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Understanding Indian Interior Design Education: From the Indian Design Professionals' Perspective

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UNDERSTANDING INDIAN INTERIOR DESIGN EDUCATION: FROM THE INDIAN DESIGN PROFESSIONALS 'PERSPECTIVE

by

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ABSTRACT

UNDERSTANDING INDIAN INTERIOR DESIGN EDUCATION: FROM THE INDIAN DESIGN PROFESSIONALS 'PERSPECTIVE

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Higher design education in India is not recognized as one of the major educational pathways, which has led to a system in which both public and private institutions offer design degrees without reference to fixed standards of curriculum and uniformity. There is also a lack of publicly available information and knowledge about design schools along with the immense complexity and diversity within the offerings of different design programs at various institutions (Coyle, Lotten, & Dubber, 2015). Prospective design students are at risk of pursuing courses of studies that neither adequately prepare nor credential them for professional work or graduate studies. There is an urgent need for a publicly available information system that can guide future design students to learn about the differences in these institutional offerings and then make an informed decision.

My project lays the foundation for such a system from the gathered wisdom of design professionals. Employing a conceptual framework built upon a human-centered approach combined with the pragmatic philosophy that underpins design as a discipline I gathered and analyzed data from 43 Indian design professionals. My purpose was to develop a clear and nuanced understanding of the schools, programs, and other factors a prospective design student should consider when choosing their education. From those survey responses, I established seven broad categories that represent what design professionals most value in designer preparation and

education. My guidance framework, constructed upon the data that I gathered, is intended to offer prospective Indian design students a tool to help them make informed decisions about which Indian design program is well suited for them. More broadly, this project is a starting point from which I aim to take an active role in helping Indian design programs revise, update, and improve the overall quality of the education they offer.

DEDICATION

I dedicate this dissertation to my mother-in-law Ar.Anjali Mody who, throughout my ten years of marriage, has encouraged me to pursue advanced studies including my masters from India in 2013 and doctorate from the US. She was also instrumental in me joining the teaching profession in 2008, a step which completely changed my life both personally and professionally. I feel grateful and blessed to have shared my 10^{th} wedding anniversary and doctoral graduation on the same day, 21 May 2019. My work is the outcome of her sacrifices and compromises. She has been a constant source of inspiration and motivation.

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I am grateful to Dr. Joseph E. Sweeney who patiently guided me in designing this research project based on identifying philosophies that resonate with me. Joe holds a Doctorate in Education and Organizational Leadership from the University of Pennsylvania. His passion for bringing decision making skills and critical thinking to youth education helped me to navigate through this research project systematically, methodically and critically. I would like to thank Dr. Steven Freeman holding a PhD in Management from Massachusetts Institute of Technology Sloan school of Management for introducing me to the world of applied research and how impactful it is when merged with design thinking. Professor Aftab Gharda played a significant role in introducing me to the world of international design education in 2012. He encouraged me to focus on Interior Design as the case study for the purpose of my research, and consider design

disciplines such as Fashion Design, Product Design, Graphic Design and others later for post-doctorate study.

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INTRODUCTION

Overview

> "India should walk on her own shadow – we must have our own development model."
>
> -Abdul Kalm

Individuals who are willing to learn about design, or more specifically about what design does, very often start with the definition by Herbert Simon (1969) in his book *The Sciences of Artificial.* He writes that design "is concerned with how things ought to be-how they ought to be in order to attain goals and to function" (p.4). The most immediate conventional interpretation of this statement links the concept of design to that of a solution to problems and sees the designer as a problem solver, an agent for solving problems at all levels, starting from everyday life to those on a global scale (Ezio, 2015). Consistent with that understanding, in 1961, the Indian National Institute of Design (NID) was established to offer a program of training in the area of design to aid the small industries in keeping pace with the growing production speed of the consumer goods. Charles and Ray Eames[1] proposed that such an institute should be connected with the Indian Ministry of Commerce and Industry. This training center eventually flourished and started to provide undergraduate and graduate level education in multiple design disciplines.

[1]*American designers Charles and Ray Eames have successfully shaped nearly every facet of American life for more than four decades. Their work includes in these many discipline's architecture, furniture, textile designs, photography and corporate design. Charles and Eames were invited by the Indian government in 1956 to explore the problems of design and to make recommendations for a training program. The designer couple proposed the functions and the organization of a training institute from Indian context.*

Design: A driver to make a difference in the system

The "Make in India" initiative launched in September 2014 by Prime Minister Narendra Modi, was part of a broad effort to transform India by creating a manufacturing hub, attracting foreign investors, and creating 100 million new jobs in the coming ten years (GoI, 2014). There is more to manufacturing than just producing products; it requires adding an aesthetic, functional and purposeful value to the manufactured products. A manufacturer will create and build physical products, but how to use these products consciously is what design can do. In this manner, "design" plays a vital role in improving the overall quality of life and aid in shaping the economic development by operating within different systems involved in the manufacturing process (Ravi & West, 2016). Beyond aesthetics, design has the power to both advance the living standards of people and be considerate of traditional cultural values. In other words, "design" can also be interpreted as "a key driver for solving complex and challenging problems faced by humanity today – problems that require not just local fixes using clever design objects, but solutions that re-imagine systems" (Pallister, 2018). Design is a fundamental building block of innovation, a critical enabler of competitive industries and vital to building livable, sustainable and cohesive communities (India Design Report, 2012). The power of design in an Indian context is magnified by the large population that needs design solutions (Ravi & West, 2016). Design as an academic discipline encompassing interior, fashion, communication, visual communication, graphic, furniture, product, industrial, and toy design and it has the potential of producing leading innovators and is also seen as a critical driver for economic development in many nations.

Design education: Public and private institutions

In 2015 with the establishment of the National Institutional Ranking Framework (NIRF), India Rankings provides a list of top universities and institutions in these disciplines; engineering, management, pharmacy, general college degree, law, medicine and architecture. These disciplines have a hierarchical academic structure and defined higher education curriculum standards at the national level. Students who study architecture, for example, must complete a core group of courses that provide them with foundational skills required to practice architecture professionally. Similarly, medical students are expected to spend a predetermined amount of time as interns within a professional setting. However, NIRF does not include any design disciplines nor does higher design education in India have any such standardization measures outlined as these other academic disciplines.

In India, there are two types of formal institutions, public and private, that offer design education in myriad ways. The difference between these institutions is that public institutions are overseen by the government in some capacities, whereas private institutions are overseen by their respective management and function independently from one another. NID, the first public design institution in India, fails to fulfill the dreams of many students who aspire to pursue design careers due to the limited number of enrollments. Apart from NID, there are still several other public institutions[2] that offer design programs. However, relatively few students are able to pursue design education at these institutions because of their limited intake capacity. The demand to pursue higher design education increased over the years, so in 2004 private sector

[2] *Such as Indian Design Centre (IDC), Sir J.J. School Institute of Applied Art, Centre for Environmental Planning and Technology (CEPT), and a few others.*

became involved with higher education, which gradually changed the structure of design education in India (Gemmell & Vyas, 2016).

Private institutions started to offer design programs with no restriction on enrollment numbers, designing their own curriculum and the program delivery pattern in a way that increases enrollments with every passing year. These private institutions governed by the private sector were able to make any changes they wanted, because they are not controlled by the state, but rather by individuals and companies as for-profit businesses (Private Sector, 2018). In India, the private and public design institutions are self-governed and self-regulated, affecting the quality of education imparted from one institution to another. Since there is no central body that governs both private or public design institution nationwide, they do not adhere to a standardized design program. Besides overseeing the governing aspect, design education lacks an accreditation body at the national level for either in public or private institutions (Gemmell & Vyas, 2016). There is also a lack of publicly available information and knowledge about design schools along with the immense complexity and diversity within the offerings of different design programs at various institutions (Coyle, Lotten, & Dubber, 2015).

Guidance for aspiring design students

This research project was an attempt to create a public information system through which a prospective student can learn about the different design schools. The aim of the project was to create an informed decision-making process for a prospective design student with the academic and professional experiences shared by the design professionals. Currently, students completing their secondary education and preparing to move on to college who might pursue design as a major have no means of assessing the quality of design institutes available to them. My project aims to fill the gap that currently exists for aspiring Indian design students trying to make an

informed decision about which institution or university to attend. The higher design education in India lacks a coherent structure, well-articulated accreditation or affiliation procedures. The absence of a governing body, insufficient knowledge about the different design programs and design institutions requires a framework or a coherent structure or a guiding map that will assist future individuals seeking design careers. These conditions, situations and factors were the motivations for this study. I have been associated with interior design education in India for the past eight years, teaching different courses or subjects in interior design at eight different institutions situated in and around the city of Mumbai. As such, I chose to design a system or guidance map for interior design discipline. Based upon the interest and goal, the research question guiding this study was:

- What factors do experienced stakeholders think are important for prospective undergraduate students to consider when selecting their design education in India?

To explore this question further, I was inclined to choose a human-centered approach. Design thinking methodology focuses on the needs and the requirements of individuals for whom the design is meant. This approach is useful in designing a system that, broadly speaking, helps to develop and improve the community. The United Nations Millennium Development Goals advocate redefining development with emphasis on individual well-being, improving education and health from a humanistic perspective rather than focusing on purely economic considerations (UNESCO Think Piece, 2012). The design thinking methodology is consistent with professional design practice and is also well suited from an Indian design academic perspective which is experiencing a growing focus on the systematic and methodical incorporation of user experience in design entailing the involvement of competencies in design

research, marketing, consumer behavior and psychology in the design process (Gemmell & Vyas, 2016).

Rationale and Significance

The primary catalysts for pursuing this study began in 2012 when I was appointed as a discipline leader/program director for a three-year Interior Design B.A. Honors program at a private design institute based in Mumbai (India). This institution had a franchise collaboration for two design programs-interior and fashion-with a United Kingdom public university. The arrangement was that students would receive a degree qualification (B.A. Honors) from the U.K university by meeting the program requirements in India. In a franchise arrangement, the awarding institution (the U.K public university) authorizes a private institution from another country to deliver the foreign curriculum while retaining responsibilities for changes in program delivery, assignments, and assessment pattern, as well as regulating the quality of the program periodically (Clark, 2012). The conflicting part in this kind of an academic arrangement arises when a student with these foreign or international degree qualification wants to pursue a post-graduation degree from a national institution. In India national institutions are accredited by autonomous bodies established by University Commission Grants (UGC) and one such body is All India Council for Technical Education (AICTE) which serves as an advisory body for technical education. In India, architecture falls under technical education so all the architecture institutions must be accredited with AICTE in order to issue a valid qualification. However, private design institutions are not included under technical education, nor is there any such body under the UGC that is authorized to accredit any private institutions. Moreover, UGC does not have any dedicated body that accredits collaboration between the private institutions and foreign universities. In this scenario, the student's foreign academic credentials are not accepted, nor are

they recognized as a valid academic credential by any public institution. This means that graduates of these programs are not allowed to pursue a post-grad from a public design institute. Not only that, if a student wants to pursue a post-grad from another private design institute, there is a possibility that he/she might not be accepted. So, my concern is that the governance of higher education in India, especially for design education, does not foster enough academic opportunities for design students.

In this section, I describe the motivation and the concern expressed above for this study from three perspectives: (1) explaining the governance of Indian higher education and highlighting the position of design education in the system; (2) the reputational and preparedness risks of graduates with qualifications awarded from private institutions; (3) the lack of design skills from recent graduates.

Indian higher education governance

Definition of different types of universities within higher education

In India, there are Central, State, Deemed, State private university, and Fake universities. A university can come into existence by an act of the national legislature. The powers of the legislature cannot be delegated to the executive of the government. As such, the universities coming into existence via a central legislative action are called the central universities. The central universities are not bound by geographical constraints unless so specified in the legislation. Universities coming into existence through state legislative action are known as state universities and have specific geographical boundaries established in the legislation. The state universities have colleges affiliated with them, which perform the role of imparting education to the enrolled students, whereas the role of the university is to determine the curriculum, conduct assessments and grant degrees. Some states permit the establishment of private universities.

These private universities come into existence by a specific act passed in the state legislature. The private university is specific to a particular location and cannot operate anywhere else. It has all the powers of a university, except that they cannot affiliate any college under them.

A deemed university is a university that is permitted by the University Grants Commission (UGC). Deemed university status is granted to an existing affiliated college, which satisfies the norms laid down by the UGC. Deemed university status is granted for specific domains of study and can be expanded later through an approval process. A deemed university is also limited to a specific location, which can be expanded only through a defined process (Gemmell & Vyas, 2016). In December 2011, UGC released a press report listing the institutions offering undergraduate/postgraduate degrees in various subjects, which were not established under either Central or State or UGC Act. Due to their status, these institutions were declared as "fake" universities/vishwavidyalaya's and did not have any right to confer/grant degrees (Press Release-Precautions against Fake Universities, 2011).

Autonomous bodies governing higher education

The Ministry of Human Resource Development (MHRD) was created on September 26, 1985, to oversee the development of human resources in the education sector. This department is divided into sub-departments – Primary and Secondary Education and Higher Education. Indian higher education functions through several autonomous bodies such as the University of Grants Commission (UGC), Central Advisory Board for Education (CABE), All India Council for Technical Education (AICTE) and many more. There are other categories of institutions outside or only partially within the remit of the UGC. These include Institutions of National Importance like Institutes of Information Technology-(IITs), National Institutes of Technology (NITs), All India Institutes of Medical Sciences-(AIIMS), and Premier Institutes of Management (IIMs)

which come under the direct control of the MHRD as well as Polytechnics, Teacher Training Institutes under National Council for Tertiary Education-(NCTE) and Nursing Institutes under Indian Nursing Council-(INC) (Manuel, 2015).

India has made efforts in progressing various higher education disciplines by creating independent bodies pertaining to specific disciplines to divide the roles and responsibilities from the two governing bodies that are UGC and AICTE. The Department of Higher Education, MHRD, is responsible for the overall development of the necessary infrastructure of the higher education sector, both in terms of policy and planning. Under the MHRD, UGC came into existence on 28 December 1953 and became a statutory organization of the Government of India by an Act of Parliament in 1956, for coordination, determination, and maintenance of standards of teaching, examination, and research in university education (UGC, n.d.).

Limited value of qualifications from private institutions

Higher design education institutions in India offer a variety of programs ranging from a duration of six months to three years and issue qualifications like certificates, diplomas, undergraduate degree, and post-graduation based on the duration of the program. In the recent years, there has been growing internationalization of higher education, referred to as "Transnational Education (TNE)." UNESCO and the Council of Europe broadly define TNE as "a type/s of higher education study programs, or sets of courses of study, or educational services (including those of distance education) in which the learners are based in a country different from the one where the awarding institution is based" (British Council, 2015). Many private design schools, are also known as private institutions in India, like DSK International Campus (DSKIC), Pearl Academy, and Indian School of Design Innovation (ISDI) are engaged in such collaborative offerings. Students enrolled in such a collaborative program in private institutions

receive degree qualification from a foreign university. These institutions function independently and are not recognized either by private, central or deemed universities. Therefore, they are termed as private or autonomous institutions.

UGC or AICTE refuses to recognize the qualifications obtained from the private institutions functioning completely within the private sector. These two governing bodies expect foreign universities to collaborate with any one of the recognized Indian Central, State or Private universities only and not with private institutions in order to issue a valid degree qualification to students (Gemmell & Vyas, 2016). However, many students prefer a UGC recognized graduate qualification and simultaneously pursue design education from the private institutions. Any student who is engaged in two different programs from two different institutions at the same time receives a joint qualification/dual degree. For example, if a student pursues a graduate program (in one of the major academic disciplines) from a UGC recognized institution and other program from a private institution, then the student receives dual qualification from both the institutions. On the other hand, there is a possibility of acquiring a foreign equivalence certificate from Association of Indian Universities (AIU)[3] only if "a study program is pursued by being a regular full-time student on the campus of the foreign university." Under this system, a student cannot acquire a national graduate qualification even though s/he has spent three years to pursue a foreign three-year degree qualification. When I was teaching interior design, many of my students were unaware of this fact which prevented them from pursuing post graduate studies. Moreover, some private design institutions engaged in a collaborative arrangements consider

[3] *The Inter-University Board (IUB) of India was formed on March 23, 1925, with the view of promoting university activities, especially by way of sharing information and co-operation in the field of education, culture, sports and allied areas. The Inter-University Board acquired a legal status with its registration in 1967 as a Society under the Societies Registration Act, 1860. In 1973, it assumed its present name: The Association of Indian Universities (AIU).*

themselves an authority equivalent to a university level and issue a degree certificate to students. In response to that, UGC instructed such private institutions to stop issuing joint degrees with foreign universities, thereby affecting the future of many students who were enrolled in the private institutions (Sharma, 2016).

Lack of a central governing body and standardized accreditation process

To assess the quality of Indian higher education, UGC established an independent body termed the National Assessment and Accreditation Council (NAAC). NAAC was the outcome of the National Policy in Education (1986) recommending upholding the quality of higher Indian education. As a result, an independent accreditation body-NAAC, with its headquarters in Bangalore, was established in 1994 through the Plan of Action (POA-1992) and the National Policy in Education (1986) (NAAC About Us, updated 2018). The higher institutions that are UGC recognized can only go through the NAAC reviewing process. NACC also reviews an institution which is not recognized by UGC but is affiliated to a university that is recognized by Association of Indian Universities (AIU). NAAC proposes that these institutions should establish an Internal Quality Assurance Cell (IQAC) to continue maintaining high-quality delivery of higher education, evaluate performances at various levels, and continue the assessment process. IQAC is primarily responsible for developing a system for vigilant, consistent and catalytic improvement in the institution's overall performance. The private institutions and the institutions that receive a status of national importance are excluded from the NAAC reviewing process. In India, a title of national importance is conferred to a premier public higher education institution when it serves as a pivotal player in developing skilled personnel within the specified region of the country or state (List of Institutes of National Importance, 2018). India's first design school, National Institute of Design (NID) started in 1961, gained a status of a nationally significant

institute in 2014. Additionally, the parliament successfully passed the NID Bill due in large part to the efforts of Smt. Nirmala Sitharaman, Hon'ble Minister of State (Independent Charge) for Ministry of Commerce & Industry and Hon'ble Minister of State for Finance and Corporate Affairs (National Institue of Design Bill, 2013). The following is an excerpt from the NID Bill which explains its benefits:

> The National Institute of Design Bill, 2013, inter alia, provides for declaration of National Institute of design, Ahmedabad, as an institution of national importance and make it a body corporate to nurture and promote quality and excellence in design education; to conduct research and training in all disciplines related to design; to confer honorary degrees, diplomas, certificates, awards and other academic distinctions or titles in disciplines relating to design and to act as a nucleus for interaction between academia and industry by encouraging exchange of designers and other technical staff between the Institute and the industry and by undertaking sponsored and funded research as well as consultancy projects.

Because design institutions in India, whether public or private, lack a governing body they have no autonomous reviewing entity like NAAC to oversee their functioning. Some of the many advantages of having a reviewing body could be establishing a consensus on the program goals, objectives, defining the intended outcomes, and what the program stands for (MUST, 2011-2017). Absence of an autonomous reviewing body gives liberty to private design institutions to deliver courses per their benefit, which impacts the quality of students' education. In the following section, I explore the impact of this notion.

Lack of designer skills expressed by design industries

A prestigious Indian designer and an academician at national institute of design, the late Prof. M.P. Ranjan, argued that Indian design education, research, and practice has been flying under the radar for over sixty-eight years since its independence (Ranjan, 2015). Firms languish, design students languish, potential clients have unmet design needs, and the economy and culture as a whole suffer. At a basic level, the disconnects between curriculum and standards and

common design trends is felt by practitioners. There is also a lack of ongoing professional development opportunities as design education in India lacks pathways for progression from bachelor's to master's level and from master's level to PhD (Pallister, 2018). This is due to the structure of design education oversight in India. Finally, there is a lack of skills development related to management, communication, and a number of other areas within the design industry (India Design Report, 2012). The current education system is failing in the areas of necessary quality, accessibility, and ongoing professional development.

India Design Report (2012) states that there is a distinct language problem between the design industry and the business partners they aim to serve. The complaint is that recognized design institutions produce designers who face challenges understanding market needs. Meanwhile, foreign academic qualifications are unacceptable by Indian higher education bodies. There is an urgent need and opportunity to seek input, insight, and solutions from the users and producers within the design education system. Having discussed the background of design education in India, my next chapter establishes the conceptual framework for the project and describes the theoretical framework I used to study the phenomenon.

CHAPTER 2

CONCEPTUAL FRAMEWORK

Overview

India is currently at a critical stage in its efforts to transition into a fully developed nation. One vital aspect of that transition is ensuring that undervalued professional sectors, such as the design profession, are adequately nurtured so they can contribute to the nation's overall growth. In Chapter 1, I demonstrated the impact of oversight by the higher education department on the design institutions and thereby creating space for the private sector to offer design education. In this chapter, I explain why it is essential to address the quality of Indian design education through a designer lens and describe how I interpret the word design. The conceptual framework consists of the following three inter-related parts: (a) designer's thinking approach-design abduction (b) what is going on with the real world which is Volatile Uncertainty Complexity Ambiguity-VUCA (c) innovation from a different lens. Through these interrelationships, I explain why India has a unique opportunity due to population, growing awareness and new opportunities for design education. The goal of this section is to explain why a proposed intervention derived from the toolkit of the designer's thinking and innovative leaders will benefit Indian design educators.

Design thinking approach: Design abduction

The discipline of design has already been expanding out to other applications and professions, after being thought of as an intuitive discipline for much of its history. To understand how designers approach a problem, we should understand how designers think. To date, there have been three reasoning approaches -deductive, inductive and abductive-that are

widely known and accepted. Deductive reasoning is often referred to as top-down logic, whereas inductive reasoning is bottom-up logic (TechTarget, 2018). We can understand deductive reasoning through Syllogisms. For instance, deductive arguments that are written in the form of A is B, C is A. Therefore, C is B. Premise A: All grapes are fruits, Premise B: Riesling is a grape. Conclusion: Therefore, Riesling is a fruit. Inductive reasoning begins with a specific data-set, followed by analysis and the conclusion is inferred. One classic example of inductive reasoning in sociology is Emile Durkheim's study of suicide, wherein Durkheim created a sociology theory for a higher suicide rates among Catholics than Protestants (Crossman, 2018). In both of these reasoning approaches, there is a specific pre-defined parameter or structure within which you are expected to find solutions. The third reasoning approach-abduction-is mostly used when a new concept is produced in design or in other profession where the typical pattern is applying specific reasons to the outcomes. The philosopher Charles Peirce insists abduction is the only process through which anything new is created and is the only logical process that can develop the ability to think differently (Encyclopedia, 2017). Abduction is central to integrate the available theories and knowledge for a creative design process, which then helps arrive at innovative solutions (Tomiyama, Takeda, Yoshioka, & Shimomura, 2003). Design abduction, a new type of productive reasoning, is utilized to come up with creative and innovative ideas (Dorst, 2015). In the following section, I explain how design abduction is different than abduction and how this thinking plays an instrumental role in creativity and innovation.

Design abduction: A productive and creative reasoning approach

Abduction so far has been the only logic that helps an individual to think something new and different, but it confines the boundary of thinking within a certain periphery of the problem.

In abduction thinking, the degree of creating something different is limited, and the problem-solving approach doesn't lead to the desired value, as the explanation that is generated around the problem is based on "WHY." To illustrate the limitations of abduction thinking, I will take Nokia's downfall as a reference. Nokia was a pioneer in the smartphone market in 2003-2004 and continued to lead the market until the arrival of the iPhone in 2007. Nokia ruled the market with its Symbian technology and continued to do the same when the iPhone was first introduced. Today the fact is the Symbian technology aged, whereas iPhone, Android, and Window phones still dominate the market (Gear, 2012). That brings to another level of thinking blending productive reasoning with abductive thinking, called Design Abduction (Dorst, 2015), which is explained as:

> In design abduction, the starting point is that we only know something about the nature of the outcome, the desired value we want to achieve. So the challenge is to figure out "what" new elements to create, while there is no known or chosen "how," a "pattern of relationships" that we can trust to lead to the desired outcome. As these are quite dependent on one another, they should be developed in parallel (pg. 50-52).

This explanation highlights the fundamental difference about how designers conceive a problem. If we consider the Nokia case again, then we learn why iPhone was one of the greatest innovations in smartphones. The inventor, Steve Jobs, had a clear vision or idea of what he wanted to create. He followed and worked with appropriate elements and processes through which he achieved his end goal.

Designers have a way to express their thoughts

How can design be instrumental in solving problems? Donald Schon introduces the concept of design (in the form of drawing) as a means through which a designer communicates his or her line of thoughts with others (Waks, 2001). In this way, designers have a conversation about their thoughts through drawings wherein they look to establish specific relationships

(Bryan, 2005). Another element of design conversation expressed by Ian Ritchie, a British architect, is by cleverly looking at the problem from the right angle or perspective so that the problem vanishes (Bryan, 2005). Designers explore ideas for better understanding the perspective of a problem and then find appropriate solutions that will be long-lasting. Different designers have their own beliefs which shape their designs, and those beliefs are subjective. On similar grounds, for this study, my interpretation of design is:

D-oes, E-verything, S-ystematically, to I-ncorporate the G-rowing N-eeds.

I firmly believe design is something that entails thoughtful planning and executing ideas for people that should empower them to lead better lives. This is also the working definition of design unless I mention otherwise.

The world is VUCA

In today's complex, dynamic and interconnected world, everything is in a constant state of flux. VUCA, short for volatility, uncertainty, complexity, and ambiguity, has become the catchphrase to describe the present-day economy (Majithia, 2017) and a catchall for "Hey, it's crazy out there!" (Bennet & Lemoine, 2014). In the 1990s the US Army War college coined the term-VUCA for the first time; it was subsequently adopted by strategic business leaders to describe the chaotic, turbulent, and rapidly changing business environment that has become the "new normal." (Lawrence, 2018). In order to meet the increasing velocity and the intensifying competition, organizations are pressured to innovate (Petri, 2014). In 2015, The Conference Board, a global independent business membership and research association working in the public interest, surveyed approximately 900+ CEOs across the globe. The study conducted was to understand the critical challenges faced by CEOs to drive their business successfully in a

competitive market. The findings of the survey ranked Human Capital, Innovation, Customer Relationship, Operational Excellence and Sustainability as CEOs top five challenges (Mitchell, Ray, & Ark, 2015). Not only CEOs but business leaders today are also facing challenges to stay competitive in the fast-moving world according to John Kotter (2012) professor at Harvard Business School who has written several books on change management.

Leadership in the VUCA world

In the fast-moving world, innovation is a key driver for organizations to succeed rapidly. A different leadership style should be considered than those used in the past to meet the complexity of the new environment where innovation is one of the top challenges for organizations to succeed. Ronald Heifetz shares a concept of "adaptive leadership" to thrive effectively through the complexity of the new environment. Adaptive leadership is anchored towards making a change in an organization using the potential of earlier wisdom and emphasizing the collaboration between the various stakeholders (Heifetz, 2011). The distinctive feature of adaptive leadership is its collaborative approach the issues and problems faced by the organization that requires new discoveries, and experimental adjustments at various levels. The world is VUCA; innovation is essential; the key to innovation is to think differently now. The adaptive approach is a central driver for applying innovation across the organization, which involves the following three activities:

i. Observing events and patterns around you;
ii. Interpreting what you are observing, developing multiple hypotheses about what is going on;
iii. Designing interventions based on the observations and interpretations to address the adaptive challenge you have identified (Heifetz, 2011).

The central discussion at Davos 2017, was on how leadership could be more responsive and responsible in the emerging context for the fourth industrial revolution which will require different leadership models than before. These challenges facing organizations have shifted our focus in engaging with uncertainty and bringing higher levels of leadership agility to navigate through the volatile, uncertain, complex, and ambiguous (VUCA) landscape. Thus, to overcome such challenges, one of the strategies is to transform organizations into learning organizations in the VUCA world (Chawla & Lenka, 2017). In other words, future leaders should to be proactively involved in leading organizations, well-versed with a diverse skill-set and be actively responsible in the decision-making process.

In design abduction, a design leader should devise proposals for both "WHAT" and "HOW" and test them in association with each other (Dorst, 2015).The working definition of design for this study explains "WHAT' design is for me, while adaptive leadership describes "HOW" I approached this study. Design abduction thinking guides one's creative or innovative designing process. In the following section, I explain how I anticipate the term innovation.

Innovation from a non-tangible aspect

> "Every time we start a new project, we always ask ourselves the same question: What can we do better and different?"
>
> -Ricardo Guadalupe.

This quote from Guadalupe relates to any kind of work we do on a regular basis. Today, organizations are experiencing an unprecedented time of change and upheaval. The end user is continually becoming more engaged and empowered. The changing expectations of the end user are gradually emerging underlying the "me" in me-conomies and me-conomy (McDonald,

2013). The emergence of an era revolving around the end user forces an organizational leader to develop solutions differently catering to issues at individual, and organizational levels.

Innovation is something that encompasses any positive change within an organization to any degree, structure and the working pattern of organizations (Sweeney, 2016). The positive change could be related to a technological advancement that has helped organization to grow or leaders in a nontechnological way applying a different strategy then ones used in the past. In most cases, innovation is recognized through the improvement of "tangible things" like the printing press in the fifteenth century, Apple phones in the twentieth century, or nano-technology in the twenty-first century. There has been an improvement in the "non-tangible aspect" of society as well. By non-tangible aspect, I refer to the impact on society by leaders whose contributions have been positive, realistic and have inspired the welfare and advancement of mankind (Ryde & Sofianos, 2014). The consistent efforts of revolutionary leaders such as Mahatma Gandhi's struggle to free India from British rule, Nelson Mandela's fight for Black people to achieve a better future for everyone in South Africa, or even Malala Yousafzai, a young Pakistani activist who fought for female education in her native community where the local Taliban had at times banned girls from attending schools, share a common momentum about uplifting the community or society where they belong to or represent.

Today's world, where workplaces and individuals are impacted due to the factors related to the fast-moving technological advancements, requires a shift of a business model and a mindset that has the potential to withstand the dynamics of change and complexity, and to aid the need of self-determination within individuals (Ryde & Sofianos, 2014). I reconcile the meaning of innovation with the following definition of innovation-"the introduction of something new that positively impacts mankind in meaningful and contextually specific ways" (Liebecap, 2013).

Design leaders who design something will be considerate of the five p's: the intended product, its purpose, performance, production process, and the people whom it is intended serve for, as they are the ones who will decide the fate of the product (Auyang, 2014). The question next is "HOW" the design process can lead to innovation. In the following sections, I discuss how useful the knowledge of design discipline is when it is combined with other disciplines including running businesses in the process of unfolding a path for an innovative practice.

Design drives innovation

Design as an academic discipline is increasingly incorporated into education programs with disciplines like humanities, social science, natural sciences and business (Poulsen, Vistisen & Gudiksen, 2017). The impact of design can also be seen in the contemporary life of a human being through four broad areas: (i) symbolic and visual communications; (ii) material objects like clothing, tools, machinery, regular activities; (iii) organized services like combining physical resources, schedules; (iv) complex systems or environments for living, working, playing and learning (Buchanan, 1992). Klaus Krippendorff, professor at the University of Pennsylvania, writes, "The etymology of design goes back to the Latin de + signare and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users or goods." Based on this original meaning, one could say design is making sense (of things). In recent years, design is considered as a way of thinking and behaving that is applicable to many situations.

The acknowledgment of design applications in various fields can also be referred to as "design mode" where professionals or individuals are seeking a different alternative to address a problem. Design mode is the outcome of combining three human gifts: critical sense (the ability to look at the stage of things and recognize what cannot or should not be, acceptable), creativity

(the ability to imagine something that doesn't exist), and practical sense (the ability to recognize feasible ways of getting things to happen). Integrating the three makes it is possible to imagine something that is not there, but which could be possible if appropriate actions are taken (Ezio, 2015). A great engineer and a gifted designer, Isambard Kingdom Brunel's created concept of building the Great Western Railway (GWR) in 1833, is one such classic example of the earlier systems thinker who balanced technical, commercial and human consideration significantly well (Brown, 2009). GWR is a British Railway company connecting London with the southwest and the west of England. This was not only an efficient transportation facility of its time but also allowed travelers to experience something unique when they boarded a train. A design solution can be benefited by thinking responsibly about the constraints and by applying the sophisticated analytical tools in understanding customer lifespan (Brown, 2009).

Design is carving its way in the business world

Organizations have started looking for solutions that are design-driven and are identifying programs that are guided by design approach. It follows that those who operate and hold responsibilities within these organizations tend to adopt a design approach which many people today refer to as design thinking (Bryan, 2005). This includes a methodical approach and a mental attitude that all social actors should adopt when they find themselves faced with a wicked problem (Buchanan, 1992). Design thinking helps organizations to manufacture their own miracles by bridging from current reality to a new future, by solving problems distinguished by a few key attributes:

- It emphasizes the importance of discovery in advance of solution generation using market research approaches that are empathetic and user-driven.
- It expands the boundaries of both our problem definitions and our solutions.
- It is enthusiastic about engaging partners in co-creation.

- It is committed to conducting real-world experiments rather than just running analyses using historical data. (Liedtka, Bennett, & King, 2013)

Design is often associated with academic design disciplines like interiors, fashion, graphic, communication, industrial, animation, and gaming. However, in the recent years, the value of the design process is realized by the business industry following which many organizations have started using the design process as a tool to solve problems. Journalists like Helen Walter, healthcare providers at Mayo, and many business leaders have taken design and applied it to their fields and beyond. In fact, Bruce Nussbaum, a business-journalist, designer and professor, is widely credited for contributing to the cross-disciplinary appeal for design thinking. Thinking and addressing problems like a designer can help organizations to achieve transformational changes. As rightly said by Tim Brown (2008), CEO of IDEO: "Design thinking is a human-centered approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success." Leading brands like Apple, Google, Samsung, and GE have adopted design thinking approach to solve organizational problems in a creative and innovative way.

Design Thinking and Pragmatic Philosophy

The Oxford dictionary (2018) defines the word pragmatic as "dealing things with sensibility and realistically in a way that is based on practical rather than theoretical considerations." Pragmatic philosophy focuses less on working towards a particular idealized solution; rather, it indicates ways in which the existing realities may be changed or improved (James, 2010). This philosophy aligns with the purpose of conducting this research study: to explore a practical direction to support the prospective undergraduate wanting to pursue an interior design career in India. I believed that this practical direction would emerge from asking

those individuals who have experienced design education in some capacities. Melles (2008) proposed that the most realistic basis for decision-making in the world is through individual's activities and experiences. The original idea of pragmatism that applies to education is that the ideas and practices shared by experienced individuals stress usability (Rorty, 1999). The usability here is "what is the research for?" and "who will benefit from the study?". In my research study, I surveyed design professionals, experienced individuals who provided a rationale for some of the important factors that an undergraduate should consider when selecting an education option to pursue an interior design career. The experiences shared by these participants was based on their substantive knowledge that can be used in creating better future design careers (Hookway, 2013).

Applying a pragmatic lens to my research study

In the works of design disciplines like urban planning, environmental planning, architecture, and interaction design, pragmatism was seen as a bridge between the *"philosophical, educational, social, and political landscape"* with the *"truth, action, values and theory-practice"* (Melles, 2008). As a designer, I strongly believe that in design there's no right design or wrong design, rather there is the design that makes sense for the end-user and that serves his purpose for using it. Dalsgard (2014) mentions that pragmatism offers a holistic perspective on both theoretical and practical levels that can be used to build a conceptual scaffolding for design thinking. He says "design thinking as an inclusive sense to denote the ways of framing, approaching, and addressing challenges that characterize design" (Dalsgard, 2014). Within a pragmatic framework, to address the key issues about Indian design education, it was crucial to acquire the knowledge and understanding from interior design professionals who have academic as well as professional experience.

I describe the present status of design education through the following lens crafted by John Dewey, pragmatist and a progressive educator. “When external authority is rejected, it does not follow that all authority should be rejected, but rather that there is need to search for a more effective source of authority” (Dewey, 2015). Here, by external authority I refer to the support provided by the Government of Indian higher education system. The importance of Dewey’s assertion in relation to design education in India is that Indian designers are uniquely positioned to influence the system through which they prepare for careers in India. External control, which governs other academic disciplines within Indian higher education, doesn’t presently dominate the landscape of design education. As such, by exercising agency over the structure and substance of India’s design education system designers will be creating a source of authority that corresponds to the needs of the design profession. The design field in practice has a methodology for problem-solving and creating new solutions, which is the design thinking approach.

Using a design thinking approach, the expressions shared by participants were interpreted for a deeper, and more meaningful way through the support of a newly developed concept referred to as corporate ethnography (Howard & Suri, 2006). Many business companies have started using human-centered observation-based research methods whereby they make efforts to understand their consumers in a specific context to stay competitive in the market (Howard & Suri, 2006). They believe that observations through research can no longer provide adequate value; more enduring value comes from synthesizing the quality of the interpretations with the observations, the individualistic insights with the interpretations, and how effectively companies respond to provide significant impacts. My research proposes to take the basic principles of corporate ethnography and put them into practice within the Indian design education system by collecting the ideas, impressions, and concerns from Indian interior design professionals. These

ideas and impressions were then used to create themes using an analytic methodology, providing in-depth knowledge by exercising the focus of the collected data for a specific function (IBM Knowledge Center, n.d.). The thematic analysis allowed me to identify the underlying assumptions and ideologies shaped by the semantic (surface) content of the data (Braun & Clarke, 2006).

Design professionals require quality design education

"Design is about solving everyday problems by overcoming limitations, challenges, and constraints in a creative way. In a society that plans for it future in a world of limited resources, design certainly matters."

-Dr Gjoko Muratovski.

Norman (1990) in his book, *Design for everyday things* shares some of the frustrations experienced by individuals from poorly designed objects. He mentions that the human mind is exquisitely tailored to make sense of the world. Given the slightest clue and off it goes, providing explanation, rationalization, and understanding. Poorly designed objects can be difficult and disappointing to use, resulting in objects that cannot be understood, and devices that lead to error. Alice Rawsthorn, an award-winning British design critic who wrote a weekly design column for *New York Times* over a decade, criticizes the design of the ballot used in 2000 U.S. presidential election in Palm Beach County, Florida. She explains that the design

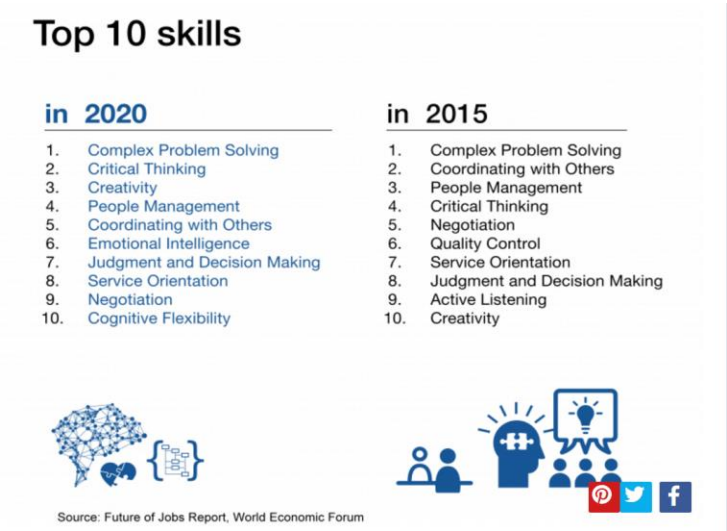

Figure 1: Top 10 skills shared by World Economic Forum in 2020

of the ballot was so confusing to voters that it might have well changed the outcome of the voting there affecting the entire election. Objects or things that are inappropriately designed tend to change the meaning and the purpose of the object.

It is more important now than ever before to foster better, more creative designers. The World Economic Forum shares a list of ten essential skills that the workforce will need to acquire by 2020, where creativity has moved from tenth position in 2015 to third position for 2020. To inculcate the value of creativity in the workforce, it is essential to understand the terms-design, creativity, and innovation. Sir George Cox (2005), Chairman of the Design Council, defines design as follows: "Design links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end". I will now turn my attention to why India should position itself to consider the growth of design disciplines from an academic lens.

India's Unique Opportunity

In India, higher education dates back more than 2,000 years, as far as 5 BC with the presence of Nalanda university (one of the first residential universities), which attracted scholars and students from across West and Central Asia, especially from Tibet, China, Greece, and Persia. (Yeravdekar & Tiwari, 2014). More recently, Indian higher education was influenced by British colonialism. In 2016-17, the total higher education enrolment was calculated to be 35.7 million, and India has one of the largest higher education networks in the world with 850 universities and 42,026 colleges as of April 2018 (Ministry of Commerce & Industry, 2018).

In 2015, India formulated the National Institution for Transforming India, also called NITI Aayog, as the "Think Tank" of the Indian Government (National Institute for Transforming India-Overview, n.d.). To promote innovation and entrepreneurship across the country, NITI

Aayog has initiated the Atal Innovation Mission (AIM) by bringing leaders and students together through a Mentor India Campaign at more than 900 Atal Tinkering Labs (ATL's)[4] in India. Innovation cannot be isolated from design; rather: "design is the single greatest driver of social change" mentions philanthropist Melinda Gates (Pallister, 2018). The Indian government's Department of Policy and Promotion has introduced a framework to build a robust start-up eco-system called Start-up India to nurture innovation. Through this initiative, the respective state and the central governments will be providing opportunities for budding entrepreneurs to flourish. The opportunity provided will be assessed by seven pre-defined interventions in different states of India (State Startup Ranking, 2018). Design is the fuel for innovation. By extension, if design as an academic discipline is empowered, then budding entrepreneurs will be encouraged to produce designs that will cater to India's specific needs.

The Indian higher education system is continually striving to improve their existing education delivery pattern. During his 2016 budget speech, the Finance Minister declared that government is willing to support academic institutions by promising to "Empower Indian higher educational institutions in teaching and research by providing an enabling regulatory architecture in teaching and research to ten public and ten private institutions to evolve at world-class. Thereby, aspiring to give affordable access to high-quality education for regular Indians, through the formulation of a detailed scheme" (Javadekar, July 2018). Following this speech, in July 2018, the Government of India shortlisted three private and three public institutions as

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[4] ATLs are dedicated innovation workspaces of 1200-1500 square feet where do-it-yourself (DIY) kits on latest technologies like 3D Printers, Robotics, Internet of Things (IOT), Miniaturized electronics are installed using a grant of Rs.20 Lakhs from the government so that students from Grade VI to Grade XII can tinker with these technologies and learn to create innovative solutions using these technologies. This will enable create a problem solving, innovative mind set within millions of students across the country. To date, 2441 schools have already been selected for ATL Grants and by the end of 2018 over 5000 schools are expected to be operational with Atal Tinkering Labs, covering all the districts of the country.

"Institutions of Eminence." The purpose of recognizing six institutions as "Institutions of Eminence (IoE)" is to propel them into the top 500 of the world ranking list of institutions in the next ten years in the field of education. These institutions will function autonomously and will be funded Rs.1000 crore (approx.$150 million) by Indian Government over a span of five years to facilitate themselves to proliferate. These institutions include:

- Public Sector: (i) Indian Institute of Science, Bangalore, Karnataka; (ii) Indian Institute of Technology, Bombay, Maharashtra; and (iii) Indian Institute of Technology, Delhi.
- Private Sector: (i) Jio Institute (Reliance Foundation), Pune under Green Field Category; (ii) Birla Institute of Technology & Sciences, Pilani, Rajasthan; and (iii) Manipal Academy of Higher Education, Manipal, Karnataka (Ministry of Commerce & Industry, 2018).

Intervention needed

Currently, there is a significant momentum in India to enhance different professional sectors within the Indian economy. In 2016, MHRD introduced National Institutional Ranking Framework (NIRF) for areas like engineering, management, pharmacy, and general degree colleges. In 2018 the ranking framework was extended to disciplines like law, medicine, and architecture. By ranking institutions, India strives to provide useful benchmarks for Indian higher education institutions (National institutional ranking framework, 2017). Students can use these frameworks in evaluating one institution against the other on specific parameters established in these frameworks. Almost all these frameworks consider either public or private universities or public institutions that function directly or indirectly under the influence of national governance of higher education. In other words, institutions that function under the private sector or those run privately are most often excluded from the ranking frameworks. In fact, in India, the design

schools, either public or private, were not included under NIRF, thereby leaving design students to make choices on their own on choosing one design institution against the other.

India can open up a whole new professional sector by raising the caliber of design education, into which college graduates can move as they complete their education. As new roles are emerging in the design discipline at multi-national companies, and other professions have recognized the importance of the design discipline, it is necessary that India thinks about its higher design education sector. Doing so will ensure that they contribute to the nation's economic growth. Elevating the level of design education in India can be part of this process. Gradually design institutes are recognized as incubators, and various industries are partnering with academic institutions. Industry in India is mainly characterized by small and medium enterprises and are continually seeking innovation at various levels. Design is an ideal model to trigger innovation for these industries (India Design Report, 2012).

Participatory (stakeholder) design as a model for intervention in design education

During the last decade or so, the formation of national design policy, national design council, establishment of design schools, organizing design conferences and increasing involvement of foreign design universities to collaborate with private institutions have indicated growing confidence in shaping the design discipline. National Design policymakers believe that to achieve "design enabled Indian industry" vision it is necessary to focus on strengthening quality design education at different levels, facilitating active involvement of industry and designers in the development of the design profession, branding and positioning Indian design within India and overseas, enhancing design and design service exports, and creating an enabling environment that recognizes and rewards original designs. In the absence of a national body in India to assess the needs and requirements of the different stakeholders involved in the design

industry, there is no defined system as such to evaluate the status of the design industry periodically.

The vision behind initiating a 'National Design Policy' is to have a "design enabled Indian industry" which could impact both the national economy and the quality of life in a positive manner (India Design Report, 2012). With the growing demand to use design as an intervention to address and solve problems, there's a constant focus on systematic and methodical inclusion of user/customer/employer's experiences in the design process. My idea of using design thinking combined with other disciplines like science, architecture, marketing, and engineering has the capability to look at the problems differently, individually and skillfully. Viewing organizational problems through a designer's lens provides an opportunity to solve them differently, but it also requires a competency and expertise to do so. Design thinking will not solve organizational problems unless individuals develop and adopt a problem-solving mindset skill helping companies address real-world challenges in a practical manner (Oswal, 2016).

The mechanism that would drive "design enabled Indian industry" is by involving stakeholders to create an informed framework that would benefit maximum number of stakeholders in the Indian Design ecosystem. For this study, stakeholders considered were design professionals, as they would have had some kind of an academic exposure to design education, and some professionals are usually involved in teaching design subjects in some institutions. The first part of the conceptual framework focused on explaining design abduction thinking, which resonates with a competent and skillful individual having design knowledge. This individual who can be referred to as a design professional is very much in a position to address real world issues through adaptive leadership approach as a result of navigating various clientele demands. A

design professional is under constant pressure to create something unique for a client in order to stay competitive in the market. From these three inter-related parts (a) designer's thinking approach-design abduction (b) what is going on with the real world which is Volatile Uncertainty Complexity Ambiguity-VUCA (c) innovation from a different lens, I was interested in learning and understanding the expressions from design professionals as they fit efficaciously with the conceptual framework for this study. In Chapter 3, I explain how I structured the designer-ly lens focusing on an aspect of design education that could bring an awareness on the higher education design scenario.

CHAPTER 3

METHODOLOGY AND RESEARCH DESIGN

Overview

In this section, I discuss the methodological framework of this study, the design thinking approach, as well as describe Tim Brown's tool kit of design thinking in which I ground my practice. Design education in India is offered in myriad ways and there is no means of publicly available information to learn about the different institutional offerings. This problem demands a methodology that generate solutions through an empathetic approach to create a positive impact (Riverdale Country School, 2012). A country like India with has a population of approximately 1.2 billion, of which fifty percent belong to the age of below 25 whereas sixty-five per cent belong to the age of below 35 (Coyle, Lotten, & Dubber, Oct, 2015) needs a creative solution catering to a wide range of people to meet individual needs. Tim Brown's design thinking process emphasizes connecting all the sentiments expressed by the users and combining it with what is technologically feasible and economically viable to innovate (IDEO, 2019). In the "Site and Participant Selection" section of this chapter I explain how, by using purposive sampling method (Creswell, 2018), I gathered the impressions expressed by interior design professionals working either as employees, interns, freelancers or who were employees having their own design firms. I collected data through a combination of close-ended and open-ended questionnaires. The data analysis was qualitative, grounded in Brown's (2018) design thinking approach.

Design Thinking

In this section, I explain what aspects of design thinking I have used for conducting this research study. Kimbell (2011) discusses three design thinking perspectives: cognitive style, general theory of design, and as a resource for organizations. Design thinking seen from a cognitive perspective focuses on understanding how successful and expert designers solve problems using cognitive processes and methods (Cross, 2001). The second concept is that design is not an exclusive domain of designers, rather all professions have design within them and it can be executed by an individual, a view advanced in the works of Simon (1969), Buchanan (1992) and Owen (2007). The third is how a designer acts as a main agent through design thinking by relying on the theories of design (Kimbell, 2011). My research study is structured from the third perspective, where design thinking is used as a resource to help organizations flourish.

Design thinking used as a resource for organizations

When design thinking is considered a tool to help organizations flourish, it relies on human intuitions, identifies patterns to create ideas with emotional and functional capacities, and expresses them in a different medium other than words or symbols (Brown & Wyatt, 2010). Since the study is designed to provide feedback to and transparency about the quality of design schools in India, it is worthwhile to learn from the design fraternity what are the key factors to consider for excellence and value in design education. Being a part of the interior design fraternity from the academic side, I was keen on educating myself on what my colleagues had to say or share for creating better future interior designers. In the research study, I referred Indian design interior design education institutions as one large organization that helped me relate design thinking as an effective tool. Based on Kimbell's (2011) third perspective of design

thinking, I am the designer who conducted this research study by using Brown's design thinking stages in an effort to bring a positive change in the interior design educational institutions. For the purpose of this research, design thinking as an organizational resource for problem-solving and innovation, the following definition will be used: Design thinking is a human-centered approach to discover wisdom from the experiences shared by individuals for a beginner to evolve on his own. This definition resonates with my interpretation of design: design is something that entails thoughtful planning and executing ideas for people that should empower them to lead better lives. In the following sections, I have used this definition of design thinking unless indicated otherwise.

Design thinking, as an organizational resource is comprised of a system with three overlapping stages or spaces: "inspiration- as the problem or opportunity motivating the search for solutions, ideation- as the process of generating, developing, and testing ideas, and implementation- as the path that leads from the project stage into people's lives" (Brown & Wyatt, 2010, p.33). In the literature, design thinking typically spans from three to five stages. I used Brown's (2008; 2010) three stages to use design thinking where he frames these stages as spaces that facilitate discussion around the design thinking approach. The table below illustrates an alignment between each of the spaces described by different scholars.

Author	Perspective	Design thinking stages							
Brown (2008)	Industrial Designer working as CEO of design and innovation consultancy IDEO	Inspiration			Ideation			Implementation	
Fraser (2009)	Academic and consultant in management and business design	Deep user understanding			Concept visualization			Strategic business design	
Martin (2009)	Academic in management with a focus on competitive advantage in business	Mystery			Heuristic				Algorithm
Duncan & Breslin (2009)	Practitioners in the health sector, Centre for Innovation at the Mayo Clinic.	Topic framing	Research		Design			Development	
Clark & Smith (2008)	Practitioners working with the experience design, process at technology company IBM	Understand	Observe		Conceptualize	Validate		Implement	
Liedtka & Ogilvie (2011)	Academics in management and business consultant	What is?			What if?	What wows?		What not?	
IDEO (Bell, 2008)	Design and Innovation consultants in business	Understand	Observe		Visualize	Evaluate Refine		Implement	
Beckman & Barry (2007)	Academics in business and mechanical engineering respectively. Model developed from empirical research with students	Observation /Problem finding	Framework/ Problem Solving	Imperatives/ Solution finding	Solution selecting				
Dym et. Al. (2006)	Academics in engineering education developed from empirical research with students	Observation	Inquiry			Learning			
Stanford University (2010)	Developed by the Stanford Design School for higher education and corporate education	Emphasize	Define		Ideate	Prototype	Test		
Holloway (2009)	Practitioner using design thinking at technology company SAP	Problem definition			Idea generation	Visualization	Prototyping		

Figure 2: Different steps or spaces of design thinking laid out by different schools and design thinkers. Source: (Howard, 2015)

Space 1: Inspiration

Brown (2010) describes this space within an organizational setting as a starting point to gather information from all the sources and construct a brief that allows the researcher to discover what needs to be modified/changed and is something that is concerning the most. A brief is a set of mental constraints (Brown & Wyatt, 2010) that outlines a framework, helps to set measurable benchmarks and establish objectives to be achieved. Four works, Fraser (2012), Holloway (2009), Liedtka and Ogilvie (2011), and Martin (2009) share a similar understanding of this phase with different names. This phase is usually broken down into two modes; one being the empathetic mode, and the other is define mode (Plattner, 2010). In the empathetic mode, designers take a "people first" approach gaining multiple perspectives from different individuals (Brown, 2008). The empathetic mode is about learning and exploring what participants have to share about design education based upon their respective perceptions. The interior design professionals shared their impressions and expressions based on their education and professional experiences. The next step was to synthesize the scattered expressions from different participants into powerful insights during the definition mode (Plattner, 2010). Each of these scattered expressions were observed systematically to categorize them into specific groupings under different aspects of design education. These specific groupings seem to fall into a few major buckets related to the quality of design education offered in institutions: skills possessed by recent graduates related to design field, professional competencies, and a few more. These insights discovered here were then used to leverage the research challenge.

Space 2: Ideation

Within this research study, the "best solution" is not the objective; the goals are, first, understanding design education from the stakeholder's perspective and second, exploring a practical approach that could benefit future students. Brown (2008, 2009) describes this phase as generating and developing ideas in a constructive manner seeking optimal solutions. The major part of this phase is to decode human experience from the insights discovered in space - Inspiration (Beckman & Barry, 2007). In the decoding process, I created several themes that covered a broad range of expressions which in turn were used to create optimal solutions. To navigate through the process of creating practical and optimal solutions benefiting future Indian design undergraduates, brainstorming ideas was the ideal way to begin. Through brainstorming, several ideas were generated on how best the themes generated could be used. Based on the problems expressed in the Chapter 1, the need to brainstorm ideas in the direction of designing a publicly available information system for a design student merged into something on the lines of an evaluation tool. Then, a journey map was created visualizing how a prospective student can possibly use an evaluation tool to choose an interior design program. The very first step in doing so was to create manageable and meaningful list of items that encompass all the themes. On creating the items, visualize how a prospective student can use it to make an informed decision about choosing an interior design program. This visualization is on the lines of creating a quick, low-resolution prototype, a storyboard that guides you through the process of visualizing the concept from the beginning to the finish (IDEO, 2019).

In the process of creating a journey map outlining the concept from beginning to end, there were key concepts that required attention. How can one evaluate an interior design program that is lasts for six months with the one that lasts for one or more years? How can a diploma

program be compared with a certification program? How can a three-year government diploma program be compared with the three-year diploma offering? Reflecting on these critical aspects required a brainstorming session on determining what the prototype should consists of. This reflection phase allowed the researcher to build a rapid prototype that could be shared with the current users of the design education system to get feedback. Incorporating survey-respondent feedback was a core element of the Ideation phase.

Space 3: Implementation

This is the final space in Brown (2008; 2009) where the product is developed and shared with the users or the desired consumers of the whole process. I do not intend to share the rapid prototype with the users and seek their feedback as a part of the research study. The goal of this project is restricted to creating a practical framework that guides a prospective student on making an informed decision on choosing an interior design institution.

Site Selection and Participation

Within the Ministry of Higher Resource Department (responsible for governing higher education in India) there is no entity governing the functions of design education throughout India. Thus, there is a lack of reference material available to guide design institutions to improve themselves if they aspire to do so. To understand how design schools can function better than presently I chose to involve stakeholders from the design fraternity itself. Engaging stakeholders in the research design is also a participatory undertaking where the participants play the role of co-designers in the research process by sharing their perspectives about the status of Indian design education and helping to envision what future undergraduate would need (Atelier, 2011). I resonate my thinking with the notion of participatory design in accordance with Scandinavian participatory design approaches as follows:

- *deep commitments to democracy and democratization;*
- *discussions of values in design and imagined future;*
- *how conflict and contradictions are regarded as resources in designs* (Gregory, 2003).

In other words, democracy here means emphasizing concepts like interactive and community-based and organization-based learning environment. As I mentioned earlier, the Indian design fraternity is one large organization. I sought wisdom from the experiences shared by individuals that will be helpful for beginners to think about design careers. The purpose is to develop a positive and a collaborative environment by incorporating ideas from the existing individuals who have experienced design education in some capacities. The shared wisdom from different participants will be of greater value in building or creating the design future rather than asking someone from a non-design background to share ideas. In the process of sharing ideas and their vision, expectations might vary. Regardless of whether ideas converge or diverge, the outcome will be a body of input built upon the knowledge and experience of those who know the world of design and design education from the inside.

For this study, the sampling is purposive (Creswell, 2018). The participants will be design professionals who are engaged with undergraduates in some capacities, working either as employers in some firm or have their own practice. The primary reason for choosing these stakeholder groups is to understand what aspiring design students need from their academic training and how those concepts and theories translate into meeting real-world challenges, particularly those which humans face every day. The following table explains step-by-step the data collection process using different techniques:

<table>
<tr><th colspan="3">Inspiration (Brown, 2008)</th><th colspan="3">Ideation (Brown, 2008)</th></tr>
<tr><td colspan="2">Step 1
(all selected participants)</td><td>Step 2</td><td colspan="3">Step 3
(discussion with the academic advisors)</td></tr>
<tr><td>Questionnaire from</td><td>Design Professionals</td><td>Purpose:

Understanding design education from their personal and professional perspective and create themes based on their expressions</td><td>I with the support of my academic advisors created thirty-seven themes</td><td>Exploring alternatives to use these themes in a productive way</td><td>Brainstorming
Journey Map

Rapid proto-typing</td><td>Purpose:

To conceptualize the themes for designing a rapid prototype consisting of manageable and meaningful factors</td></tr>
</table>

Figure 3: Application of Browns' design thinking spaces for the research methodology- data collection purpose.

Survey Questionnaire

The participants, interior design professionals, had an opportunity to share their emotions and beliefs by answering a few open-ended questions. The questions in this phase asked participants to reflect on the aspects they feel strongly about within current design education. Dewey's extensive work on education ascertains the role of reflection as a bridge between the theory and experience (Bringle & Hatcher, 1999). In this sense, reflections are seen as a thread emerging from the experiences shared by the design professionals to help advance individuals and, ultimately, society (Rodgers, 2002)**.** Responses from different participants are useful to formulate assumptions about the essential factors necessary for design education. Through participant's individualistic reflections, I gained an unbiased, firsthand engagement, and a broader context of Indian design education. Dewey believed that firsthand engagement from the cooperative participant experiences should be the basis for developing and learning for

undergraduates (Howlett, 2016). In design thinking, this phase plays a crucial role in navigating a problem, concern, or an issue from a broader perspective to a narrower one.

Issues of Validity

A survey conducted by India Design Report (2015) states that Mumbai, New Delhi and Bangalore are the major design hubs. Most of the participants for the study were drawn from the two former cities because events like India Art Festival[5], Anifest[6], Fashion Weeks[7], USID[8], Kala Ghoda[9], Designomics[10], India Art Festival[11] and others are held in either Mumbai or New Delhi. Moreover, both cities are among the top five preferred by students to pursue higher education in India. Equally significant, not only are Mumbai and Delhi hubs of design education and design industry gatherings, they are the two most heavily populated cities in India with the highest concentration of the most representative faculty and students samples of design population (India Design Report, 2012). Therefore, by focusing my examination on design professionals in Mumbai and Delhi, I ensured that I was soliciting the opinons of a sample population of Indian designers who are closely associated with the prevailing trends and practices in the design profession.

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[5] *Interaction and communication platform between art collectors and artists of contemporary times.*

[6] *Biggest annual international animation festival started in 2005, by The Animation Society of India (TSAI) which is also India's largest non-profit animation society.*

[7] *Showcase of young and established designers attracting both domestic and overseas agents, buyers and talent.*

[8] *Annual event organized by USID the foundation, for HCI and usability professionals and educationists, as well as members of the public, with presentations, case studies and tutorials.*

[9] *India's largest nine day long multicultural arts festival organized in February drawing visitors across the country.*

[10] *A knowledge platform assembling from design and business fraternities to exchange thoughts, ideas, experiences and vision on the world of design.*

[11] *Founded in 2011 is a new model for dialogue and collaborations between art galleries, art dealers, art buyers, artists, interior designer, architects and connoisseurs who come together every year in Mumbai or Delhi.*

Researcher's personal affiliations

The subject group-design professional-chosen for this study is one I was once a part of before working as a full-time interior design educator. I pursued interior design education from two institution based in Mumbai, practiced as an interior design professional for several years and served as an interior design faculty member at various design institutions. I have studied, worked, and practiced in Mumbai, which is also the capital of Maharashtra state and is home to approximately 22 million people (World Population Review, 2018). I gathered responses from interior design disciplines whose background could be from architecture, and interior design, as they are one of the most popular academic design disciplines in India (India Design Report, 2012).

Researcher's position

My research methodology for this project is design thinking, a human-centered approach through which I created a prototype with the help of the data collected through survey. As a researcher, I was careful in choosing participants from design disciplines to ensure diversity and to incorporate a broader level of expertise in teaching and to practice. Since each of the participants belong to different segments of design education, their responses were based on their own subjective positon. My role as a researcher in this stance is not to be judgemental about any of the responses, rather be open about the fact that each response is real and individual. The manner in which I constructed the research portion of my project was explicitly designed to prevent my prior experiences and existing ideas from shaping the responses of participants or influencing how I interpret their feedback. For instance, when I first constructed the survey questions, I did so with an eye toward gathering a particular type of response. However, as I reworked the survey questions, I rephrased questions that I felt might lead respondents to

specific answers that were more in line with my impressions than their experiences. I believe that such shared expressions by each participant on design education are interrelated and will provide richer information through an idiographic perspective (Velicer, July, 2010).

The concept for validity and reliability

Each participant in the research study has lived and is living with their own experiences related to design education for a substantial amount of time. I collected data from the participants by asking them to fill out the survey responses based on their observations and experiences with design education. I used the concept of corporate ethnography, asking the participants to share their real experiences on design education. I expected them to share, express, and voice their opinions on design education. Each response I received was unique and different from the context of Indian design education. To highlight and make sense of this uniqueness in the context of Indian higher design education was the preliminary step in my data collection process. It is unfair to validate individual experiences with each other and also against any existing generalized beliefs on Indian higher education or higher design education.

To establish the soundness of my methodology, I applied the four criteria proposed by Guba & Lincoln (1994) for qualitative research which is illustrated in the table below. I expressed the inter-relationship how the four terms: Credibility, Transferability, Dependability, and Confirmability are used in my study. Responses received from the participants will be credible as the participants will be filling out the surveys and sharing them with me. As a researcher, I cannot control individual responses. However, I believe that the experiences shared by the different stakeholder groups were authentic and guided me to analyze a narrative. Through these narrations, I created themes within the context of Indian design education.

Aspects considered valuable for a sound research approach	Terms used in Quantitative Research	Representation of the terms used for Qualitative Research (Guba & Lincoln, 1994)	Application of the qualitative terms in my study
Truth Value	Internal Validity	Credibility	Responses received from the participants through survey
Applicability	External Validity	Transferability	Creation of themes (by the researcher) that embraces the direct as well as the underlying meaning of the responses received from the survey
Consistency	Reliability	Dependability	Work with the academic advisors to explore the best possible way to use these themes
Neutrality	Objectivity	Confirmability	

Figure 4: Guba & Lincoln (1994) four terms truth value, applicability, consistency and neutrality considered for a sound research study

In this chapter, I described the methodological framework of this study, the design thinking approach. I also related my theoretical framework, pragmatic philosophy, to the design thinking approach and explained the relationship of both to my research question, "What factors do stakeholders think are important for undergraduate to consider when selecting their design education in India?" I then described how I would select participants and collect data, as well as addressed risks to the validity of the study and my role as a researcher. In the next chapter, Chapter 4 – Findings, I described how I analyzed the data collected in the study and used the findings to develop a pragmatic direction to the problem of Indian design education quality and governance.

CHAPTER 4

DATA ANALYSIS

Overview

This chapter discusses the research findings derived from the data collection process, wherein a questionnaire of fifteen questions was distributed to fifty Indian interior design professionals. Seven questions focus on demographics; the other eight are open-ended questions allowing the professionals to share their thoughts about current design education in India. I created thirty-seven themes (see Table 4.1) based on the expressions, ideas and impressions shared by the design professionals. These themes served as the basis for a systematic framework allowing aspiring design students to assess the curriculum of different design institutions on theoretical, practicum and professional aspects. In response to the survey questions, design professionals consistently expressed some common sentiments regarding the quality and value of interior design education that is given to students. Based on these expressions, I was able to prioritize certain educational and professional factors (see Table 4.2) in order of significance. The assessment could help students determine which design institute offers the most valuable education that suits their needs and, by extension, where they should pursue design education. The chapter is divided into three components:

- Discuss the themes created through the raw responses,
- Discuss the design of the prototype,
- Discuss the demographic profile of the survey respondents.

Discussing the themes created through the raw responses

Once I gathered all the survey responses through the survey link, I began extracting the keywords or key phrases from each of the response and started looking for common patterns.

Through these common patterns emerged some common threads which enabled me to create themes (IDEO, Finding themes, 2019). These themes were then combined together and gradually served as the basis to design a systematic practical framework that consisted of seven factors. To indicate what a framework of practicality entails, I followed Dewey's pragmatic educational philosophy, which states that the power of practical considerations is the foundation of a truly effective education system. Dewey (2015) believed that the power of practical considerations emerges from those individuals who have had an experience of living through the organizational system that one is looking to bring a change. In this research study the organization is the design education system in India and the individuals who have experienced the design education system are the working interior design professionals. Apart from experiencing the design education system in India, these individuals have demonstrated the belief that was the underlying thinking approach that guided the data analysis process. To summarize that, Dewey states that "we always live at the time we live and not at some other time, and only by extracting at each preset time the full meaning for doing the same thing in the future. This is the only preparation which in the long run amounts to anything" (Dewey, 2015).

Continuing this thought process, in the second chapter, I designed a conceptual framework for the study formed by the three inter-related parts. These are (i) designer's thinking approach-design abduction i.e. to understand how designer's approach a problem; (ii) what is going on with the real world which characterized by Volatility, Uncertainty, Complexity, and Ambiguity - VUCA, and, (iii) viewing innovation through the lens from a non-tangible social aspect i.e. referring to a thought-leader/s who have invested time, and efforts to uplift a particular aspect of society. Through the survey responses shared by the design professionals in India, I discerned the academic context which led me to design a guidance framework based on their subsequent

experiences. In the table below, I discuss the themes that emerged while looking for common patterns.

Theme	Description of the common threads in responses	# Comments
Association with design professional bodies	Students should enquire whether the institutions have associations with any professional design bodies.	5
Campus location	Professionals felt location of the institution is important if the institution cannot provide appropriate infrastructure.	4
Communication skills	Professionals expressed one of the big challenges with graduates today is communicating their ideas from conceptual level to the presentation level. Different stages of the designing process require different software knowledge as well as understanding the transitioning process from one software to another. Apart from the software knowledge there were concerns expressed around the appropriate usage of the designer-ly technical language.	22
Core competencies	This particular skill set encompasses a wide range of skills from thinking in a designer-ly way to creating bill of quantities to negotiating skills. Professionals indicated a range of characteristics that they felt a graduate should at least acquire.	28
Creativity	Professionals mentioned that not everyone is creative by nature, but students should make efforts to make their designs standout.	1
Critical thinking	This is one of the important skills that a student should develop within an institutional setting.	2
Design thinking	This concept would be a challenge for students to understand at an institutional level, though professionals feel that it is important to make students aware of the current concepts in the field. The awareness could come through various mediums like professional talks, seminar, and workshop activity.	1
Diverse faculty member	Professionals expressed the need to learn from faculty members with a wide range of practicing years and faculty members from different age-groups.	5
Employability options	Students who want to be future designers should make efforts to learn about different work opportunities related to interior design. Professionals felt this learning could take place within an institutional setting by asking faculty members or peers or even contacting alumni.	1
Entrance exam	Professionals stressed that students should be evaluated on different skill sets before they are enrolled in a design program.	4
Faculty academic diversity	Students should ask about the academic credentials faculty have. In India design faculty qualification may range from certificate to degree courses.	5

Faculty academic knowledge	Professionals felt that institutions should aim to hire faculty members who have a practical as well as theoretical understanding of the subject/course they are teaching.	7
Faculty professional diversity	Institutions should aim to hire faculty members who have different interior design related professional exposure. This exposure could be in terms of years working in the field or working as a 3D Max drawing expert or someone specialized in creating 2D and 3D AutoCAD drawings or something else.	3
Foundation course	Exposing students to the fundamental skill set related to the design field is critical. Professionals expressed the need to offer a foundation course in every institution.	5
Innovation	Like creativity, to be innovative all the time is a challenge, but students should aim to be different in their design approach and constantly read or skim through the innovative ideas.	1
Innovation and creativity	Few professionals expressed the need for developing these two skills exclusively, as the design market is competitive. and demanding	1
Inquisitive mindset	To what degree a student is personally interested in pursuing interior design education	45
Institutional offerings	How prepared the design institution is in terms of offering a design program to students. The offering covered a range of areas including duration of the course, location, structure of the program, infrastructure etc.	113
Market awareness	Graduates should not restrict themselves to institutional learning, they should be proactive in learning what's new in the market. Update themselves constantly with the new materials, software, hardware etc.….	14
Onus of taking the decision	When professionals interview graduates for job applications they have noticed that few graduates were in the design profession because their family business was in the construction industry or were architects. The contribution from such graduates is almost negligible when it comes to teamwork. So, graduates insist on requesting graduates to follow their passion.	3
Open-mindedness	How prepared a student is in terms of exposure to the design field. Professionals felt that a student who aspires to be a designer should showcase some traits before as well as after joining the academic institution.	9
Opportunity for paid internship	Professionals expect students to learn how an institution provides opportunities exposing them to the required field knowledge and beyond.	9
Opportunity to explore the field and beyond	Professionals expect institutions to find and provide opportunities to students to explore the interior design field in all the possible ways and means.	21
Origin of the institute	Enquiring about the founding discipline of an institution is crucial from an Indian design higher education perspective as not all design institutions have a designer-ly approach to teaching design.	2
Perspective sketching	These days one of many expectations clients have expressed is the need to see the drawings in 3D views. Small firms cannot afford to hire an expert to do	2

	only 3D drawings so if a student works on developing a sketching skill then it is an added benefit in applying for jobs.	
Professional knowhow	Professionals felt that students should make continuous efforts to learn about the interior design field.	2
Project management skills	Many institutions do not emphasize teaching that projects are done in multiple phases and many people are involved at various stages of the project. Professionals highlighted that it is a stressful activity to expect graduates to walk through different stages of the project and explain them to be a bit more proactive. Apart from the planning and organized process it is also requires graduates to understand the leadership and the team management components of managing the project.	6
Rapid sketching skills	A few professionals expressed that graduates should focus on learning some techniques for easy perspective sketching purposes.	1
Recruitment opportunities	From an institutional point of view this is an important element as a part of the reputation of the learnings within an institution. Professionals expressed that if students asked for recruitment options then it also affects the quality of education provided within an institutional setting.	4
Research skills	In India, this particular skill is not recognized as an important part of the education as well as designing process. Few professionals stressed that it is a challenge to ask graduates to do research about something when they are unaware of the research process. So, this skill should definitely be an inclusive part of the design education system.	2
Students' academic qualification	Professionals felt that institutions should not enroll students who are only 10^{th} or 12^{th} pass. There should be a minimum eligibility criterion for a student to pursue a design career.	5
Students feedback	Feedback loop is extremely important and crucial in a learning process so students should ask institutions whether they have provisions for providing feedback about the institutional setting.	1
Technical skills	Professionals expressed concerns that students lack understanding of the technical skills ranging from using software for drawing and presenting purposes to learning different joineries used for furniture construction.	23
Time management skills	Professionals suggested that this particular skill is important not only for graduates but for themselves as well. There seems to be no shortcut to learn the art of managing time perfectly. They mentioned that while a graduate can prepare the drawings ahead of time for clients, they should also be prepared for revisions and modifications once the drawings are presented to clients. Also, to prepare drawings graduates need to spend time in learning a lot of other things like what's new in the market, which material will be a best fit for the designing purpose. Basically, a graduate should keep in mind that he has to spend time outside the office and also in the office so he should learn to balance his time accordingly.	3

Tuition	Professionals felt that students should ask for an approx. expense sheet as in design education there are a lot of hidden expenses which sometimes a middle-class family cannot afford, so they can make arrangements accordingly.	2
Workplace exposure	Apart from just enquiring about different work opportunities professionals also felt that students should look for opportunities to learn and understand the nuances of working as an interior designer.	10
Workshop facility	Professionals highlighted that design institutions should make provision to teach theoretical as well as practical learning related to design education.	1

Table 1: Qualitative themes from open-ended questions

The themes of communication skills, core competencies, technical skills, time-management skills, research skills, recruitment opportunities, workplace exposure, professional know-how, workplace facility and market awareness suggest that Indian design professionals were inclined to assess the quality of design education in terms of practical employment skills -that the curriculum should provide space for practical learning opportunities.

The themes created were then interpreted for a deeper understanding by placing them alongside and again looking for a common thread between them. The themes that were identified as having common threads between them were grouped together. Several groups were created using an excel sheet [see Appendix III: Thematic Diagram]. This process continued until I came up with the similar themes in a group, and then each group was labelled according to the underlying meaning of those themes. The labels and the themes in each group were iterated with the assistance of four academic colleagues and advisors, who come from a variety of fields. We continued iterating until all five of us agreed with the labels, which then became the seven factors, all of which the interior design professionals felt were important from a prospective student's perspective. In design thinking, collaborative and multi-disciplinary teamwork approach is critical to solve multifaceted problems (Dam Rikkie and Siang Teo, 2019).

In order to use these seven factors with thirty-seven themes, I started creating a journey map about how these factors can be used by a prospective student. A journey map[12] [see Appendix IV: Journey map for a prospective interior design student] is created in order to identify and strategize key elements that a prospective student might encounter when using these seven factors. The initial starting point was something similar to a ranking framework which has three to five ranking parameters. Each of these parameters consists of several indicators that define them. I looked at several ranking frameworks at national and global level and learned that an institute could be ranked if there are some standard and defined parameters which, in the case of Indian design institutions, there is not. As mentioned in chapter one, design institutions in India offer design programs in myriad ways and forms so it will be difficult to rank these institutions based on the seven factors. Following the ranking framework concept, brainstorming some ideas around it was essential which took several weeks. At this stage, there were some critical elements to consider: can one evaluate the interior design program that is offered for six months with the one that's offered for one or more years? Can a diploma program be compared with a certification program? Can a three-year government diploma program be compared with three-year diploma offering?

Through the help of journey maps there were some key elements to consider so I, along with my advisors engaged in a SCAMPER[13] brainstorming session. This session allowed us to rethink on the idea of a ranking framework [See Appendix V: SCAMPER a creative brainstorming technique] for different institutions based on seven factors, so I chose to go the

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[12] In Brown's design thinking methodology a journey map comes under Ideation phase where a designer or a researcher can visualize a customer's (in this research project I refer customer as prospective student) experience from beginning to end. Source: http://www.designkit.org/methods/63

[13] SCAMPER is a creative brainstorming technique that stretches the thinking capacities or boundaries to generate new ideas from different perspective.

other way round and let students select a design institution for themselves. In order to do that, they would need a framework consisting of criteria in a ranking structure to help them understand what institution offerings entail. Finally, with the assistance of my academic advisors we came up with a concept of guidance framework that would serve the purpose of informing prospective students about institutions and create a checklist for institutions to consider the areas that would create dynamic future interior designers. Based on the problems I mentioned in chapter one, I felt that there should be publicly available information on different design schools which will empower students to make an informed decision about choosing an interior design institution. The representation of this guidance framework would be in a pie chart representing the significance of each factor.

Seven factors	**themes corresponding to factor**	**No. of themes**	**No. of comments**
Program characteristics *In terms of curriculum and duration*	inquisitive mindset, institutional offerings, origin of institution, foundation course, students' feedback, campus location, students' academic qualification, tuition, recruitment opportunities, entrance exam and onus of taking the decision	11	188
Professional skillset development *In terms of communication skills and research skills*	associations with design professional bodies, communication skills, research skills, rapid sketching skills, core competencies, project management skills, time-management skills, innovation, creativity and perspective sketching	10	71
Cross-design disciplinary know-how *In terms of exposing how other design disciplines can be worked together*	open-mindedness, professional know-how, opportunity to explore the field and beyond and critical thinking	4	34
Design discipline knowledge *In terms of professional talks, new software development and market trends*	market awareness, design thinking, innovation and creativity and workplace exposure	4	26

Workshop and technical resources *In terms of workshop facility, library, and material lab*	workshop facility and technical skills	2	24
Faculty academic and professional qualifications *In terms of diverse academic discipline and years of professional experience*	diverse faculty member, faculty academic diversity, faculty academic knowledge and faculty professional diversity	4	18
Practice opportunities *In terms of paid internship and engagement in an on-going project*	employability options and opportunities for paid internship	2	10

Table 2: Seven factors with the themes corresponding to each one

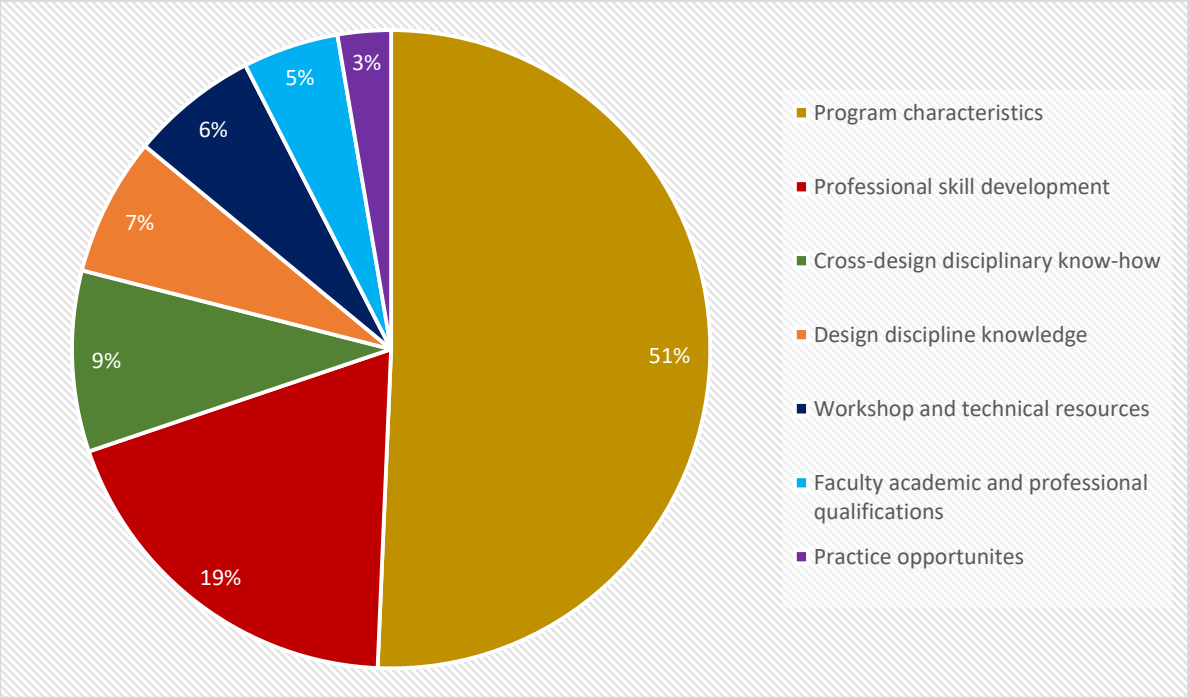

Figure 5: Guidance framework with seven factors proportionately divided based on the total no.of responses associated with that factor.

Discussing the design of the prototype

In this section, I discuss how these seven factors could be used to seek a practical direction to guide future interior design students logically through the decision-making process. The framework consists of seven distinct factors, each of which is different from another and covers theoretical, practical as well as professional aspects of design education. The values in the guidance framework with seven come from the total number of qualitative responses received. All the seven factors are further divided into two, three or four parts so a student can follow through each factor by itself.

Factor 1: Program characteristics

Program characteristics were the most frequently mentioned factor to consider. This factor emphasizes inquiring about a prospective design program in an objective as well as in a subjective manner. The two themes that dominated 84% of this factor are institutional offerings (60%) and inquisitive mindset (24%). Institutional offerings indicated the duration of the program, how the design program is offered, the credentials that a student will receive at the end of the program, and whether the institute has appropriate infrastructure to support the design education. In fact, this particular theme was discussed to a greater extent as compared to other thirty-six themes. Respondents felt that programs offered for a shorter duration (i.e. from six months through one year) are inadequate to equip students with appropriate academic as well as practical design knowledge. Professionals recommended seeking at least a three-year graduate program to pursue an interior design education.

In addition to that, this factor is broken down into three parts for a prospective student to use it effectively. The first one is (i) nuances of the curriculum. In this section a student should ask how many courses within the program are offered, how often is the curriculum of the program

upgraded or are certain elements of the program revised often, who has designed the existing program curriculum and how is the content of the curriculum divided in terms of theoretical and practical learnings. The second is (ii) academic credential. What kind of a qualification will a student receive? How widely usable is the credential received from the institution? What future academic opportunities exist with that credential in-hand? For instance, if a student pursues one-year diploma from a private design institution and then decides to pursue three-year diploma from another private design institution, will the one-year credential allow him to waive a year of study in pursuit of a three-year program? The third is (iii) institutional background. Few professionals expressed the need to learn about the primary discipline/s offered during the beginning years of the private institution. The underlying assumption described here was if the cornerstone discipline of that institute was other than design, the curriculum of design program will mostly be guided around that discipline. For instance, if the institute was started with management discipline/s then the design curriculum will be delivered similar to management courses. In that case, there is a possibility of lacking a dedicated space to experiment with practical design knowledge.

The following pie chart describes the significance of each theme that comprise this factor.

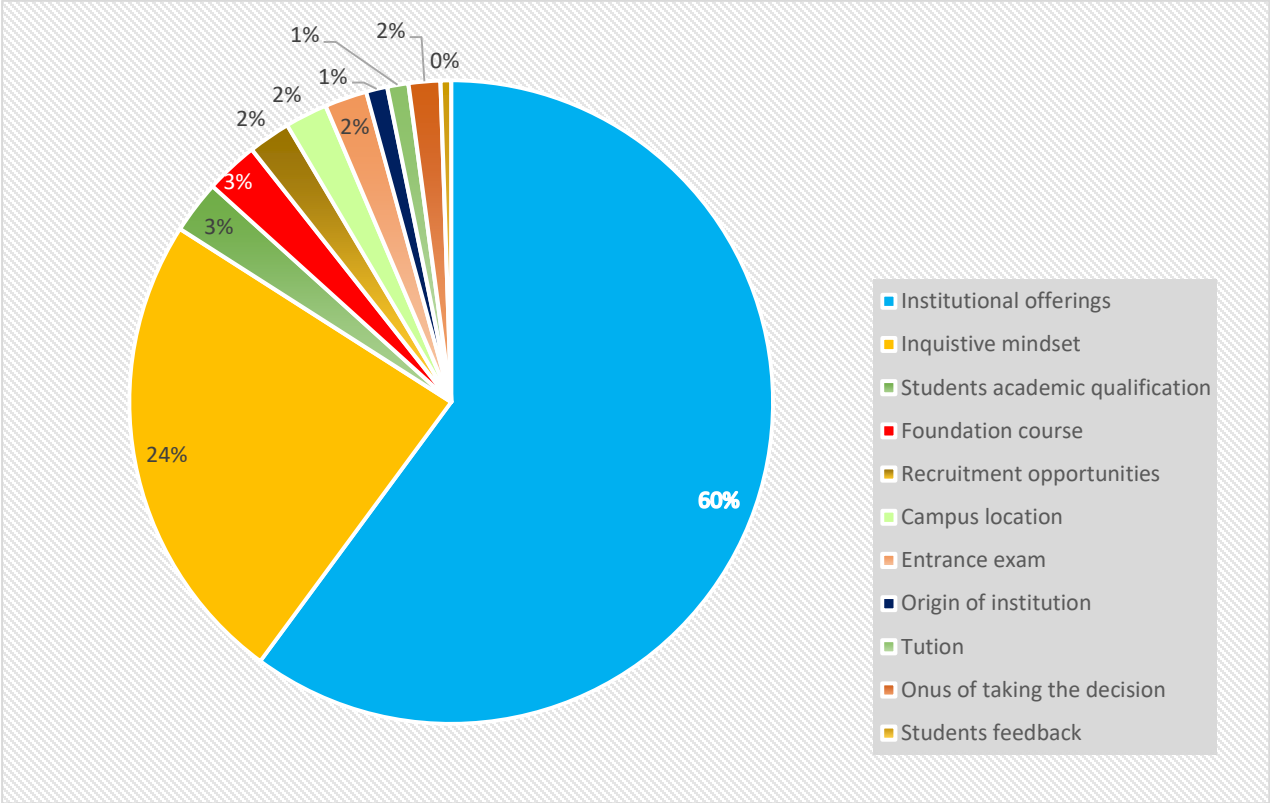

Figure 6: List of themes comprising the first factor: Program characteristics

Factor 2: Professional skillset development

Professional skillset constitutes the second most frequently cited factor to consider when choosing a design program. There was an overarching concern expressed by the professionals about recent graduates who lack basic sense of professionalism. The Merriam-Webster dictionary defines professionalism as "the conduct, aims, or qualities that characterize or mark a profession or a professional person"; and it defines a profession as "a calling requiring specialized knowledge and often long and intensive academic preparation." (Daniel, 2015). Respondents believe students must be exposed to how things work in the real world, including describing their drawings to clients, incorporating client's requirements, preparing the drawings and presenting them in a timely manner. Experiencing these demands is beneficial for students to

understand professionalism to some extent. Responses in this factor include “rules and regulations of the government or paper work”, “how does a professional work in different cities national or international”, “practical knowledge- dealing with labor”, “you are no more an interior designer after several years…. in fact, you represent so many roles like communication manger, creative head...I think at institutional level students should be exposed to all possibilities for being an interior designer.”

Design professionals, especially those working for a firm rather than independently, believe that in addition to exposing students to professional skillset, the institution should advise them on standard governmental rules and regulations to be followed while designing an interior space. Developing professional skillsets requires attention to the following sub factors. First is (i) core competencies: enquire how institutions teach about local and regional rules to follow in terms of residential, commercial and public spaces, teaching negotiating skills, execution of sites. Second is (ii) communication skills: learn how the development of intercommunication skills is encouraged through peer review process. Are sketching skills taught as they are crucial to help clients understand the drawing in a 3Dview? What about appropriate use of language with clients and skilled workers or sketching and drawing ideas on paper? Third is (iii) project management skills: art to visualize the timeline of the entire project with contingencies, considering back-up options, ways to work with back-up options. Core competencies and communication skills dominated 71% of the total responses, 40% and 31% respectively. Professionals assert that addition of these skillsets will introduce students to the professional world. While there are other areas that working designers must understand in their professional careers, emphasizing the concept of professionalism in design higher education will open their minds to the demands of the career.

The figure below signifies the themes that comprise this factor.

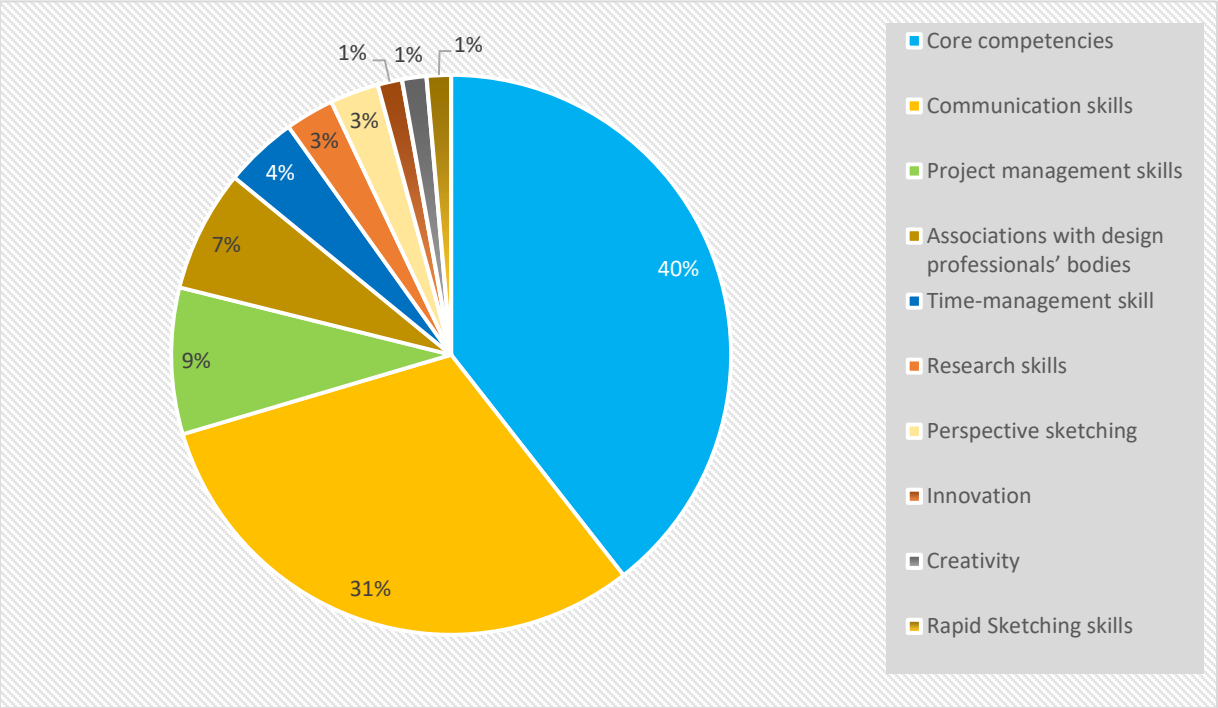

Figure 7: List of themes comprising the second factor: Professional skill-set development

Factor 3: Cross-design disciplinary know-how

This factor highlights the different ways and means institutions make efforts to integrate the knowledge of other design disciplines in interior design education. Professionals strongly felt that working only as an interior designer is not enough in today's demanding market. Additional knowledge from other design disciplines is valuable to stay competitive in the market. For instance, an interior designer is often asked which curtain material is appropriate for different rooms in an apartment. In this case, some exposure to the textile discipline would be helpful. Another example shared by a professional was to be aware of different types of materials used for murals on walls. In this context, some knowledge about fine arts would be helpful. The cross-design disciplinary know-how factor can guide students on being more competitive in the

market. A prospective student can ask questions in two ways; (i) open-mindedness: students should ask questions about what other design discipline/s can they possibly aspire to have an understanding about in order to enhance their interior design knowledge; (ii) opportunities to explore beyond the field: does the institute encourage site-visits, factory-visits, and industrial tours that compliments the academic learning and also enhances the understanding about design field.

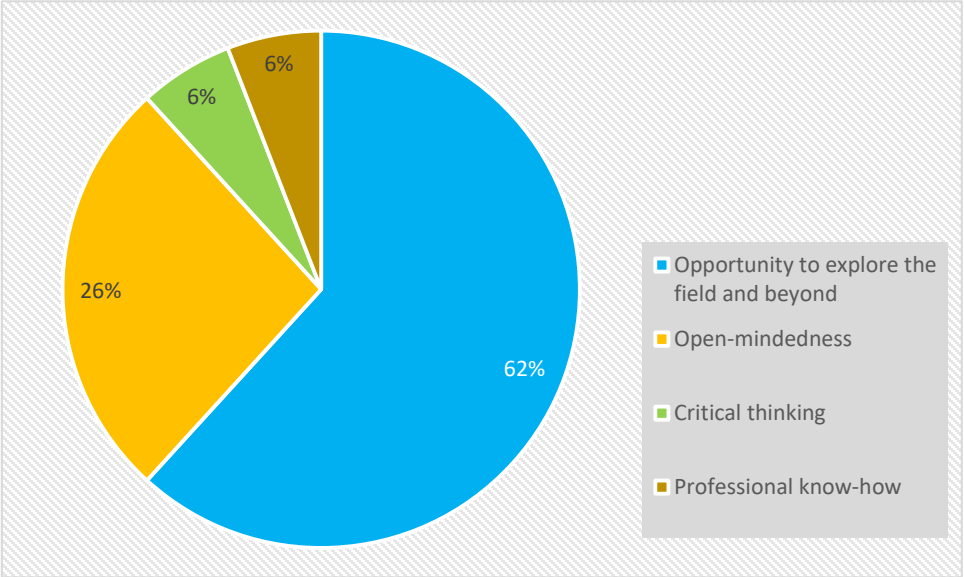

Figure 8: List of themes comprising the third factor: Cross-design discipline know-how

Factor 4: Design discipline knowledge

This factor stresses the importance of students working on developing awareness of what is happening in the design field. The difference between the previous factor and this one is the onus of being aware of what's happening in the design field should be shared by students as much by the institutions. Respondents gave equal significance to factor 3 and this one, 11% each. Survey takers believe that a student interested in pursuing design education has to make efforts to learn how the offerings of individual institutions have value in the design profession. Some of the survey professionals working as freelancers (16% of the total survey respondents) and as

employees in a firm (44% of the total survey respondents) suggested that if a student develops a willingness to extend the learning environment beyond an institutional setting, then the student will be more productive and dynamic. Straightforward responses included: “spend time in the market to learn materials used to design interior spaces”, “learn about innovation, design thinking”, “awareness of different software for easy communication and rapid proto-typing.”

Responses in this factor mainly focused on two areas. Firstly, (i) market awareness: students should be active learners and share their academic as well as the market exploration experiences with the class and their faculty. Students should ask at the time of enquiry whether the institute facilitates such an environment and if yes how do they encourage that. To be active learners, students should introduce themselves to new materials and create a list of software used in the design industry. Secondly, (ii) workplace exposure: if one is looking to work as a freelancer then how can one start off working? Discover what are the initial ways and means to start working as interior designers. In very rare cases, recent graduates will be trusted to handle the entire interior design project from doing drawings through executing the on-site projects. In such instances, it is essential to determine what is needed, for example, to be responsible for financial management of a project.

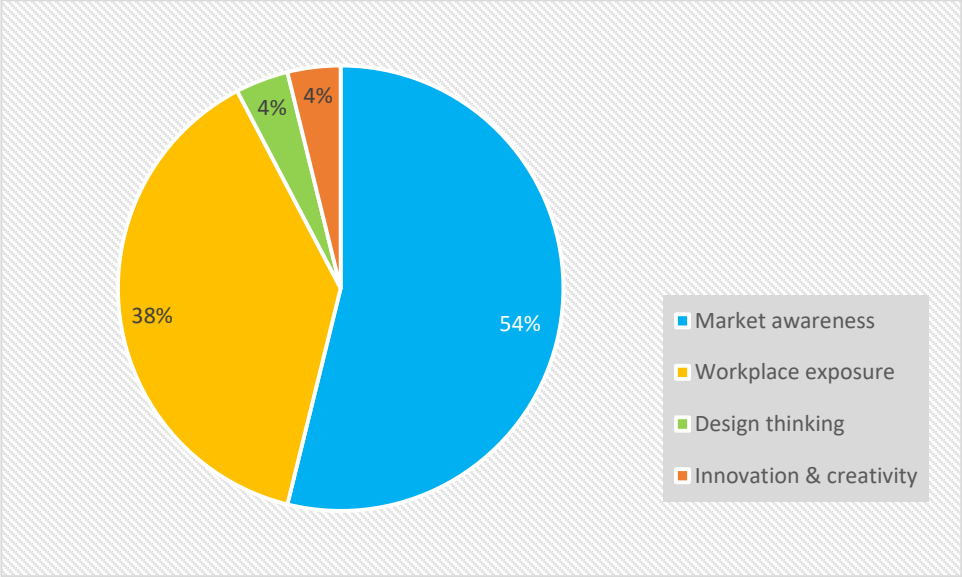

Figure 9: List of themes comprising the forth factor: Design discipline knowledge

Factor 5: Workshop and technical resources

This factor highlights the importance of teaching technical skills and providing workshop facilities within an institutional setting. The provision of these resources would be a valuable source for teaching practical aspects of interior design education under faculty observation. The survey respondents with experience of working both in residential and commercial spaces strongly emphasized that teaching technical skills are extremely important not only from professional aspect but also from an academic standpoint. These professionals referenced technical skills specifically related to academics such as teaching different types of joineries used for various materials and learning to create a prototype with the knowledge of few joineries, as well as ability to sketch a concept and transfer the conceptual idea into a technical drawing and then build a prototype.

Responses in this section related to two major aspects. One is (i) exposure to technical skills: technical skills here refers to technical drawings and software skills. Students should ask how

many types of software are taught and whether the institute has computer labs. Students should also enquire how often the computer lab can be used. Another is (ii) availability of workshop facilities: in order to get a practicum exposure within the institutional setting students should inquire whether a dedicated space is available for them to learn about how different interior materials can be used in interior spaces. Students should also ask about the availability of a material lab, because professionals stressed that it is important to feel and learn about the texture of different materials in addition to just knowing the name of the materials. Apart from learning about the materials, hardware also plays a meaningful role in enhancing the learning about joineries.

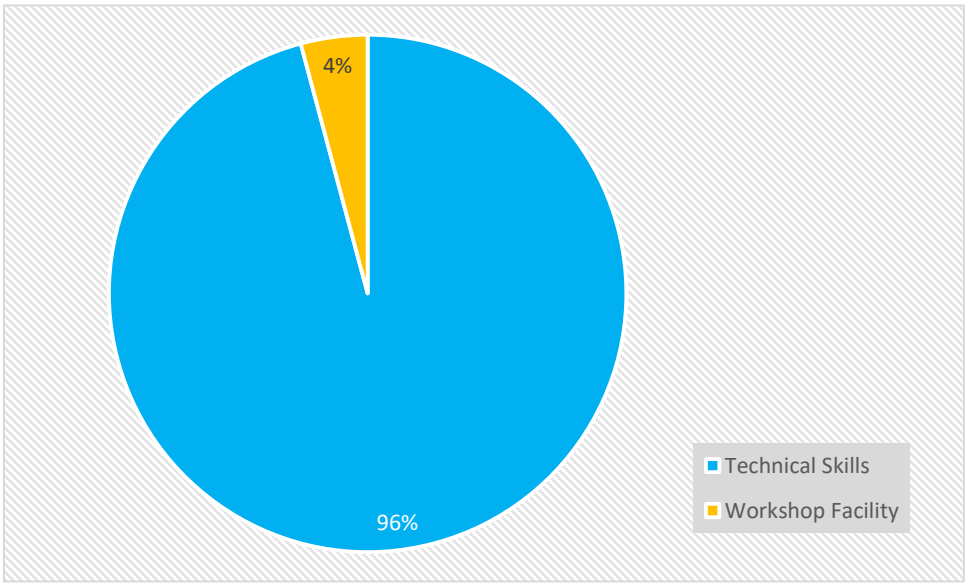

Figure 10: List of themes comprising the fifth factor: Workshop and technical resources

Factor 6: Faculty academic and professional qualifications

Respondents lent this factor as much importance as the cross-design disciplinary know-how and design discipline knowledge. Moreover, some did indicate that the qualifications of faculty members should be considered when choosing a design institution. Select professionals,

including interns (1% out of 3% of this factor) and employees (4% out of the 44% of the design professionals practicing as employees), felt that academic qualifications of faculty members matter specifically because students frequently ask faculty to serve as a reference when applying for jobs. Also, there were a few respondents suggesting that faculty with an adequate number of practicing years would potentially share practical insights during teaching sessions. Also, faculty from different generations would be an added value to bring in different perspectives during the teaching sessions.

A student can discern this information by asking questions in two areas. First, (i) academic qualification: ideally an institution's website faculty information could readily be available. If not, then students should ask during the application process about the academic qualification of faculty members. Second, (ii) practicing experience in the field: a student should be aware of the diversity in the number of practicing years of faculty members. An underlying assumption expressed by respondents is that teachers who are working as professionals with the most recent experience can highlight current market trends whereas faculty who have considerable years of experience can share the learnings from their projects with students. So, a diverse group of faculty member is an asset to a design institution.

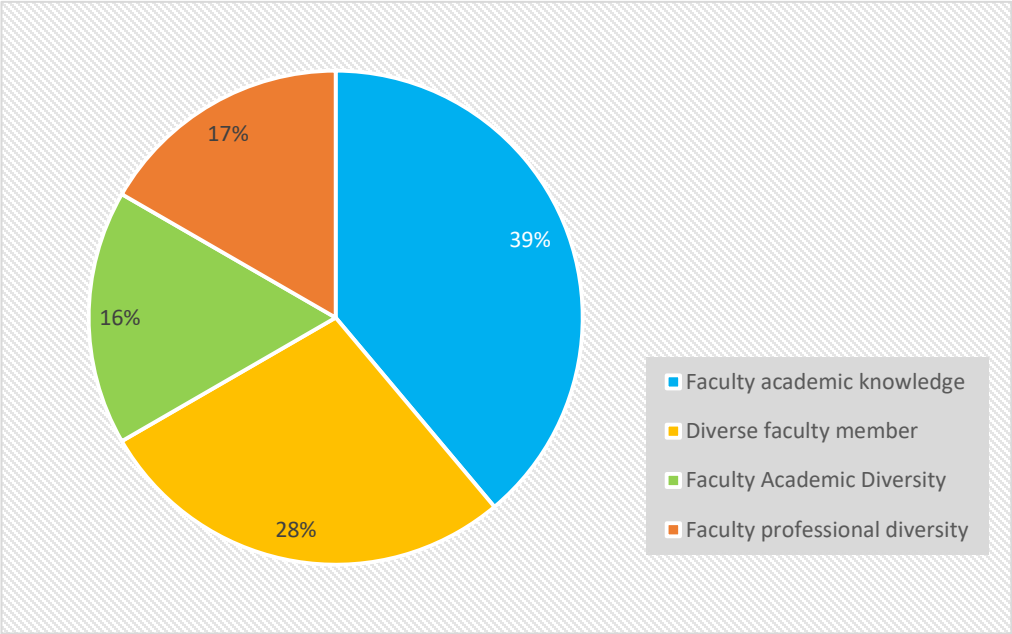

Figure 11: List of themes comprising the sixth factor: Faculty academic and professional qualifications

Factor 7: Practice opportunities

This factor encourages students to learn if institutions provides any practicum learning opportunities like paid internships or student exchange programs. Though this sentiment was not expressed as explicitly as the previous factors, professionals working as interns and freelancers mentioned that some kind of a practicum exposure would help them to develop some professional skillset. Based on academic knowledge they were aware of some technical terms used in the market quite frequently and were aware how an interior design project should be executed. But if there was an opportunity to combine this academic knowledge with hands-on experience, then it is an added value in the learning process.

Some of the respondents felt that teaching practicum-based knowledge will ease the pressure of acquiring practical understanding about the field once a student steps out of an institution. A student can learn about this factor in two ways. One is (i) employability options: students should be asking if the institution provides any provision to engage in ongoing project with a faculty member or if they can bring an outside project and can get credits for working on that. Another is

(ii) paid internship facility: many professional courses in India have an internship as a part of learning curriculum component and in turn receive certification upon completion of that internship. Similarly, now design disciplines are considered as a professional pathway in Indian higher education so students should be requesting such opportunities. Responses from professionals who took the survey included "opportunity for a paid internship in the final year", "provision of student-internship ratio", "institute to undertaking and executing industry project ratio."

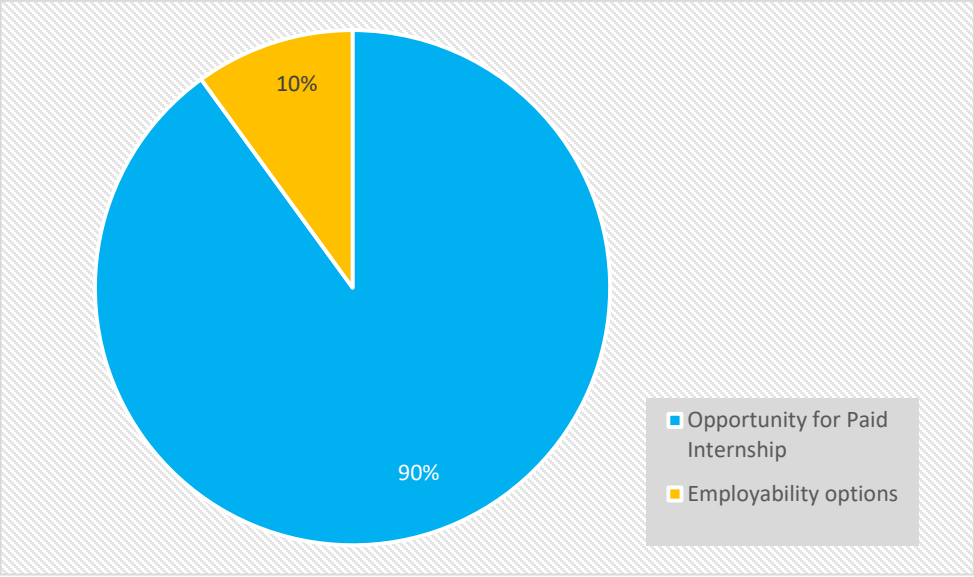

Figure 12: List of themes comprising the seventh factor: Practice opportunities

Discussing the demographic profiles of the respondents

Over the course of approximately six weeks from November through December 2018, I gathered data by sharing the survey link through the two social media platforms, Facebook Messenger and WhatsApp. The link was distributed to fifty interior design professionals, of whom forty-three completed the survey. This section breaks down the broader demographic information, including educational as well as professional information of the forty-three

responses who answered the survey questions. Respondents were recruited by contacting professionals who were my teaching colleagues in the past, and some of them were chosen through a snow-ball technique.

Educational background

The design professionals who participated in this study possess two types of educational qualifications; one was interior design, and the other was architecture. The response to this question helped me understand the academic background to which the respondents belong. In India, architects can practice as interior design professionals, but interior design professionals cannot practice as architects. Since my research study was focused on exploring the critical educational factors that would guide prospective interior design students, the opinion of architects practicing as interior design professionals would also be beneficial. Based on the responses 89% of the professionals had an educational qualification in interior design, 9% had architecture, and just 2% had both disciplines.

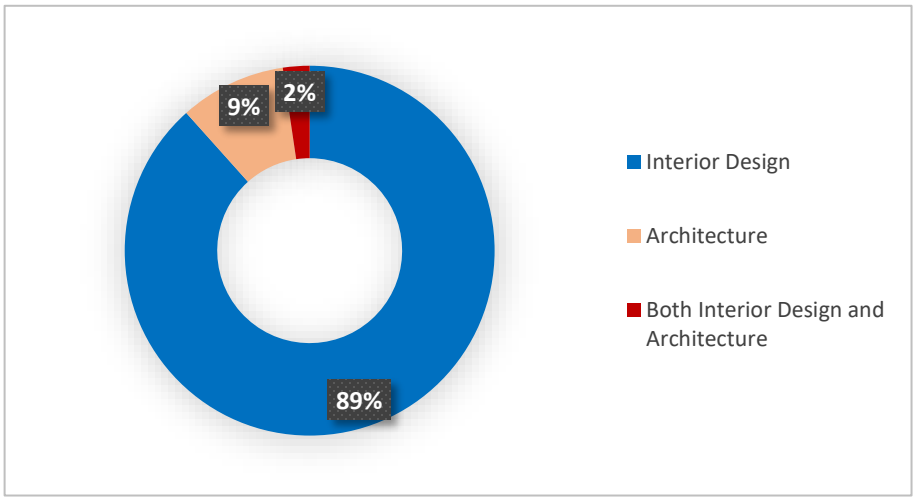

Figure 13: Educational background of the survey professionals

Location where respondents pursued their education

In addition to educational background, I sought to know where the surveyed professionals pursued their academic education. Since design education in India does not have a standardized curriculum, the responses from different places throughout India provide a general overview of the kind of offerings from different design institutions. I anticipated receiving responses from varying perspectives as public and private design institution have different ways of teaching interior design, and the curriculum differs from one city to another. The surveyed professionals pursued their design education from six different cities in Indian, and two professionals pursued design courses from Florence-Italy and Manama-Bahrain. It was interesting to learn that the design professionals who participated in the survey were geographically dispersed nationally with one having international academic exposure.

Some professionals studied in multiple cities. There was one professional who studied in four different cities, whereas there were six professionals who studied in two cities. However, all the professionals have one city in common; Mumbai-capital city of Maharashtra state, is home to a several public and many private and international design schools. Mumbai is also one of the top three Indian cities where students prefer to pursue higher education (Top 10 cities for the best education in India, 2016). Apart from Mumbai, professionals pursued education in five other Indian cities. These include New Delhi- urban district of Delhi state which is the capital of India; Ahmedabad-where the first design school National Institute of Design was established; Bangalore- also known as Bengaluru capital of India's southern Karnataka state; Pune which is the second largest city in the Maharashtra state; Chennai-the capital city of the Tamil Nadu state. As far as international academic exposure one respondent studied in Florence-Italy, which is

home to many classic works from the Renaissance art and architecture period and the other pursued from Manama which is the capital of Bahrain.

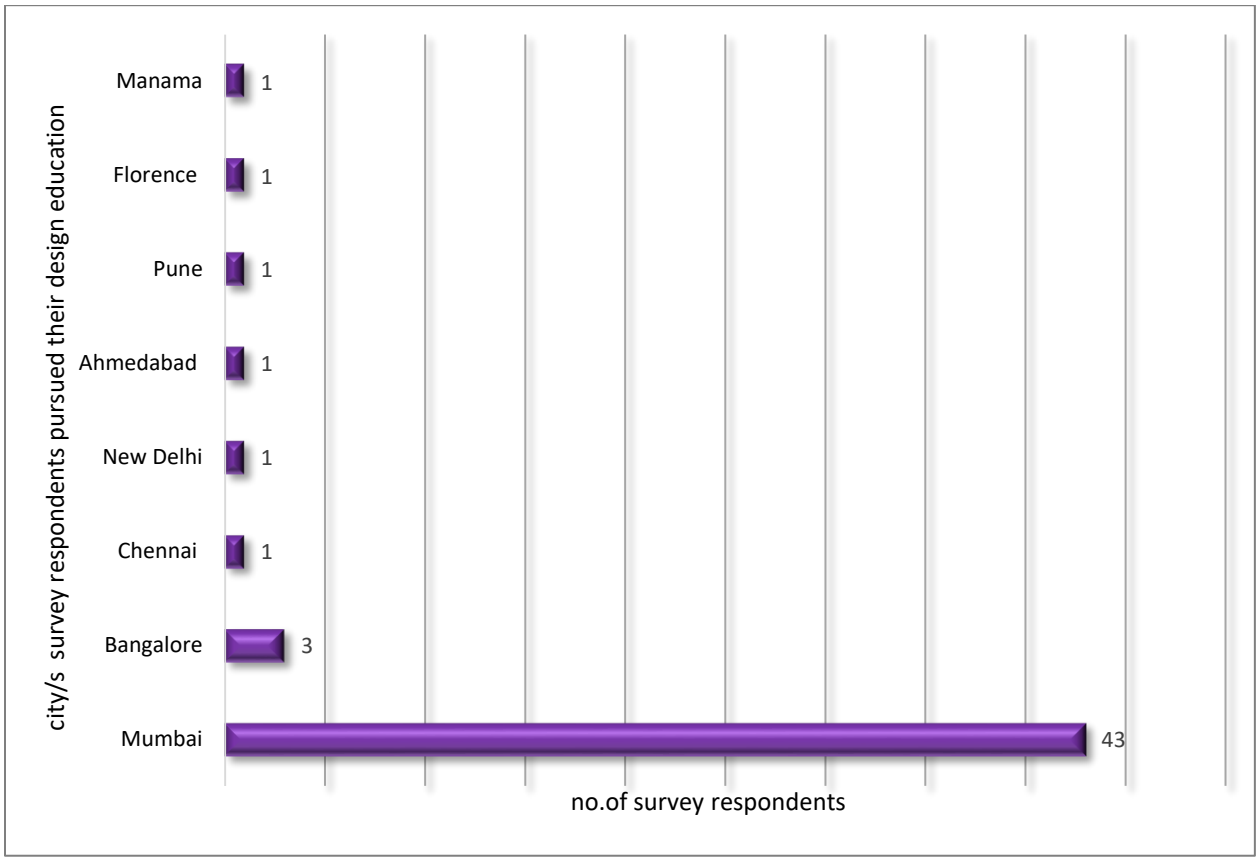

Figure 14: List of places design professionals pursued their academic design qualifications

Locations in which design professionals currently practice

In this section, I sought to learn locations of survey respondents' current offices and if their practice had any other locations than the current one. The professionals were asked to list the current city where they work and also the locales of other places where they have had a chance to execute project/s. Like the academic findings, the surveyed professionals have experience working in different cities of India and one professional is currently working outside India. A total of four different cities were listed that differ from the ones listed where the professionals pursued their design education. These were New Mumbai-considered as a planned satellite city off the west coast of the Maharashtra state; Hisar-which is one of the 22 districts of Haryana state situated in the northwestern part of India; Indore-the most populous and the largest city in the Madhya-Pradesh state; and the last one is New York-most populous city in the U.S. and considered as the world's primary hub for commercial, financial and cultural centers. The

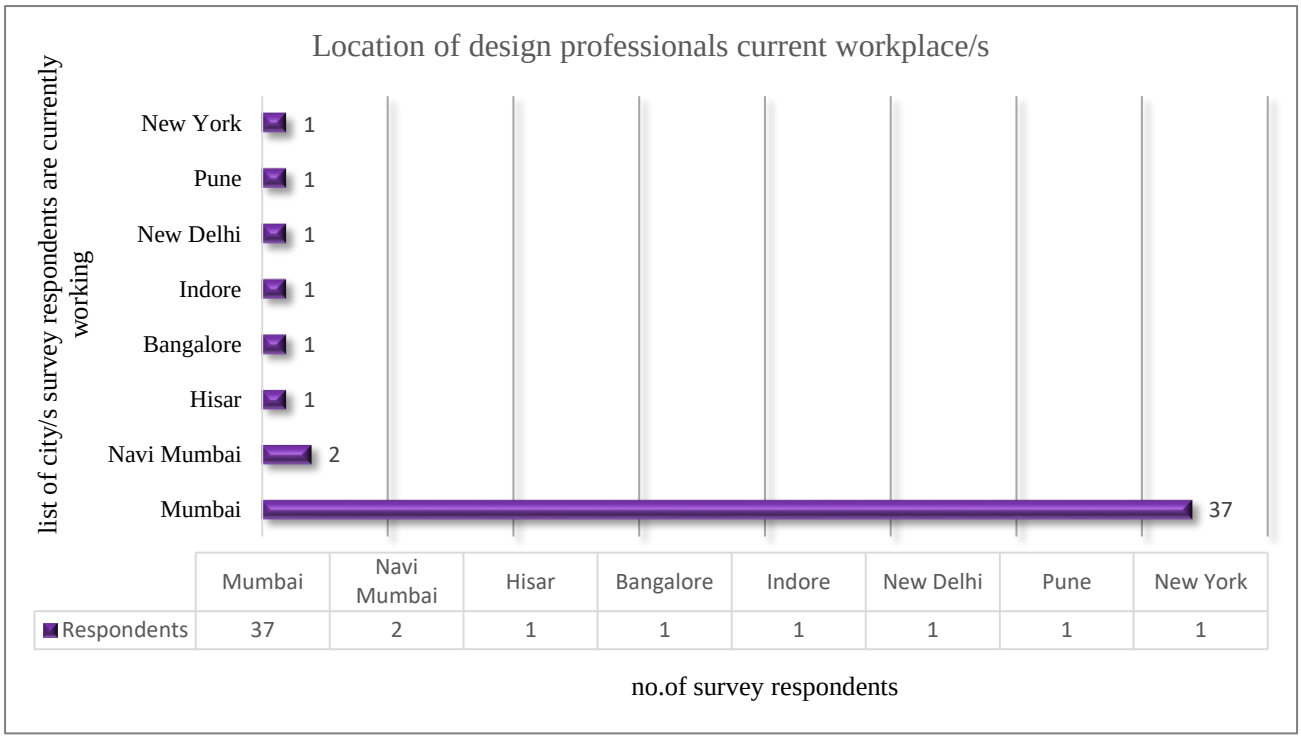

Figure 15: Cities in which surveyed design professionals have experience executing interior projects

majority of the surveyed professionals are working in Mumbai either as an employee (44%) or owning their design firm (23%).

Cities in which design professional executed projects

Along with the knowledge of the different cities where the surveyed professionals have their offices, I was curious to learn about their exposure in executing projects in different locations. The response to this question provides a broader viewpoint of the qualitative responses received to the ensuing questions. To answer this question, professionals had to select one option from the four alternatives shared with them. Interestingly, I received a response for all the four options, especially the last one which stated nine cities and above. The response to this question indicates that professionals who participated in the survey are diverse not only in terms of workplace locations but also in handling the number of interior projects in different cities. Working as an interior design professional from a city need not necessarily mean that one gets project/s only from that city. There are ample of opportunities that one can potentially get project/s from different places through many mediums like word of mouth, or through referrals. Listening to

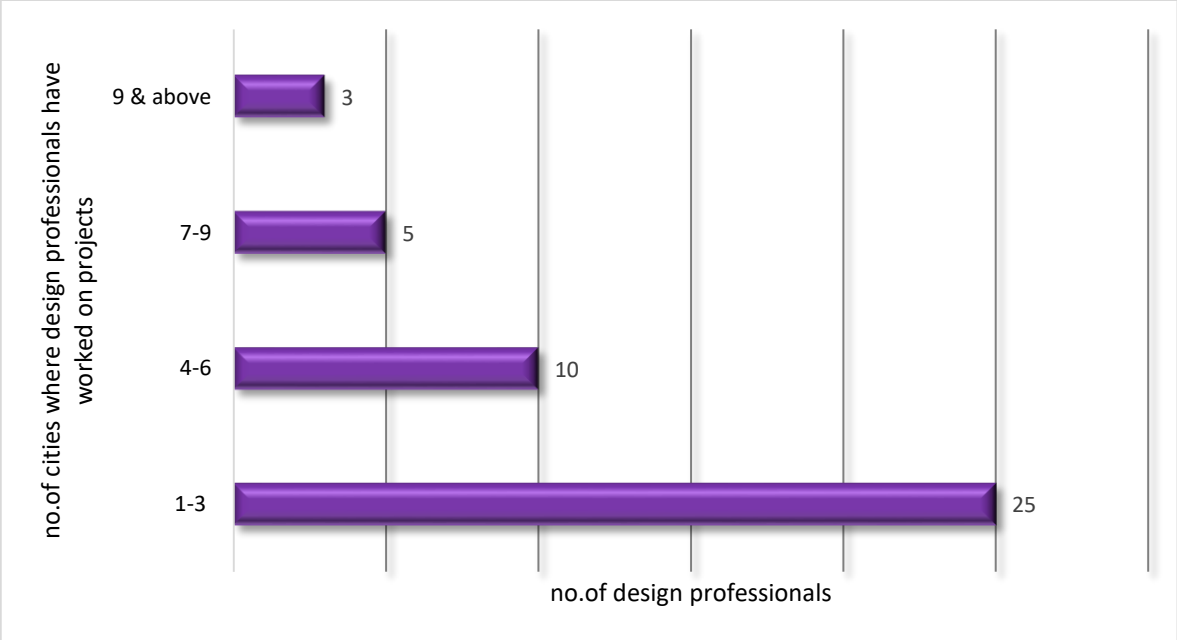

Figure 16: Number of cities surveyed design professionals executed projects

professionals with experience executing projects in different cities brings some vital elements to the impact of the interior design education teachings within an institutional setting.

Design professionals' practicing capacities

Interior design professionals cover a broad spectrum working as designers in several capacities. In order to better understand the nature of the qualitative responses, it was essential to ask the professionals in what capacities they were currently practicing. There was an underlying assumption that the design professionals who own their firms or are partners in a firm may respond more openly than those who are working in a firm as an intern or employee. A design professional working as a freelancer may have a different perspective than the others. For this question, professionals had to select an option from the list as shown in figure 17. Based on the responses most of the surveyed professionals belong to two major factors (a) employee in a firm

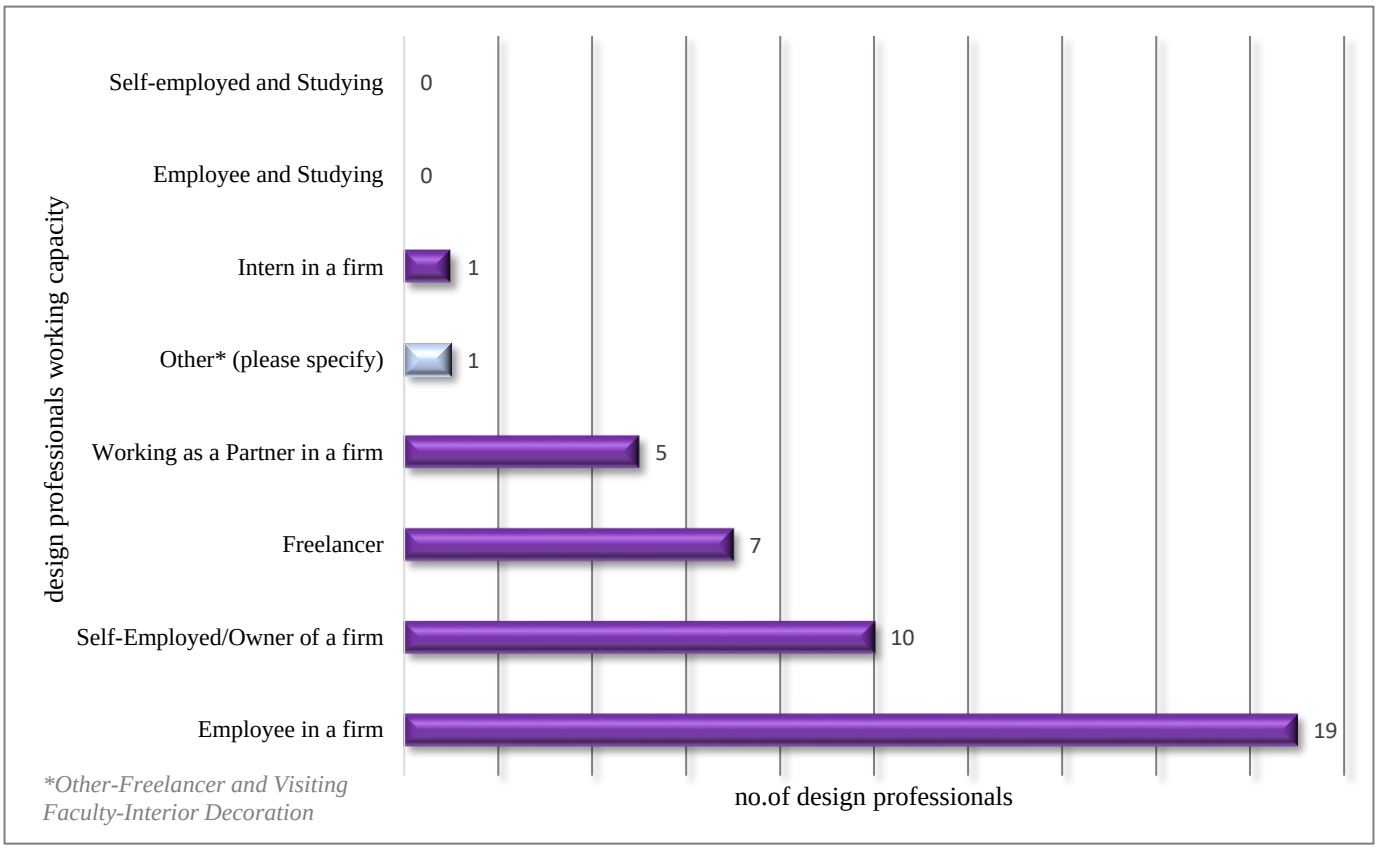

Figure 17: The surveyed design professionals practicing in different capacities.

(44%) and (b) the professional either has his practice or runs a firm in partnership with someone (23%).

Kind of interior projects undertaken by professionals

This question provided information about the kind of interior projects executed by the respondents. The primary reason for asking this question was to ensure that design professionals who participated in the study have undertaken interior projects in the two arenas, residential and commercial spaces, which are mostly focused on within an academic institution. Thus, I asked respondents to select one option from the two broad factors. The first one was residential space where a family resides which includes a wide range of dwellings like an apartment, (consisting of 2/3/or more rooms) a row house or a penthouse, bungalow or weekend homes. The second factor was a commercial space covering a range of areas from a clinical space to a shop in a mall to a retail outlet for jewelry, shoes, clothing, accessory brands and much more. The final factor is for the design professionals who worked in both spaces, i.e. residential and commercial.

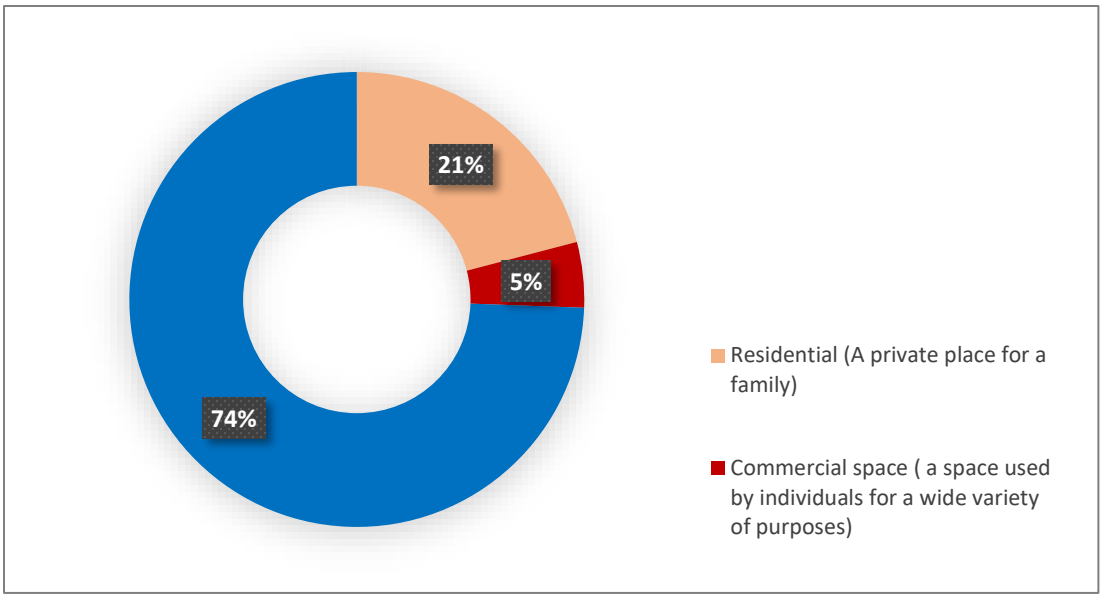

Figure 18: The surveyed professionals executed these types of interior design projects

Value of international design education

In an effort to discern what value my survey participants placed on that shortcomings in Indian design education could be addressed through closer collaboration with design education programs outside of India, I asked for their impressions about the value of international cooperation between Indian institutions and non-Indian institutions. It might seem sensible to conclude that aspiring Indian design students who recognize the problems with India's design education system would be best served if they sought design education abroad. However, my respondents gave mixed reactions when questioned about the benefits of international cooperation for Indian design students.

For this question, respondents were asked to take a positive, negative and a neutral position. Based on the raw responses received, they were categorized accordingly. For instance, some of the positive responses were "Yes !!!! in the hope that we might get better in turns to work with", "Yes, because I think it gives more practical exposure and a healthy learning atmosphere", "Yes, it does benefit both Indian as well as foreign institutions. Reason being people from India are

looking for opportunities globally and vice-a-versa. So, it will help each one to understand the common and distinguish conditions in design to handle and criteria's to" so on and so forth. On the other hand, negative responses were: "No!!!! India is diverse enough to learn from.... why to add more pressure by teaching western culture and western designing stuff", "No, as the scenarios in Indian market and the abroad market is completely different", "Not really...unless the curriculum is a combination of India and western".

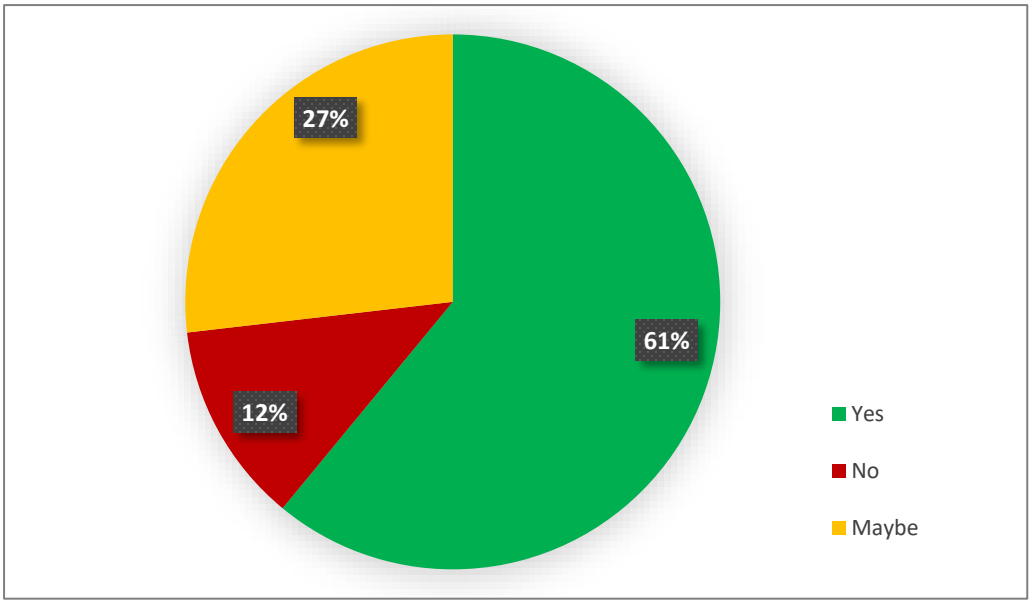

Figure 19: Responses received for international academic collaborations between Indian and foreign design institutions.

CHAPTER 5

FINDINGS, DISCUSSIONS AND IMPLICATIONS

Never lose an opportunity to educate or learn.

-M.P. Ranjan

In this concluding chapter I discus the significance of my Guidance Framework resulting from this research study. I further discuss how the framework's seven factors can be used as a reference to address the challenges anticipated by design professionals in future if Indian design education remains in its current state. There were similarities between the characteristics of an emerging designer laid out by M.P. Ranjan and the expectations by the professionals who filled out the survey. The discussion on how the guidance framework plays a critical role for a prospective interior design student in a decision-making process is the first step towards the current thinking in the field contextualizing my study. I highlight the possible implications for (a) myself as a leader in terms of guiding prospective design student to make an informed decision; (b) interior design curriculum that benefits the student, institution and society; and (c) areas for future research advocating other design disciplines within the Indian higher design education system.

In establishing the value of my work for Indian design education, I believe I am building upon the notions of India's foremost design expert, the late M.P. Ranjan. For over thirty years, he was recognized as one of the most noted design theorist faculty members at India's National Institute of Design (NID), Ahmedabad. He advised government and industries on strategies for appropriate application of design services in the various sectors of the Indian economy. He strongly advocated that design has the potential to address the diverse nature of the Indian economy if design institutions adopted a sector-specific approach in conjunction with other

disciplines like science, technology and management. Among the many design-related ideas he advanced was a profile of an emerging designer; it put forward a series of skillsets that those aspiring to a career in design should cultivate to prepare themselves for the demands of the design profession. Prof. Ranjan's view was that emerging designers should focus on honing cognitive, knowledge, and skill bases as they readied for the professional world (M.P.Ranjan, Design blog for India , 2013). During his long and notable career, Prof. Ranjan laid the groundwork for a future in which Indian designers occupy equal footing with their peers in other nations. It is my hope that the outcome of my research project will help move Indian design closer to that dream.

Findings and Discussion

In 2007, the government of India adopted the National Design Policy to establish a platform for creative design development, design promotion and partnerships across all sectors, states and regions for integrating design with traditional and technological resources. The vision behind initiating the National Design Policy was to have a "design enabled Indian industry" which could impact both the national economy and the quality of life in a positive manner. To implement the provisions of the National Design Policy, the government established the India Design Council in 2009. India Design Council is an autonomous arm of the government of India, established under the aegis of the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry. Several efforts have been initiated by the India Design Council including the

design education quality mark[14], rethinking basic design pedagogy[15], India Design Mark[16], and designing design education for India[17]. Despite of all these efforts, design education in India lacks coherent structure because of the absence of well-articulated accreditation or affiliation procedures. There is no national accreditation body to accredit design programs. Most of the state universities do not have design programs through which they can affiliate colleges. As such, it is not possible for an entity to seek affiliation and hence grant a degree in design. Another impediment in the growth of design programs has been the absence of recognized universities delivering design programs. As reported in the India Design Report (2015), especially in the education section, there is a common sentiment within the design industry that design graduates are not well trained/educated. This sentiment has been explicitly expressed by my survey professionals as well stating that the design graduates do not possess the competencies required by the industry.

In the India Design Report (2015) and in the responses to my surveys there were concerns expressed about the shortage of qualified and quality faculty members hindering the

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[14]In 2007, the India Design Council, formed in accordance with the National Design Policy, was mandated to raise Indian Design Education to global standards of excellence. The India Design Council collaborated with the Quality Assurance Agency for Higher Education, UK (QAA) according to benchmark design education programs on pre-determined standards for institutions. The UK has been benchmarking its higher education through its Quality Assurance Agency, which reports to the Higher Education Funding Council for England on the academic standards and quality of learning opportunities in the institutions, which it reviews. The British Council in India helped and supported this collaboration.

[15] India Design Council organized Re-Thinking Basic Design Pedagogy Workshop in 2015, one of the first attempts aimed at reassessing the Basic Design Education in India at NID Ahmedabad.

[16] India Design Mark is a design standard, a symbol, which recognizes good design that symbolizes excellence in form, function, quality, safety, sustainability and innovation and communicates that the product is usable, durable, aesthetically appealing & socially responsible. India Design Mark provides strong differentiation and market positioning as a design and innovation leader.

[17] The Designing Design Education Conference is the means to create a guiding framework for India as design education in India is expanding at a brisk pace. Many institutions now offer design education in diverse design disciplines. The proliferation of a large number of design institutions in India necessitate creating a guiding (not binding) framework that represents a common rationale / philosophy for design curricula and its implementation. The aim is to harmonize the different education systems whilst taking into account their great diversity.

progress of well-trained design graduates. Design education in India lacks opportunities for progression from bachelor's to master's level and from master's level to Ph.D. These gaps include the absence of a governing body at the national level which has created opportunities for private institutions to expand enormously and offer design programs per their convenience. In the past ten years many of these private institutions have been collaborating with foreign universities to offer a quality degree design program. However, these qualifications are not recognized by Indian higher education's governing bodies for number of reasons explained in chapter one and two. Also based on my experience working with a private institution for over a period of three years, few students who wanted to pursue a master's program failed to do so for similar reasons.

The National Institutional Ranking Framework (NIRF), India Rankings 2018 provides a list of top universities and institutions in these disciplines; engineering, management, pharmacy, general college degree, law, medicine and architecture. These disciplines have a hierarchical academic structure and defined higher education curriculum standards at the national level. Students who study architecture, for example, must complete a core group of courses that provide them with foundational skills required to practice architecture professionally. Similarly, medical students are expected to spend a predetermined amount of time as interns within a professional setting. Higher design education in India does not have any standardization measures outlined as these other academic programs.

These factors are the underlying motivators for me to design a publicly available information system in the form of a guidance framework that could guide a prospective interior design student to seek the right kind of information about university design programs and ask the

right kind of questions about institutions they are considering attending in pursuit of a design education.

Guidance Framework

The guidance framework should be used like a navigation compass, the main purpose of which is to help a traveler determine an appropriate direction to move forward. Similarly, my guidance framework consisting of seven factors should be used as a device to identify an appropriate interior design institute to pursue an ideal design career. In India, where interior design higher education is offered in myriad ways, a guidance framework will play a significant role in creating awareness about some of the key aspects that a student should investigate. The seven factors, including Program characteristics, Professional skillset development, Cross-design disciplinary know-how, Design discipline knowledge, Faculty academic and professional qualifications, Practice opportunities and Workshop and technical resources, comprise a roadmap for a student who is clueless about what is entailed within interior design education. In India, most of the state boards offering primary and secondary education do not include design related courses in their curriculum. To introduce design to school students, professor Ravi Poovaiah[18] from the Industrial Design Centre organized a national meet in February 2009 on introducing "Design and Innovation" in school curriculum. The outcome of what resulted was recommendations regarding (i) curriculum, (ii) methods of learning design and (iii) modalities

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[18] Ravi Poovaiah's current pedagogic as well as research and design interests are in fields related to Interaction Design, New Media Design, Visual Design and Product Design and his research interests are in areas related to Visual Language, Information Visualization, Visual Narratives, Way Finding Systems, Interaction Devices, Collaborative Social and Learning Environments and Designing for Children. He is involved with building digital resources related to 'Design Learning', 'Folk Tales', 'Interactive Systems', 'Designing for Children', 'Design of Way-finding Systems' and 'Design in India' with free and open access to networked information. He has been coordinating along with NID and IIT Guwahati, a Ministry of Human Resources sponsored project named 'e-kalpa' to build an open source digital learning environment for design in India. http://www.idc.iitb.ac.in/ravi/short-bio.html

for implementing the proposal. There is a follow-up meeting for this proposal to be held on December 6, 2019 to focus on issues connected with "designing for children" (Design Educational Meet, 2019). Thus, a student who is interested in pursuing design education has limited exposure at the high school level to the design field.

To remedy this lack of awareness, several coaching institutions have been established that offer foundational level design studies. Coaching institutions like Bhanwar Rathore Design Studio[19], afdindia[20] and several others have tried to bridge the gap between the requirements of the design schools and the skillset required by students to pursue design careers by offering short term or long-term courses to prospective students. The purpose of these coaching institutions is to expose and teach students the foundational components expected by the public and private design schools at the entry-level. In addition to teaching these foundational components to students, I feel it is important to make them aware about the design field from a holistic perspective. Teaching students the elementary skills to get admitted to a design school is not helping them to build a design career. Most of my survey responses illustrated the fact that the institutions are failing to fulfill the market demands and to inculcate a professional attitude among students. The first two factors of my guidance framework highlight these factors extensively such as program characteristics and professional skillset development. In addition to the survey responses highlighting the lack of designer skills, in chapter 2 (p.26) I list the top ten skills required by individuals in 2020 among which creativity is listed third, while in 2005 it was tenth. In fact, creativity is one of the important skills that a designer should possess which should be encouraged in a formal or an informal design educational setting (Miller, 2019).

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[19] *BRDS founded in 2005, has 25 centers across India.* https://rathoredesign.com/about-brds/brds-institute-infrastructure/

[20] *AFD founded in 1999.* http://www.afdindia.com/about/who-we-are.html

The India Design Report (2016) and my survey responses both suggest that there is a huge gap between what is expected within the job market and what is offered in the design institutions to produce quality designers. In an attempt to bridge the gap this research study focused on creating a public information system that could inform prospective design students on these two aspects: (a) to enquire what is offered at the institutional level; (b) to be aware of the current market trends for a future interior designer. A guidance framework can serve multiple purposes as follows:

i. A prospective design student who has limited exposure to the design world can at least learn what it entails from an education in the design field.
ii. If a student pursues a design degree from an institution where only few of the seven factors are met, then the student is aware of what additional efforts are required to round out his or her education.
iii. The seven factors provide a holistic understanding of the essential components from an interior design education standpoint. For a prospective student this framework should serve as a roadmap indicating what progress should be made at various benchmarks along the way.
iv. A prospective student can choose to learn different design aspects from different institutions based on what the institution offers.
v. Based on what the current interior design education scenario is in India, a framework like this can help middle-class and lower-middle class families to wisely spend their money on design education. Estimates vary, but a recent study calculated that India's middle class constitutes between 35 and 40% of its population, and it is continuing to grow. (Ramanathan, 2019). As such, the number of potential future design students is only going to increase in the coming decade.
vi. In Mumbai (capital of Maharashtra state) designing for the lower class has preoccupied the government since approval of the Maharashtra Slum Area Act in 1971 through which slum land is given to the developers to make pucca homes thereby improving the lifestyle of the slum people (Slum Rehabilitation Authority, 2019). Future interior design students may find that furnishing low-income housing of this type will constitute a significant

> portion of their work as professionals. Therefore, knowledge about the availability of the different economical furniture pieces that they can either make by themselves or purchase from the market should be at least introduced at the institutional level which forces a student to think about various designing possibilities.

The factors in the framework should not be seen as the only factors shaping a successful interior designer, but rather as the basic necessities that can help an emerging designer to think through the spatial design academic process. The seven factors of the framework are the outcome of the survey responses at the time this study was conducted that is in 2019. The word framework is used so as to provide a broad overview, or a skeleton of interlinked items supporting that can be modified or changed as and when required (WebFinance Inc, 2019). In the VUCA world, which is volatile, uncertain, complex and ambiguous the word framework makes complete sense as it is provides a structure for the current situation to move forward and also provides a space for modifications depending upon the future requirements.

Interior design curriculum that benefits the student, institution and society

Don Norman (2013), in his book *The design of everyday things*, emphasizes that a good design will always serve as a communication between the object and the user and if the user does not relate with the respective object, then it is a bad design. The seven factors of the guidance framework provide ingredients to help produce good design with a blend of academic and professional understanding of the interior design world. Therefore, if most or all these factors are integrated seamlessly within the existing interior design curriculum in India, then a student can acquire a robust foundational skill set for the design profession. In the VUCA world which is entering the fourth industrial revolution, two attributes that will help one to thrive successfully in the design profession: responsiveness and the ability to address constant changes. In other words,

a design leader should embrace adaptive leadership (explained in chapter 2 pg.18) in a way that leads to designs based on what a client needs presently and incorporating near future needs as well. A designer with a robust foundational skillset and with an adaptive leadership approach would be in a position to address the problems in a creative way. An adaptive leadership style, if combined with productive reasoning and abductive thinking called design abduction thinking, has the potential to spark the innovative drive of the designers.

My guidance framework is based upon the elements of intellectual, academic and hands-on preparations required for a future designer to think abductively. Key to this approach is that designers possess a high level of basic analytical skills and intellectual understanding of the discipline. As my survey findings indicate, Indian design education, at either public or private institutions, presently fails to impart these skills to its students. There have been very few designing concepts worth mentioning during these years that are beneficial for society. One of the very famous concepts is the setup of terracotta Daily Dump back in April 2006 designed by a Bengaluru-based industrial designer and social entrepreneur to change the mindset towards waste management in urban spaces (Wangchuk, 2019). The compost reduces the emission of methane gas and in turn reduces the load on public garbage agencies. India's design curriculum needs to emphasize developing such mindsets that prioritize lifestyle as well as gives meaning and purpose to design something for the respective end user.

Guiding prospective design students to make an informed decision

The final question of my survey asked respondents to forecast areas of difficulty that future design professionals will face if India's design education system remains in its current state. The substance of their responses illuminates the importance of my contribution to the design field and areas of current and future improvement that are vitally important. The responses received were

categorized into three themes: (i) Lack of professionalism- responses in this category consist of the compilation of various skillset listed by the professionals that they felt are lacking in the current education system and will continue to lack if not addressed today; (ii) Failure of design institutions to produce design graduates-responses emphasized the fact that design institutions, if they do not reconsider and reflect upon their current curriculum and the delivery pattern, will fail to empower most of the Indian graduates with fundamental designing skills; (iii) Defined designing opportunities-responses highlighted the fact that the design graduates are hardly exposed to any practical or on-site knowledge or market trends and materials are limited. These themes were created after the guidance framework was designed. The sole purpose of analyzing the last question at a later stage was to find a correlation between the learnings from the past academic and professional experiences and in the process of moving forward which areas should be addressed systematically.

Themes created as a result of the areas forecasted by design professionals that needs immediate attention	Guidance Framework for a prospective interior design student

These themes (on the left) below can be overcome with the respective factors of the guidance framework.

Lack of Professionalism	Factor 2 Professional skillset development
	Factor 7 Practice opportunities
Failure of design institutions to produce design graduates	Factor 1 Program characteristics
	Factor 6 Faculty academic and professional qualifications
	Factor 5 Workshop and technical resources
Defined designing opportunities	Factor 3 Cross-design discipline know-how
	Factor 4 Design discipline knowledge

- The themes emerged as a result of the challenges anticipated by the professionals can be addressed with a respective factor.
- These factors should seamlessly blend into the existing design curriculum which in turn will bridge the gap between the academia and the professional requirement.

Table 3Areas that can be addressed systematically with the use of guidance framework.

The blending of the seven factors into the existing curriculum requires broad understanding of the different curriculums presently taught in India including certificate courses, one, two or three-year diploma, three-year degree and foreign qualifications offered by different foreign universities. As a design educator with experience teaching interior design in all these different settings, this project has allowed me to deepen and reshape my understanding of the challenges facing aspiring Indian design students who are trying to choose an institution that suits their needs. Gathering data on identifying the existing gaps between design education and the design

profession in India and addressing those gaps systematically is a way for me to enhance my ability to lead aspiring designers toward an appropriate educational path available within system. The seven factors of the guidance framework as described in chapter 4 are the components that should be addressed and incorporated in the current interior design curriculum in a way that the graduates can then aim to becoming better and more productive designers.

Areas for Future Research

There are any number of potential future research avenues which might arise from my project. However, I believe the most beneficial would be an enhanced version of my work that reached out to a much larger segment of Indian designers and design educators to solicit their views on the state of design education and explore best possible alternatives to address them. Specifically, as my research suggested, there is a strong feeling among Indian designers that college students studying design in India are not exposed to critically important professional development opportunities. A larger study of the same type would allow a future researcher to highlight how missing professional development elements are leaving Indian design students dramatically underprepared for the demands of the design profession on a national level.

Moving forward, having established a rigorous data-gathering method I believe it is critically important to conduct extensive research to determine the varied nature of the shortcomings within the Indian design education. Despite of my research project being limited in scope and scale, the use of the design thinking methodology did reveal an underlying concern on the part of practicing designers in India with the substance of design education. The findings shared in chapter 4 are just the preliminary ones and signify the first solid evidence that there exists a problem within the Indian design education and needs to be addressed urgently. Using

my survey approach as a springboard, I believe it is now possible to investigate the attitudes of members of the Indian design community in a much more detailed and thorough way.

I plan to take the findings of this study and share them with design institutions to guide them for preparing better interior design students by modifying certain elements of the current curriculum. I also plan to share the systematic decision-making process via guidance framework with the prospective students in the hope that it will prepare them to make an informed decision. Finally, I expect to take on a new professional challenge that allows me to more actively engage in the work of transforming design education in India impacting directly the improvement of the human endeavor.

Appendix I Participants Survey Material

Research Instruments: Survey Protocol

The researcher will recruit participants for filling out the survey questions from her professional network for the research study. Some of the participants will be individuals with whom the researcher had some interaction in the past as a colleague or a faculty member. Other participants will be referred by the selected participants. Next, is to send them a request to be a participant in the study through email, or leave an online message through WhatsApp, Instagram or Facebook messenger. Since I am conducting this study from a different country than my participants, I have to rely on the social networking platforms for staying connected with my respondents. The request would be an introductory paragraph explaining why I chose you as my participant, a cover letter with detailed information about the research background, brief overview about research process, consent information statement addressing concerns like anonymity and the consent form itself. If no response is received in one week, then a follow-up email will be sent to the respective participants. If a response is still not forthcoming, then it will be assumed by the researcher that the participant is not interested to be a part of the study.

Introducing the research interest to design faculty and design professional's participants

Dear Respondent,

I am pursuing a Doctor of Management in Strategic Leadership at Thomas Jefferson University (USA). I am designing a framework to advance the understanding of different Indian design institutions. I have experience working at a national and international level in the design education for eight years. The last few years before I went on pursuing my research were challenging in terms of teaching design to students. What I learned and observed is that they

have a wide range of expectations from the design institutions and many were challenging the traditional curriculum we taught in the various courses/subjects. I believe your response will help me identify some of the important characteristics of design education based on your experience. Please find the enclosed invitation letter to participate in the study. Your responses will not be shared without your consent. Please sign below to participate in the research process.

Respondent Type: Design Faculty

Name: ……

Sign: ……..

Background to the research

Individuals who are willing to learn about design, or more specifically about what design does, very often start with the definition by Herbert Simon (1969) in his book *The sciences of artificial*. He writes that design "is concerned with how things ought to be-how they ought to be in order to attain goals and to function" (p.4). The most immediate common interpretation of this statement links the concept of design to that of a solution to problems and sees design approach as a problem solver, an agent for solving problems at all levels, starting from everyday life to those on a global scale (Ezio, 2015). We as designers try to do our best to solve a problem in a way that is unique to us and unconsciously start creating our own style in the process. And then comes a point we realize we ought to share this uniques style with as many people as we can. The journey continues…….

National Institute of Design (NID) created in the year 1961 on one such premise for providing a skill-based training that would aid small industries which in turn would help to eliminate the rapid deterioration of consumer goods during the industrial revolution (Eames, 1958). This training center eventually flourished and started providing education related to various academic design disciplines. For many years, NID continued to be the only stand-alone institution that offered design education. The institutions in India mainly fall under two broad categories: public and private. The fundamental difference is that public institutions are overseen by the government in some capacities, whereas private institutions function independently. Currently, there is an excellent momentum in India to enhance different professional sectors within the Indian economy.

In 2016, MHRD introduced National Institutional Ranking Framework (NIRF) for areas like engineering, management, pharmacy, and general degree colleges. In 2018 the ranking framework was extended to disciplines like law, medicines, and architecture. In India, the design schools either public or private were not included under NIRF, thereby leaving design students to make choices on their own on choosing one design institution against the other. India can open up a whole new professional sector by raising the caliber of design education, into which college graduates can move as they complete their education. As new roles are emerging in the design discipline at multi-national companies, and other professions have recognized the importance of the design discipline, it is necessary that India thinks about its higher design education sector. Taking a first step in recognizing the gap in the growing demand of designers navigating their places in the business world today. My guiding research questions are:

Which are the important criteria or factors a prospective design student should consider when evaluating an Indian design institute or program?

Research Approach

My methodology for the research project is design thinking which is a human-centered approach where I will collect data by distributing survey questions to the participants followed by interviews with some participants. The participants for the study are design faculty, design students and design professionals. Please feel free to ask me about my methodology process.

Research Questions for Interior Design Professionals

Section A-Demographic profile (all compulsory questions)

Sr. No	Survey Questions
1	Name
2	City where you studied Interior design
3	City of your current Workplace
4	Your educational qualification consists of: Interior designing, Architecture, or Both Architecture and Interior design
5	Please tick which applies to your current professional status: Self-Employed, Employee in a firm, Intern in a firm, Self-employed and studying, Employee and studying
6	In how many cities have you worked on a project: 1-3, 4-6, 7-9, 9 & above
7	What kind of projects do you or your firm take? Tick all that apply Residential (a private pace for a family), Commercial spaces (a space used by individuals for a wide variety of purposes)

Section B-Designers evaluate the state of Indian design education

Sr. No	Survey Questions
8	What distinguishes a good design education from a great one?
9	What factors do you think a prospective student should consider when evaluating various interior design education programs?
10	What do you consider the three most important criteria for evaluating Indian Design Institutions for interior design education?

11	What do you think the three most important criteria that a student should consider for choosing an Indian Design Institutions for interior design education?
12	Please identify three specific skills, theories, or design practices that you have come to realize were missing from your design education as a result of your experience working as a design professional.
13	Do you feel that collaboration between Indian design institutions and foreign design institutions benefits Indian design students as they prepare for their careers? Why or Why not?
14	What challenges are current Indian students most likely to face in their careers if Indian design education remains in its current state?

Appendix II IRB Approval

Jefferson
Philadelphia University + Thomas Jefferson University

East Falls Campus
Institutional Review Board
4201 Henry Avenue
Philadelphia, PA 19144
Email: irb@philau

28 October 2018

TO: Darshi Mody
FROM: Prof. R.M. Shain
RE: PU18 - 60

Dear Mr. Mody:

In accordance with the University's Institutional Review Board (IRB) policies and 45 CFR 46, the Federal Policy for the Protection of Human Subjects, I am pleased to inform you that the Philadelphia University IRB has approved your research protocol through its expedited review process.

Project Title: Understanding Indian design education from the stakeholder's perspective

In accordance with federal law, this approval is effective for one calendar year from the date of this letter. If your research extends beyond that date, you must notify the IRB. Please reference the IRB application number noted above in any future communications regarding this research.

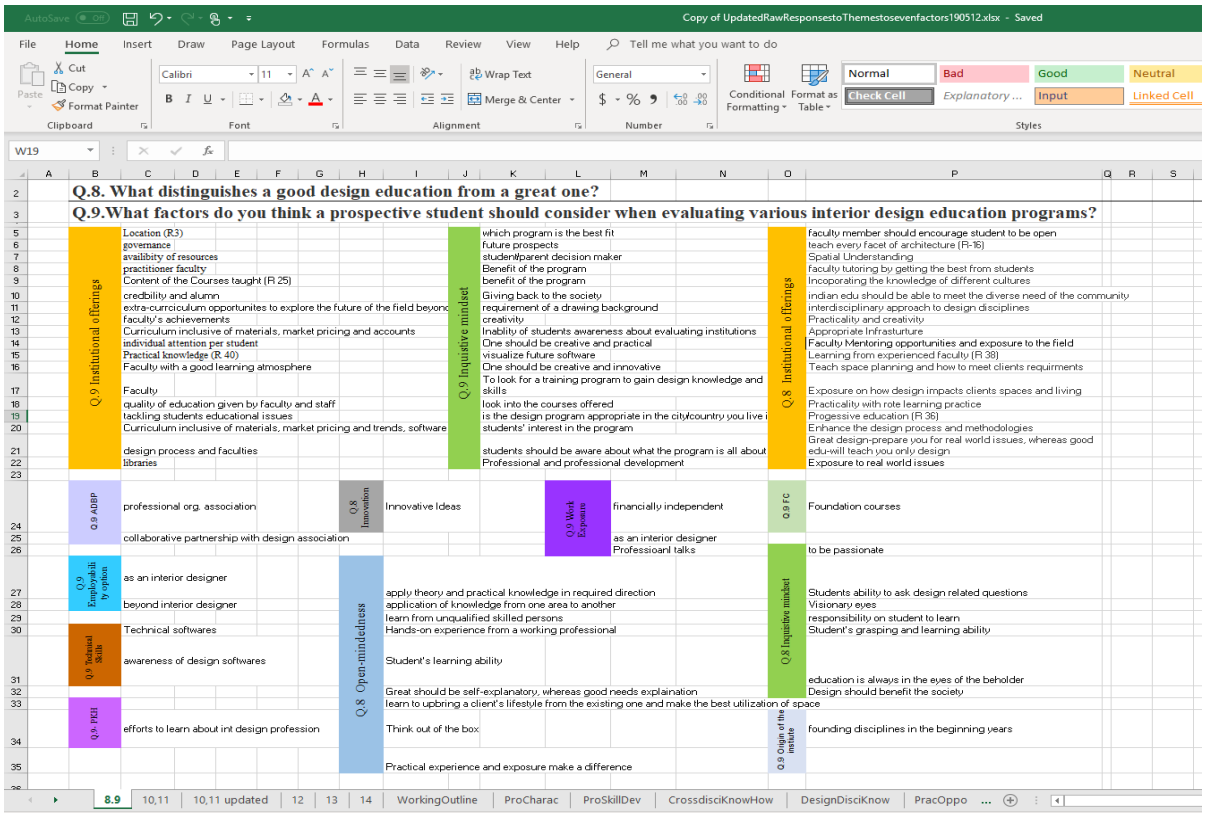
Good luck with your research.

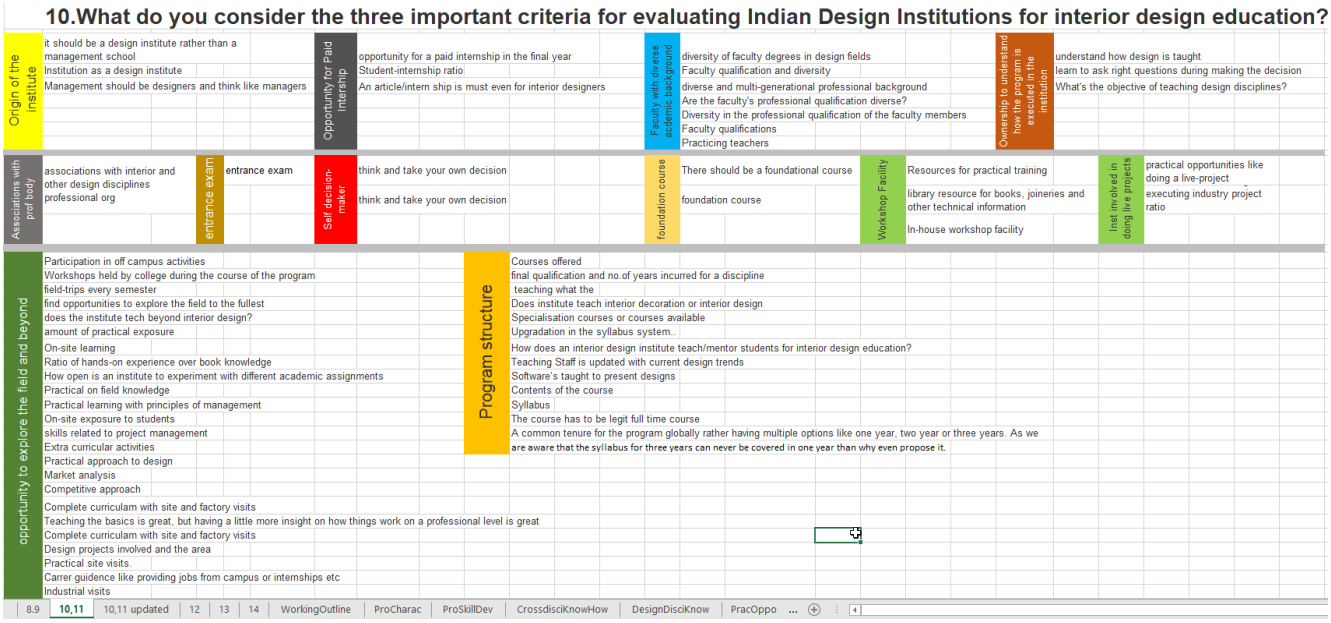
Sincerely,

R.M. Shain, Ph.D.
Chair/Administrator East Falls Campus IRB

Appendix III Thematic diagrams

The colored tabs are the themes corresponding to the respective responses

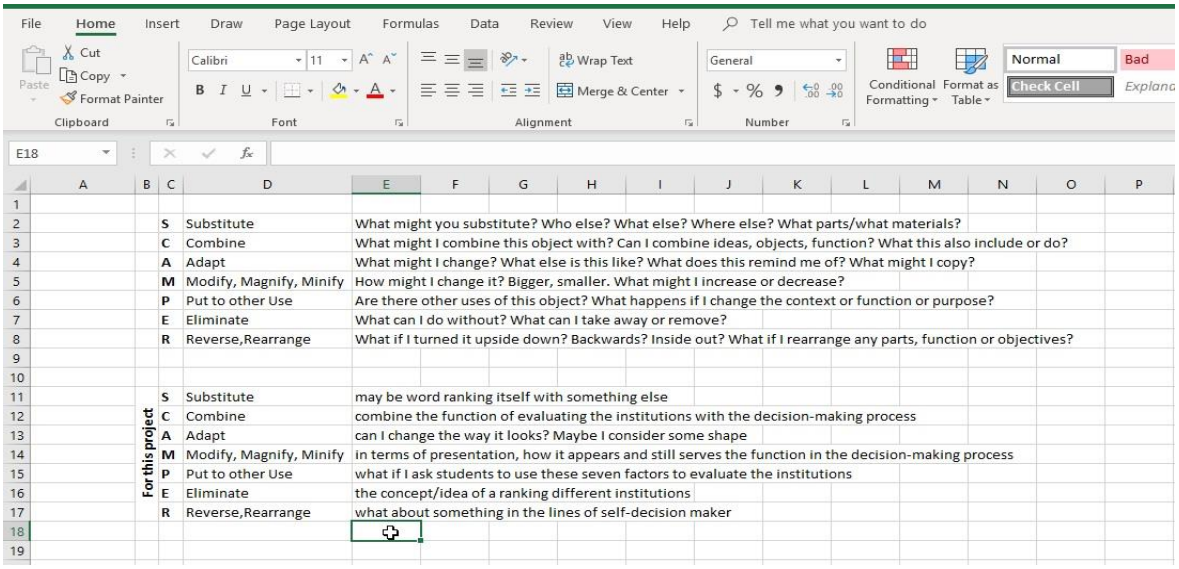




Appendix IV: Journey map for a prospective interior design student

Row	B	C	D	F	I	J	N
2			prospective student				
3			incase if I create a ranking framework				
4			Case I		Case II		
5		Step 1	visits a school		Step 1	visits a school	
7		Step 2	asks questions around the seven factors		Step 2	asks questions around the seven factors	
8			e.g. say one institute will issue six month certificate			e.g. say it's a private school and guarante	
9			another will give two year diploma			employability after completion of the program	
10						another institution is a public institution and cannot	
11		Step 3	how can he measure the value of certification			guarantee job after completion of the progam	
12			with that of a diploma?				
13					Step 3	how can a student learn what is critical	
14		Step 4	how will a student learn the difference			for him between job placement and earning a	
15			between what is offered at certificate level			certificate from a public institution?	
16			and what's offered at diploma level?				
20	**Program characteristics**		**Professional skill development**		**Cross-design disciplinary know-how**		**Design Discipline knowledge**
22	Inquistive mindset		Associations with design professionals' bodies		Open-mindedness		Market awareness
23	Institutional offerings		Communication Skills		professional know-how		Design Thinking
24	origin of institution		Research skills		Opportunity to explore the field and beyond		Innovation and Creativity
25	Foundation course		Rapid Sketching Skills		Critical Thinking		workplace exposure
26	Students feedback		Core Competencies				
27	Campus Location		Project Management Skills				
28	students academic qualification		time-management skill				
29	Tution		Innovation				
30	Recruitment opportunities		Creativity				
31	Entrance exam		Perspective Sketching				
32	Onus of taking the decision						
34	**Faculty academic and professional qualifications**			**Practice opportunities**	**Workshop and Technical resources (2 themes)**		
36	Diverse faculty member			Employability options	Workshop Facility		
37	Faculty Academic Diversity			Opportunity for Paid Internship	Technical Skills		
38	Faculty academic knowledge						
39	Faculty professional diversity						

Appendix IV-SCAMPER a creative brainstorming technique



	S	Substitute	What might you substitute? Who else? What else? Where else? What parts/what materials?
	C	Combine	What might I combine this object with? Can I combine ideas, objects, function? What this also include or do?
	A	Adapt	What might I change? What else is this like? What does this remind me of? What might I copy?
	M	Modify, Magnify, Minify	How might I change it? Bigger, smaller. What might I increase or decrease?
	P	Put to other Use	Are there other uses of this object? What happens if I change the context or function or purpose?
	E	Eliminate	What can I do without? What can I take away or remove?
	R	Reverse,Rearrange	What if I turned it upside down? Backwards? Inside out? What if I rearrange any parts, function or objectives?
For this project	S	Substitute	may be word ranking itself with something else
	C	Combine	combine the function of evaluating the institutions with the decision-making process
	A	Adapt	can I change the way it looks? Maybe I consider some shape
	M	Modify, Magnify, Minify	in terms of presentation, how it appears and still serves the function in the decision-making process
	P	Put to other Use	what if I ask students to use these seven factors to evaluate the institutions
	E	Eliminate	the concept/idea of a ranking different institutions
	R	Reverse,Rearrange	what about something in the lines of self-decision maker

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