-depth understanding of research that undergraduate ID students and their faculty have at a private university in the DR. The purpose of the design and methodology described in this chapter was to explore if faculty of the undergraduate ID program provide research experiences to such students. The population sample for the study was described, the research questions were identified and the methods of analysis were explained. The structure, validity, and reliability were also discussed.

To collect and analyze data for the study, I engaged both students and faculty to generate a full picture of where, how, and why faculty do or do not provide students with research experience during the undergraduate ID program. The data was collected from the interviews and documents described in this chapter. The next Chapter IV presents the case and Chapter V describes the results of the data collected from these participants and the conclusions of the study.
CHAPTER 4
THE CASE

As noted in Chapter Three, "case studies favor intensity and depth, as well as exploring the interaction between case and context" (Marshall & Rossman, 2016, p. 19). To give context, the private university that served as my case study setting was founded in the early 1980’s, and is located in the heart of the city of Santo Domingo. It is one of the leading colleges in the Dominican Republic (DR), recognized as one of the top five private higher education institutions (HEIs) in the country.

Today, the university offers several undergraduate programs, masters programs, and many certificate programs and diplomas through its continuing education department. The student body includes approximately 4,000 students from all over the world and over 19,000 graduates. The university has a professional academic and administrative staff of over 600 professors and 400 staff members.

The academic institution is a pluralistic and inclusive university which encourages scientific and philosophical diversity, respects religious and political ideologies, making no distinction on the basis of gender, age, race, ethnic background, physical handicap, and veteran status. The university has a research department that has developed areas of research to guide the academic community’s research work. It serves as the unit responsible to create continuing education regarding research for students and faculty in specialized areas of interest. The department is a research umbrella that supervises sub-units of research that have different responsibilities concerning research administration.

Upon selection and consent to participate, the data collected for this single instrumental case study included in-depth interviews, complemented with a review of the ID curriculum and the academic program final research projects. Each participant provided his or her own
experience and understanding of the university´s undergraduate research practices in the study of ID.

**Study Participants**

The student population pool recruited for this study were the same participants of my field study: the students that completed their last final project course in the Fall Semester of 2018 at the school of ID of this private university. I wanted to follow-up my study to have the students´ experiences before and after taking the two final project courses. To complement this study, I also recruited all 18 faculty members of the same school. From all faculty members, 13 teachers volunteered to be interviewed. Originally, I only needed to interview nine to ten faculty members, but I decided to interview as many of them accepting to be interviewed to reach the point of saturation or redundancy. All references to the participants use fictional names to protect their confidentiality.

I have to first address some main points that apply to all 20 interviews: The participants were very cooperative regarding the time and the days set for the individual interviews. The physical space identified to hold the interviews was very isolated from interruptions or disturbances, very comfortable, and very nicely designed; elegant, but not intimidating. The temperature of the room was adequate, as was the lightning, thus ruling out how the environment could affect the flow of the activity. The students and faculty interviews were audio recorded, transcribed and reviewed. Over the course of an academic semester, data were collected. Students and faculty members were interviewed individually.

**Students**

There is no male representation within the students because such representation does not exist. Right now, only women make up the population of the students in this school of ID. As shown in Table 3, where their demographic data are detailed; the students interviewed had great
academic performance during their undergraduate studies, most of them achieving academic honors. The students belong to the penultimate ID program and it is the last cohort to study under this curriculum. The last program was approved in Fall 2017 and the students who started with this curriculum should be finishing their studies in 2021.

Table 3

*Participant Demographics: Student*

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Sex</th>
<th>Age</th>
<th>Cumulative GPA</th>
<th>Academic Honors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maria</td>
<td>Female</td>
<td>21</td>
<td>3.75</td>
<td>Magna Cum Laude</td>
</tr>
<tr>
<td>Maureen</td>
<td>Female</td>
<td>26</td>
<td>3.42</td>
<td>N/A</td>
</tr>
<tr>
<td>Paola</td>
<td>Female</td>
<td>20</td>
<td>3.98</td>
<td>Suma Cum Laude</td>
</tr>
<tr>
<td>Natali</td>
<td>Female</td>
<td>20</td>
<td>3.53</td>
<td>Cum Laude</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>Female</td>
<td>20</td>
<td>3.95</td>
<td>Suma Cum Laude</td>
</tr>
<tr>
<td>Laura</td>
<td>Female</td>
<td>20</td>
<td>3.87</td>
<td>Magna Cum Laude</td>
</tr>
<tr>
<td>Amanda</td>
<td>Female</td>
<td>20</td>
<td>4.00</td>
<td>Suma Cum Laude</td>
</tr>
</tbody>
</table>

**Student 1: Maria**

Maria is a female student, 21 years old. She completed her final research project with a peer. She considers it a priority to do research before starting any ID project, and to know the ergonomic needs of the specific project to be developed. She evaluates the project during the creative process several times, and she compares it with her prior research.
She explained that she does not incorporate anything from our Dominican culture in her concept, style, materials, etc. She was very surprised with that question. She was the only interviewee to mention specific great designers’ names that she follows, and use them as referents in her creative process. She uses a concept as a referent start, but not a style. Maria was very accurate in her answers, but she did not over-explain herself. It was kind of difficult to try to make her talk more than exactly what she wanted to say.

**Student 2: Maureen**

Of all the participants, Maureen was the oldest, a female student, 26 years old. She worked alone in her final research project. She found it very challenging. Throughout the interview, she pointed out several times the need to know how to work collaboratively. She mentioned the word “teamwork” several times. Also, she pinpointed the importance to relate the ID with sustainability. She was very clear about the meaning of each concept related to the profession, and before I asked about her undergraduate experiences (UREs), she started mentioning the importance of doing research to start a design project. She did not know what I was going to ask.

For her, it is very important to have practical experience in the field, because she understands it is easier to learn from practice; but also, she explained the importance of the theory behind the practice. She wished she had a deeper experience regarding research prior starting her final research project. She loves to sketch manually as part of her strategies in the creative part of the design process. She considers that the program provides her of the skills needed to succeed in the profession. Even though she is conscious that in reality designers work in teams, she does not like to work with others. But she expressed that she does like to do research, that she feels very strong about it.
Student 3: Paola

Paola, a 20 year old student, completed her final research project with a peer. She expressed that the most important attributes for an interior designer are to be creative, a person that is capable of solving problems, to know how to understand the client, and to keep informed of what is happening in the world of ID. Paola also explained that research is the first phase a designer develops to approach a design process. It is the need to understand the space and the needs of the users.

Paola explained that she uses the internet and specialized books in ID and Architecture to research before starting a design project, focusing a lot of research on ergonomics. She likes to sketch, to use a concept, a mood board, and to go to the field, before starting the creative phase. She also expressed that there are not a lot of books by interior designers and that needs to change. She also explained that it is very important to do deep research before starting any ID project, and to know the ergonomics needs of the specific project to be developed. She evaluates the project during the creative process several times with her teachers before submitting the final design.

Student 4: Natali

Natali, a 20 year old female student, worked alone in her final research project. She explained that her father is an architect, and he guides her in her projects. She is currently working at his firm and she likes to do research very much. She spent a lot of time doing research for her project, and even better, because all the information she needed was very dispersed, she had to construct the information gathering pieces from different resources. She brought ideas to the table about how committed she was to her research, even though she did not like the research methodology course. She found it very hard and confusing. She was very honest and focused in her answers.
She was very firm assuring me of the importance of the methodology of design to start a project. She made special emphasis on the importance to learn from the practice. She also explained that she never goes to the library, she goes straight to the internet to do research for the design project. Natali asserted that the use of a concept does not work for her. She does not relate creativity with using a concept to start the creative part of a design project. She relays on inspiration. She was the only participant that likes to use a style to start designing. She also makes a mood board of inspiration, to exploit her creativity. She also emphasized the importance of drawing manually. She expressed her need to go to the physical space, when she has an assigned project, to learn from the space itself.

Student 5: Elizabeth

Elizabeth, a 20 year old student, was able to explain her UREs explicitly and without any problems. She worked alone in her final research project. She was focused in assuring the importance of the practice experience in the field. She indicated that the student practice should have to take place in an early stage of the ID program, and that she regretted all the inexperience when reaching that last part of the program.

Elizabeth made special emphasis on the fact that an interior designer definitely has to have spatial intelligence; not only to have good taste, but to have a lot of theoretical knowledge about ergonomics. All of the participants, so far, talked about the importance of ergonomics, to have this theoretical knowledge. She kept talking about that through all the interview and she specially emphasized the need to have a strong, evident research experience prior the final project course. She also loves to sketch manually as part of her strategies in the creative part of the design process. She explained that she never goes to the library, she goes straight to the internet to do research for the design project.
Student 6: Laura

The sixth participant, Laura, a 20 year old female student, came to the interview very early. She had to wait a few minutes before I let her in. She worked her final research project with a peer. She thinks a lot of changes must be made to the ID curriculum, even though she assured that she had a good research experience during her design courses, as well as with the design methodology and the research methodology classes.

Laura started talking more, and became very talkative when we got to the part of what she thought was a limit in our field regarding research. She found my question interesting, and she expressed that. She explained that she feels very bad when she sees students of the school of medicine reading like crazy at the library. Laura relayed me an anecdote, that once a person said to her that interior designers do not read. She defended our community saying that was not true, that we do that every time we start a design project. For the lightning design, the psychology of the space, graphic communications, everything. Then, she concluded, "it is not true that the interior designer does not read."

Laura explained that she has her own research methodology to start a design project. Something that caught my attention is the fact that she does not use social media as a design resources as her classmates do. She said she is not a follower on Instagram or Pinterest. At the end of the interview, Laura added, as an unexpected contribution, that the final project course should be writing about design, developing theory, not a project, because we have been doing that since the beginning of the program.

Student 7: Amanda

Amanda is a 20 year old female student. She worked her final research project with a peer. She was very emphatic on the importance of having a concept very well developed before starting the creative process, as the result of the research done previously to start to define de
project. She expressed the importance of the practical experience in the field, going to learn from the field as part of the curriculum for the program. She thinks the strongest attributes for an interior designer are: entrepreneurship, innovative, creative, hard worker, to focuses on the details, patience, to have empathy, to know how to work with different people, to be very open minded, and to be collaborative. She explained the importance of doing research before starting an ID project. She loves to sketch digitally as part of her strategies in the creative part of the design process.

**Faculty**

To better understand the way faculty thought about and approach research experiences for undergraduate ID students, all professors were audio-recorded during the interview. Some of the faculty members spent a great deal of time talking about their own experiences when they were students of the same program.

There were variations in the ways those individuals talked about their students, their teaching strategies and their own practices. At first, these variations appeared to be a contrast in the maturity of the faculty members due to the interdependent variations between their biological age and their years of teaching experience (See Table 4). Moreover, the differences appeared to be deeply related to the role of the faculty as practitioners. A third of the faculty are architects, 46% are interior designers, and 15% are both architects and interior designers. Only four professors are not certified in the university’s instructional model. They are the members of the faculty that have been at the university for the least amount of time. Not all faculty have been members of the final research project defense committee (panel of experts in the field) belong to the ID faculty. The only thing that I regret from this population is the fact that there is only one male represented among faculty.
Table 4

**Participant Demographics: Faculty**

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Sex</th>
<th>Age</th>
<th>Profession</th>
<th>Graduate Studies</th>
<th>Rank</th>
<th>School Alumni</th>
<th>Years In Academy</th>
<th>Final Project Advisor</th>
<th>Final Project Committee Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marivi</td>
<td>F</td>
<td>46</td>
<td>Architect</td>
<td>Master in Higher Education</td>
<td>AP</td>
<td>No</td>
<td>16</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Iris</td>
<td>F</td>
<td>61</td>
<td>Architect and Interior Designer</td>
<td>Master in Higher Education and doctoral candidate in Academic Evaluation</td>
<td>AS</td>
<td>No</td>
<td>25</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sandy</td>
<td>F</td>
<td>52</td>
<td>Architect and Interior Designer</td>
<td>Master in Higher Education</td>
<td>AP</td>
<td>Yes</td>
<td>20</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mayra</td>
<td>F</td>
<td>57</td>
<td>Architect</td>
<td>Master in Higher Education and in Construction Management</td>
<td>AS</td>
<td>No</td>
<td>17</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Rita</td>
<td>F</td>
<td>54</td>
<td>Architect</td>
<td>Master in Higher Education</td>
<td>AP</td>
<td>No</td>
<td>25</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Jaqueli</td>
<td>F</td>
<td>25</td>
<td>Interior Designer</td>
<td>Master in Interior Design</td>
<td>P</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Michel</td>
<td>F</td>
<td>35</td>
<td>Architect</td>
<td>Master in Urban and Territorial Development</td>
<td>P</td>
<td>No</td>
<td>11</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table 4-Continued

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Position</th>
<th>Degree</th>
<th>Rank</th>
<th>Yes</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jorge</td>
<td>M</td>
<td>30</td>
<td>Interior Designer</td>
<td>Master in Exterior Design, Spaces and Event Management</td>
<td>P</td>
<td>Yes</td>
<td>6</td>
<td>No</td>
</tr>
<tr>
<td>Sonia</td>
<td>F</td>
<td>46</td>
<td>Interior Designer</td>
<td>Master in Interior Design and in Marketing Advising</td>
<td>AP</td>
<td>Yes</td>
<td>11</td>
<td>Yes</td>
</tr>
<tr>
<td>Dalia</td>
<td>F</td>
<td>31</td>
<td>Interior Designer</td>
<td>Master in Interior Design</td>
<td>P</td>
<td>Yes</td>
<td>4</td>
<td>No</td>
</tr>
<tr>
<td>Claudi</td>
<td>F</td>
<td>32</td>
<td>Interior Designer</td>
<td>Master in Interior Design</td>
<td>P</td>
<td>Yes</td>
<td>1.5</td>
<td>No</td>
</tr>
<tr>
<td>Ashley</td>
<td>F</td>
<td>65</td>
<td>Historian</td>
<td>Master in Fine Arts</td>
<td>AP</td>
<td>No</td>
<td>20</td>
<td>No</td>
</tr>
<tr>
<td>Renata</td>
<td>F</td>
<td>44</td>
<td>Interior Designer</td>
<td>Master in Interior Design</td>
<td>AP</td>
<td>Yes</td>
<td>11</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note. F=female; M=male; ASP=associate professor AP=assistant professor; P=professor.

Faculty 1: Marivi

The first faculty participant was Marivi, a 46 year old female architect. She has a Master’s degree in Higher Education and she has been teaching for 16 years. She has been supervising the final project course and several design studios for three years. She is also a professor in the school of architecture. She was the first of the faculty members to volunteer and she wanted to participate right away. It did not take long for her to make the appointment. She gave very straight forward answers and she was very clear and critical on her thoughts about
providing UREs to her students. She explained that UR in her classes takes place both in and outside the classroom, either students work individually or in small groups of no more than two or three members each.

Marivi thinks the most important area of development for research within the ID curriculum could be environmental psychology, because everything starts with the human perception of the built interior space. She believes it is very important to develop tools and skills for applied research in the ID field. She explained that some students have a natural tendency toward research, but others need proper guidance to develop their skills. She works differently the research part of the design process with the students. Other professors work first the research and then, the creative part, as it is the conventional way. She works it simultaneously and helps the students to find the resources they need for their work both in the library or in the internet. She also likes to start working with a concept as the abstract and creative picture of the project and then, the students work in the research part.

**Faculty 2: Iris**

Iris is a 61 year old female, architect and interior designer. She has a Master’s degree in Higher Education, a specialization on virtual education, and she is a Ph. D candidate in academic evaluation. She has been teaching for 25 years and she has mentored students’ final research projects for over 20 years. She teaches the final project course, several design studios, furniture design, ergonomics, ethics, and methodology of design. She is also a professor at the school of architecture.

This was the only professor of all the participants that was aware of the school’s areas of research. She considers herself a better research professor after starting her Ph. D. studies because now, she really understands what it means to be a scholar and that condition shapes how she is capable to teach and to conduct research in the undergraduate courses. She really wants to
see research become the foundation of the entire program. Iris describes the importance of faculty being fully engaged in UREs, teaching with the proper tools and the exchange of ideas. She confessed that her main concern is the fact students find it hard to develop research skills and get bored very easily, without making the proper analysis of the problem and the consequent connections for the project in development.

Iris is in charge of the methodology of design course which focuses on the basic steps of design research, critical analysis, careful reading comprehension and academic writing, and practice and experience of the profession. She gives them a general overview of the design process, how to organize the data gathered on a particular topic to traduce it into the design project. She is recently working with the collaboration of her students on a capstone project for a particular community and she wants to make it more interdisciplinary towards a real and important contribution to the society. They are currently working on the publication of the results and that is going to be the first collaboration where the students are co-authors with their professor.

**Faculty 3: Sandy**

Sandy is an architect and interior designer. She has earned a Master’s degree in Higher Education. She is 52 years old. She has 20 years of teaching experience, including one year as final research project advisor. As a former student of the program, she expressed her understanding of the need to have more collaboration among faculty in the design studio courses to align the design methodology and the research. She teaches several design studio courses at all levels of the program, including the two final projects, ergonomics, technical drawing and environmental psychology.

Sandy described that for her, the research process is very intuitive. She expressed being very intellectually curious so she is constantly researching and learning about every topic she is
interested in, and that she tries to transmit that curiosity to her students through formal research assignments and round table discussions.

Faculty 4: Mayra

Mayra is an architect with a Master’s degree in Higher Education. She is 57 years old. She also has a Masters in Construction Management. She has been part of the faculty since 2002. She has taught through those 17 years several design studio courses at different levels (hospitality, restaurants), climate control and acoustics, furniture design, and she has been member of the defense committee for the final research projects presentations. She has a critical attitude about what the program should be and about the job of the faculty, on how the courses should be both challenging and enjoyable for the students. For Mayra, the current generation of students come, in general, from a very poor basic education, with a lot of academic "lagoons" that make them intellectually immature to approach a research project with the proper rigor.

Mayra expressed her worry that some courses have less contact time in the redesigned program (2017). She considers there is a missing structure regarding research and accuracy, methodologies, and the use of theory. For her, faculty need to be more developed in the university´s instructional model and should be better prepared regarding research. She explained that it is important to promote a better understanding of the role of the interior designer in the community as a problem searcher of human needs in habitable spaces. She proposes a unit within the research department just for the research projects of the faculty of arts, because right now the university is only focusing on the "hard sciences" that produce data and statistics, and the professions that belong to the humanities area could give a different and enriched perspective to research in the social sciences. She feels the humanities are marginalized in the university´s research support.
Faculty 5: Rita

Rita is 54 years old, an architect with a Master in Higher Education. She has taught in the school of ID for 25 years. She teaches construction materials and the budgeting course. She is currently teaching construction methods and techniques, and project administration. She also teaches technical drawing and architectural drawing very often. She has been member of the defense committee for the final research project presentations since she started teaching. She teaches very practical courses, but has not taught any of the design studio courses.

Rita has a critical attitude about what the program should be and about the job of the faculty. For her, it is very important that the school defines priority research areas. She considers research a foundation of the program. She added that in order to promote UREs within the program, it is very important to have an integrated faculty. When she explained her thoughts about design research, she specified that in order to design, there should be an objective argument based on research. For her, researching for an ID project is the main difference between designers and decorators. "We need leaders in ID, not decorators." To achieve that ID leadership, research should inform design.

Faculty 6: Jaqueline

Jaqueline is a 25 year old female interior designer, and an alumna from this program. She has a Master in Interior Design and she has been teaching for one year. She is quite new in the faculty and she expressed that she loves to teach. She teaches design and ergonomics, residential design studio, visual language, and design language. She is interested in engaging in research herself, but she pointed out several times that she does not have time for that, "maybe in the future." She specified that she does integrate research into her teaching in her design studio, and her students have to follow a methodology of design in their projects. She was a low-
information interview regarding UREs because she was more focused in the way students visually display their design projects.

**Faculty 7: Michelle**

This participant is a 35 year old female architect, with a Master in Urban and Regional Development. She has been teaching for 11 years. She has been member of the defense committee for the final research project presentations and has taught several design studio courses and the digital design courses. She made special emphasis on the idea if the university opens a unit of the research department to work with interior design’s priority areas for research, or for the faculty of arts, the professors will be more interested in doing research to publish with their students, and she said she would be very interested in that. She said: "Yes, yes, yes!" after sharing this idea. She incorporates research into her design courses, and she teaches design research in the same way she was taught during her studies of Architecture. Her students work with basic information to start a design project, but she wants to have the opportunity to do formal research and publish with her students within the university’s priority areas for research.

**Faculty 8: Jorge**

Jorge is a 30 year old male interior designer, and an alumnus from this program, as well as the only male participant interviewed. He has a Master in Exterior Design, Spaces and Event Management. He has two specialties: Retail Window Design and Commercial Design. He has been teaching for six years, and focuses on hospitality design, commercial design, institutional design, and an elective course called visual merchandising.

Jorge believes in cross-disciplinary collaboration as a critical skill for interior designers due to his recent experience with a marketing agency. He commented on the importance of renewing the program because he considers that the school has lost its leadership at national level. For him, the program needs to grow and to be renewed completely in a multidisciplinary
approach because of the relevance of the profession to other fields. He feels there is an imperative opportunity for the school to offer two masters: One in design and management, and another in commercial or hospitality design. He also has been a member of the defense committee for the final research project presentations.

He considers applied research a high impact methodology to use as a teaching and learning strategy, because students learn how to research by working in the real world, learning through practice. Students find solutions that solve design problems based on real users’ needs. Students work in the field, instead of only working within the classroom, applying existing and new knowledge that could be directly applicable and immediately useful.

**Faculty 9: Sonia**

The participant is a 46 years old female interior designer, and an alumna from this program. She has two masters: A Master in Interior Design and a Master in Marketing Advising. Currently, she is doing a Master in Arts Leadership and Administration. She has been teaching for 11 years. She has been a member of the defense committee for the final research project presentations, but also the advisor for several years. She has also taught several design studio courses, ergonomics and furniture design. One of the things that concerns her a lot is plagiarism. For her, the fact of being a student again, has gained her, as a professor, a new perspective on how the UREs should be for the students.

Similar to Mayra, Sonia feels that the students arrive to higher education from a very poor basic education system, with an academic research "emptiness" that make them intellectually behind to approach an interior design research project with the required rigor to respond to social and human needs. She makes her students start a design research project by reading and searching for social problems in the newspapers to support and argue about a design
problem that needs a response. She also promotes regular visits to the library to engage the students in reading and academic writing.

**Faculty 10: Dalia**

Dalia is a 31 year old female interior designer, and an alumna from the program, with a Master in Interior Design. She has been teaching for 4 years. She has never been member of the defense committee for the final research project presentations. She has taught English professional vocabulary for interior designers, design language, and residential design studio courses. She likes the students to work in teams as a strategy for critical learning and analysis of the interior design projects. Similar to Jaqueline, she was a low-information interview regarding UREs because she was more focused in the way students visually represent their design ideas for the projects than the level of deep research they have to do before start designing.

**Faculty 11: Claudia**

The participant is a 32 year old female interior designer, and an alumna from the program. Claudia has been teaching for one and a half years. She started her academic studies in Architecture, but changed to ID. Her research interest comes from that time studying Architecture, almost three years. She teaches art direction and the art direction assembly shop. She has not been member of a final research project defense committee yet.

She believes students need to learn to do deep thinking, to properly use the methodology process for every design project. Innovative designers do research because data do not lie. She thinks that lack of interest on research from the students, maybe is generational. In her own words: "To design is to design life itself." For her, the scientific method is the strongest guide to her work.
Faculty 12: Ashley

Ashley is a 65 year old historian with a Master in Fine Arts. She works at different HEIs. She has been teaching for 20 years, but never has been member of the defense committee for the final research project presentations because she only teaches theory. Even though she was hired as part of the general studies faculty, because of her academic background, she teaches mostly at the faculty of art. She took the university’s instructional model and she considers it very essential for her performance as a professor. She has taught furniture history, art history, and history of contemporary art. She considers that there should be a coherence between research levels, and she believes that the university should pay more attention to the humanities disciplines. For her, the past has something to teach us as a current civilization. Hence, history, philosophy, ethics, aesthetics, semiotics, etc., have an impact in our lives, and should be taught in order to encourage more meaningful lives.

Faculty 13: Renata

Renata is a 44 year old female interior designer, and an alumna from the program. She has a Master in Interior Design. She has been teaching for 11 years, and she has been member of the defense committee for the final research project presentations, but also a research advisor for several years. She has also taught several design studio courses, ergonomics and furniture design, furniture budget, basic design, and environmental psychology courses.

She expressed that she likes doing research, she does it continuously at her firm and she is very passionate about it. Similar to Jorge, she asked the following question, like thinking about it out loud: What happens that the students have to study their masters somewhere outside the country? She concluded saying that the school needs to offer masters in ID, commercial ID, lightning design and luxury spaces design to produce knowledge in the field.
As a professor, she likes to help her students find their own design "footprint" with challenging learning in collaboration and innovation strategies to enhance the creativity for the design projects. She also is part of the faculty that feel students lack basic academic preparation to enter the university, missing of critical rigor, analysis, reading and writing skills. Renata feels the university has the responsibility to address those preparations gaps in order to produce more research within the undergraduate students.

For Renata, the designer is definitely a mystic character, a god or a goddess because we add value to people lives with our work. As she noted, there is no context for our Dominican design, and there is a lack of doing new things. She wants to stop the idea that interior designers are decorators. She explained: “And that is our mission as interior designers, to contribute to the knowledge of the discipline with formal research, publications, books, exhibits, and critical conversation.”

The ID Program

The Bachelor in ID’ curriculum is structured in the areas of design, art, communication and technology. This program creates the bases for the programming, planning and design of interior space, and prepares students for professional practice, taking into account social, functional, aesthetic, constructive and technological aspects in the development of the activities of humans within interior surroundings. It is a ten-semester program that lasts three years and three months. It is composed of 68 courses that add to 178 credits, divided in three cycles: general, professional basic and professional.

The general cycle corresponds to the construction of scientific, social and cultural knowledge that is crucial to understanding and interpreting specific knowledge for the profession. The professional basic cycle focuses on the development of abilities, artistic skills and sensitivity. The professional cycle addresses the formation of the interior designer in
knowledge, attitudes, values, abilities and skills of the field. It constitutes the reaffirmation and self-development of the student, consolidating acquired abilities and capacities.

The general purpose of the program includes the promotion of research, innovation and the interrelation with other disciplines, to interpret the social and historical moment where the future interior designer will be a practitioner. The curriculum is designed to fulfill the development of the following specific objectives, which allow the future interior designer to reach the capacity of: To produce spaces with innovating aptitude, creative proposals, aesthetic sensitivity and efficient functional expectations. To effect changes in the quality of life of human beings by contributing to the development of spaces by active and conscious management. To develop pleasant, comfortable, functional and harmonic interiors of daily use, including furniture, accessories and atmosphere. To solve problems while considering the impact on users. The skills to develop in the students are:

1. Knowledge of the visual representation aspects of a project on which the design is based.
2. Consciousness of the social function of design and the capacity of the interior designer to contribute ideas to society to improve habitats in the areas of health, security and well-being.
3. To understand human behavior and how humans interact with the constructed environment and with each other.
4. Knowledge of the basic aspects of sociology, anthropology and psychology necessary for the social contextualization of the project and its basic ergonomics.
5. Knowledge of the physiology of visual perception and its implications for visual contact (graphical ergonomics).
6. Capacity to formulate ideas and to transform them into project-worthy creations in agreement with composition principles, visual perception and systemic space.

7. Knowledge of art history, architecture and design styles.

8. Capacity to create spaces that increase the productivity of the user’s.

9. Capacity to know and to apply research methods to creatively solve the demands of the human habitat, in different scales and complexities.

10. Capacity to compile and analyze information about the users of a space to design in relation to their behaviors, characteristics, requirements and needs.

11. Willingness to engage in research producing new knowledge that contributes to the development of interior spaces.

12. Knowledge of the fine arts, the popular arts and aesthetics as fundamental factors in the quality of the conception of interior spaces.

13. Capacity to plan, program, budget and manage interior design projects in the labor market.

14. Capacity to select appropriate product specifications and materials that involves observance of codes, safety, standards of construction, and criteria of sustainability and human needs, such as accessibility.

15. Knowledge to focus on significant, functional, emotional and aesthetic needs for public spaces and to facilitate the well-being and connection of the user with the interior space.

The curriculum is structured in four academic areas: Design, communication, art and technology. The curriculum includes elective courses and a student practice at the end of the program. Seventeen courses belong to general studies. Ten courses belong to the design studio area, specifically, where the orientation to design research is to promote the capacity to comprehend and to apply research methodologies to resolve the needs of the human habitat with
creativity, at different scales and levels of complexity. Only four courses are oriented explicitly to research: research methodology, design methodology, final project I and final project II, even though the program descriptions accurately capture the types of duties a professional can expect to perform research in the work environment as explained above in the skills developed in the students.

The program does not have specialized labs to support the research learning outcomes of the ID program about materials, or to make furniture and artifact prototypes. There is only a lightning lab, which has very basic facilities. The textbooks listed in the university library for the program are adequate for program delivery, but they do not have the latest editions. The school does not have its own library. There are few research learning resources, like audio-visual materials and print media, to engage students in research, and some are out of date. The institution has a research department which has appropriate technologies to provide research instruction. There are research engineering labs and basic sciences labs, and there is one researcher from the faculty of arts working with the research department. The institution has computer labs where the students learn how to use digital tools to draw, but these do not contain content and learning activities consistent with design industry research practices.

Some students and faculty expressed that the program length is not adequate to produce graduates with the required entry-level knowledge and development in research for the field. They suggested that the program should last at least four years, and the time allocated to research for each course should be longer. The program properly addresses course pre-requisites and co-requisites in general. Courses like research methodology and methodology of design are taught in the middle of the program. Students and faculty complaint about the student practice (internship) because it is undertaken in the last semester. They believe that there should be more practice or contact with the "real world" (in their own words) earlier in the program.
Five final research projects were reviewed out of the seven students interviewed because two pairs of students worked together in their projects. Most of the projects were well-structured and well-written, responding to a specific interior design problem, aiming to develop better design systems or procedures. They were very creative and innovative. The practical problems were clear and correctly identified in a coherent and pertinent proposal of applied research, as were the objectives of the project. There was inconsistency regarding sufficient and adequate references for the project. References were not up to date, and some students used correct APA format, but others did not. Most of the technical-specifications (tech spec) reports were not interesting to read or well-written, showing a lack of preparedness regarding research publications and academic writing, and missing some formal aspects of research rigor. The tech spec is a chapter of the final research project that explains the requisites of the project to be accomplished.

**Chapter 4 Closure and Reflection**

Even though there are common perspectives regarding research and similarities in their experiences, it is important to note that these participants, students and faculty, spoke from their own experience. For them it is crucial to have the proper amount of time to conduct design research, to find relevant problems and the appropriate literature. They confessed that some of them “needed little mentoring regarding research because they researched a lot at high school; but in general, they needed guidance and motivation.” They needed help from their professors to discover their true interests and to be passionate about doing research, and the proper amount of time and space to do so. It is important to underline that students used the terms “research” and “searching for sources of information” interchangeably, denoting they do not clearly understand the differences between such definitions.
The opportunity to interview the faculty members enriched the case because "the voices of humanities faculty are often marginalized or missing altogether from conversations about the state of research and scholarship in the academy" (Mendoza, 2015, p. 76). The more experienced professors (regarding the time teaching at the school) have lots of practical wisdom, but the younger ones have new points of view, new teaching-learning ideas. They are trying to teach differently from the way they learned as undergraduates.

Faculty had to think about what was happening in their classrooms concerning research. They were able to talk about their practices and professional interactions and how to contribute to a culture of production of new and original knowledge in the field, and from the academy, regardless of their lack or training as research advisors or mentors. The diversity of ideas and innovation in classroom strategies were undeniable insights (written reports, round tables, panels, oral presentations, use of mobile apps to encourage discussion and field trips). The research part of the design studio courses is developed in small teams that work collaboratively in design projects, relying on one another to complete the tasks, focused on the human experience.

The data gathered from faculty provided a foundation for understanding their experiences and perspectives on UR, and how they are committed to engage deeper into instruction in this matter based on the university’s educational or instructional model. Some of them have no training or experience in research. Faculty made special emphasis on the fact that each discipline seeks the truth through different dimensions, methodologies, and perspectives. Professors confessed that they do not work collaboratively at and across curriculum levels for program implementation.
CHAPTER 5
EMERGENT THEMES AND SUB-THEMES

Interior Design faculty and students interact in complex environments such as the ID studio courses where they develop design processes to answer to users’ needs. This dissertation explores the students’ experiences with UR in ID during the course of their education. The case study was constructed around experiences and themes. I created visual concept maps during the data analysis process for the emerging issues to be analyzed. These sketches were a different way to relate the experiences that generated the meanings for this study.

Information collected through the use of researcher-designed instruments was the basis of this study. In particular, the findings of this research are the result of in-depth interviews and collected artifacts (final research projects thesis and syllabi documents). The interview transcriptions were analyzed for themes and sub-themes from each in-depth interview. The interview protocol was closely followed with extending questions presented to probe deeper into the UREs of students provided or not by their faculty. The document analysis was a procedure to support data cross verification and to build theory (Bowen, 2009).

The Study Findings

The next section of this chapter presents the study findings within emergent themes and sub-themes. All data collected from students were analyzed around the four meaning categories identified through the literature review to provide insight into their research preparedness: Learning motivation, research environment, research orientation, and research self-efficacy. At the same time, data collected from the faculty were analyzed around the four meaning categories of faculty instructional decisions regarding UREs in ID: Faculty beliefs and outputs, design strategies for promoting research, contribution to research environment, and students’ URE
supervision and mentoring. The analysis of the final research project thesis and the syllabi rested on the ID curriculum: Body of ID knowledge, ID competencies, practice and experience.

Following interviews and review of collected documentation, four major themes emerged from the study: (a) enacted norms of undergraduate research; (b) university culture and structure; (c) the relationship between research and design, and (d) DR design community identity. The themes and sub-themes discovered through the collected data are noted in Table 5.

Table 5

*Emergent Themes and Sub-themes*

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<th>Theme</th>
<th>Sub-Theme</th>
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<td>Enacted norms of undergraduate research</td>
<td>Divergent definitions of research</td>
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Theme One: Enacted Norms of Undergraduate Research

Within the design process, research is embedded as a main component whether or not the designer is conscious of it. Research becomes an inherent part of any undergraduate ID curriculum, explicitly. Future interior designers should systematically seek information to provide design solutions to the interior habitat that responds to human demand, and impacts their behaviors as users of such space.

In the interviews, each student and faculty member talked about their experiences with undergraduate research. They provided their own points of view about the relevance of promoting research at the undergraduate level. The participants defined, in their own words the terms research and undergraduate research.

Sub-theme: Divergent definitions of research. Research is the path to find a solution to a specific problem using the scientific method. The data and evidence collection provides new information on a topic, to its better understanding or to develop new theories. In ID, the issue is addressed by the question that answers to specific human needs within the built environment, accomplished by searching for the most information possible about it, and to explain it in a manner that could be easily understood. To search for information to provide clarity on a topic or to answer a question, is the foundation of every design project.

Within the design process, it is data to be applied in the interior space. Research sustains the design process, it explains and supports design decisions, because it is the starting point to design. Students converged that research is to develop a theme to implement, very deeply, to cover everything that theme requires. Amanda defined research as to search for information. She noted: "We do have to do research all the time as designers depending mostly on the nature of the project. I look up information based on what I need."
Faculty definitions of research were very similar to those of the students, considering research as “an analysis of information to develop something new.” Faculty also defined research as “scientific production, if it contributes to something new, to something different.” “Research is to search or look up for useful information to develop a project, to also use it as the foundation of any design.” The results indicated some definitions of research are not aligned with faculty’s understanding and use of research. Faculty explained that scientific production is about new discoveries or developing something new, but better explained, scientific production is a quantifiable summation of impact of findings.

For Mayra, research is to discover, to bring up a problem, maybe one that has been analyzed or studied so little, that helps to make a significant change when that problem is studied. Rita explained that to do research is to compile in an objective way through a methodology and analysis, a series of variables and data to verify an inquiry regarding a specific topic. In a simpler definition, Jaqueline considered research as the process of gathering information about a topic to get to results. Similarly, Michelle views research as to gather information for further analysis to achieve a result because research has a final purpose. Jorge noted: "Research should be the gathering of information about a topic of interest in order to demonstrate a purpose."

Dalia noted: "Research, for me, is to deepen in a topic, maybe unknown or maybe that there is little information available about it, taking into account the need to make pilots, studies, field trips, interviewing people, observing other people, to gather information, and to be able to transcribe it to benefit that field." Claudia reinforced that idea when she explained: "Research is the process to gather information about a specific topic, to get to a conclusion in an area of interest." For Ashley and Renata, in similar responses, to do research is to search for missing elements to create the general concept of a topic under study.
An integral part of work of those faculty members is to engage students in research in each design studio course. As presented above, their definitions are basic because they have done little formal research in the past. Faculty members range from those new in the academic life to veterans, but their perspectives are very similar. It is critical for faculty members to set a focused design research agenda with their students because it is an important part of academic life. Faculty research activities within their classrooms are not enough to engage the students to do formal research to publish nor to define priority areas for research for the school. But faculty were interested into exploring new workable UR strategies to promote academic success among those students with enough passion and curiosity to do formal research.

All faculty agreed that to do research is a very complex task because research could have different facets. It could be only about gathering information that could be used as a data base for a bigger investigation. Interior designers do formal research for their masters´ thesis and doctoral dissertations, but also for publishing. When designers collaborate publishing, they make a big contribution in terms of scientific research. They produce knowledge through formal design research methodology, which will be discussed in subsequent themes and sub-themes.

**Sub-theme: UR in the curriculum.** Only faculty conceptualized ideas about the definition of UR. Each participant gave an experience of UR from their own work as undergraduates, instead of definitions. In their interviews, some participants explained the topic from the design perspective, others defined it from a more general perspective. Most of them agreed that research at undergraduate level still is not complete and students must be introduced to research. ID is part science due to all the technical processes, and in a good part, art, that has to be expressed in a solution to a problem.

In the review of the program and syllabi there was inconsistency in the research competencies and learning objectives necessary within the individual program courses. Also, the
time allocated regarding research to each course was insufficient. The issue is that faculty do not give the students the time to do formal research, and right now it is only an introduction to research because historically research is a graduate studies competency. Therefore, when students enter the labor market, they cannot develop real research. In the practice, it is a matter to demonstrate knowledge, fundamentally, more than doing research.

Research at the undergraduate level is good data gathering to develop something totally new. For example, Iris sees UR as a project to research at the university. Also, as a project to design. She explained that after the specialization that she achieved in academic planning and evaluation, where everything was research, her concept of research has broadened with the benefit of her students taking it to new levels of application. Similarly, Sandy explained: "UR is to look up for information or data that helps to know about new topics or to know about the world that I am entering as a designer. The foundation for the simplest project students have to do at class."

UR should be the foundation of solutions in ID, for both the theoretical and the practical part of the project. The theoretical, to gather information about a specific topic for a specific client, the background, the origins, mission and vision; and the practical phase, to research about the materials, colors, suppliers, etc. Faculty believes that students of ID need to put more emphasis on the details than normal research or inquiry. They have to demonstrate something graphically in the case of ID, creating something that responds to specific needs.

A research project developed in each topic within each course of the program, to search for some matters of particular interest contributes to the field of knowledge of ID at undergraduate level. Faculty make students to go to similar places as their ID projects to take photos on their own, and also document what they see to have the physical experience for each project. Faculty consider important to divide a research course into two levels, two different
courses about research. Wherein the first course, the students would understand the general research concepts. The other course should be focused on the methodology of design research. Students could do research about specific topics, how to measure the use of spaces, user comfort. If the students do something more general, they are never going to use it in the future as a reference to research in ID.

The definitions of UR provided by faculty recognize the value of research within an undergraduate ID program, as an intrinsic part of the design process. The perception of what constitutes simple gathering of information and what represents research as a direct step towards the solution of a design problem is defined by a fine line in their respective uses in the practice.

**Sub-theme: URE pedagogy.** ID students study new materials, approach new design processes, and benefit from new technological tools to design artifacts and projects in order to produce better environments and to solve a current design problem to do so. Generally, students are consumers of foreign ID research instead. URE pedagogy is needed to engage students in the production of original research knowledge. The review of the syllabi, an examination of each course, was an opportunity to uncover opportunities for research instruction and outreach, instead of focusing on the lack of structure for formal undergraduate research. Interior designers make ideas into spaces and products. As mentioned in Chapter VI, there are no specialized labs in the program to engage students in research, or to test the inquiry produced in class. Faculty is the essential link to implement new teaching and learning strategies to change a traditional curriculum into a research-based curriculum. Faculty have the responsibility to engage students in methods of inquiry through design, but the educational instructions regarding research need to be explicitly explained in each studio course syllabus. Students and faculty gave examples of the strategies implemented in class related to research. Natali and her classmates did a contextual framework for their class in hospitality design. They had to research climate, soil usage, etc.,
topics unknown to them at the time. They also did the programmatic framework, learning about the target, the place, hotel category, what kind of people will use it, the flowchart and the organizational chart. One strategy used by the professor of the climate and acoustics course, was to work the research with the same formality they were going to apply for the final project course. Natali considered that strategy a good connection between those courses.

For Marivi, research is behind any creation. As a strategy, she uses examples a lot, like what happened from some gathered data or information. She explains to the students, constantly, that they could not create anything new from something they do not know about. Therefore, if they do not have the knowledge, they would create nothing, and creation comes from knowledge, being able to combine them all to create something new or innovative. She makes them to deliver a specifications technical report. Marivi asks for that report in order to know if there is something, like an integral point that helps them to navigate between design projects, different levels of difficulty each time they get to a new level of a design studio course. There is an input that they have to look for because if they do the contrary, the product will not come out responding to a user´s needs.

Mayra´s educational strategies to promote research in the teaching-learning process consist of the objectives, very well-structured research questions and delimitation of the project that have to be very clear in the students´ design projects, and the SMART strategy (specific, measurable, achievable, relevant and time-based goals). The problem statement has to be associated with the ID project, and has to really reflect a need or problem to be solved. The students have to do applied research. The construction of the theoretical framework is vital.

Rita, in an empirical way, has been integrating the technology into the classroom. "I have been introducing social media and social networks in the class, to give them a tool that they really like, in order to motivate some research tips, so they go home with a starting point. I do
this in order to make them find value in a free-creative process, to make a natural liaison with the design course, so the students could start giving technical, creative solutions, but within a real context."

Ashley uses several strategies to promote research in her class. She uses mood boards so the students can start visualizing their project with the incorporation of conceptual elements. They have to work about three hours per week doing research, constructing the knowledge. She defines it as an integral project that emphasizes the cultural and historical background that an interior designer has to have, a required capacity in the labor market.

The university’s instructional model promotes the autonomy of the student; the role of the professor is different now. Faculty have increased their role incorporating UREs for the students in the study of ID (round tables, presentations, mood boards, etc.). The scientific method is the first thing to apply to the project. Within the mood board there is something that has to be written, the conceptualization of the project. But formal mentored research is still out of their teaching scope. An interior designer who does not have a solid conceptual foundation, a good cultural base; who is not capable of doing a solid basic conceptualization of his or her idea of the project, is, at the end, not convincing the client. The conceptual tools, theoretically derived from research, help to give support to the design project.

**Sub-theme: Research skills.** Students consider they have been exposed through multiple ways and levels to approach research within an ID project in their undergraduate program. They do emphasized research at the beginning of each design studio course. The first step to any design is to do some inquiry, gathering of information on the topic students are going to work with. They have to do presentations, but also round tables where they share and discuss that information. They have to deliver a written document, related to the final expected design product. They have to interview the user of the space as part of the research to start designing.
“Design is not only how it looks and feels like, design is how it works” (Vassallo, 2017), a designer needs to develop research skills since the beginning of their undergraduate program to be able to provide solutions to users’ needs through inquiry. The ID program presents only four research-oriented skills (as presented in Chapter IV), which is not congruent with the general purpose of the program that promotes research skills in the academic training of the future interior designer of the school of ID.

For Maria, as a student, whenever she was about to start a design project, she always had to gather information about the minimum dimensions required for the different areas, to propose an optimal and functional distribution. Every ID project required the study of space ergonomics. "Always, in all the design studio courses, we had to look up the ergonomics of the project at least." For Maureen, the research part of her final research project was a challenge. She explained:

For example, for the final research project I bought like seven books, and I devoured them all, because I was very interested in the topic. If you have a clear idea of what you want to do, when you are comprehending more about the project, the research part is more interesting. Then, you have more ideas, and you are more motivated. I liked that part, to do the research for the final research project, it was not that bad. It is more tedious than designing, but in the reality, it is very necessary. If I like the theme, I get very passionate about it.

Elizabeth feels that research should be taught as a method from the beginning of the program. She is positive about the acquisition of the fundamental or basic knowledge about research, but believes that students do not develop deeper knowledge because, as the way students are accustomed to design, the research part is something they do superficially. Research has to make sense for them, because design is not a linear process.
Iris has taught the methodology of design and the final projects courses for many years. For all those years, students never left the classroom. She considers there is a need to get them to go out to places, to make an analysis, to interview people. For her, students need to learn how to make guided significant interviews, and how to analyze data. Research in ID has to be focused to become a research product, not only a design product. When thinking about the research training within the ID program, Rita clarified in the interview that the students do not dedicate much time to research. Renata, in this part of the interview, focused in her own perception of research in the ID field, on her feelings as a practitioner towards research.

In general, faculty believes the students’ ID projects are incomplete regarding the research process, because they really start learning when they have the final research project in their hands. Probably, if those courses were well-directed, applied to the final research project, and also to what students are going to do as professional interior designers, students will look at it more positively regarding the research process and its importance. The research training needs to focus the work of the whole project integrating several fields or disciplines (engineers, architects, marketing specialists, etc.), and more ID research resources to make it more related to the professional practice.

**Sub-theme: Access to resources.** Despite the high investment on research resources for the library of the university, both in books and data bases, students expressed their difficulty in finding information on specific topics of interest. In each syllabus, there is a section of references to be used in classes, but most of them are out of date or they are not available at the library or in bookstores. The school does not have its own space to function as a specialized library. Maria found it challenging to compile all the information for her final research project. She worked with a peer. They did not find sources about her theme at her university’s library. Instead, she had to interview her professors and ID professionals from the area to help her,
because even her advisor did not have information about it. She went to the library as her first step in research for her project, but she did not find anything. She confessed she does not know how to use the library databases. To keep herself informed about current trends, she follows a wide variety of interior designers and suppliers on social media.

Paola confessed her primary source of information is mostly the internet. When the internet is no helpful, she goes to the library. To keep informed of current trends, she reads ID magazines from local production like Aldaba and Arquitexto. She likes to use Instagram, even though it is not the most extensive tool for information, to keep informed that way of current trends. She follows independent local interior designers, big designers´ companies, and design stores that publish about materials, what is new, etc. Natali likes to consult the designers´ own bible, the Plazola. She explained that for her final research project, it was very difficult to find a flowchart, or maybe the general area disposition of the topic of study. There was a lot of information missing, that she had to compile by herself, to construct it and to analyze a lot of things to have a conclusion.

For Elizabeth and her classmates, books were not a primary source for research because they could easily find that information on the internet. For Laura, student, researching for ID was not easy because the information was old, and there was not much material written by interior designers. "We took the foundation for our final research project from Architecture and from the internet, and maybe in some books such as The Plazola, Human Dimensions, the Neufert, and the Interior Design Handbook." She explained that she used the Architecture Platform to inquiry about products and specific sources for ID.

For Amanda, the information for her final research project was very hard to find. She mentioned that in the library, there was no information available. She went to the library only for specific books. She confessed she did not know how to use the library, and
she did not know how to use the databases like EBSCO, HINARIS, THOMPSON & GALE, etc. She explained there was a class programmed on how to use the library, but they could not take it because of lack of coordination of the school of ID. And when they did not find enough information, they decided to gather more information from interviews with psychologists and based their project on their own criteria, but not from existent information.

When faculty participants gave their opinions, those correspond to a different perspective of the reality around the use of research resources, cross verified with the review of the final projects. For Sandy, students never used the library. It was very uncommon for them. In her experience, they limited themselves to the internet, and they also did not deepen in the search. In the review of the references part of the projects, I noticed they were very poor elaborated, and most of the information was out of date or non-existent. Most of the few references presented were from the internet. Rita noted that she has been taking some steps to not accept certain domains from the internet. She considers that the students do not use the adequate information, even though they have access to available scientific information. Jaqueline never sends her students to the library because in her own case, as a student, she used it very little. She considers that the library platform is no user friendly, it is very confusing, very hard to find anything there.

In a world that moves around digital information, digital apps, and a generation that lives on the internet, the use of the on-line library, the databases, was not important for the students and they marginalized the efforts the university does to have the best data bases available for the students at one click. Natali confessed that she did not use the library data bases for her final research project. She used a lot of the final research projects for her department as references. The rest of the students were not sure about what a database was or that they could have access to the library on-line. All faculty mentioned they send students to the library, but never
commented about their own role in these particular tasks as guides of the inquiry process for the design studio or final projects courses.

The difficulties expressed by students and faculty respond to an under-resourced program, but also to the lack of research in the field of ID in the DR, in general. Concerning students, there are to aspects to take into account about the lack of knowledge production: Insufficient available resources and not having the knowledge and skills necessary look for the right information. To overcome that, interior designers, as part of their academic training, learn to complete the data gathering for their projects from different sources, which are not necessarily written or compiled information. This fact compromises de reliability of the information because a reliable source is based on strong evidence, and provides well-reasoned arguments. It is important to find reliable sources because they produce credible evidence to back up such arguments.

For designers, drawing is the most important tool of the design and development process because it stimulates creative thinking and enhances the capacity to comprehend the world through observation. It works as the first exploration of ideas, after a clear understanding of the design problem derived from the research. To sketch is to build initial ideas in a visual, schematic, and conceptual representation. In the interviews, student participants expressed a lack of artistic courses that were present in the precedent programs. Those courses were substituted for digital drawing courses.

Paola, student, likes to use the Sketch Up digital program to start her design process. To make everything fit together for the project she studies all the information and images she has collected to think what could work for which part of the project. "When I am about to start, with all the sketches, I start drawing those previous images. If something does not work or fit into the project, I start over, doing an evaluation as I progress in my design process." She noted that she
never learned rendering at the university. She had to take classes outside the university to learn because there was a problem with the program license at that time. Instead, they had to learned to use Sketch Up, which became a problem later because when they went to their internships, the employers asked for their skills in the Vector and AutoCAD programs as digital tools they would be required to work with.

Natali also had a problem with a digital drawing tool once. It was not working. She lost a lot of time trying to make the app work, so she could not complete the assignment. She missed delivering several plant and section views. She expressed that she likes to draw, to sketch by hand, but it is very difficult for her to use a concept as a visual reference. The sequences she uses to resolve design problems are: As soon as she finishes sketching, she draws the blueprints and presents them to the client to get feedback to proceed with the corresponding changes if needed. After she finishes drawing by hand, she starts drawing digitally.

Drawing by hand, sketching manually, has an impact on students’ design process and design outcomes. Sketches redefine the research process, helping to visualize potential solutions in different approaches. Sketching helps to illustrate users flow and human interactions, the relationship of areas at the beginning of the design process.

**Theme Two: University Culture and Structure**

Taking into account the fact that there is insufficient knowledge production at the undergraduate academic level because historically is not a competence of undergraduate education, the concept of mentoring is central to the entire discipline of research. Potter, Abrams, Townson, and Williams (2009) stated that universities should make research-based learning a part of the undergraduate curriculum because mentoring undergraduates for faculty can be a fulfilling experience and help faculty relate better to students. According to Potter et al. (2009), faculty could be more positive about their role as mentors, if they knew such mentoring
is supported by their institutions, and thus it is important to promote research-based learning as a standard for institutions of higher education.

**Sub-theme: ID areas for research.** To define priority areas of research in ID by the school of ID and the university, could become a guide for the final research projects, and become part of the technical requirements when it is systematic. This priority areas of research could be parameters to use under some circumstances and situations across the curriculum. That would give to the future interior designers in DR, solutions to users’ needs and design problems that right now rest only in the use of international parameters, not having an adequacy for our country.

In the interviews, faculty participants were asked about their awareness of the university´s or the department´s priority areas of research. Twelve of these participants hesitated in their answers and they showed confusion when asked about it. They were not aware of the university´s priority areas of research. Marivi commented: "That idea has been mentioned more than once. But there is nothing done about it yet." Only Iris was aware. She made an effort to have priority areas for research in her classes in accordance to the department, like habitability, health, hospitality, and renovation. A series of topics that could help to define more specific areas to do real final research projects. Another issue is that in order for final research projects to be of publishable quality, professors need to know and understand the publication process.

Sandy mentioned that it would be interesting, but the school does not have priority areas for research. She said that the director of the school mentioned something in the last faculty meeting, at the beginning of the semester, but very lightly. Nothing defined yet in that matter. She said that the director told professors that they could propose a research topic of interest, but not everyone was interested, and they did not propose any topic in the meeting.

Mayra expressed: "That is a really good question, the problem is practically there is no research in ID. So suddenly, everything has a priority." She considers that the areas of design
among the highest priorities for research are: "Everything related to users´ parameters or standards, including extreme or special standards. Also, historical details and information that we should be using. Some ID evolution that we need to have very clear in order to do improvements, to establish, to re-invent." For Rita and Jaqueline, the priority areas of research for the department should be related to users´ anthropology and to psychology, the culture, the context, inclusion and special projects.

The perspectives of faculty on the same topic add a deeper understanding of the attraction that the idea to have defined priority areas of research in ID provokes in the participants: The opportunity to have a particular series of published articles on the same topic, as the result of a team´s effort composed by students, faculty, and administrators. To define and to develop areas of research for the school requires to involve a group of researchers in the program. In order for this to occur, it may take several years to consolidate hire and retained researchers.

**Sub-theme: Faculty training.** The more experience faculty have doing research, the more likely they will be motivated instructors to provide challenging and engaging UREs. Therefore, the UR learning experiences get more enriching and significant. When the ID students would become really involved into analyzing data, the results of the ID projects will always be more creative, innovative, and relevant to the users. As it is important that ID professors need to learn how to teach design, ID faculty need also to learn how to teach research. There should be at least a workshop, to train ID faculty to comprehend research from another point of view, the design point of view. Mostly all the existent design research comes from architects.

Marivi explained that she likes research, for her and for her students. Iris relates that research is something she is passionate about, but that it is a challenge for the ID community, and a challenge for the students. She understands that a research culture within the faculty
should be more developed, because students need to know how to apply the scientific method to a project. Sandy described her feelings towards research: "I really like it at a personal level. I am very curious, and I like to search for information, even to the last page. I do not settle with the first information I find. I keep searching until I could confirm that the first thing I found was correct, or if there is more information behind that first one I found." She would like to be involved in more formal research at the university and to be published, in very specific topics of her interest. She believes interior designers could do research about new materials, on how the user experience (UX) of spaces changes, and on how to renovate spaces to meet current standards.

Mayra stated that if the professors do not know how to construct objectives, a purpose statement, to define a problem, they cannot help the students as their advisers. Therefore, the path taken is wrong, so the results are weak. "I think the faculty must be trained. I think there should be workshops. In the past, I have attended a lot of workshops for faculty, but suddenly they stopped. The new professors, that are the most of the faculty now, have been not benefited by those workshops. I think that they need to be trained in research, not only in our instructional model. Because both the advisers and the professors are going to be members of a final research project defense committee, they need to know how to read and to orient research."

Michelle has worked on research studies on urban projects, but with no publications or further research experiences. Jorge is more into applied research. He has focused a lot within the commercial design, on restaurants specifically, on doing market analysis, comparing with similar target businesses. Sonia really likes to study, to do research. She has to be constantly informed, to be updated. "For me, in particular, it is a need. I love to do more deep inquiry because you start to comprehend a lot of things, a reality; it gives you a new vision. You have compiled enough information to get to your own conclusions, more close to the truth." She expressed she
would like to be engaged in research with students, but not as the main leader, more as a collaborator to start, to be a part of a team, but not to be the leader. She confessed she does not feel secure about it right now. For that, she would need to have more research preparedness first.

The faculty of this ID department have the distinctiveness in that they are good practitioners that got engaged in teaching at some point of their practice. They expressed that they teach as they were taught, but their main research trainings come from their master’s degree studies, with a diversity of methodologies. To achieve a better understanding of the importance to generate new knowledge for the field, and to properly motivate students, faculty agreed on the importance of adequate training on formal research so they could replicate it in their classes.

**Sub-theme: Student training.** In the interviews, each student participant described similarities in their research training. The research methodology, methodology of design and ethics were the courses that explicitly gave them an undergraduate research teaching-learning experience. According to Maria, in those courses they had to do research. The professor gave them a project, and they had to cover everything, to complete all the research phases, really helping them to comprehend how to make a project. For Maria, the level of depth into research always depended on the project that they were going to work on. She explained: "For example, now with the final project course, we had to research about lightning and the types of lightning and how it affects the way we perceive interior spaces. Even some textures that we knew that we should not use because the light makes them look different."

For Maureen, as an undergraduate student, she feels that they had a very good research preparation but little time to work on it. It was key to success in the final research project. She commented: "I think we are missing a lot regarding research, we need to have more time, putting research together needs more time." Natali did not like the research methodology course because she could not relate it to previous knowledge nor to her final research project.
Marivi feels that the students could apply the research methodology to reinvent something, and that could be demonstrated. To gather data from something that already exists, like a material, and from that, they should explore something with that material, to create an artifact, something useful, or use it from another user perspective. From a faculty point of view, students research could be targeted to psychological aspects of design, how users experience a specific interior space, and that could be demonstrated and applied.

Jaqueline believes that students could do more deep research. "I made them do research since the first design studio, they had to research about the history of the location, everything about it. The same thing with the materials. But it always has to be of their interest to keep them motivated, and they do not get bored." In her opinion, the results of the final research projects are good, but they do not make it completely at the end. For her, they could have a good research, but they do not know how to write it. "There is no connection between the objectives of the project and the project, and that could wrong the entire work. They need to know how to choose the right words to explain their projects."

Michelle feels confident with the methodology she uses in the students training, because she covers the gathering of information for further analysis, the background, functionality, the user experience, etc. For Jorge, the final research projects (senior thesis) are necessary "books" as research resources that cannot be found in a bookstore, because they compile important information about specific topics. He believes there are several very good final research projects that could be used as references. "I think those final research projects should be rescued to be published, instead of sitting in our library only for internal consumption." Dalia expressed to be very pleased with the outcome of her students’ design projects. She could appreciate an evolution since the first assignment to the last one.
When speaking with the students and faculty participants in this study about the topic of students’ training on research, they described their own experiences. They all made special emphasis on the need to help students comprehend the nature of design research, and to work collaboratively with other professionals related to the field as a very important for the education of future interior designers.

**Sub-theme: Collaborative learning.** When a group of interdependent individuals (colleagues) work well together, in the most effective and efficient way to achieve a common goal, it is called teamwork. Cooperation among team members leads to creativity and to complete a task by trying their best in any circumstance in a collaborative effort. The team members exchange ideas in order to find the best solutions to a problem. The review of the syllabi indicates that

Understanding the perceptions of students and faculty about collaborative work, as well as how interior designers practice their profession, could help improve the quality of the design projects within each design studio courses because they would be linked to the "real world" as students like to denominate the ID practice. Sometimes in the same project, they work in teams for a phase, and individually for another phase. As a desirable skill as future practitioners, they need to learn how to do collaborative work. The interior designer never works alone, constantly works with other professionals.

In the review of each course syllabus, the learning strategies include collaborative learning. There is inconsistency with some assignments because in most of the courses, the outcomes are expected to be deliver individually, especially in the design studio courses. There is no evidence of the inclusion of multidisciplinary teams in any learning strategies.

In the case of Laura, she explained that in the classes she took, she got the chance to choose her work teams, so it was easy to complete the tasks because of the familiarity with her
classmates on how to deliver a design project. For Iris, in her experience as a professor, team work really contributes to the project, even though students resist at the beginning. For Sandy, it depends on the team, that the team work could help students to address uneven preparation for research and to improve the quality of projects. According to her: "There are teams that know how to distribute the assignments among them, but there are teams that have people that rely on others."

For Rita, collaborative team work is fundamental and preferable in the ID career. "It is multidisciplinary; you have to necessarily get involved. When students work in pairs, you have good results, both of them work. But if they work more than three persons per group, it is harder to find out who did the homework or not." Sonia likes to make students work in pairs, no more than two students because they work more and better like that. According to Sonia: "If you have three students in a team, that third person is not going to contribute much. That could end in conflict. My goal is to make them to achieve a good project, that they learn from that, without conflicts. That makes them to have a better project, even a better research, which is part of that intention. To have different points of view and opinions, to be able to achieve something better. Differences could make good contributions to the project."

Dalia makes students work in teams of pairs, but also individually. For her, when they do research individually, it is more tedious, it takes more time to finish, but she considers it is the only way, for her as the professor, to assess their skills as a team or as individuals. They deliver presentations, never something written. For Claudia, when they have to do research, they have to work alone, so she could see their individual capacity and how they develop the research, but the project has to be worked in teams. "I like to develop the collaborative work, because in my area of development, they need to support each other. I like to promote team work and everyone has to have a role. When they work in teams is so much better, more effective. In that way,
there are several heads bringing ideas to the project, and also there is more questioning, and that is a good thing."

Most of the strategies used by faculty for the learning activities were team work-oriented. As the teams were formed randomly in some cases, they learned to work with people they did not chose, as happens in real life every day. Team work offers the students the opportunities to deliver new, improved and more integrated design projects, and to share knowledge and information. When designers see themselves as one with the world within a project, there is no room for competition, there is only room for collaboration.

**Sub-theme: Rethinking research in the curriculum.** ID is both a problem-solving activity and artistic creation at the same time. Science and art, two inseparable parts of a whole that promotes human experiences result of the acquisition of design knowledge, competencies and skills. Therefore, interior designers are both creators and builders of interior spaces that humans emotionally react to, live or work in. The future of the ID curriculum, as considered by students and their faculty in their interviews, rests on research as the way to develop a body of knowledge for the field.

In general, students expressed they would have liked to have more time (i.e., four years) to finish the program, instead of three years and four months. They wanted to have more interesting complementary courses, deepening in corporation and institutional design, and complementary courses that allows them to learn more about the different aspects of the field. More elective courses and less "obligatory" elective courses. Students called "obligatory" elective courses to those the school of ID made mandatory because those were the only courses they had to offer in a semester.

Students also wanted to have a more realistic approach to the practice in the field as one of their main concerns. They explained that there are the details, in general, that could have been
more deeply taught. To have more emphasis in the classes of topics that are going to be part of the real practice, like how to manage the client and accounting, to have the business part of the design.

Faculty consider students should be used to do research since the beginning of the program for each project, to help them to do a better research in such short period of time as they had in the final project course. They consider the management of the school of ID should review the more practical courses, to have more practice like the internship at other stages of the program, not at the end.

For Michelle, it would be interesting if they could have an elective course where the students could develop only research, without doing the project. She thinks that most of the time, the emphasis is in the project, in the blueprints, in the design proposal. "In order to be able to help the students to learn and know how to research topics, the faculty need to be in sync of knowledge, skills, and attitudes. Faculty needs to be able to transmit it to the students."

Faculty proposed that in each design studio course level, to insist a little bit more on doing research in order for students to comprehend what they are doing. The faculty should take much more seriously that the students could do more research in their classes, without sacrificing the nature and focus of the course. Jorge considered that could be an advantage in the development of the design process. The research methodology and the methodology of design are support courses for the final project course than those in the rest of the program. The research should be included at earlier stages of the program.

For example, Dalia believes the research methodology and the methodology of design courses should be taken at the beginning of the program because the new students come to the academic setting with very different backgrounds. She explained that some of them have done research in their high school years, but some did not. For her, some balance is needed at the
beginning of the program, in the first semester that helps them comprehend basic research. "I feel that they have to manage a lot of information in that design language course, that was too much for them. They should have an introduction to research in their first semester."

Ashley believes that the history of art course should be taken at the middle of the program because this course requires a more mature student in order to comprehend its importance and the value of reading for an interior designer student and future practitioner. She noted that this is a generation that does not like to read. For her, that is one of the battles of being a professor nowadays. History classes provide students a space for research, fundamental for the academic preparation of the ID students.

What should ID students learn in the 21 century? What should ID faculty be teaching? Those are the main concerns of students and faculty when asked about how the ID curriculum is designed to influence and to enhance students´ performance. Faculty questioned how well the courses are correlated in this curriculum to meet the needs of the students as future ID practitioners.

Students and faculty, discussing the ID students´ performance regarding research, confirmed that good or poor research outcomes have to be linearly related to the sequence of the courses in the curriculum: requisites and co-requisites. The results of each design studio course are related with the amount of time and effort students put to the projects regarding research. The results also depend on what the faculty perceive in relation to what they give priority to as professors.

From Maureen´s perspective as a student, in the program courses, research was pretty basic at the beginning. For her, it was at the end of the program that they were really asked to do formal research from two very demanding professors. She explained that the rest of the faculty just assumed that they were doing research without assessing it. "They did not ask us to deliver a
paper or something like that. It was like you do some research and start to work on the design project. But I think it also has to do with the time available; in reality a semester is very short to do a lot of research for an ID project."

For Paola, the most challenging course has been the climate and acoustics one because it was a very complicated topic and they spent a lot of time without working with that topic before, so when they arrived at that course, it was very difficult to try to integrate the knowledge to what they were doing so far. "I had that course very late in the program. In reality it was very interesting, implying a lot of research and we applied it to a specific design project."

Marivi, faculty participant, feels that the research courses in the program are not enough. For her, even though they have research methodology and methodology of design, when students arrive to the final project course, they have forgotten everything. "You have to start connecting dots so they could associate that previous knowledge. We need to create in them the consciousness of the importance of research, and maintain that through all the program. We have to do the synergy. People do not associate the research we do as designers to the scientific research." For Mayra, students need to truly apply the research methodology in all their design projects. She explained that some professors do not do a follow up the research part of the project. They ask for information, but they do not validate it. It is not systematic. The student does not get even close to scientific rigor. They work with non-analyzed information to be synthesized into a design project. For her, the students are missing that step. "Sometimes they do that only to fill the requirements, not even comprehending what they need to do with the project and with that information. There is the case of students that have a clear picture of it, but they do not know how to express that. I think they need to learn to express that information, to explains what they have discovered."
Jaqueline believes that there should be more than one internship. "I really learned a lot during my internship. But we need more than one, so if they do not like the career, they know it from the beginning and have the opportunity to change programs if necessary." Jorge meets his students once a week for the elective course he teaches. Therefore, students do the research part at home and bring the information to class. Within the class, each week, there are presentations, discussions and practice. "I tend to focus on applied design." For him, there should be a connection between the design studio courses. All those programs should be structured together, coherently. Faculty should read each other’s syllabi, together, in order to comprehend what the students previously had and what is needed in the next sequential course.

In the same order of ideas, Sonia thinks that the different levels of the design studio courses should be unified in methodology. Everything has to have the rigor of an academy, without losing the creativity. That could be also co-curricular, to unify projects, so the different courses work together in collaboration for an integrated student learning experience. She would like to see more structure regarding research, more formal, like a chain effect to help to have more professional projects. "Right now there is no relation between two co-curricular courses, very independent from each other. There is not a connection between the employers and the learning outcomes the school is expecting. The internship was not very well-organized. That could be better done. I think that the internship should be taken before the final project course, maybe in two levels; to have one before the final project course, and the other one, at the same time."

Claudia thinks that the students also need another course that helps them connect to the real world where they could do applied research, something that connects the theory learned with the practice in the field. She noted: "The internship should be done at the middle of the program. They need to have that reality shock, even though you put them, then, in a bubble. They have to
experience that they work with people, that they have to provide them information, even to their supervisors, and that they have to display some degree of research formality."

For Renata, the research methodology and the methodology of design courses should be taken at the beginning of the program, so in each design studio course they could apply the research correctly. "Maybe more courses in research are not necessary, but I would propose something like consumer psychology. Also, courses in which they have to do research, but also they could apply it, learn how to do surveys and interviews. More courses that give support to the design development, but in a more theoretical process."

A coherent curriculum is the consensus of students and faculty. They proposed an aligned curriculum regarding research, meaning a well-organized and sequenced academic program both vertically and horizontally. They believe that professors should collaborate with other professors to decide what students will learn, considering the level of competences and skills that they need to develop in each stage of the program, without overlapping lessons or gaps in what should be taught in each course in an integrated research structure.

**Sub-theme: Structure for research.** In discussing whether or not the program offers a research-oriented curriculum, students and faculty described their research formal learning and teaching experiences, respectively, as choices made in the process of the development of the courses. The process was described as slow, where the core courses, in the syllabi review, did not contain research learning outcomes particularly relevant to enacting to the final research project with a good research structure.

Students, because of the lack of available information, learned how to search specifically what she needed to develop a good final project. They learned how to research, individually. For them was very hard and challenging to research their topics of interest because they did not know where to start. They did not have a reference of a similar undergraduate final research
In general, they believe the time was hard to manage because they spent a lot of it researching rather than designing. For students, the research methodology and the methodology of design courses were not very related to ID. They had the structure on how to do research, but not related to the design process. They want to have more professors (one for the methodology part and one for the creative part of the process) for the final research project to have several points of views on the research and the design.

Faculty believe that students think they are going to solve a design problem without doing proper prior research and the reviews of the project take more time than expected because of the lack of information gathered. They feel it should be inherent to the program to spend time doing research for every project because the research process will feel natural for them, even for their final research project.

To cultivate students´ research skills is the fundamental focus of what participants described in their interviews. They want the university take into consideration to train the design studio faculty on research because is fundamental to have a structure for research within the program. They believe the current ID program needs to provide meaning to the nature of the profession: The study of humans´ habitat problems to produce adequate solutions, anticipating the users´ needs, etc., that could be achieve through formal research.

**Theme Three: The Relationship Between Research and Design**

The role of designers and the understanding of design have evolved through the years adding value to the users of a space. Designers have gone from crafting to have a sense of community responsibility to the field. Interior designers should be aware of the users´ needs to provide the proper user experience in order to have a relevant impact on people lives which is the true meaning of design. Their work impacts the user experience and the perception of an interior space, because design is usable, but also produces emotions, creating connections and memories.
When interior designers research for their design project, they could arrive to several design solutions to the same problem. Every possible solution to a problem should respond to usability and have meaning for the user’s life, combining aesthetics and research.

**Sub-theme: ID research as applied research.** When speaking about ID, both students and faculty agreed on the statement that ID is both art and science. They mentioned it in the majority of the interviews. For them, design is subjective and objective at the same time. It is art because it achieves the aesthetics of an interior space while it responds to functionality (comprehending people’s behavior) based on the rules and principles of design, of mathematics and Architecture. No ID project could be successful if it does not respond to the purpose it must serve; if it has no significance.

Students and faculty believe ID gives solutions to a problem, and research is necessary for interior designers. They are positive that the interior designer has to research, to know about our society facing problems, and to provide solutions to those problems. Designers have to research how to accomplish the design of a specific project. They research about the users of a space and the client, materials, textures and techniques. Design research is important for identifying problems and solutions to add value to the user’s experiences.

For Faculty, from their perspectives as professionals, instructors and practitioners, ID does not belong to the hard sciences, because it is part art, part science, and the scientific method could not be applied completely or to approach only quantitative methods to design a research in that field. The designer does not necessarily have a lot of data with a lot of statistical results to support their projects.

The interior designer always has to do research. In this profession there is a need for research. Faculty want a research unit for each school of the Arts department. They want to do experiments, but also learn how to be researchers. They believe that art cannot be separated
from the science within the discipline because there should always be a theoretical part from a proposal beyond the chosen of colors and materials. The selection of the materials process, the finishing, the costs, should be done over the basis of an analytic-objective criterion.

For Michelle, research is very, very important for interiors designers. That is something she likes her students to comprehend, and she thinks that it is a little bit difficult to teach sometimes. "To design is very important that part of searching for knowledge, of gathering information. Not only about tendencies, but the origins of the design, historical elements, also to comprehend current events; and any design, if it is well-based in research, then is more successful."

For Jorge, the combination of art and science should be indispensable for any interior designer. Sometimes, because of the lack of time or the eagerness of the interior designer contract for the project, the study is not that broad as needed to start the design process. He thinks that if interior designers had the proper time to research, the results will be more pertinent. "Sometimes the interior designer has to work with a particular perception of the project’s owner, not necessarily what the target population is looking for. If you get to know that population preliminary in the study, it could be more profitable for the project and for the designer." As broader is the information gathered, the students will do a better job.

Faculty stated that if they teach the students to do practical design research (art and science applied together), it could be very doable and of their interest. They consider is a matter of introducing that "hard" part (research) as inherent to the "creative" part (aesthetics) to make it really interest for the students.

The dichotomy between art and science is a recent phenomenon. It started in the Middle Ages and it still persists because both disciplines have been treated as separate fields. They look superficially different, and both are considered specializations. As students and faculty have
expressed, the interconnection between art and science has an impact on the solution of problems. Art and science can benefit from interacting. Creativity helps to develop original ideas, and both artists and scientists have to be creative, imaginative people. The work of Renaissance master Leonardo da Vinci is a great example of art and science working together, as sides to the same coin. To enable an overall understanding of the world, if science gives answers and art provokes questions, both the STEM fields and the arts should work together.

In the interviews, faculty participants talked about how to engage the students into doing more research. They mentioned several times that applied research in ID is to give meaning within the practice to the process of gathering information at the beginning of a design project. Elizabeth was the only student that introduced the idea of applicability of the research to a design project. When Elizabeth was interviewed she complained about how her cohort was taught in the methodology of design course. She did not like that course because for her was getting out of her comfort zone to make the research applicable and it consumed a lot of time.

Faculty consider there is a deficiency in the process of applied research in classes. They propose that applied research could be related within each design studio course. For Sandy, there is a deficiency of applied research in classes because of the lack of practice from students, or the easy access to all kind of information, that they only keep the first information they find. She believes students do research because it is mandatory. Mayra considers that there is an intention to make an improvement in applied research within the program, but she considers the problem is that the students take the research methodology course when they do not comprehend anything about design.

Rita believes that there is a lack of motivation for the students to do applied research. For her, with the urgency to complete the academic programming, the working process could vary between the design studio courses. She considers that probably it makes that the students found
it tedious to do the same process in each one of the design studio courses. They consider that from their point of view, faculty could work some more in a collaborative and integrated way. The research part of the process could be broadened like a platform, and the projects will be presented very well-supported and the students could be more motivated to do research.

Applied research serves to solve specific practical problems. It is a type of research that suits perfectly the work of interior designers. It helps to give answers to certain questions related to the users’ needs within a building space. The results of applied research could provide new information of the experience of users, new knowledge to the field, adhering ethical standards, legitimizing the profession and the field.

In the interviews, most of the participants talked about the user experience (UX) as a key component of the applied research, and the element of an ID project that needs to be primarily attended, which informs the design research. The UX in ID embraces all aspects that influences the final users of an interior space (enhancement of the senses, psychological effects, lightning and materials effects, general feelings, general ambiance, perceptions, etc.). When the interior designer starts a design project, the first step to take is to research the exact needs of the user or users of the space in order to have a deep understanding of the nature of the project, and to finally meet those requirements in the final product.

When Maria, student, was working in her design assignments, she liked to imagine herself inside the interior space as a strategy. For Maureen, her classmate, it is very similar. Natali uses the same strategy. She explained that when she is about to start designing, she needs to feel the real space. Elizabeth considers, as a design student, that sometimes there is no need to do research for a project. When she worked an airport design for her last design studio course, because she has been a tourist, as a user in several occasions, she knows how an airport works. She only had to do research about the type or category of the airport.
Dalia likes to explain to her students that design is an experience. "If you look for international ID programs, you even will find masters in experiential design, to create UX. That is very trendy in Europe right now. So, even though that is not what we are teaching specifically, at the end, what you are creating as a designer is a UX." For her is very important that the student, as a future designer, lives the experience as a user, feel the space, see what the space really is, listen to what the space is telling, in order to improve the experience by the design. She invites her students to become one with the environment.

The incorporation of UX research in the design process of creating spaces that provide meaningful experiences to users, includes integrating all aspects within a three dimensional space: the design itself, the function and the usability. UX research gathers information by qualitative and quantitative methods, discovering the users’ behaviors to fulfill their needs, to improve the design as an end goal in mind. This connection only could be achieved if the students get the experience of applied research starting in the design studio and the student practice courses.

**Sub-theme: Ethics of innovation and inspiration.** Interior designers produce spaces where creativity and innovation necessarily meet. For students and faculty, there is a difference, yet a similarity in both terms. Creativity is to produce something original (not comparable) and innovation is to produce something totally new (recently made or created). Designers tend to use visual aids to promote creativity and innovation for their projects. Each of the participants described the need of research to reach creativity and innovation within a design project using sequences to resolve design problems. For Maria, student participant, first of all, the product of a design has to be functional. The steps she takes to start the process of design, the creative phase are: To sketch and to develop the mood boards. "In the past I was not in love with the idea of sketching, but I had to learn. To sketch helps a lot to develop ideas. When someone knows
nothing about design, the way to express ourselves with them is precisely through drawings. I do sketch with my computer, digitally, and I propose a color palette, textures, that could be pleasant to the eye." Maria considers very important the technical part of the project (lightning, climate, acoustics, materials) and the client’s needs." As a creativity tool, she likes to look for visual aids in Pinterest. She added: "Obviously, I do not copy designs, I only use it as a reference, as a visual aid, an inspiration. For example, I find something that I like, and I think I could use something similar to make my project work. To use some of the forms adapted to my own design, without doing the same thing, without doing plagiarism. I am aware that could bring a lawsuit against."

Maureen uses her iPad a lot. She bought it a year ago for her final research project. It has been very helpful because she imported the view plan and she did the zone sections there. It also helped her to visualize the design faster. "If I had to erase something or go over it, it helped me to visualize it better before jumping into the design. It helped me a lot, because I did all the diagrams there. I adapted everything into my project, and put those sketches in my written report." She likes a lot to sketch, to write, the connection between drawing and doing narratives.

Paola likes to do sketches by hand, and to look up for visual inspiration, she uses a mood board. She searches for those images in Pinterest, Google images, and Instagram. "Sometimes I see a picture that I like, and I downlow it, and then, if I need something, I look for that file to search for what I have there for inspiration." Natali considers that a design project is complete when it meets the minimum requirements of functionality, creativity and innovation. "For me, I have to obtain the functionality of each space. I believe that my project is good enough when I first cover the part of the functionality. When I achieve that level, I believe that my project is already done, and it is a good project." Natali uses Pinterest as a very specific visual aid. "For example, if a need to do a landscaping design that I do not have any idea of, I then search for
"landscaping" on Pinterest, and therefore, I learn what things are possible to do, and I do make use of that information. But that is only when I have something very precise to search for visually."

Elizabeth, student, follows designers to keep herself informed of current trends, and for her final research project she used as an inspirational resource, where there are a lot of corporative projects, named Office Snapshot. She likes to sketch even though she is not very skilled sketching by hand. When Laura is starting her design approach, the tool she finds most effective at the creative level is to have a concept. She chooses her concept based on the needs of the project, and the functions. Laura also needs the concept as a starting point. She likes to do sketches, by hand. She does not use the mood boards, but uses Pinterest for inspiration, but not to copy. She made special emphasis on that last idea.

For Amanda, it is not easy to draw. She considers that the act of drawing by hand make her waste a lot of time, to lose her initial design ideas. The first steps she takes to keep herself informed of current trends are to look up for visual references, not books, a lot on internet, a lot of Instagram, a lot of Google images. In her cell phone she follows some Architecture and ID pages. And when she has an ID project, she uses Pinterest. She only does mood boards when she has a lot of information and she has to make a synthesis of that information.

When asked Faculty if they consider that there is innovation in students’ design projects, but not research, they noted that without research, the creativity and innovation are limited. They think the media factor, even though it is very good for many things, it is very dangerous related to design because students are doing a lot of copy and paste. Some of them have banned the mood boards from their classes, some of them re-oriented the mood boards to be a more conceptual intention, meaning: pure color, pure material and sketches. Faculty prefer that students develop conceptual diagram at the prototype level.
Iris considers that the students are one hundred percent more creative and innovative when they do deep research before the project. For Sandy, it should be a balance between innovation and research. She considers that, sometimes, when students think they are innovating, they are just copying. Sometimes they get tired during the research phase, because they want to start to design without having all the information needed for.

For Mayra, always, a more innovative project has more research behind it. It means that if the students are more curious, they ask more questions, go more often to the professor with doubts, questions, inquiry. Rita considers that there is a lack of research in the students´ design projects. She considers that without a research foundation, the design result will be poorly executed; research should be fundamental to design. For Sonia, the better projects are the ones that have balance between research and innovation. Her students, in class, most of the time, are working in the design development. They do the research part at home or at the library for the presentations. She evaluates with the presentations how deep or good is the research, if they did the research or not.

In general, for faculty participants, the outcomes in the different design studio courses are mediocre regarding research and as a consequence, the resulting design. But they feel that when students get to the final project course, they are more empowered because they are more mature, so they try to make a more finished project than in the previous courses. In Claudia´s classes, students have to deliver the projects for real. They have to read a lot first starting to design. In her classes, students need to spend two weeks in each project doing research previous the design and execution part. For Renata, good students know and apply the information gathered with a lot of creativity, so there is a balance between research and innovation.

Jaqueline feels there is no balance between research and creative outcomes. She considers that students limit themselves a lot with the internet. She and Michelle perceive that
the students see the research as a requisite they have to fulfill, that they have to write something for the book and then, they only focus in the design process, the creative part. They think that even though there are very good projects in general, the creative part weights more than the theory behind the project because they are not very clear on how to research. They are no able to comprehend what formal research implies.

Students use visual aids to hold their attention, to be engaged with innovation during the initial creative process involvement, to comprehend the information they gathered for their design projects. But those visual aids used as inspiration could backfire a design project because there is a thin line between copying and being influenced in order to create something new. In the syllabi review, no evidence was found, except in couple of courses, that there are rigorous policies regarding plagiarism and its consequences for the academic permanence of the student in the ID program.

Research and creativity are two concepts that should be part of an inseparable binomial in each design project, in each design decision and outcome, in each design studio course. There is no innovation without creativity, and there is no creativity without research. For interior designers, the design research should be applicable.

**Sub-theme: Student practice.** When examining the data from the interviews, there was a clear and systematic distinction of the importance of student experience in the real world. The ID program includes a student practice course in the last semester that has the treatment of an internship, while students take the second level of the final project course. This experience provides ID undergraduate students of the opportunity to work at an interior designer or architect’s firm for the period of time encompassed within the semester. The internship or student practice provides a real-world experience to apply all the knowledge acquired during the
academic years into real design projects by the hand of qualified practitioners of the field. It also provides skills that could be relevant for the future practice as an entrepreneur or as an employee.

Students feel the practice has helped them to present a project professionally, to sell it better, to produce ideas faster. The internship has been a complement to the learning process. They all agreed the internship was a very good experience. The only regret Paola had was that the student practice should not have been taken in the same semester of the final project course. For her, and for some of her peers, it was kind of stressful. For Laura, the final research project was not manageable with the student practice. She expressed that she was against of having both courses at the same time. Amanda considers that maybe there should be more internships, maybe in each design studio course.

The perspectives of faculty were not far away from the students’. Marivi expressed to have reservations about the internship because the students lose their interest and passion for their final research project when they start working. For Mayra, the internship takes a lot of time from the students, because they have to work. She believes students are more interested in the internship than the final research project because they are learning in a real context. The internship not only takes time from the final research project, but also from the other co-curricular courses. Faculty expressed that it is possible that a good student before the internship, with very good grades, could start neglecting those courses because of the interest dedicated to the internship. All faculty agreed that students need both experiences, preferably connected.

Rita has always received students as interns in her firm for the student practice course. For her, the internship is to take students by the hand, to see their potential, and guide them, provide them with tools to work in the real world. She considers like Dalia and Claudia, that the internship course should have two levels of practice to have a connection between the internship and the final project course. To make the experience more valuable and significant for the
students, having, at the same time, the learning and the experiential process, working with professionals of the area that are interested in working with their research topics.

The student practice or internship provides the ID students of diverse advantages: practical learning curve of experience, the assessment of skills and abilities, and to have their "first job". The ID internship provides the students to learn in the real world, applying the theory and knowledge learned in classes.

**Theme Four: DR Design Community Identity**

Each discipline needs other disciplines, so professionals from every field need to learn to work collaboratively and engage in research in multidisciplinary teams. That is an enriching way of doing research. Interior designers are lifelong learners, they need to comprehend the world in order to provide experiences and sensations to the users of the space. According to the interviews, the ID program should be more formal research-oriented, involving other professional fields to enrich the process to achieve ID research leadership nationwide.

Faculty consider the university needs faculty and students that could do research. They want to know the university’s aspirations regarding the production of knowledge in the humanities. Sometimes professors tend to focus on the practice, and they do not work the theory. Students must do a project to apply the research. Some students have produced some interesting final research projects, like the one on the history of the Dominican furniture. Faculty consider students could do more research like that to create their own identity as Dominican Designers. To produce theory within our local context.

**Sub-theme: Research in place.** This theme was present in the data implicitly, but not previously mentioned in the precedent themes, but very connected to the ID areas for research sub-theme. Faculty is very aware the need to create Dominican identity for the students´ design projects. Identity as designers in the DR is essential to create a brand for the country, to sell
ourselves in the spaces we create, clearly communicating our design styles, culture, and costumes. To create identity in ID is to produce local design, contributing to the cultural and economic development of the country.

For Faculty, to promote local context, to create identity, students should start learning how to apply it primarily to the habitable part, the daily living for people. They need to learn not only the aesthetics of the project, but also for the theoretical foundation of the design. People need to live in Dominican ID oriented-life styles. They consider the very first step of a good design, in order to be effective and functional, is research. For them, in DR, the highest priority areas for research, in order to create identity and be relevant are health care centers and hospitals. Faculty believe there is very little work about of what has been done in the DR in ID. Also the use of construction materials, local materials, that could be used instead of importing to develop sustainability and local authenticity.

For Ashley, it is a priority to develop research in the history of Dominican furniture. "I wish that we could study the path of ID in the DR. In that same sense, we do not have a record of the DR´s interior designers, their history, their career path. Those topics could serve for bigger studies in the future." Renata wants to attend a workshop to learn to teach design research, to have a common methodology to unify general criteria. She said that she definitely would like to be part of a research team, even as a co-researcher. Renata believes that the areas of design that are among the highest priorities for research in DR are management and execution of the project, to provide real tools for the real world.

Faculty agreed that we almost have no information about our roots, our elements, the things that we should be capturing or expressing in our interiors: The context we live in; how we should manage our climate, the use of our local lightning to favor the use of a space. We have a lot of information about the ergonomics standards in the world, but for example, we do not have
information about the measurements of Dominican people. We need to be able to develop our own standards.

To promote our local context and culture in our ID, Dominican interior designers must start doing research to determine our audience’s needs, to respond to a given design problem with local materials, creating our identity as a country within the design parameters, it is necessary to develop research. The need of a research-based curriculum responds to the connection between the academy and the practitioners.

**Sub-theme: The practice.** For both faculty and students, the introduction of students within of what they called "the real world" was a constant in their interviews. All faculty participants are both professors and practitioners with a vast experience. The ID practice has been present since the time of ancient civilizations to respond the needs of creating functional and beautiful spaces for the unfolding of human being’s activities. This purpose serves to enrich the work that undergraduate programs should promote for the incorporation of future interior designers to the practice before they leave the academia. Both participants in this study, students and faculty expressed their dissatisfaction with the students´ practice course structure. The practice course syllabus presented inconsistencies in the learning objectives and the guidelines to complete the reflective journals and the final paper (the internship experience report), as well in the grading system, which is not aligned with the expected outcomes. Even though the syllabus specifies the length of the student practice (number of work hours), students commented that they had to complete much more work hours, compromising the time needed to finish their final projects.

Faculty consider the student practice course is taken very late in the program. Students should do more practice since the beginning, focused in the labor market. Students need more guided visits to get involved with the materials in the construction, a more frequent interaction,
more talks with experienced designers with different points of view. Faculty think there are a lot of courses that could be more focused in the practice, to be more practical. Ideally, every course could provide a contact with the real world. Claudia thinks that it would be very interesting, taking from the last two cohorts she has worked with, that the students learn more about how to do a budget in reality. Rita, in the past, has helped students to participate in entrepreneurship projects related to ID. That was another way to incorporate them into the practice of the profession and they had to research also.

The interior designer creates functional and aesthetical spaces to satisfy basic needs of protection and refuge. Those interior spaces are the scenery of the development of humans’ activities based on users’ needs of psychological wellness, security, accessibility and production. The contact with the professional practice within the academic years produce better future interior designers, more connected with the reality, capable to produce knowledge with rigor.

Sub-theme: Dissemination. For faculty, taking about formal research in their interviews is not easy because they are not really scholars. They teach students to do research as they have learned in their own undergraduate studies. The professional and academic experiences of faculty tend to influence and affect how they teach design research for every design studio course, including the final project course. That does not necessarily involve the rigor of a research methodology and results of that research are never published.

Sonia loves to do research if she finds the opportunity. She considers that it is something missing in the faculty of arts. "To do research after they graduate from their bachelors in ID, could be a way to be a professional, to work in ID, that would be an interesting path to take. That would benefit the entire ID community. There should also be research workshops opportunities, specifically for the faculty. I think that doing research, having publications in the
ID field, that would be a great opportunity to promote the field, even at an international level. That would be a benefit for all of us, like an impulse for the profession."

Ashley confessed that she is very shy to be published because she panics when asked to write an article. She believes academics have little time to do research, they have a lot of courses to teach, simultaneously, and the research requires a lot of time and dedication. "That is a weak point that we have at the university, and myself as a professional." Iris wants more rigor for research in each design studio course in order to have results that could someday be published. She wants to bind together the final research project with real projects, doing a deep research, following a research methodology very rigorously. "Not only to have the historicity of the site, but also in the results, the analysis of data from interviews, surveys, how students got to those results, and how those results were reflected in the final product." The findings of this study challenge ID educators to reconsider how design research may influence the classroom and transcend it.

Design has a high impact on users´ experiences and the power to provide changes in the quality of peoples´ lives. ID represents an opportunity to contribute to the economic development of the country, to contribute to sustainability. To define ID areas for research could reorder the world and humankind because it is an opportunity to make science, no matter the research methodology. It is about impact, about evidence to transform this profession. Every interior designer could contribute to the body of knowledge of the field through research.

To create identity as Dominican designers, to have a ID research leadership is mandatory to do formal research to get published. To be published is the quickest way to gain exposure for the field. To publish is an important goal for the academic community and the professional field of interior design because it means that there is knowledge production, that there is a professional platform construction based on scientific work.
Insight into Research Questions Through Emergent Themes

To provide a clearer picture of what kinds of UREs do faculty incorporate, and how do students and faculty regard their place in an undergraduate ID curriculum, I incorporated the participants’ interviews and documents into the themes that emerged from this study. The guiding sub-questions about students and faculty and the subsequent questions for each are mapped through the developed themes and sub-themes contributing to my understanding of UREs in the study of ID.

In general, students believe that they are capable of doing a design research project in the future by themselves, without guidance, that is good enough to meet the minimal requirements. As depicted in Figure 4, the findings indicate that students are confident that they acquired proper tools to have a research preparedness to inform design. Students’ emotions and feelings toward research are crucial for feeling motivated. The concept of motivation, as they expressed, is a basic need to do to formal research. This component is associated to the research self-efficacy factor because one notable idea that resonated through the students’ interviews was the fact that they consider they end working alone in the design research process as their faculty do not provide the adequate amount of time to review their work in the research phase of the project.

According to the students, the time issue is not something directly related to the faculty course planning, but to the amount of research needed to properly finish a project and the class size; too many students per professor. They have to keep themselves engaged in the research to accomplish all the design project’s requirements and to do it on time.

Associated to the learning motivation factor, students expressed the importance of having different drawing tools, both digital and artistic, responding to their capacity to visually express their creativity. Sketching was the main way to conceptually represent their ideas that are the
resulted from research. They do not frequently draw by hand. They limit themselves to the Sketch Up program.

Despite of their preference for soft types and sources of information in their design problem-solving process, they clearly stated that design research has value to prepare a good design project within their design studio courses. The research orientation factor is related to the access to visual aids as part of their research process during their training in the methodology of design. They always use visual references to design. Students use internet images, and social networking services as Instagram and Pinterest for searching visual references, even though faculty consider them no trustful references to work with. The mood boards are created to synthesized their research.

Regarding the research environment factor, which is very interrelated to the students´ training component, some students felt strong about research, ready and secure. Others do not feel secure because they only did superficial research. Some of them feel lazy to do more research for their projects. They want the information to appear immediately. These students complained about lack of research preparedness and not enough research sources provided by the university.

Another component associated to this factor is the students´ practice where students could taste the real world in a controlled environment provided by their school. This activity gave them a new perspective on how the acquired knowledge and skills could be applied into real design projects by the hand of qualified practitioners of the field. For the seven students interviewed, this was the more relevant aspect of their training during their academic years, where the real learning started because the design research was applied.
How Do ID Students Describe their UREs?

The research sub-question asks how students describe their UREs. This question is related to factors explained in the precedent question and it is depicted in Figure 5. Students described their UREs started with the exposure to different ways to approach research within every design studio course in their undergraduate program. The research requirement levels varied accordingly the semester they were taking, but they did formal research within two courses: the research methodology and the methodology of design. And in the two final projects
courses where they developed a design project that had to cover all the knowledge acquired in classes.

The first step to do any design is to do some inquiry, gathering of information on the topic students are going to work with. In her discussion about researching for a project, Maria explained that whenever she was about to start a design project, she always studied the space ergonomics and search for the minimum dimensions required for the different areas, to propose an optimal and functional distribution.

Generally, students are consumers of foreign ID research. To be engaged in the production of knowledge, students described that they were better motivated when they gathered information through visual aids, and when they had to do interviews to the users of the space as part of the previous research to start designing. They traduced that first gathering of data by drawing or doing sketches. They also had to do presentations and round tables in each class where they shared the information gathered and discussed it. They had to deliver informal written documents about their findings. Usually they used all the “designers´ bibles”: The Neufert, the Plazola, Ching´s books, the Architecture Platform, ArchDaily, etc.

The student participants learned how to do a contextual framework for their design classes. For each project, they did the programmatic framework, the flowchart and the organizational chart. They learned about the target, the place, and about the kind of users of the spaces. They always had to come to class with a minimum research. One strategy used by the professor of the climate and acoustics course, for example, was to work the research with the same formality they were going to apply for their final project course. Natali, one of the students, considered that strategy a good connection between those courses, but that was not common in all program. Some courses did not make a connection to consistently do formal research, less to assessed research. Students considered those classes are not related. And the
research methodology was different for each design process, where faculty did not make a follow-up of this process.

Students were consistent in their affirmations about the lack of resources at the university’s library for the field of ID. The university, in its responsibility to provide the proper research tools, spends a great amount of money on research resources for the library, both in books and databases, each year. Despite that fact, students expressed their difficulty in finding information on specific topics of interest. They also commented that the books at the library were not updated. Some students had to construct all the information presented in their final research projects, because they were not able to find anything that would inform their final research projects. They all agreed not knowing how to properly make use of the library resources because there was a class programmed to cover that topic and it was cancelled at the last minute.

Both students and faculty agreed that the UREs could have been more significant if there could be a redesign of the program. There is a need for a research structure within the program. They all consider that a semester is a very short period of time to do proper UR. Students expressed they wanted more research and more time to do it. They consider that faculty take research for granted within the design project. Students recommended that faculty should be more engaged, do follow-ups between projects. In a moment, they felt they were wasting their time and at the end of the semester, there was a rush to finish the project and complete the information. They explained that some professors changed the methodology of the design project almost finishing the semester. They also wanted to have more than one professor for the final research project to have more points of view, one for the methodology part and one for the design part of the project.
Figure 5. ID students’ description of their UREs (Pimentel, 2019).

How Do ID Students Believe Their Experiences with Research Contributed to Their Undergraduate Coursework?

UREs connected the students to the discipline itself, in their own words. As depicted in Figure 6, there is a connection between students’ research self-efficacy and their emotions to develop the needed research skills that are required for the future practice. Students are conscious that research helps design decisions, and research is different from the design process. Research sustains design; it is the start to design. Research and design are part of a continuous
process; information for design has a purpose. But they frequently got confused about when they were truly doing research and when it was only a simple data gathering. They all agreed that they always consulted the Neufert, the Plazola for each project as part of the requirements to start. When they were asked about the type of research they believe interior designers do, they expressed that there were projects where the research was not relevant. Students affirmed that they had a wrong or twisted perception of the profession because sometimes they see themselves as decorators, and decorators do not do research for their projects. Interior designers could be decorators in the ornamentation part of a project (the last phase), but decorators are not capable to do ID.

For the students, in order to make sense, the methodology of design needs to have significance. Research has to be taught as a method from the beginning and have consistency through all the program. The methodology of research class should be taught from the school of ID, not from the general studies development. They noted there was no match between theory and practice. There was a divorce from previous courses and the final project course because classes were not related and had no sequence. They explained they needed the coherence between courses in order to have a research structure that helped them to do proper coursework. Students were aware that they needed to use the information they gather about a project, about the user experiences, to adapt the design with that information in each of the design studio courses.

The internship, the opportunity of practice, was the most relevant component of the program according to the students. They explained the internship grounded the design research. Internship represents the real life, the real world. They consider it a challenge because reality is very different from what they have learned at the university. But they were not able to do research at the internship. The practice gave them confidence as future practitioners. They
wanted more practice, more experience before leaving the university, more workshops in each studio course. They also considered that the final project courses and the internship do not belong in the same semester. The internship is a way to learn to adapt to the real world because design has always to be related to reality. The internship is about applied research as students noted. Therefore, being exposed to research is needed.

Figure 6. ID students’ beliefs of the contribution of their UREs to their coursework (Pimentel, 2019).
In What Ways Do Their Experiences with Research During Their Undergraduate Work Influence Their Dispositions Toward Involvement with ID Research After Graduation?

One of the findings of this study is that students worked by themselves most of the time. Even though students had the experience of working in teams, they needed to learn how to work collaboratively. Faculty expressed the importance of them learning how to work in multidisciplinary teams to comprehend better the design projects from the beginning, and to have access to more finished information that informs design. Most of the students felt secure about doing future research because they had the basis to start a research project, but not about working collaboratively in a design research project. The students’ training, in order to engage them in future research after graduation, as depicted in Figure 7, require some more structured students’ UREs supervision and mentoring, in the words of the faculty.

Students complained about the lack of information whenever they went to the library to do research. Students did not know how to use the library nor the data bases, and they could not take the orientation class regarding the use of the library. They had to construct the information for their final research projects. Some of them were not informed of current trends in the world of ID. Some of them preferred to use their own UX instead of doing research as they commented. They required to learn how to search for information to be able to have the necessary skills to do future research after finishing their program.

To achieve a more structure UR from the beginning of the program, the school need to define specific priority areas for research which should be conceived from the core of the program. Materials, UX, environmental psychology, ergonomics, users’ parameters, inclusion, among others, are the areas that could have been evolved in the design studio courses to provide students of orientation towards research skills development. Students needed to learn to synthesize, how to use the data gathered.
Students were working at an abstract level as expressed by both students and faculty in the interviews, limiting themselves to the internet and social media to search for inspiration and information. They always use visual references to design, instead of constructing their own with the use of a concept. When asked about creating a concept to start designing, only two students affirmed the use of it.

Even though a design concept is an abstract idea behind a design (the underlying logic and thinking, and the aesthetic aspect) to solve it, student participants did not use it for their design projects. The design of a concept involves research, definition of a problem, analysis and the comprehending of the end user or users, which could become a way to start constructing and defining design research.
What Strategies do ID Faculty Utilize to Incorporate UR in the Courses They Teach?

In review of this research question, the focus was on the UREs strategies provided by faculty to students. The data collected was used to gain an insight into research development strategies as initiatives and practices (instructional decisions) in the ID undergraduate program. Depicted in Figure 8, faculty collectively described the importance of the practice for the future interior designers to contribute to promote a research environment at the undergraduate level. Practice, as a strategy to promote UREs, is the vehicle to do applied research for both students
and faculty. For the students, the practice was a good experience complementing the learning process.

Faculty consistently expressed the need to have priority areas for research to mentor students regarding UR. For them, Santo Domingo, as the capital city of the country, is turning more and more into a vertical city, but more than that, in a commercial city. Everyday a restaurant opens; more people are renting spaces in malls. Jorge noted that the commercial design, in this moment, is at its peak, more than the residential design. For him, commercial design is priority right now. He considers students have to work with retail, the visual merchandising, the fusion with other professions like marketing and advertising to make an ideal synergy with what we do as interior designers. For him that should be, without any doubt, the biggest focus of the program. Secondly, the hospitality design because we are a country that depends economically from the tourism, and the possibility of creating touristic places keeps growing. Those are the two main areas for research because of the country’s high demands.

Faculty beliefs and outputs are crucial to promote research, but that depends on their previous training in that matter. Some of the faculty participants like to do research on their own, but only one participant is currently working in a research project at the university that includes undergraduate students. They are positive that they need to make students develop more writing and critical analysis skills because designers need to write, need to produce knowledge. In the past, this has been a task reserved only for architects in the DR.
How do Faculty Describe Their Own Professional Involvement with Research in their Field?

This question was formulated to investigate how faculty describe their own involvement with research. Depicted in Figure 9, the findings from the data illustrated that the faculty’s professional practice is more related to design research (experiential or practical research in design) than to formal research. Renata illustrated it well in her interview. Focused in her own practice, she explained that she is continuously doing research whether a new project arrives at
her firm. She does all the inquiry related to the project and to the design process. She does
interviews for data gathering, but she uses it only as a part of the project brief. Even though she
likes to write articles for ID magazines, rather than doing research, the information is based in
her own experience as a practitioner and her previous knowledge. Practically, there was a
consensus within the faculty answering to that question. They all admitted that they love to
research, they feel passionate about it. Research is part of a design project and could be
translated into practical design, applied research and experiential design.

Talking about formal research in their interviews was not easy for faculty participants;
they are not really scholars. They confessed they teach students to do research as they have
learned in their own undergraduate studies with no formal training. The professional and
academic experiences of faculty, and their beliefs, tend to affect and to have an effect on how
they teach design research for every design studio course. The final research project is the
culmination of the design core of the program. That does not necessarily involve the rigor of a
research methodology and those research results are not published.

Faculty participants expressed the importance to promote a research culture within the
school of ID as a role they need to assume in the near future, opposed to what is currently
happening in that matter. To apply the scientific methodology to a project with the intention to
be published, not only the use of the methodology of design to develop it. Even though the
methodologies are similar, and the methodology of design is a valid process, in the humanities,
the faculty do not publish at this moment, therefore, they do not have a way to demonstrate or
explain their design research work. They want to know how to read and to orient formal
research, to be able to teach it. The fact that their own professional practice could contribute to
promote a research environment at the ID undergraduate program constitutes the first step in
formal research involvement at a higher level in the university.
Faculty most often do field studies for their own practice, to develop a project, and they could involve students. They consider this is a “fun way” to do research and to promote UR connected to the final research projects in a meaningful way. Students, as part of their internship, could observe a professional in action, taking decisions live in a collaborative and multidisciplinary work, being part of an entrepreneurship model.

Figure 9. Faculty’s involvement with research in their field (Pimentel, 2019).
How do Faculty Describe the Ways They Incorporate Research into Their ID Courses?

Depicted in Figure 10, the data collected through faculty participants´ interviews demonstrated the ways faculty incorporate research into their ID courses. This research could have the formality and the scientific rigor if it is needed. They use the methodology of design as the first step to gather information, to evaluate that information and to synthesize it. Research is the first step to design. The methodology of design consists of a circular process that include several steps for a project: To research about user needs to enhance UX, to define a problem and the space to develop the project, conceptualization of the design, development of the design, and to review the users´ needs under the scope of the final result. The UX provides information to make design decisions and gives meaning to the design. In class, in teams, students make presentations, round tables, conceptual and mental maps, discussions and informal written reports to share the information for common use within the project.

Generally, the professor gives students a project, and they had to cover everything of the methodology of the design process, to complete all the research phases, to comprehend the project integrally. But faculty do not work aligned for each design studio course. They have their own syllabus and it is rarely the occasion where they share their teaching and learning methodologies, classroom strategies, etc., with each other. They hardly make students to develop reading and writing skills in class, but some of them make the students develop their projects with the formality of a final research project. Their specific role in the particular tasks as guiders of the inquiry process for the design studio or final projects courses were not clear for them: How to make students address those findings to an ID project, to give solution to a real problem, and to make it knowledge production material. There is a lack of systematicity and a missing structure for formal research in the ID program.
All faculty mentioned they sent students to the library, but never commented about how they validated that information they gathered. Students did visual representations, mood boards, conceptualizations of the data. They all agreed in the imperative need of instructional materials, new strategies in the classroom, and specific resources for interior designers regarding research as a potential area of development in the university. This development will support both students and faculty training in research because good research provides good design. Instead of assuring that they use specific educational research strategies, faculty proposed the following strategies to incorporate research habit experiences in their courses: Field visits for applied research; several levels of student practice for experiential research; reading and writing skills development; thinking routines; visible thinking; learning by working in the classroom; and collaborative and integral co-curricular work since the beginning of the program.
What do Faculty Believe is the Role of Original Research in the ID Undergraduate Program and Why?

The final research question for this case study involved faculty beliefs in promoting the production of knowledge at the undergraduate level in the study of ID. They affirmed that research is behind any creation. As depicted in Figure 11, to be able to produce knowledge instead of consuming it for our professional field, students need to be engaged in formal research since the beginning of the program. This means to approach previously identified design problems within a community in an orderly, systematic and disciplined way. Significant
research outputs, meaningful for the students, will be guaranteed for the program, for the university, and moreover, for the nation.

The ID program should be more research-oriented, involving other professional fields to enrich the process to achieve ID research leadership in the country and for the country. To create our own identity as Dominican designers, producing theory within our local context. Faculty is very aware of the need to create Dominican identity for the students´ design projects. To create identity in ID is to produce local design, contributing to the cultural and economic development of the DR as a brand, and research is needed to accomplish that goal. Interior designers sell themselves in the spaces they create, clearly communicating their design preferences, costumes and their culture, both inherited and acquired. People need to live in Dominican ID oriented-life styles.

Faculty believe that the university needs faculty and students to produce knowledge in ID. Most of the time, faculty tend to concentrate on the design part of the project, and they do not work the theory with the students. Students need to be able to apply the research within an ID project. Learning to work collaboratively engaged in research multidisciplinary teams is an enriching way of doing research. Interior designers need to comprehend the world in order to provide experiences and sensations to the users of the space. Therefore, interior designers should be lifelong learners.

To intervene designing any space is needed the compilation of complete information. As noted by the faculty participants, the very first step of a good design, in order to be effective and functional, is research. Dominican interior designers must start doing research to determine our target´s needs within the design parameters. It is necessary to develop research to respond to a given design problematic with local materials and local suppliers. Connection between the academy and the practitioners, doing formal research to get published and to promote the field.
Where is knowledge production, where is scientific work at undergraduate level, there will be continuing development of a nation.

*Figure 11. Faculty’s beliefs in the role of original research in the ID undergraduate program (Pimentel, 2019).*
Chapter 5 Closure

Four major principal UREs themes emerged from this case study and those themes began to provide a better understanding of what kinds of UREs faculty incorporate, and how students and faculty regard their place in an undergraduate ID curriculum. These themes included: enacted norms of undergraduate research, university culture and structure, the relationship between research and design, and DR design community identity. Participants provided specific examples of UREs for achievement at the undergraduate level. The experiences of these individuals provided insight about how the role of the faculty might continue to evolve in leading research at ID schools.

The first theme is "enacted norms of undergraduate research". In the interviews, both students and faculty talked about their experiences around UR. They provided their own perspectives when they gave a definition of the terms research and UR. Research was considered, in a simple definition, as the path to find a solution to a problem, and a basis for the design process, an important part of the design process within an undergraduate ID program. A fine line defines the general participants´ idea of what constitutes simple gathering of information and what represents research as a direct step towards the solution of a design problem within the academy and in the ID practice.

The second theme is "university culture and structure". This theme emphasizes the role of the academia in mentoring faculty to promote research-based learning as a standard at the undergraduate level, defining priority areas of research, students UREs, promoting collaborative work. The structure for research constitutes an inherent part of the curriculum redesign in the future. The third theme describes "the relationship between research and design" oriented to the enhancement of design research as a uniqueness of the discipline, described by faculty as art and
science. They emphasized the importance of applied research and the incorporation of the student practice in diverse levels of the program.

The fourth and final theme speaks of "DR design community identity" promoting the production of knowledge in the humanities, specifically in the faculty of arts. Faculty made special emphasis on the need to create our own identity as Dominican designers, to produce theory within our local context.

The chapter also examined the research questions through the lens of the themes, in both narrative and visual representation. In describing the UREs that faculty incorporate into the ID program, and how students and faculty regard their place in an undergraduate ID curriculum, the themes and sub-themes emphasize the importance of developing an adequate structure for research that gives a protagonist role to the faculty, and integrating the practice from the early years of ID studies.

Of the themes discovered, it is possible to take from the findings, the general sense of the need of development of formal design research, implementing strategies associated with the search of relevant information for the ID projects. Faculty are considering ways to support the production of knowledge in a collaborative, team approach. The findings from this study can open and inform professional and academic practice of faculty regarding UREs provided for the students, concerning the impact of their instructions on research skills achievement, which is presented in the next Chapter 6.
CHAPTER 6

DISCUSSION AND RECOMMENDATIONS

The future of the ID as a profession was the underlying basis for the rationale of this study. It was the *behind the scenes*, the *leitmotiv* that provoked the final topic for my dissertation: UREs in the study of ID. This case study was about students and faculty undergraduate research experiences. The findings include the students’ experiences of research within the design process provided by their faculty, learning about design research and the research methodology, and their internal pains as students while they faced the implications of the time available in each semester to perform relevant research in their design projects.

Concretely, this study explored the following question: What kinds of UREs do faculty incorporate, and how do students and faculty regard their place in an undergraduate ID curriculum? In pursuing these questions, my goal was to better understand what were the factors associated with the research experiences for ID undergraduate students, and what strategies did ID faculty utilize to incorporate in the courses they teach. In Chapter V, the emergent themes description contributed to understand the importance of engaging ID students in UR, a challenge for each design studio course, and a challenge for their faculty, who should facilitate their design research learning through meaningful experiences. This chapter includes the discussion of major results, the relationship of results to existing studies, recommendations for future research and concluding thoughts.
Discussion

In Spanish there is a saying: "Each professor has his or her own teaching handbook." Translating this saying to instructors that belong to the faculty of arts, I could affirm, based on the interviews, that generally they teach design research as they were taught. But it does not mean they are generating meaningful experiences for ID students to produce the expected outcomes, and the methodology of design could be approached from different perspectives, leaving the rigor of the process behind. Designers with different styles adopt different approaches to design situations and use different strategies during problem solving (Yukhina, 2007).

Commonly, the classes are conceived within a traditional classroom-teaching and learning practices. The core of the ID program is constituted by the design studio courses, which are the perfect scenario to provide and to expect UR. Faculty should reflect on how they develop meaning to the design process. Those courses should reproduce the real world-ID practice as the result of a problem-solving exercise to be significant for the future interior designers.

I framed this chapter taking into consideration the relationship of results to the literature base, and the new learning from the themes derived from the data. While thinking in the discussion and recommendations that detach from this study, I analyzed what I have learned from the participants´ interviews and I arrived to the belief that how faculty shape the students´ UREs is as important as how the students comprehend and learn about design research for the design process and the design outcomes.
Relationship of Results to Existing Studies

The data collected in this study parallel and support previous scholarly literature described in Chapter Two surrounding UREs in the study of ID. I present the similarities and new insights. The concept of UREs in the humanities has been discussed in recent decades and remains inconclusive. Work like the study of Mendoza (2015) has brought new perspectives to the topic, providing “a foundation for understanding how humanities faculty who actively participate in UR make meaning of their work as scholars and mentors” (p. 215).

ID Practice and ID Education

The faculty’s insights provided understanding about their role in the ID education promoted by their own ID practice. Their beliefs about the need to increase the opportunities for research in the field of ID in DR were similar to Nemeth’s (2014) study, which examine the need to define both the body of knowledge applied in practice and the contribution of ID professionals. Studies by Dickinson et al. (2009), Polkinghorne and Wilton (2010), Russell et al. (2007), Sevaldson (2010), and Zimbardi and Myatt (2012) suggest that ID instructors may not consistently or systematically provide students with in-depth, or prolonged engagement with research in their field. The concern of incorporating research within an undergraduate ID curriculum has step to the podium since the 80’s. As example, Franklin and Erickson (1987) noted:

Research is an important component of the design process and should be incorporated into undergraduate ID curricula. As potential designers, students need to become cognizant of the necessity of systematically seeking information for design solutions and to increase their awareness of the behavioral impact of design through observation. (p.31)

As illustrated by findings from Shaw et al. (2013), ID instructors in general, are not presenting new problems to create relevant knowledge for the ID field or to conduct original
experiments dealing within the built environment. He proposed to extend research experiences to undergraduate level, regardless of the program students were undertaking. Historically, research has not been a competence of undergraduate education (knowledge production at the undergraduate academic label). Research is a graduate competency. The work developed by Rust et al. (2007) relates to my findings because the conclusions of their study emphasized that practice-led research could be approached as a strategy for inquiry and practice in the professional disciplines of art, design and architecture.

Klingenberg (2009) considered that research must be the foundation within our field of knowledge, having a close relation to my study. But to accomplish that state, she considered that theory and terminology are needed for design research, and the way to achieve this theory is to do research. This affirmation grows together with one of my study´s outcomes: Even though faculty participants believe the importance of incorporating UR into the educational experience at the college level, and they want to be part of a change in the way undergraduate ID programs could incorporate more research, they need to have a research-related training to be able to provide students of those UREs.

**UR and UREs**

Many studies have explored various components of UR, and provided insight for further studies. Dickinson et al. (2009) found that it is not possible to expect the profession to value research if this subject matter is not taught at the undergraduate level. The definitions of research provided by students and faculty in this study have the point of convergence on the end use of knowledge than the creation of new knowledge. Reproduction of knowledge (past experience) instead of production of knowledge (primary resource).

The data gathered from both students and faculty from their research and UR definitions was conclusive: To research is not to simply compile information for a project. However, there
is a discrepancy in the use of the terms research and searching for sources of information provided by faculty. They use those terms interchangeably. In most of the interviews, I do not think they were talking about research per se, rather for searching for information. "Information gathering is certainly a part of the research process, but does not encompass the entire definition" (Dickinson et al., 2009). Emphasis was focused in the idea that if ID students are not formed in all the program with an intention very well-defined in research at a bachelor level, they will be re-inventing “the warm water” constantly. It is an issue of a lack of available ID resources, and students not having the knowledge and skills necessary to look for the right information.

For faculty, students must try to document themselves more in a design project, to comprehend that research is not only for science. There are a lot of basic steps that ID students do, that belong to research, but for the majority of them, it does not seem like that. They do not believe like it because of the nature of the profession. ID students do not see the conclusion of a project in an UX. The project is kept at a conceptual level. They do not have the opportunity to execute it, to measure it. They need to make the connection through applied research that could be approach in the ID practice as a way to explore research in the arts, in the humanities.

How can we expect to have more UREs if there are important deficiencies in the understanding of research? Bolt and Kett (2010) considered practice research-based as an innovative approach to enhance research experiences for students. More recently, Marenko (2018) suggested that it is in the education of future designers where research will gain a better understanding on its application within the professional practice. The integration of research is vital within the design process taught in curriculum. Therefore, changing educational standards in design education are needed for undergraduates entering the workforce to be aware of how to conduct research in their design work (Marenko, 2018).
UREs help students to establish positive relationships with their teachers and create a learning research community where they feel they belong as members (Balster et al., 2010). Franklin and Erickson (1987) suggested the incorporation of UR methodologies to engage students in research that could be translated in the future in their professional activities. Faculty stated that the methodology of design could be the ideal course to promote teaching and learning activities related to research. A research-based design could be applied in each design studio course through the methodology of design.

Methodology of Design

The methodology of design is a rational problem-solving paradigm. It could be translated as research in design or design research, term commonly used by designers. The methodology of design covers how designers work and think (design process) to produce design knowledge to be applied to design problems (Vink & Brauer, 2011). Faste and Faste (2012) defined research: "A systematic investigation that establishes novel facts, solves new or existing problems, proves new ideas, or develops new theories. Design is the act of planning and communicating a course of action to others, usually through the creative exploration of an area of interest" (p. 15). Design research combines research and design, the production of knowledge through purposeful design. In academic circles, it could refer both to the study of design and the process of knowledge production that occurs through the act of design (Faste & Faste, 2012).

Ding (2009) found an interdependence between technical content and design outcomes and emphasized that students´ competencies are developed in problem solving through inquiry, critical thinking, and graphic resolution. One of the greatest gains from the students and faculty´s interviews was that the methodology of design or design research was better understood throughout an individual or personal engagement in the design process for each project developed in in the design studio courses. This engagement was related to each student´s
personal motivation on the project itself, her interactions with the professor or classmates (if the process included teamwork collaboration) as the project design process was taking place, and the hours spent in it.

Faculty agreed that the beauty of a design process is that students could arrive to different solutions to the same problematic by multiple paths, which makes it a conglomerate of ideas, concepts, and convergent and divergent mental activity. They are conscious of the importance of encouraging students to incorporate the research results to the design process. The design process is a human, intellectual and aesthetic experience. Design research requires of a series of steps within the process very similar to the research methodology (Pimentel, 2010) to produce an outcome. Therefore, ID is both art and science, as explained emphatically by faculty participants.

New Insights

The themes generated from the interviews provided the opportunity to gain greater understanding about the research experiences in the study of ID at undergraduate level. "If one sets aside the assumptions about UR and examines the experiences of faculty in the humanities, UR has existed within the disciplines successfully for many years in various forms" (Mendoza, 2015, p. 203). Currently, the main challenge consists on how that faculty build the evidence of implementing formal UR in ID and how to change the mentioned rigid dichotomy between the definition of ID: The partition of the profession into art and science as mutually exclusive. It is a matter of introducing the "hard" part (science) as inherent to the "creative" part (art) to make it really interest for them. The data collected developed new interrogatory related to my research questions that could be traduced in new insights to be explored.
How faculty could incorporate formal research in the student practice of ID at undergraduate level? This question provides understanding to the matter of UREs in the study of ID. Faculty and students agreed that the program should provide teaching strategies and learning activities that promote knowledge gained from experiencing it. Students must become part of the UX to comprehend those interactions, because human beings comprehend the world from different points of view (identified as ways of knowing) that encompass a broad spectrum of human experience: experimental, co-relational, qualitative, historical, simulation, case study, and logical argumentation (Wang, 2007). According to Stolterman (2008), designers do not experience a particular situation in the same way. An ID project is based on the client, the end-users and their needs, their interactions as individuals and among others within the spatial environment crowned by social, cultural, and psychological aspects.

The UX involves client requirements and user needs as they both communicate within a built environment, and it is the main component of applied research in an ID project. According to Poldma (2009), the UX in ID informs the design research which is done to comprehend human interactions within spaces and between activities. “Designers create interior spatial designs for user experiences, and the knowledge uncovered through design research is tacit when this is based on experiences” (Poldma, 2009, p. 4659). The applicability of research to a design project is to give the intention of real practice (experiential knowledge) to the process of gathering information at the beginning of a design project in a design studio course at any level of the program.

Why the professional practice where they could apply the research is significant for the student of ID? What is the nature of applied research that helps to encourage the inquiry in the design process? To achieve those real-world experiences, the road to take is the professional practice, to enhance the actual student practice of the program to a new level of professionalism.
The need of a research-based curriculum responds to the connection between the academy and the practitioners. The scientific methods are adapted to better suit the design practice (Stolterman, 2008).

Students tend to only believe that the interior designer produces only visual outcomes, but they need to comprehend that they also have to support the why of the form. The deep knowledge and the constant experimentation and prototyping have been through time the core to build great works of ID. The professional practice is a suitable space within the program where the students get to apply all the theory acquired throughout their ID studies.

The need to do research in ID is a way to evolve within the field. It is very necessary the training of the interior design student in the scientific method. A formal methodology of research is imperative in the productive life of an interior designer. The proper training in research and how to apply it helps to provide the adequate tools to identify problems of the human habitat that need to be solve in order to enhance the quality of life of the interior spaces´ users. It is the only way to route the ID as a scientific discipline. The interior designer could do research to design and to produce knowledge. Knowledge to generate better ID projects (innovation, creativity and originality based on the UX), and ID projects to generate theory (body of knowledge). The nature of ID problems is based in human needs. Design becomes the answer to provide solutions to those needs.

Is there an established research methodology of design that faculty could use to impact on the students´ UREs? How does what is taught about research within a design studio course could be translated into better ID projects? The enhancement of the senses and the perceptions of a space, the psychological effects, lightning and materials effects, general feelings, and general ambiance are the aspects that influence the final users of an interior space. At the beginning of a design project, the interior designer researches the exact needs of the client and the users to have
a better understanding of the nature of the project and the interior space to be built. But the way to translate the concepts generated by this first inquiry for the ID project is to do sketches.

There exists a research methodology of design (with multiple variations) that could be modified by each interior designer depending on the personal way to approach the project as presented in Chapter Two. It basically consists of a set of steps that could be applied to any type of design, and involves sketching (visualizing) during the whole process. That is the reason sketching is considered the main brief account of a design project because it helps to visualize the project from the beginning to the end. The core of design, according to Stolterman (2008), is to sketch, which is a disciplined, rational and designerly way (design approach of thinking and acting) to expressed design ideas, the relationships between the whole and the detail, between form and function.

To produce better ID projects using research within a design studio course, faculty must do emphasis in a viable model (depending on the way students adapt the methodology of design). Faculty should teach how to build a design process that must have sketching as the main tool to develop design ideas, to explore all aspects of the project, involving quick and rough drawing. This model should cover several universal phases that are circumscribed to a creative cycle: a) research and analysis; b) ideation, explore, plan and design; c) development, production and refining; d) implementation; and e) evaluation, revision and critique. As mentioned in the literature review, according to Vink and Brauer (2011), the methodology of design envelops designerly working and thinking (design process). The methodology of design develops design knowledge (applicable and theoretical) to answer to design problems. Faculty hypothesized in the interviews about the relation between science and art in the world of design. Science main concern is the meaning of the how, and the result of the design goes further and provides the answer to the how to be. Citing Simon (1996) to properly illustrate this idea:
Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. (p. 130)

Why is it important for students to meet the research requirements of a design project?

First, the ID student should know the most common methods for design research, and the research methodology. The importance in learning how to meet the research requirements of a design project allows the student to document the design work. After several publications are produced based on design inquiry, the knowledge production to create identity-goal is reached. To have ID research leadership and to create identity as Dominican designers as mentioned in Chapter Four, it is mandatory to learn how to do formal research.

For the ID student, research has to have meaning, significance and relevance within a design project. But it has to be based in the search for solutions to the needs of our country, the needs of our reality and our socio-cultural local settings. Learning to meet the research requirements of a design project within each design studio course, the future practitioner has to learn to respond to the user’s real needs, satisfying the industry and the labor market. The interior designer student needs to learn to be competent with the feet firmly grounded on the local context and looking intently up into the global context.

There should be more inquiry in the future identifying the need for research in ID (Brew & Mantai, 2017; Dickinson et al., 2009). When there is knowledge production, scientific work within the field, designers gain exposure by publishing. An important goal for the academic community should be to publish which allows to better define the professional field body of knowledge. To submit papers for publication opens the opportunity to present the work at
conferences. This is an important indicator of an ID program success (Davis, 2008). According to Davis:

Growing research and research programs in design, therefore, is a necessary but complicated task. It is obvious that the proprietary behavior of design practitioners will not make new knowledge widely available and that universities must take on the roles of knowledge generation and dissemination. At the same time, it is also clear that development in this area will be slow without broader recognition that research matters to the future of the design professions and that the outcomes of design decisions have consequences in society. (p. 79)

**Study Implications**

The role of research in ID is to generate new knowledge. Research has to become a high priority at undergraduate level among faculty and students. Research is the ideal contextual framework to provide solutions to a design project beyond the classroom, communicating their work by publishing.

**Implications for Policy**

From the perspective of public policies, there are no regulations and codes to achieve sustainable ID in the DR. The interior designer has the responsibility to contribute to minimize the massive environmental pollution we are facing, providing alternate solutions that can serve as new standards for the field. The collaborative research work of faculty and students can constitute the platform to develop new ID products through technological innovation (wall covers, fabrics, flooring materials, furniture, lightning, accessories, etc.), new manufacturing processes and materials categories translated into policies to guide and diminish the impact of our work in the country and therefore, in the planet.
One of the ways to evaluate and elevate the quality of a HEI is through the analysis of its personnel scientific production (OECD, 2008). The Ministry of Higher Education, Science and Technology (MESCyT) of the DR has implemented the National Research Career in 2018. Currently, the priority areas for research that obtain funds from the MESCyT are health and technology. The disciplines that belong to humanities are not embarked in the acquisition of research funds because they are not taken into account. The undergraduate education represents the ideal scenario to develop policies to promote collaborative work among faculty and students in the humanities to obtain alternative sources for research financing.

In the particular case of ID education, it is an ideal space to articulate the value of design in delivering products and services based on research. Design research is a strategic tool to find solutions to the real problems and demands of the community regarding the improvement of the quality of life. Design research is the way to achieve social and economic well-being success for the country through innovation in the human habitat.

**Implications for Theory**

Given that this is the first study of this kind conducted in DR, there are implications for theory. First, findings support the need to develop research-oriented undergraduate ID programs. The need to develop UREs to connect formal research to the design process in each design studio course to generate new knowledge for the ID field. Second, the findings can be replicated in other undergraduate programs, and can serve as a reference for future research in this topic.

**Implications for Practice**

The implementation of a practice-based learning approach that serves as a transition to a knowledge-based interdisciplinary undergraduate ID education (knowledge creation and application). To understand the role of design research as the theoretical foundation to
contribute to the body of knowledge of the field, students work on specific real life projects in their studio design courses and document it.

**Future Research**

This study provides a foundation for understanding UREs in the study of ID. My conceptual frame contributes to define a design research culture to permeate the ID undergraduate curriculum, faculty instructional decisions, and the student experience with research to inform design. There are several suggestions for further research. To gain more insight based on the results, I suggest a comparative study: A follow-up in a year, as the student participants will be immersed in the labor market as practitioners. There is enough space for further progress in determining whether or not research is part of the daily basis of an interior designer’s practice. Additionally, a further study with more focus on how UR provided students the proper tools and skills to develop formal research to work as professional ID researchers is therefore suggested. The research definition conflict among students could be the result of the misuse of the term when professors are asking for data gathering to start a design project. A study addressing the confusion in the definition of the term research among students and faculty is suggested as well.

The vast majority of faculty participants were female, and among ID students, the presence of men was non-existent. This is a constant fact since the beginning of the profession as decorators, but I was very interested in having the male perspective in my study. During the Bauhaus years there was a shift in this issue, and the male presence had the domain of the design courses. In the early 20 century, the design production of male designers was very prolific, but the 21 century has been characterized by a decrease in male enrollment in ID programs at undergraduate level. Attention to this condition will need to be undertaken.
In addition, a further work is required to establish more focus on the alignment of the use and importance of research in ID. While students are immersing in the design process, they should be more informed of the consequences for the project of doing deep research. To establish better understanding of the main role of ID educators conducting ID research to produce knowledge for the field, a further study is required. Finally, a study could be done to examine which behaviors and practices contribute to students’ behavioral success in developing theory as an alternative to the merely reproduction of knowledge. To transcend the final research project outcome, instead of doing only an academic contribution to fulfill the program requirements. These studies also could be replicated in other fields of knowledge at undergraduate level.

**Conclusions**

As demonstrated in this study, and not very different to the work of Shaw et al. (2013), undergraduate students enrolled in their last year of their academic career are more likely to show evidence of research preparedness at the very end of the program. All students expressed that they were required to conduct research prior starting a design project. Results suggest that research has important implications for undergraduates’ opportunities. How undergraduates perceive research would make a difference in the way research should be approached in the future of the ID at undergraduate level (Bowers & Parameswaran, 2013).

As mentioned in Chapter Five, the future of the ID curriculum, as considered by students and their faculty in their interviews, rests on research as the way to develop a body of knowledge for the field, and in the creation of a Dominican identity. As a whole country we inherited identity issues. We often prefer to embrace other countries’ ways of designing, rather promoting in our interiors, our roots and unique cultural elements. It is a post-colonial legacy that we need to eradicate. In order to achieve those goals, it is crucial to incorporate the notion of a design
research culture among them (Davis 2008) that values our history, our context, our distinctiveness. In the HEIs, it is required to have different approaches to create, grow, develop and nurture a research culture to suit the research environmental conditions (good human resources and research infrastructure) of the program regarding formal inquiry (Hajir, 2013). It takes a long time with good planning to build a strong research culture.

Meanwhile, a research-based curriculum re-orientation has to be designed to promote arts-based educational research in a four-years program instead of three. The design studio courses need to be strengthened regarding research, balancing the theory and the practice (labs and fieldwork). More structured research activities are recommended to be integrated with other academic work to concatenate research and creativity throughout the program. For example, students also wanted courses about the design business and how to start an entrepreneurship project. Additionally, some advanced drawing programs were taught very late in the curriculum (i.e., InDesign and Illustrator), not helping to focus completely on the final research project due to the lack of time for proper dedication to the research process.

What could the undergraduate system offer to curriculum change? How to move beyond? It is not enough to change the curriculum; hard work regarding design educators is needed to have an educational reform in the humanities, especially in the arts, to accomplish the educational goals as a nation. All participants emphasized the relevance of research at undergraduate level, but at the same time, faculty demonstrated lack of important research skills. How this issue could be addressed?

To teach research in the design studio courses while building a research culture, faculty should hold a research degree to establish research protocols, policies and evaluation standards (Davis, 2008). Highly motivated teaching staff have and will continue to provide challenging and engaging research learning experiences for students (Oliver, 2011). The interest of research-
active teachers to include research outcomes into teaching define how URE would give undergraduate design students personal insight into this ever-evolving complex field (Mägi & Beerkens, 2016).

The fast expansion of knowledge and the acceleration in the race for knowledge creation have sharpened the emphasis on learning both how to learn and how to construct new knowledge (Shaw et al., 2013). Therefore, within actions to take, the library resources of the university should provide primary source material to the research emphasis of the program. HEIs need to increase responsibility in the area of knowledge production (Sevaldson, 2010) among faculty with the collaboration of the students.

What does it take? Even though there are some differences between science students and social science and humanities students, they experience almost the same results. They benefit from learning a topic in depth and developing better relationships with their mentors, and they also comprehend the research processes better (Lopatto 2006). Students need a motivation to do research. They need to work collaboratively in multidisciplinary teams for enhancing the integral knowledge for their design problem-solving process.

Design is productive art and also it is an integrating science by nature. Design requires to prove that something actually works. To design is a complex, dynamic task, that requires mainly functional and aesthetic considerations. Several phases of inquiry, analysis, modeling, adjustments and previous adaptations to the definitive outcome. In addition, it includes several disciplines and the participation of one or several people in the process. Design is at the level of science and philosophy, since it is oriented to develop interior spaces to be used to satisfy the necessities of the human being, like science does.

The internship, the opportunity of practice was the most relevant component of the program according to the students. They explained the internship grounded the design research.
Internship represents the real life, the real world, and provides the ID students of diverse advantages: practical learning curve of experience, the assessment of skills and abilities, and to have their "first job". The practice gave them confidence as future practitioners applying the theory and knowledge learned in classes.

The findings from this study can open and inform professional and academic practice of faculty regarding UREs provided for the students, concerning the impact of their instructions on research skills achievement. The future of the ID curriculum, as considered by students and their faculty in their interviews, rests on research as the way to develop a body of knowledge for the field, and in the creation of a Dominican identity.

From this perspective, I could conclude that ID could be conceptualized as a multidisciplinary field of knowledge. Research in ID could be studied, learned and, in consequence, applied at the undergraduate level. Due to the comprehension that all design decisions have consequences for human beings and their interactions with the environment, particularly in DR, the future of the ID profession is connected to applied research and to document it to contribute to the body of knowledge of the field.
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Appendix A

HSIRB Approval Letter
Date: December 18, 2018

To: Andrea Beach, Principal Investigator
Julia Virginia Pimentel Jimenez, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair
Re: IRB Project Number 18-12-24

This letter will serve as confirmation that your research project titled “Undergraduate Educational Research Experiences in the Study of Interior Design” has been approved under the expedited category of review by the Western Michigan University Institutional Review Board (IRB). The conditions and duration of this approval are specified in the policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes to this project (e.g., you must request a post-approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study”). Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the IRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: December 17, 2019
Appendix B

Initial E-mail to Potential Faculty Participants
Date
Santo Domingo.

Dear Faculty Member of the Interior Design Program,

Saluting you, my name is Julia Virginia Pimentel Jiménez. The reason I am contacting you is to invite you to participate in a meeting to present you my dissertation project, a case study titled: "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. The purpose of this study is to explore how the integration of research experiences within undergraduate Interior Design (ID) programs is perceived by students and their faculty.

If you are interested in participating or you want more information about the project, you could contact me at my phone number: (809) 710-7386 or via my e-mail: juliavirginia.pimenteljimenez@wmu.edu. The length of participation in the study required for each of you is 60 minutes.

These meetings will be held at the university. The interviews will be scheduled previous agreement with each of you the time that you will be available to meet. I will reserve a private classroom or a private conference room for the individual interviews at the main building of the university according to the availability at the moment that fits the time recommended by each of you to meet.

Your participation is very valuable, that I am really grateful in advanced.

Sincerely,

Julia Virginia Pimentel Jiménez

President and Founder ADOPRODI
Coordinator for the ALADI’s National Committee for the Dominican Republic
Honorary International Member of the SMI
Member of the Editorial Committee of the DiseñoLA Organization

Fecha
Ciudad.

Estimados Profesores de Diseño de Interiores,

Saludándoles, mi nombre es Julia Virginia Pimentel Jiménez. El motivo de contactarles es para convocarles a participar en la reunión de la presentación de mi proyecto de investigación titulado “Experiencias Educativas de Investigación para Estudiantes de Diseño de Interiores a Nivel de Grado”. Este proyecto servirá para cumplir con los requerimientos de mi disertación para el programa de Doctorado que estoy tomando. El propósito de este estudio es explorar cómo la integración de experiencias en investigación dentro de programas de grado de Diseño de Interiores es percibida por los estudiantes y sus profesores.
Si usted está interesado en participar o requiere de más información del proyecto, me puede contactar en mi número de teléfono móvil: (809) 710-7386 o vía mi e-mail: juliavirginia.pimenteljimenez@wmu.edu. La longitud requerida de tiempo de su parte para participar es de 60 minutos.

Esta actividad se realizará en las instalaciones de la universidad. Estas entrevistas serán agendadas previamente con cada uno de ustedes en el tiempo que tengan disponible para las mismas. Como estudiante investigador reservaré un aula privada o un salón de conferencias privado para cada entrevista individual en la universidad, según disponibilidad de tiempo de los participantes.

Su participación será muy valiosa, la cual agradezco de antemano.

Atentamente,

**Julia Virginia Pimentel Jiménez**

Presidente-Fundador ADOPRODI
Coordinadora Comité Nacional ALADI República Dominicana
Miembro Honorario Internacional SMI
Miembro Comité Editorial Organización DiseñoLA
Appendix C

Initial E-mail to Students Interviewed for the Field Study and Potential Student Participants

Including Non-English Translations
Date
Santo Domingo.

Dear Students of the Interior Design Program,

Saluting you, my name is Julia Virginia Pimentel Jiménez. The reason I am contacting you is to invite you to participate again in the meeting to present you my dissertation project, a case study titled: "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. The purpose of this study it to explore how the integration of research experiences within undergraduate Interior Design (ID) programs is perceived by students and their faculty.

If you are interested in participating or you want more information about the project, you could contact me at my phone number: (809) 710-7386 or via my e-mail: julia_virginia.pimenteljimenez@wmu.edu. The length of participation in the study required for each of you is 60 minutes.

These meetings will be held in the facilities of the university. The interviews will be scheduled previous agreement with each of you of the time that you will be available to meet. I will reserve a private classroom or a private conference room for the individual interviews at the main building of the university according to the availability at the moment that fits the time recommended by each of you to meet.

Your participation is very valuable, that I am really grateful in advanced.

Sincerely,

Julia Virginia Pimentel Jiménez

President and Founder ADOPRODI
Coordinator for the ALADI’s National Committee for the Dominican Republic
Honorary International Member of the SMI
Member of the Editorial Committee of the DiseñoLA Organization

Fecha
Ciudad.

Estimadas Estudiantes de Diseño de Interiores,

Saludándoles, mi nombre es Julia Virginia Pimentel Jiménez. El motivo de contactarles es para convocarles a participar en la reunión de la presentación de mi proyecto de investigación titulado “Experiencias Educativas de Investigación para Estudiantes de Diseño de Interiores a Nivel de Grado”. Este proyecto servirá para cumplir con los requerimientos de mi disertación para el programa de Doctorado que estoy tomando. El propósito de este estudio es explorar cómo la
integración de experiencias en investigación dentro de programas de grado de Diseño de Interiores es percibida por los estudiantes y sus profesores.

Si usted está interesado en participar o requiere de más información del proyecto, me puede contactar en mi número de teléfono móvil: (809) 710-7386 o vía mi e-mail: juliavirginia.pimenteljmenez@wmu.edu. La longitud requerida de tiempo de su parte para participar es de 60 minutos.

Esta actividad se realizará en las instalaciones de la Universidad. Estas entrevistas serán agendadas previamente con cada una de ustedes en el tiempo que tengan disponible para las mismas. Como estudiante investigador reservaré un aula privada o un salón de conferencias privado para cada entrevista individual en el Edificio Francia II de la universidad, según disponibilidad de tiempo de los participantes.

Su participación será muy valiosa, la cual agradezco de antemano.

Atentamente,

**Julia Virginia Pimentel Jiménez**

Presidente-Fundador ADOPRODI
Coordinadora Comité Nacional ALADI República Dominicana
Miembro Honorario Internacional SMI
Miembro Comité Editorial Organización DiseñoLA
Appendix D

Informed Consent for Faculty Including Non-English Translations
Western Michigan University
Educational Leadership, Research, and Technology
Western Michigan University College of Education and Human Development

Principal Investigator: Dr. Andrea Beach
Student Investigator: Julia Virginia Pimentel Jiménez
Title of Study: UNDERGRADUATE EDUCATIONAL RESEARCH EXPERIENCES IN THE STUDY OF INTERIOR DESIGN

You have been invited to participate in a research project titled "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. This consent document will explain the purpose of this research project and will go over time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?

The purpose of this study it to explore how the integration of research experiences within an undergraduate Interior Design (ID) program is perceived by students and faculty.

Who can participate in this study?

You can participate in this study if you are a faculty member of a school of interior design at a private university in Dominican Republic.

Where will this study take place?

The data collection is going to take place at a private school of interior design in Santo Domingo, Dominican Republic. The interview will be schedule at a time that is convenient for you.

What is the time commitment for participating in this study?

You will be asked to complete one interview that will each last approximately 60 minutes. Your total time of participation will be no longer than 1 hour.

What will you be asked to do if you choose to participate in this study?

You will be asked to a list of questions prepared for the interview regarding research experiences by undergraduate ID students and faculty.
What information is being measured during the study?

I, as the researcher, will collect information from you regarding your experience as a faculty member of a school of interior design. You will be asked to describe your experience with research in your teaching strategies.

What are the risks of participating in this study and how will these risks be minimized?

There are no known risks for this study other than what you might experience in everyday life, like time inconvenience risk. If you find some interview questions sensitive, you could refuse to continue with the interview and withdraw from the study any time.

What are the benefits of participating in this study?

The entire ID community (design practitioners, professionals, graduate and undergraduate students; and design educators or faculty) may benefit from this study, because the findings may be a useful guide for academics, administrators, and policy makers to let undergraduate students to have access to research experiences.

Are there any costs associated with participating in this study?

There are no costs associated with participating in this study

Is there any compensation for participating in this study?

There is no compensation associated with participating.

Who will have access to the information collected during this study?

The results of the study will be disseminated in research journals, and conference presentations. Your identity will be kept strictly confidential.

What if you want to stop participating in this study?

You can choose to stop participating in the study at anytime for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either academically or personally if you choose to withdraw from this study.

The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the principal investigator, Dr. Andrea Beach at her phone number: (269) 387-1725 or via his e-mail: andrea.beach@wmu.edu  Also, you can contact the student investigator, Julia Virginia Pimentel Jiménez at her phone number: (809) 710-7386 or via her e-mail: juliavirginia.pimenteljimenez@wmu.edu  You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.
This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name

________________________________________________________________________

Participant’s signature                                      Date
¿Qué se está tratando de encontrar con este estudio?

El propósito de este estudio es explorar cómo la integración de experiencias de investigación en los programas de grado de Diseño de Interiores (DI) es percibida por los estudiantes y por sus profesores.

¿Quiénes pueden participar de este estudio?

Usted puede participar de este estudio si es parte del universo de profesores de la facultad de la Escuela de Diseño de Interiores en una universidad privada de la República Dominicana.

¿Dónde se va a desarrollar el estudio?

La recolección de la información tendrá lugar en una universidad privada en Santo Domingo, en la República Dominicana. Las entrevistas serán agendadas previo acuerdo del tiempo que tenga disponible para el encuentro.

¿Cuál es el tiempo de compromiso de participar en este estudio?

La duración de la participación en el estudio requiere de su parte de completar el tiempo para una entrevista con una duración de 60 minutos. El tiempo total requerido no será mayor a 1 hora.

¿Qué se le va a solicitar si usted decide participar en este estudio?

Para la recolección de la información, a usted se le harán una serie de preguntas preparadas para la entrevista sobre cómo son las experiencias de investigación para los estudiantes de grado de la carrera de diseño de interiores y su experiencia como docente, en una interacción directa e individual.
¿Qué información será medida durante el estudio?

Yo, como la investigadora, le solicitaré proveer información con relación a su experiencia como docente para una Escuela de Diseño de Interiores para recopilar datos. A usted se le solicitará describir su experiencia en investigación como docente de grado.

¿Cuáles son los riesgos por participar en este estudio y cómo se minimizarán estos riesgos?

No hay riesgos conocidos para este tipo de estudio más que lo que se pueda experimentar en la vida diaria, como el inconveniente de tiempo. Si usted considera que alguna pregunta le resulta incómoda o muy sensible, usted puede rechazar su continuación en el estudio y retirarse del mismo en cualquier momento.

¿Cuáles son los beneficios de participar en este estudio?

La comunidad completa de DI (diseñadores profesionales, estudiantes de grado y de postgrado, y docentes) podrán beneficiarse con este estudio ya que los resultados serán una guía útil para académicos, directores y desarrolladores de políticas que podrán permitir a los estudiantes de grado tener acceso a experiencias de investigación.

¿Hay algún costo asociado con la participación en este estudio?

No hay costos asociados con la participación en este estudio.

¿Hay algún tipo de compensación por la participación en este estudio?

No hay compensaciones asociadas a la participación en este estudio.

¿Quién tendrá acceso a la información recogida durante este estudio?

Los resultados de este estudio serán difundidos en revistas de investigación, y presentaciones en conferencias. Su identidad se mantendrá estrictamente confidencial.

¿Qué sucede si no deseo continuar en el estudio?

Usted puede escoger dejar de participar en este estudio en el momento que lo desee y por la razón que entienda. No será penalizado o prejuiciado si decide no continuar. Usted NO será afectado de manera académica ni personalmente si decide dejar el estudio.

La investigadora también puede decidir retirarle del estudio sin su consentimiento.

Si usted tiene alguna inquietud durante el estudio, usted puede contactar a la investigadora principal, Dra. Andrea Beach a su número de teléfono celular: (269) 387-1725 o vía su e-mail: andrea.beach@wmu.edu También usted puede contactar a la estudiante investigadora, Julia Virginia Pimentel Jiménez a su teléfono celular: (809) 710-7386 o a través de su correo electrónico: juliavirginia.pimenteljimenez@wmu.edu Usted también puede contactar al
Presidente del HSIRB por sus siglas en Inglés (Human Subjects Institutional Review Board) en el teléfono 269-387-8293 o al Vice Presidente de Investigación al teléfono 269-387-8298.

Este documento de consentimiento informado ha sido aprobado para ser utilizado por un año por el Consejo del HSIRB como indicado por la fecha y la firma del presidente del consejo en la esquina superior derecha. No participe en el estudio si la fecha ha caducado.

He leído el documento de consentimiento informado. Los riesgos y beneficios me han sido explicados. Estoy de acuerdo con participar en este estudio.

Por favor, ponga su nombre completo.

____________________________________________________________________

Firma del participante

Fecha
Appendix E

Informed Consent for Students Including Non-English Translations
Western Michigan University
Educational Leadership, Research, and Technology
Western Michigan University College of Education and Human Development

Principal Investigator: Dr. Andrea Beach
Student Investigator: Julia Virginia Pimentel Jiménez
Title of Study: UNDERGRADUATE EDUCATIONAL RESEARCH EXPERIENCES IN THE STUDY OF INTERIOR DESIGN

You have been invited to participate in a research project titled "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. This consent document will explain the purpose of this research project and will go over all time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?

The purpose of this study is to explore how the integration of research experiences within undergraduate Interior Design (ID) program is perceived by students.

Who can participate in this study?

You can participate in this study if you are graduating from a three- and- a-half-year ID program, taking the final project course, at a private university in Dominican Republic.

Where will this study take place?

The data collection is going to take place at a private university in Santo Domingo, Dominican Republic. The interview will be schedule at a time that is convenient for you.

What is the time commitment for participating in this study?

You will be asked to complete one interview that will each last approximately 60 minutes. Your total time of participation will be no longer than 1 hour.

What will you be asked to do if you choose to participate in this study?

You will be asked to a list of questions prepared for the interview regarding research experiences by undergraduate ID students.

What information is being measured during the study?

I, as the researcher, will collect information from you regarding your experience as a final project student in interior design. You will be asked to describe your experiences with research during your undergraduate work. You also will be asked to provide me of a digital copy of your final project to be assessed.
What are the risks of participating in this study and how will these risks be minimized?

There are no known risks for this study other than what you might experience in everyday life, like time inconvenience risk. If you find some interview questions sensitive, you could refuse to continue with the interview and withdraw from the study any time.

What are the benefits of participating in this study?

The entire ID community (design practitioners, professionals, graduate and undergraduate students; and design educators or faculty) may benefit from this study, because the findings may be a useful guide for academics, administrators, and policy makers to let undergraduate students to have access to research experiences.

Are there any costs associated with participating in this study?

There are no costs associated with participating in this study.

Is there any compensation for participating in this study?

There is no compensation associated with participating.

Who will have access to the information collected during this study?

The results of the study will be disseminated in research journals, and conference presentations. Your identity will be kept strictly confidential.

What if you want to stop participating in this study?

You can choose to stop participating in the study at anytime for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience NO consequences either academically or personally if you choose to withdraw from this study.

The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the principal investigator, Dr. Andrea Beach at her phone number: (269) 387-1725 or via his e-mail: andrea.beach@wmu.edu Also, you can contact the student investigator, Julia Virginia Pimentel Jiménez at her phone number: (809) 710-7386 or via her e-mail: juliavirginia.pimenteljimenez@wmu.edu You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

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I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name

Participant’s signature 

Date
Usted ha sido invitado a participar en un proyecto de diseño titulado "Experiencias Educativas de Investigación para Estudiantes de Diseño de Interiores a Nivel de Grado." Este proyecto servirá como requerimiento para mi programa de doctorado. Este documento de consentimiento informado explica el propósito de este proyecto de investigación, los tiempos necesarios, los procedimientos a utilizarse en el estudio, los riesgos y los beneficios de los participantes. Por favor, lea este formulario de consentimiento antes de completarlo. Por favor, si necesita alguna aclaración al respecto, favor de indicarlo.

¿Qué se está tratando de encontrar con este estudio?

El propósito de este estudio es explorar cómo la integración de experiencias de investigación en los programas de grado de Diseño de Interiores (DI) es percibida por los estudiantes.

¿Quiénes pueden participar de este estudio?

Usted puede participar de este estudio si es parte del universo de estudiantes que se estén graduando de un programa de DI de tres años y medio de duración, tomando la asignatura de proyecto final en una universidad privada de la República Dominicana.

¿Dónde se va a desarrollar el estudio?

La recolección de la información tendrá lugar en una universidad privada en Santo Domingo, en la República Dominicana. Las entrevistas serán agendadas previo acuerdo del tiempo que tenga disponible para el encuentro.

¿Cuál es el tiempo de compromiso de participar en este estudio?

La duración de la participación en el estudio requiere de su parte de completar el tiempo para una entrevista con una duración de 60 minutos. El tiempo total requerido no será mayor a 1 hora.

¿Qué se le va a solicitar si usted decide participar en este estudio?

Para la recolección de la información, a usted se le harán una serie de preguntas preparadas para la entrevista sobre cómo son las experiencias de investigación para los estudiantes de grado de la carrera de diseño de interiores, en una interacción directa e individual.
¿Qué información será medida durante el estudio?

Yo, como la investigadora, le solicitaré proveer información con relación a su experiencia como estudiante de proyecto final de DI para recopilar datos. A usted se le solicitará describir su experiencia en investigación durante su vida como estudiante de grado. Se le solicitará además entregar al final de su curso de Proyecto Final una copia digital del mismo para fines de evaluación del producto.

¿Cuáles son los riesgos por participar en este estudio y cómo se minimizarán estos riesgos?

No hay riesgos conocidos para este tipo de estudio más que lo que se pueda experimentar en la vida diaria, como el inconveniente de tiempo. Si usted considera que alguna pregunta le resulta incómoda o muy sensible, usted puede rechazar su continuación en el estudio y retirarse del mismo en cualquier momento.

¿Cuáles son los beneficios de participar en este estudio?

La comunidad completa de DI (diseñadores profesionales, estudiantes de grado y de postgrado, y docentes) podrán beneficiarse con este estudio ya que los resultados serán una guía útil para académicos, directores y desarrolladores de políticas que podrán permitir a los estudiantes de grado tener acceso a experiencias de investigación.

¿Hay algún costo asociado con la participación en este estudio?

No hay costos asociados con la participación en este estudio.

¿Hay algún tipo de compensación por la participación en este estudio?

No hay compensaciones asociadas a la participación en este estudio.

¿Quién tendrá acceso a la información recogida durante este estudio?

Los resultados de este estudio serán difundidos en revistas de investigación, y presentaciones en conferencias. Su identidad se mantendrá estrictamente confidencial.

¿Qué sucede si no deseo continuar en el estudio?

Usted puede escoger dejar de participar en este estudio en el momento que lo desee y por la razón que entienda. No será penalizado o prejuiciado si decide no continuar. Usted NO será afectado de manera académica ni personalmente si decide dejar el estudio.

La investigadora también puede decidir retirarle del estudio sin su consentimiento.

Si usted tiene alguna inquietud durante el estudio, usted puede contactar a la investigadora principal, Dra. Andrea Beach a su número de teléfono celular: (269) 387-1725 o vía su e-mail: andrea.beach@wmu.edu También usted puede contactar a la estudiante investigadora, Julia Virginia Pimentel Jiménez a su teléfono celular: (809) 710-7386 o a través de su correo
electrónico: juliavirginia.pimenteljimenez@wmu.edu  Usted también puede contactar al Presidente del HSIRB por sus siglas en Inglés (Human Subjects Institutional Review Board) en el teléfono 269-387-8293 o al Vice Presidente de Investigación al teléfono 269-387-8298.

Este documento de consentimiento informado ha sido aprobado para ser utilizado por un año por el Consejo del HSIRB como indicado por la fecha y la firma del presidente del consejo en la esquina superior derecha. No participe en el estudio si la fecha ha caducado.

He leído el documento de consentimiento informado. Los riesgos y beneficios me han sido explicados. Estoy de acuerdo con participar en este estudio.

Por favor, ponga su nombre completo.

___________________________________  ________________________
Firma del participante  Fecha
Appendix F

Interview Protocol for Faculty Including Non-English Translations
This is the faculty’s interview protocol:

Central question: What strategies do ID faculty utilize to incorporate UREs in the courses they teach?

Sub-questions:

a. How do faculty describe their own professional involvement with research in their field?

b. How do faculty describe the ways they incorporate research into their ID courses?

c. What do faculty believe is the role of original research in the ID undergraduate program and why?

Dear Faculty, Good Morning (Afternoon),

Thank you for coming. I really want to thank you once again for being willing to participate in the interview aspect of my study. As I have mentioned to you before, my name is Julia Virginia Pimentel Jiménez. I am a graduate of the School of Interior Design of this university. My dissertation project is a case study titled: "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. The purpose of this study is to explore how the integration of research experiences within an undergraduate Interior Design (ID) program is perceived by students and their faculty.

Our interview today will last approximately one hour during which I will be asking you about your instructional decisions regarding students’ research experiences. In our first meeting, you completed a consent form indicating that I have your permission or not to audio record our conversation. Are you still ok with me recording (or not) our conversation today?

___Yes ___No
If yes: Thank you! Please let me know if at any point you want me to turn off the recorder or keep something you said off the record.

If no: Thank you for letting me know. I will only take notes of our conversation.

I want to remind you that your comments will remain strictly confidential. I will be compiling a report which will contain all students’ and faculty’s comments without any reference to individuals.

Prior to begin the interview, do you have any questions? If you have any questions, or other questions arise at any point in this interview, you can feel free to ask them at any time. I would be more than happy to answer your questions.

Thank you very much for your time.

Interview Questions

Sub-question: How do faculty describe their own professional involvement with research in their field?

Faculty Beliefs and Outputs

1. What do you understand by the term research?
2. What is your concept of undergraduate research?
3. What are your feelings towards research?
4. Have you had any research experience?
5. Please describe the types of research you believe interior designers do. Is it useful? Elaborate, please.
6. Which areas of design are among the highest priorities for research?
7. Do you consider that there is a deficiency in the process of applied research in the field? Elaborate, please.
Sub-question: How do faculty describe the ways they incorporate research into their ID courses?

Design Strategies for Promoting Research

8. Do you use educational strategies to promote research in the teaching-learning process of your students? Elaborate, please.

9. How do you think working in teamwork helps students to address uneven preparation for research and improve the quality of projects?

Sub-question: What do faculty believe is the role of original research in the ID undergraduate program and why?

Contribution to Research Environment

10. Do you consider that there is innovation in students’ design projects, but not research? Justify your answer.

11. How many hours on average you spent per week working to support your students in their design projects? How many meetings do you have with students each week?

12. Are you pleased with the outcome of your students’ design project(s)? If not, why?

Students´ URE Supervision and/or Mentoring

13. Do you think the students taking the final project course are well-prepared for research? Please explain why or why not.

14. Are you aware of the university´s lines of research? Could you list a few?

15. Are you aware of the school of interior design´s lines of research? Could you list a few?
Spanish Version Interview Protocol

Estimado(a) profesor(a), buenos días (tardes),

Gracias por venir. Deseo realmente agradecerle una nueva vez el apoyo en colaborar en participar en la parte correspondiente a las entrevistas de mi proyecto de disertación. Como le mencioné antes, mi proyecto de investigación se titula “Experiencias Educativas de Investigación para Estudiantes de Diseño de Interiores a Nivel de Grado”. Este proyecto servirá para cumplir con los requerimientos de mi disertación para el programa de Doctorado que estoy tomando. El propósito de este estudio es explorar cómo la integración de experiencias en investigación dentro de programas de grado de Diseño de Interiores es percibida por los estudiantes y sus profesores.

Nuestra entrevista el día de hoy está pautada para tener una hora de duración, en donde le estaré haciendo preguntas sobre tu experiencia de investigación durante tus estudios de grado. En nuestra primera reunión, completó un formulario de consentimiento, indicando tu permiso o no para grabar esta conversación. ¿Todavía acepta (o no) que yo grabe nuestra conversación hoy?

___Sí ___No

Si es positivo: ¡Gracias! Por favor, me hace saber en cualquier momento si desea que apague la grabadora o si hay algo que mencionara que prefiera mantener fuera del audio.

Si la respuesta es no: Gracias por hacérmelo saber. Solamente tomaré notas de nuestra conversación, sin grabarla.

Quiero recordarle que sus comentarios se mantendrán estrictamente confidenciales. Yo estaré haciendo un reporte que contendrá una compilación de los comentarios de los estudiantes y los profesores sin hacer referencias particulares a individuos.
Antes de que comencemos la entrevista, ¿tienes alguna pregunta? Si tienes alguna pregunta o algún otro tipo de inquietud que te surja durante la entrevista, te puedes sentir en total confianza de cuestionarme en cualquier momento. Yo estaré más que complacida en contestar estas preguntas.

¡Gracias por tu tiempo nuevamente!

Preguntas de la Entrevista

Sub-pregunta: ¿Cómo los profesores describen su propio involucramiento profesional con la investigación en su área?

Creencias y Producción de los Profesores

1. ¿Qué entiende por investigación?
2. ¿Cuál es su concepto de investigación a nivel de grado?
3. ¿Cómo se siente respecto a hacer investigación?
4. ¿Ha tenido alguna experiencia de investigación? Elabore su respuesta.
5. Para usted, ¿cuál es la utilidad de la investigación en diseño de interiores?
6. ¿En su criterio, cuáles áreas del diseño están entre las de más alta prioridad para hacer investigación?
7. ¿Considera que hay una deficiencia en el proceso de investigación práctica?

Sub-pregunta: ¿Cómo los profesores describen la manera en que ellos incorporan investigación en sus clases de diseño?

Estrategias de Diseño para Promover la Investigación

8. ¿Utiliza estrategias para promover la investigación como eje articulador en el proceso formativo de sus estudiantes? Elabore su respuesta.
9. ¿Cómo considera que el trabajo en equipo ayuda a los estudiantes para prepararse en investigación y mejorar la calidad de sus proyectos?

Sub-pregunta: ¿Qué piensan los profesores sobre el rol de la investigación en los programas de grado para los estudiantes de diseño de interiores y porqué?

Contribución al Ambiente de Investigación

10. ¿Considere que en los proyectos de sus estudiantes hay presencia de innovación, pero ausencia de investigación? Elabore su respuesta.

11. ¿Cuántas horas promedio dedica a la semana a dar apoyo a sus estudiantes en sus proyectos de diseño? ¿Cuántas reuniones tiene con estudiantes cada semana?

12. ¿Se siente complacido con los resultados de los trabajos de sus estudiantes en los proyectos de diseño? En caso contrario, ¿por qué no?

Supervisión y Mentoría para las Experiencias Educativas de Grado de los Estudiantes

13. ¿Considera que los estudiantes que están tomando el proyecto final de grado están bien preparados para hacer investigación? Elabore su respuesta.

14. ¿Conoce las líneas de investigación de la universidad? Mencione por favor alguna de ellas.

15. ¿Conoce las líneas de investigación de la escuela? Mencione por favor alguna de ellas.
Appendix G

Interview Protocol for Students Including Non-English Translations
This is the students´ interview protocol for these research questions:

Central question: How do ID students describe their undergraduate research experiences?

Sub-questions:

a) How do ID students believe their experiences with research contributed to their undergraduate coursework?

b) In what ways do their experiences with research during their undergraduate work influence their dispositions toward involvement with ID research after graduation?

Dear Student, Good Morning (Afternoon),

Thank you for coming. I really want to thank you once again for being willing to participate in the interview aspect of my study. As I have mentioned to you before, my name is Julia Virginia Pimentel Jiménez. I belong to the Alumni and the Faculty of the School of Interior Design of this university. My dissertation project is a case study titled: "Undergraduate Educational Research Experiences in the Study of Interior Design." This project will serve as my dissertation for the requirements of the Ph. D. program. The purpose of this study it to explore how the integration of research experiences within undergraduate Interior Design (ID) programs is perceived by students and their faculty.

Our interview today will last approximately one hour during which I will be asking you about your research experience during your undergraduate academic upbringing. In our first meeting, you completed a consent form indicating that I have your permission or not to audio record our conversation. Are you still ok with me recording (or not) our conversation today? ___Yes ___No

If yes: Thank you! Please let me know if at any point you want me to turn off the recorder or keep something you said off the record.
If no: Thank you for letting me know. I will only take notes of our conversation.

I want to remind you that your comments will remain strictly confidential. I will be
compiling a report which will contain all students’ and faculty’s comments without any reference
to individuals.

Prior to begin the interview, do you have any questions? If you have any questions, or
other questions arise at any point in this interview, you can feel free to ask them at any time. I
would be more than happy to answer your questions.

Thank you very much for your time.

Interview Questions

Sub-question: How do ID students describe their UREs?

Learning Motivation

1. Describe the most interesting or challenging class you have taken. What was it
about this course that intrigued you?
2. What about the research project itself: was the project manageable?
3. What did you learn? Do you feel confident in doing another research project?
4. How could you have been better prepared to engage in the final project
course?
5. Do you consider that research is important for identifying problems and solutions
of value to society? Justify your answer.

Sub-question: How do such ID students believe their experiences with research
contributed to their undergraduate coursework?
**Research Environment**

6. Please give a detailed example of an assignment you were asked to perform through research that was outside of your knowledge/comfort level. What steps did you take to perform the task?

7. Please describe a situation where you had to work with a difficult student or professor in your research project. What made them hard to work with, and how did you work through this challenge?

8. Describe a time within a project that something went wrong. How did this get resolved and what did you learn from it?

*Sub-question: In what ways do their experiences with research during their undergraduate work influence their dispositions toward involvement with ID research after graduation?*

**Research Orientation**

9. What do you understand by the term research?

10. What are your feelings towards research?

11. Have you had any research experience?

12. Do you have any special skills regarding research?

13. Please describe the types of research you believe interior designers do.

14. What knowledge do you have of products and sources for interior design?

15. Design is a dynamic and every changing field. What steps do you take to keep yourself informed of current trends?
Research Self-efficacy

16. Being a successful interior design student requires the ability to quickly adjust to change. Describe how you have learned to deal with all these changes and give an example of a recent change you had to adapt to quickly.

17. What is your design approach, and which tool(s) do you find most effective?

18. Describe sequences you would use to resolve design problems.

19. When you were studying for a topic, how did you try to make everything fit together?

Spanish Version Interview Protocol

Estimado(a) estudiante, buenos días (tardes).

Gracias por venir. Deseo realmente agradecerte una nueva vez el apoyo en colaborar en participar en la parte correspondiente a las entrevistas de mi proyecto de disertación. Como te mencioné antes, mi proyecto de investigación se titula “Experiencias Educativas de Investigación para Estudiantes de Diseño de Interiores a Nivel de Grado”. Este proyecto servirá para cumplir con los requerimientos de mi disertación para el programa de Doctorado que estoy tomando. El propósito de este estudio es explorar cómo la integración de experiencias en investigación dentro de programas de grado de Diseño de Interiores es percibida por los estudiantes y sus profesores.

Nuestra entrevista el día de hoy está pautada para tener una hora de duración, en donde te estaré haciendo preguntas sobre tu experiencia de investigación durante tus estudios de grado. En nuestra primera reunión, completaste un formulario de consentimiento, indicando tu permiso o no para grabar esta conversación. ¿Todavía aceptas (o no) que yo grabe nuestra conversación hoy?

___Sí ___No
Si es positivo: ¡Gracias! Por favor, me haces saber en cualquier momento si deseas que apague la grabadora o si hay algo que mencionarás que prefieras mantener fuera del audio.

Si la respuesta es no: Gracias por hacérmelo saber. Solamente tomaré notas de nuestra conversación, sin grabarla.

Quiero recordarte que tus comentarios se mantendrán estrictamente confidenciales. Yo estaré haciendo un reporte que contará una compilación de los comentarios de los estudiantes sin hacer referencias particulares a individuos.

Antes de que comencemos la entrevista, ¿tienes alguna pregunta? Si tienes alguna pregunta o algún otro tipo de inquietud que te surja durante la entrevista, te puedes sentir en total confianza de cuestionarme en cualquier momento. Yo estaré más que complacida en contestar estas preguntas.

¡Gracias por tu tiempo nuevamente!

Preguntas de la Entrevista

Sub-pregunta: ¿Cómo los estudiantes describen sus experiencias de investigación a nivel de grado?

Motivación Para el Aprendizaje

1. Describe la clase más interesante o retadora que has tomado. ¿Qué es lo que te hace sentir así de esa clase?

2. Háblame del proyecto final de grado: ¿fue manejable la investigación?

3. ¿Qué aprendiste? ¿Te sientes capacitado para hacer otro proyecto de investigación?

4. ¿Cómo piensas pudiste haber estado mejor preparado para afrontar tu proyecto final de grado?
5. ¿Consideras que la investigación es importante para identificar problemas y soluciones de valor para la sociedad? Justifica tu respuesta, por favor.

*Sub-pregunta:* ¿Cómo esos estudiantes de diseño de interiores entienden que sus experiencias con la investigación contribuyeron o impactaron su trabajo de grado?

**Ambiente para la Investigación**

6. Por favor, da un ejemplo detallado de un momento en que se te haya solicitado hacer una investigación para una asignación que haya estado fuera de tu alcance o nivel de confort. ¿Qué pasos diste para completar la tarea?

7. Por favor, describe una situación en la que hayas tenido que trabajar con un compañero de clases difícil o un profesor en un proyecto de investigación. ¿Qué fue lo que hizo difícil trabajar con ellos, cómo lo superaste?

8. Describe un momento dentro de un proyecto que algo saliera realmente mal. ¿Cómo lograste resolverlo y cuál fue tu aprendizaje?

*Sub-pregunta:* ¿De qué manera sus experiencias en investigación durante su trabajo de grado influyeron con su disposición para involucrarse en investigación luego de graduarse?

**Orientación Hacia la Investigación**

9. ¿Qué entiendes por investigación?

10. ¿Cómo te sientes respecto a hacer investigación?

11. ¿Has tenido alguna experiencia de investigación?

12. ¿Tienes algunas habilidades para la investigación?

13. Por favor, describe los tipos de investigación que entiendes que hacen los diseñadores de interiores.
14. ¿Qué conocimientos tienes sobre productos o fuentes para el diseño de interiores?

15. El Diseño es un campo de trabajo muy dinámico y cambiante. ¿Cuáles acciones tomas para mantenerte informado de las tendencias más recientes?

Auto-eficacia Sobre Ser Investigador

16. Ser un exitoso diseñador de interiores requiere de la habilidad de adaptarse rápidamente al cambio. Describe cómo has aprendido a lidiar con estos cambios y por favor, da un ejemplo de un cambio reciente al que te hayas tenido que adaptar rápidamente.

17. ¿Cuál es tu abordaje al diseñar, cuáles herramientas te resultan más efectivas?

18. Describe las secuencias que utilizas para resolver problemas de diseño.

19. Cuando has estado estudiando para un tema, ¿cómo logras que todo encaje?
Appendix H

Checklist for Final Research Project Thesis Analysis Including Non-English Translations
### CHECKLIST FOR FINAL RESEARCH PROJECT TESIS ANALISIS OF THE SCHOOL OF INTERIOR DESIGN

**Participant:**

**Title Final Research Project:**

**Date:**

Identify the aspects that are actually present in the final research project thesis in the column at the right.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>CONTENT AND LOGICAL STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Cover</td>
<td></td>
</tr>
<tr>
<td>1. Logo, Name of the University, Faculty, School and Program.</td>
<td></td>
</tr>
<tr>
<td>2. The title is clear.</td>
<td></td>
</tr>
<tr>
<td>3. Name and ID of the student(s) and the advisor.</td>
<td></td>
</tr>
<tr>
<td>4. Date and city. Declaration of responsibility.</td>
<td></td>
</tr>
<tr>
<td>Dedication (optional)</td>
<td></td>
</tr>
<tr>
<td>Acknowledgments (optional)</td>
<td></td>
</tr>
<tr>
<td>Table of Contents</td>
<td></td>
</tr>
<tr>
<td>5. Contents are clearly and correctly identify.</td>
<td></td>
</tr>
<tr>
<td>6. Pages are correctly identify, including the appendixes.</td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td></td>
</tr>
<tr>
<td>7. Summarizes the elements of the project in an English version.</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>8. Sintetices the elements of the project.</td>
<td></td>
</tr>
<tr>
<td>CHAPTER I</td>
<td></td>
</tr>
<tr>
<td>Problem Statement</td>
<td></td>
</tr>
<tr>
<td>9. The definition of the project is clear, well-structured and well-written.</td>
<td></td>
</tr>
<tr>
<td>10. The project is clearly conceptualized (identifies current state of affairs).</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td></td>
</tr>
<tr>
<td>11. The general objective is consistent with the proposal, clear and well-written.</td>
<td></td>
</tr>
<tr>
<td>12. The specific objectives are consistent with the proposal, clear and well-written.</td>
<td></td>
</tr>
<tr>
<td>Rationale for the Project</td>
<td></td>
</tr>
<tr>
<td>15. Explains how could it be developed.</td>
<td></td>
</tr>
<tr>
<td>16. Aims to develop better design systems or procedures.</td>
<td></td>
</tr>
</tbody>
</table>
17. The practical problem is clear.
18. The proposal is coherent and pertinent.

**Limitations and Delimitations**

19. The limitations are clear and well-presented.
20. The delimitations are clear and well-presented.

**CHAPTER II**

22. Literature Review.
23. Proper citations.
24. Includes the user, activities, needs, environment.
25. Includes the conceptualization of the design.
26. Includes the ergonomics aspects of the project.
27. Includes the structural aspects for these type of project.
28. Includes the adequate and recommended materials for these type of project.

**CHAPTER III**

**Building Proposal**

29. Includes the descriptive memory of the project.
30. The descriptive memory is clear, well-written and interesting to read.
31. The descriptive memory has logical structure.

**IV. REFERENCES**

**References**

32. Sufficient and adequate.
33. Related to the project.
34. References are up to date.
35. Uses correct APA format.

**V. GLOSSARY**

36. The glossary is broad and very detailed.
37. The glossary is in alphabetical order and very organized.

**VI. APPENDIXES**

38. Numbered and identified.

**VII. DRAWINGS OF THE PROJECT**

39. **PROTOTYPES OR MODELS.** If necessary.

**OBSERVATIONS:**

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

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Spanish Version Checklist for Final Research Project Thesis

LISTA DE COTEJO PARA LA EVALUACIÓN DEL PROYECTO DE GRADO ESCUELA
DISEÑO DE INTERIORES

| Participante: | | |
| Título Proyecto de Grado: | | |
| Fecha: | | |

Identifiquen los aspectos que están actualmente redactados en el Proyecto de Grado en el recuadro en azul claro de la columna de la derecha.

<table>
<thead>
<tr>
<th>ASPECTOS</th>
<th>CONTENIDO Y ESTRUCTURA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portadilla</td>
<td>1. Refleja el emblema, el nombre de la Universidad, Facultad, Escuela y Carrera. 2. Es claro el título del proyecto de grado. 3. Nombre y matrícula del o los sustentantes y del/la asesor(a). 4. Fecha de entrega y ciudad. Declaración de la responsabilidad.</td>
</tr>
<tr>
<td>Dedicatoria (opcional)</td>
<td></td>
</tr>
<tr>
<td>Agradecimientos (opcional)</td>
<td></td>
</tr>
<tr>
<td>Índice de Contenido</td>
<td>5. Expresa los contenidos que se desarrollan en el proyecto de grado. 6. Indica en qué página se encuentran los contenidos (incluyendo los anexos).</td>
</tr>
<tr>
<td>Abstract</td>
<td>7. Sintetiza los elementos contenidos en el proyecto traducido correctamente al idioma Inglés.</td>
</tr>
<tr>
<td>Introducción</td>
<td>8. Sintetiza los elementos contenidos en el proyecto.</td>
</tr>
<tr>
<td>CAPÍTULO I</td>
<td>Planteamiento del Proyecto</td>
</tr>
</tbody>
</table>
16. Busca mejorar sistemas y procedimientos.
17. Son claros los motivos prácticos.
18. La propuesta es coherente y pertinente.

**Alcances**
19. Los alcances de diseño son claros y están bien delimitados.
20. Los alcances de investigación son claros y están bien delimitados.

**CAPÍTULO II**
22. Se hace referencia a los autores de las citas mencionadas.
23. Presenta un análisis corto de la evolución histórica del proyecto.
25. Incluye conceptualización del diseño
26. Incluye los conceptos funcionales – ergonométricos. (SI APLICA)
27. Incluye proceso constructivo necesario para este tipo de proyecto. (SI APLICA)
28. Incluye materiales recomendados para este tipo de proyecto. (SI APLICA)

**CAPÍTULO III**

**Propuesta Arquitectónica del Proyecto**
29. Incluye la memoria descriptiva desglosada por áreas
30. La memoria descriptiva es amplia e ilustrativa
31. La memoria está bien redactada y es coherente

**IV. REFERENCIAS**

**Referencias**
32. Es suficiente y adecuada.
33. Guarda relación con el proyecto.
34. La bibliografía es actualizada.
35. Cumple con los requerimientos del modelo de investigación documental APA.

**V. GLOSARIO**
36. El glosario es amplio y detallado
37. El glosario está organizado en orden alfabético

**VI. ANEXOS**
38. Numerados y bien identificados.

**VII. PLANOS.** Incluye:
39. **PROTOTIPOS O MODELOS TIPO.** Del proyecto completo o partes del proyecto, según sea necesario.

**OBSERVACIONES:**

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

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Appendix I

Questionnaire for the Curriculum of ID Analysis
Curriculum (Program and Syllabi) Review Questionnaire  
(Adapted from Wolf et al., 2006)

Section A: Overview of the Program and Syllabi

The curriculum document contains the following (checklist):

a). Detailed description of the program___
b). Program objectives and competencies___
c). Types of educational experiences___
d). Areas of specialization or foundational content___
e). Duration of the program___
f). Program Content___
g). Individual course outlines including subject content, specific learning outcomes to be covered (theory and practical components) ___
h). Time line/duration for each course___
i). Evaluation methods/criteria for each course___
j). Method of instruction/delivery (classroom or shop/lab or both) ___
k). List of textbooks and learning resources (e.g., print media, field trips, outside agencies) to be utilized for the delivery of each course___
l). List of tools, equipment and supplies required for programs with a significant practical component___

Section B: Program Description (Research Orientation)

1. Comment on whether the program description accurately captures the types of duties a graduate can expect to perform research in the work environment.

2. Comment on the adequacy of the program length in terms of its ability to produce graduates with the required entry-level knowledge and/or skill development in research for the field.

Section C: Program Content (Research Self-efficacy)

3. Does the sequencing of training (i.e., order of courses presented) within the program properly address course pre-requisites and/or co-requisites? Are there any courses within the program you feel should be pre-requisites for other courses regarding research, but have not been identified?

4. Comment on whether the time allocated regarding research to EACH course is sufficient, excessive, or inadequate.

5. Explain whether you feel all necessary research competencies/learning objectives are included within the individual program courses.
6. Where there are courses and/or specific contain research learning outcomes not particularly relevant to the course/program, please identify.

7. Where there are courses and/or specific research learning outcomes you feel need to be strengthened, or topic areas that could be added to the program, please identify.

8. Comment on the adequacy of balance between theory (i.e., classroom) and practice (i.e., lab/shop/fieldwork) within the program regarding applied research.

Section D: Program Resources (Research Environment)

9. Explain whether the tools, equipment and/or supplies listed for practical components (applied research) of the curriculum (if applicable) are satisfactory for program delivery regarding research (i.e., do they support the research learning outcomes of the program?).

10. Please explain whether the textbooks listed are adequate for program delivery (i.e., do the textbooks appear current and/or relevant for training in research for this field?).

11. Explain whether there are adequate research learning resources (e.g., print media, audio-visual materials) provided for program delivery and to actively engage students in research.

12. Please comment on the institution’s ability to provide research instruction which is reinforced with appropriate technologies (e.g., current software, hardware).

13. Identify if there are specialized equipment, textbooks, software or other resources which you feel are not listed but would strengthen the delivery of this program regarding research.

Section E: Program Instruction/Evaluation Methods (Learning Motivation)

14. Comment on whether the instructional materials model appropriate work research habits in industry, and whether the program content/learning activities are consistent with research industry practices.

15. If no research instructional/training methods have been identified by the training institution, are there any instructional methods that you would suggest for course/program delivery?

16. Please comment on whether the methods of evaluation used for this program regarding research are appropriate (i.e., is there an adequate balance of theoretical and practical assessments conducted for each course?).

17. If there are any recommendations for additional research evaluation methods which would ensure student research competencies or skills, please identify these.

18. What combination of training and experience do you feel will be required for potential instructors hired to teach core research competencies/courses within this program?
19. Please identify specific courses within the program which may require a different combination of training and experience than that held by potential instructors hired to teach core research competencies/courses.

Section E: Additional Comments (Formal Research Experiences)

20. Provide any additional comments regarding this program you feel have not been previously addressed regarding formal research experiences.