UNIVERSITY OF BAHRAIN

College of Engineering

Department of
Architecture & Interior Design

Designing for Human Behaviour: Towards a More Appropriate Design Process

A Thesis Submitted in Partial Fulfilment of the Requirements for the
M.Sc. Degree in Architecture - Interior Design

Submitted by

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20143224

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Assistant Professor

University of Bahrain

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ملخص

تُعدّ تجربة المستخدم جانبًا حيويًا في التصميم الداخلي، مما يُبرز أهمية تصميم مساحات تتوافق مع احتياجات المستخدمين وتفضيلاتهم (شارما ودهانوانتري، ٢٠١٧). ومع ذلك، لا تتوفر حاليًا سوى أدوات قليلة لتعزيز رضا المستخدم وفعاليته في هذا المجال. يسعى هذا البحث إلى دراسة مزايا استخدام خرائط رحلة المستخدم كأدوات تحليلية في عملية التصميم، بهدف تعميق فهم المستخدمين لدى مصممي الديكور الداخلي. وتبحث الدراسة في كيفية مساهمة خرائط رحلة المستخدم في تحسين فهم تجربة المستخدم في التصميم الداخلي من خلال استكشاف العلاقات بين المفاهيم ذات الصلة.

سيتم استخدام منهجية نوعية، تبدأ بمناقشات جماعية مُركزة تضم ممارسين لتقييم مدى إلمامهم بتصميم تجربة المستخدم. بالإضافة إلى ذلك، سيتم تحليل خرائط رحلة المستخدم التي طورها طلاب السنة النهائية في قسم التصميم الداخلي بجامعة البحرين. وستُقيّم المقابلات مع أربعة مُدرّسين في التصميم الداخلي فوائد دمج خرائط رحلة المستخدم في سير عمل التصميم. كما سيتم تقديم استراتيجيات فعّالة لهذه المجموعة من الممارسين لتطبيق خرائط رحلة المستخدم في ممارساتهم. من خلال الجمع بين هذه المنهجيات، تهدف الدراسة إلى التحقق من فعالية خرائط رحلة المستخدم كأدوات أساسية لتعزيز رضا المستخدم وفعاليته في التصميم الداخلي، مما يعود بالنفع في نهاية المطاف على الطلاب والمعلمين والممارسين على حد سواء.

الكلمات المفتاحية :

خريطة رحلة المستخدم؛ تصميم تجربة المستخدم التصميم الداخلي؛ المنهجية؛ وجهات نظر المستخدم؛ الطلاب؛ المجموعات المنفصلة؛ الممارسون؛ المقابلات؛ المدربون؛ الفهم؛ عملية التصميم؛ التوقعات؛ الاحتياجات؛ المشاعر؛ الصورة التوضيحية؛ التأثير؛ عناصر التصميم الداخلي؛ نتائج التصميم.

Abstract

User experience is a vital aspect of interior design, highlighting the significance of crafting spaces that align with users' needs and preferences (Sharma & Dhanwantri, 2017). However, currently there are few tools available to enhance user satisfaction and functionality in this domain. This research seeks to investigate the advantages of utilizing journey maps as analytical tools in the design process, aiming to cultivate a deeper understanding of users among interior designers. The study examines how user journey maps can improve the understanding of user experience within interior design by exploring the relationships between relevant concepts.

A qualitative methodology will be employed, beginning with focused group discussions involving practitioners to gauge their familiarity with user experience design. Additionally, user journey maps developed by final-year interior design students at the University of Bahrain will be analysed. Interviews with four interior design instructors will further assess the benefits of integrating journey maps into the design workflow. The same group of practitioners will also be presented with effective strategies for implementing user journey maps into their practices. By combining these methodologies, the study aims to validate the effectiveness of user journey maps as essential tools for enhancing user satisfaction and functionality in interior design, ultimately benefiting students, educators, and practitioners alike.

Keywords: User Journey Map; User Experience Design (UXD); Interior Design; Systematic; User Perspectives; Students; Focused Group; Practitioners; Interviews; Instructors; Understanding; Design Process;

Expectations; Needs; Emotions; Pictogram; Impact; Interior Design Elements; Design Outcomes.

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Finally, I dedicate this thesis to my father and my future children, whose presence in my life continually inspires me to strive for excellence.

Chapter One: Introduction

1. The Background of the Study

Interior design aspires to assemble a space that improves people's everyday lives and fulfils their needs. On the other hand, interior space design problems are complex and demand a systematic process. Analysing spatial development from the perspective of user experience-based design techniques and user engagement is challenging (Boess & Kanis, 2008).

As UXD of interior environments, designers need to understand the user from different angles for successful UXD. Design Thinking (DT) is important because it helps to integrate the UXD process within the design process, enabling designers to experiment with appropriate methods and tools, adapt them, inquire properly, create meaningful solutions, and leave the user with a solution that has been a seamless experience with them (Mattelmäki & Battarbee, 2002).

The user journey map tool is selected for interior designers because it helps designers understand users everywhere in the project. The Design Thinking process can facilitate better stakeholder communication and help refine designs through early-stage revisions or modifications (Budikusuma, 2023). User journey maps focus on the users' experience and point of view, although they are primarily based on the average user (Crosier & Handford, 2012).

In the field of UX design, service providers, design agencies, and consulting iteratively apply user experience design tools (Trischler & Zehrer, 2012). However, user journey maps have not yet been fully adjusted to focus

on the user experience in interior spaces. This research examines the potential of a user journey map as a tool to help raise awareness of user experience among interior designers.

1.1 Research Problem and Research Focus

1.1.1. Research Problem

User experience is a crucial consideration in interior design, as it is inherent in our nature to create spaces that reflect users' needs and preferences (Sharma & Dhanwantri, 2017). However, currently there are limited tools or methods available to guide enhancements of user satisfaction and functionality in this field.

This research aims to explore and validate the benefits of using journey maps as a tool in the design process to foster a deeper understanding of users for interior designers. Ultimately, this approach is expected to elevate the quality of design, ensuring it meets users' needs and contributes to a richer user experience.

1.1.2. Research Focus

This research investigates the impact of user journey maps on enhancing the understanding of user experience within the field of interior design. The literature review will examine the interconnections between the relevant concepts and assess user journey maps as analytical tools that enhance our understanding of users. This understanding is instrumental in facilitating improved functionality and overall experiences in interior design.

Qualitative methods will be employed to examine the advantages of integrating user journey maps into the design process. The initial phase will involve a focused group discussion with four practitioners to evaluate their familiarity with user experience design. Additionally, researchers will analyse user journey maps created by final-year interior design students at the University of Bahrain, utilizing the mapping techniques developed by the students. Interviews will also be conducted with four interior design instructors to assess the benefits of incorporating user journey maps into the design workflow. Finally, the same group of practitioners will be presented with effective strategies for integrating user journey maps into their design practices.

Combining these methodologies will validate the efficacy of user journey maps as invaluable tools for enhancing user satisfaction and functionality in interior design, benefiting students, educators, and practitioners alike..

1.1. Research Question

- How embedding the user journey map in the design process can improve user satisfaction and functionality in interior spaces?

1.2. Aim

Exploring the effectiveness of using a user journey map to improve the understanding of UXD for interior designers.

1.3. Research Objectives

The present research endeavours to achieve two main objectives:

1. Demonstrate the correlation between user experience design and interior design spaces while exploring various user design tools.
2. Explore the benefits of using a user journey map as a tool to enhance the understanding of user experience within interior design spaces.

1.5. Scope of the Research

This research will focus on investigating the benefits of incorporating user journey maps into the interior design process. The study will be conducted through several qualitative methodologies to ensure a comprehensive understanding of user experience design.

Initially, a focused group discussion will involve four professionals in the field to assess their existing knowledge and perspectives on user experience design. Subsequently, the research will analyse user journey maps created by final-year interior design students at the University of Bahrain, utilizing the mapping techniques developed by these students.

Furthermore, interviews will be conducted with four interior design instructors to evaluate the potential advantages of integrating user journey maps into the overall design workflow. These instructors will provide insights into their experiences and the impact of user journey mapping on the design process.

Finally, the same group of professionals will receive strategies for effectively incorporating user journey maps into their design practices. By

combining these methodologies, the research aims to confirm the effectiveness of user journey maps as essential tools for enhancing user satisfaction and functionality in interior design. The findings will ultimately benefit students, educators, and industry professionals, fostering a better understanding of users.

1.6. Thesis Outline

The research is distributed in five chapters.

Chapter Two: Literature Review

- Provides an overview of the connection between user experience design and interior design.
- Compares several UXD tools.

Chapter Three: Methodology

- Outlines three research methods.
- Focuses group with practitioners
- The impact of user journey maps on interior design students' process.
- Interviews with instructors are conducted on the benefits of the user journey map as a tool.

Chapter Four: Analysis

- Analysis of the research results.
- Evaluates user journey maps as a tool for improving the understanding of user experience among interior designers.
- Provides discussions, further recommendations, and future research.

Chapter Five: Conclusion

- Wraps up the argument.

1.7. Research Phases

The research consists of two phases, which provide a more in-depth view of user experience design in interior design.

Phase one: Discussing the connection between user experience design and interior design, the first phase addresses the awareness of user experience design techniques (i.e., user journey maps) among interior designers.

Phase two: Elaborates on how user journey maps benefit the user experience in interior design. This research aims to use user journey maps to validate that they are a beneficial tool in interior design.

In unison, these phases highlight the knowledge gap of how to correctly utilize user journey maps to illuminate a better grasp of user experience in the interior space. This will inform the methodology employed for the research and demonstrate the steps taken to fill the gap. It will be executed in two stages.

1.7.1. In Phase One: Literature Review, we demonstrate the correlation between user experience design and interior design spaces while examining various user design tools

In this phase, explained in chapter two, the relationship between UXD and interior design, gaps, and problem framing are investigated.

We reviewed existing literature on the definition of UXD in the interior environments' domain, its history and significance, and how it could fulfil the

domain. Explores the origin, its importance, and stages as a process for UX interior designers through the concept of the User Journey Map as a tool.

This research introduces this tool to the literature, describes its essential components, and indicates the possible advantages for designers. It fills an apparent gap in knowledge between designing for human behaviour and the UXD.

1.7.2. In Phase Two: We explore the benefits of using a user journey map as a tool to enhance the understanding of user experience within interior design spaces

Chapter Four of this study explores user journey maps and how they help designers better understand users to improve design outcomes.

Given that many interior designers are not used to working with user experience design tools, this chapter explores how the user journey map should be validated by knowledgeable user experience designers to inform user insights.

The data findings demonstrate the advantages of applying the user experience principles to interior architecture, connecting gaps found in previous stages of research, and honing the design problem-solving approach.

1.7.3. Connection Between Phases One and Two

The research is based on User Experience Design (UXD), its historical context, importance, and influence on the interior and the concept/process of Design Thinking. One of the major findings is that there is limited knowledge and proof related to the advantages of UXD tools, specifically user journey maps, for improving user experience in internal environments.

In the following stage, user research will be conducted into the benefits of using user journey maps to understand user experience in interior design. These two steps are interconnected; the first is to understand UXD, and the second is to understand the usefulness of user journey maps.

1.7.4. Problem Development Through Phases

The first phase emphasizes the poor reputation of interior design tools, such as user journey maps.

Phase Two: Show Interior Designers the Value of User Journey Maps.

Phase two focused on providing user journey maps to interior designers, highlighting their benefits, how they help to understand what users need, and how to create experiences based on research trends.

In response to the challenges identified, user journey maps were employed in a study of final-year interior design students, and four educators reflected on their experiences, which helped validate user journey maps in this approach.

According to Gangadharan (2019), a good user experience is very important for knowing the needs and loyalty of users. Roger focuses on recognizing user experiences and communications (Decety & Jackson, 2004).

Chapter four examines the importance of mapping user journeys in interior design, reviews existing literature and gaps in knowledge, and highlights future discussions concerning the issue.

1.8. Research Contribution

This research contributes significantly by offering interior designers' valuable methods for improving their understanding of user experience design.

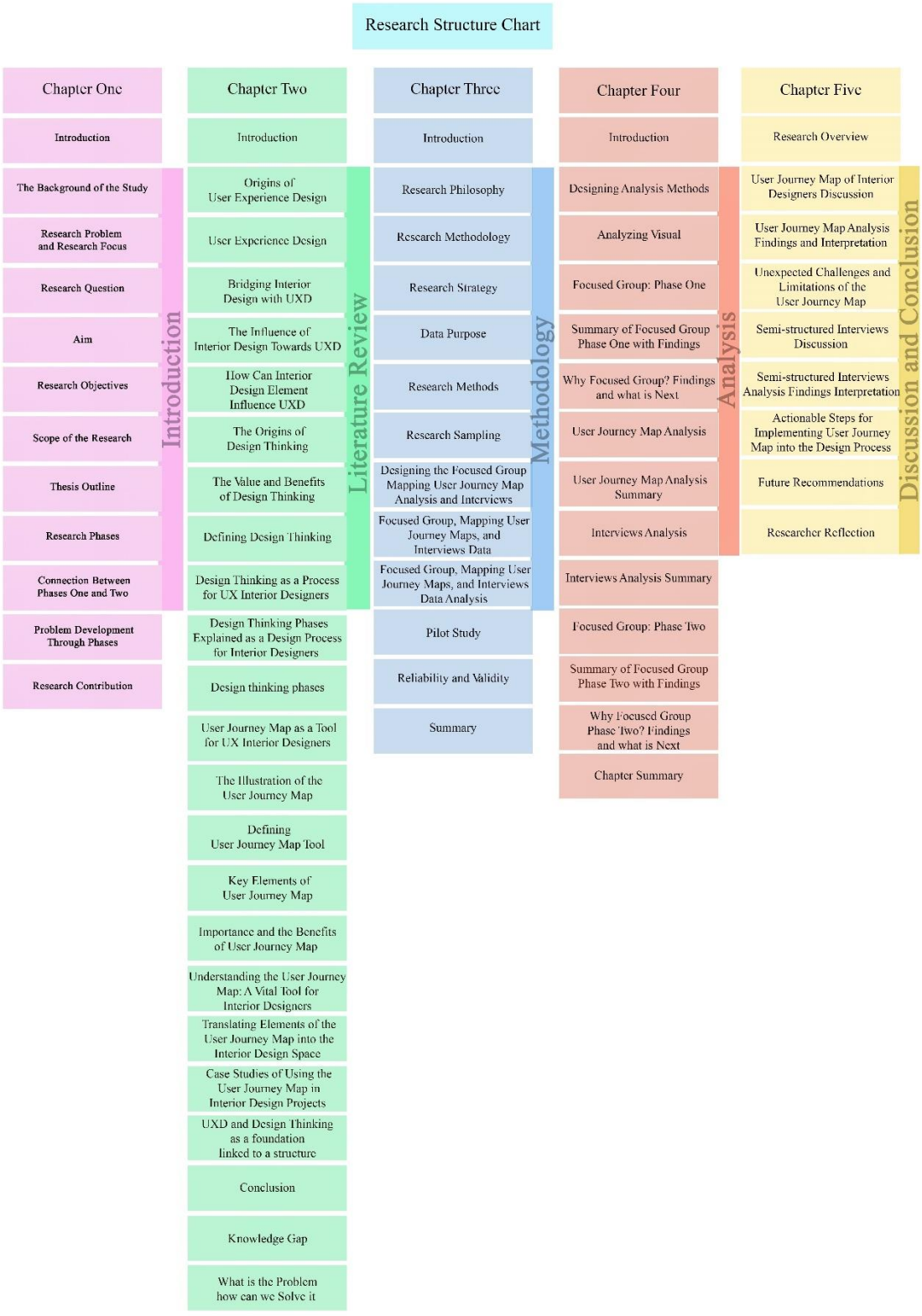


Fig 1.1: Research structure chart

Chapter Two: Literature Review

2. Introduction

In interior design, continually improving design processes is key to achieving embodiment, with human behaviour as a central consideration. As technology evolves, design processes must adapt accordingly.

Embodiment of human behaviour is a key theme in interior design, which is the continuous evolution of better design processes. With technological progress, it is essential for the design process to adapt.

The literature review provides an outline of User Experience Design (UXD) 's place in interior design. It then discusses how Design Thinking and the User Journey map can facilitate improved UXD for designers.

As Sasaki and Ravasi (2024) pointed out, once you are familiar with a field's past, many possibilities for design decisions open up. For instance, Canfield (2011) argues that UXD is less of a process and more of an understanding of your users. They are trained Design Thinking to solve wicked design problems with users at the centre of the frame (T. Kelley & D. Kelley, 2013).

Fassi, Galluzzo, and De Rosa (2018) stress the importance of tools that improve designers' understanding of their users, especially User Journey Maps, which became a key tool for understanding user experience and emotion (Budikusuma, 2023) and help in reducing design iteration and communicate design to stakeholders.

Lastly, it is important to note the difference between User Experience (UX) and User Experience Design (UXD). UXD deals with many things, including environments and products that aim to improve user experiences (Yamazaki & Furuta, 2007). UX is for human-computer interactions.

2.1. Origins of User Experience Design (UXD)

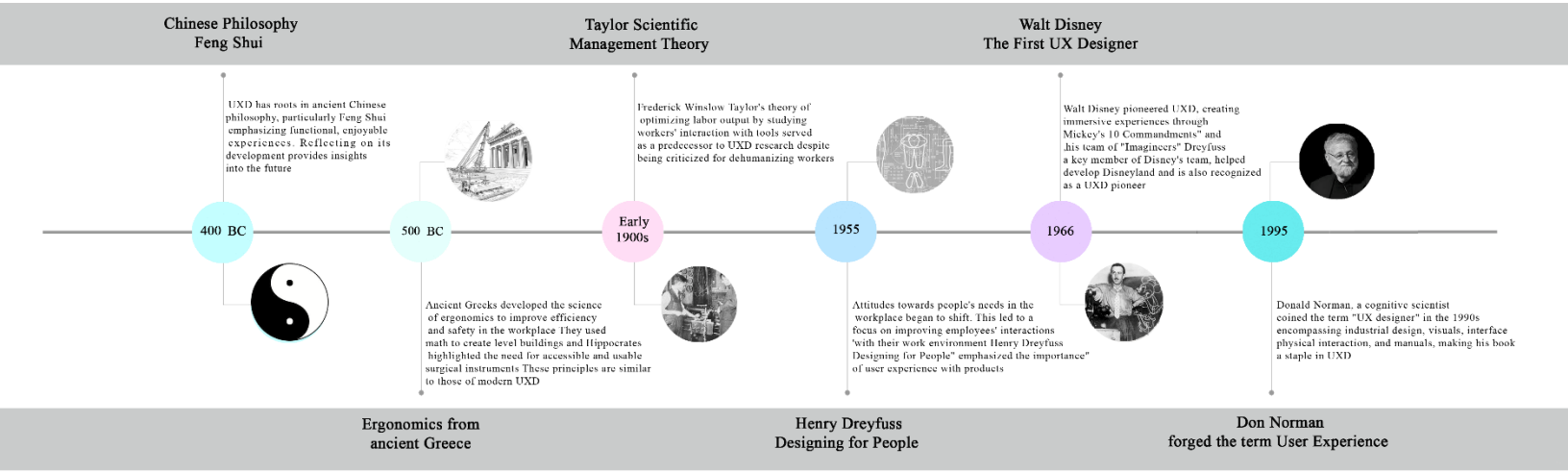


Fig 2.1: Origins of User Experience Design

Understanding the historical basis of a topic is very important because it gives you the central information to better understand it. Sasaki and Ravasi encourage recognizing a subject's history, as its past can fuel creativity for its continued future direction (Sasaki & Ravasi, 2024).

From the standpoint of user experience design (UXD), knowledge concerning the subject matter's historical background is crucial in acquiring insight into the field. To start, we will discuss the history of user experience design (UXD).

This marathon narrative will start with an introduction to Chinese philosophy and Ergonomics in ancient Greece, then take them through Taylor's Scientific Management Theory, then two decades of Henry Dreyfuss smoking out design for that hairy soup known as people, and end with a word on the term "User Experience" coined by Don Norman. Yet Fig 2. 1 takes the reader on a summary journey of the history and origins of user experience design.

a. Chinese Philosophy “Feng Shui” 400 BC

Examining key moments in the history of UXD can help inform the future of this evolving discipline. For example, history dates user experience from 400 BC to ancient Chinese philosophy.

If we trace its history, the user experience design (UXD) concept can be related to ancient Chinese feng shui. The purpose of Feng Shui is to maintain harmony between man and nature. It focuses on a functional, usable, enjoyable experience that adds value to people's lives, enabled by innovative design solutions (Erdogan, 2014).

b. Ergonomics from ancient Greece 500 BC

Then, after the Feng Shui practice came to Ergonomics from ancient Greece, the science of designing a workplace or equipment to maximize efficiency and safety, also known as ergonomics, dating back to ancient Greece, where the concept was known as "ergon". According to Russell (2004), The Greeks used intricate mathematics to create the illusion that their buildings were level and straight by adding small curves.

They drew inspiration from their highly developed religion, art, culture, and medicine to improve their civilization, resulting in significant global

transformations (Russell, 2004). Hippocrates, a Greek physician, described the perfect setting for a surgeon, highlighting the need for easily accessible and usable instruments to improve surgical outcomes. This need for usability and facilitation of activities is similar to that of UX designers, who aim to satisfy users in all areas (Marmaras et al., 1999).

c. Taylor Scientific Management Theory: Early 1900s

However, over the next few decades, Frederick Winslow Taylor, a mechanical engineer who would later publish "The Principles of Scientific Management" in 1911, put forth a theory that concentrated on maximising labour output by analysing how workers used their tools in their everyday lives. While Taylor's conclusions were harshly criticised at the time for dehumanising workers, Taylor's research established the groundwork for UXD research and was a predecessor (Taylor, 1911).

d. Henry Dreyfuss: Designing for People, 1955

In 1955, it all began to change when attitudes about the importance of people's needs in the workplace began to evolve. This shift resulted in a higher focus on improving employees' interactions with their work environment. In this period, Henry Dreyfuss wrote "Designing for People" (Dreyfuss, 1959), emphasising user experience with products.

e. Walt Disney: The First UX Designer, 1966

Walt Disney has been recognised as a pioneer of UXD, primarily due to the work of Dreyfuss, who worked for the company for ten years. Disney's futurist vision aimed to use advanced technology to create immersive and seamless societal experiences. Disneyland in Anaheim, California, was one of

the results of this vision, where Disney envisioned creating a fully immersive theme park experience.

He referred to his team members as "Imagineers" and developed "Mickey's 10 Commandments," a set of guidelines that emphasised user experience design principles. Dreyfuss, who had worked for Disney for a decade, was instrumental in developing Disneyland and is recognised as a pioneer of UXD. Disney's futurist vision aimed to leverage advanced technology to create immersive and seamless experiences for society, culminating in the creation of Disney World (2013).

f. Don Norman forged the term User Experience, in 1995

In the 1990s, a cognitive scientist called Donald Norman made history when he became the User Experience Architect at Apple — and, thus, the first person to hold the position of UX Designer. As Lallemand et al. (2015) point out, the phrase "user experience design" was added to "human interface and usability" in 1993 when Norman indeed constructed the expression to cover each part of the user experience with a device, like its industrial and visual (or graphic) parts, human-computer interaction, physical interaction, and the intangible aspects of a device, for example, it dictates or guides.

Norman's best-selling book, The Psychology of Everyday Things, later retitled The Design of Everyday Things, quickly became the bible of UXD, telling us everything we needed to know about design (Norman, 2013).

By tracing the trajectory of user experience design (UXD) along with the emergence of design principles, we discover in hindsight how we can enhance user experience to make the designs feel second nature and engaging. The study of environment and humanity (about 400 B.C.), ancient Chinese

philosophy, is the closest to a holistic understanding possible and was the basis for the UCD's hypotheses presented in your studies.

Potential: Studying the historical dimensions of UXD could give designers a lens through which to view the field and its evolution, as well as opportunities for experimentation and pushing boundaries. Thus, designers could be equipped with knowledge that can be used to generate new ideas.

The subsequent section will explore the origins of user experience design in-depth and present a comprehensive history of UXD, providing extensive knowledge about the subject.

2.1.1. User Experience Design (UXD)

Lallemand et al. User Experience Design (UXD) began to emerge in the 1990s in the domain of human-computer interaction (HCI) (Lindgaard et al., 2015). It is primarily about enhancing the usability, desirability, and accessibility of digital products by observing how users feel as they interact.

According to Norman et al. (1995) and Hassenzahl and Tractinsky (2006), which deal with the interaction between the interface and usability of applications in user experience design approaches yet, the International Standards Organization (ISO) (2010) differentiates UXD as the mental state and physical behaviour of users during an interaction with an object or an element, so the focus is on people's psychological and physical behaviour in response to design features like functionality, presentation, brand identity, usability, and personal objectives.

According to Kuniavsky (2011), UXD is everything an end-user thinks while interacting with an object or product, identifying whether he or she is

pleased with the service or the elements generated. To arrive at a similar definition, Garrett (2011) defines UXD as the experience an element provides to the people in a particular context interacting with it in the real world. UXD is a comprehensive, multidisciplinary way to attend to all user interfaces that define a product.

According to Gabriel-Petit (2006), in the "User Experience Design Matters", which is a mainstream trade publication, this is about "Defining the form, function, and content of the product". While interface design and product design are concerned with detailing a single thing in the world, Benyon takes the interaction design literature to task for ignoring the interactions between one object and another. Forlizzi and Battarbee (2004) summarize the experiences of interactions with people and objects and the experiences created from these interactions. Though Forlizzi (2007) is concerned with product environments, she emphasizes user engagement. The Interaction Conceptual Framework by Beaudouin-Lafon (2000), however, looks for a set of principles to guide the design of interfaces.

We are increasingly examining interactive installations related to experience-oriented design (Dalsgård & Halskov, 2006; Dalsgård, Halskov, & Wiethoff, 2016; Falck & Halskov, 2013). The paradigm proposed by Jung and Stolterman (2012) has an artefact focus for interaction design. Kaye et al. (2011) argue that UXD is periodically perceived as the 'first stop' of product development in that it helps outline relevant concepts and limits unnecessary stresses during development. They highlight the regulation of high-value UXD in research and industry, citing Google design. The authors contend that great industrial design resides somewhere at the intersection of want and the capacity to deliver world-class products that perform.

Additionally, at a more fundamental level, they need a broader comprehension of what comes under the umbrella of UXD and open up participation in the design process. The authors note a divide between academic concepts of UXD and the commercial nature of merchandising through positive experiences. They promote creating experiences that are extremely meaningful and engaging but mindful of the price aspect (Kaye et al., 2011).

There has been a rising interest in UXD within industrial product and service innovation over the last couple of years, and academic researchers have adopted this in their studies. For example, Kaasinen et al. (2015) define UXD as the conduct of utilizing platforms, services, or products in an occupational environment and how this understanding impacts the users' presentation to others. Mahut et al. (2017a; 2017b) describe UXD as a possible determinant of behaviour and context, an outcome of artefact and user factors. UXD is a multi-faceted process requiring an individual's perception of cognitive, expressive, and physiological responses.

Multiple frameworks have been proposed for delineating a value-driven UXD (e.g., Pucillo & Cascini, 2014). However, Garrett (2002) interprets UXD as a relation between users and the objects produced from these interactions. When it comes to the phrase "user experience design", however, there is no industry-wide agreement on the meaning. Nevertheless, it generally refers to how people use products and has ramifications for multiple disciplines, such as human-computer interaction (Park et al., 2013).

A UXD has various knowledge and skills to meet the design requirements and enhance the user experience. The emergence of UXD affects interior design; designers must watch users in and after the design phase to

enrich their experiences. One of the fundamentals of interior design is understanding user experience design (UXD). It serves as a solid framework for deeper learning and growth in the field, pinpointing opportunities where thoughtful design can improve usability.

The researcher has studied User Experience Design (UXD) extensively and clearly understands what it means to think about user behaviour in context to their surroundings and how to design spaces accordingly. The subsequent literature review will endeavour to bridge the connection between interior design and UXD.

2.1.2. Bridging Interior Design with UXD

Interior design is a holistic practice that assembles environments that fulfils people's needs and enhances their daily lives. It addresses challenges and unites spaces to offer a coherent solution. These are essential process elements, as presented in "The Basics of Interior Design" (Dodsworth, 2009).

Combining modern user experience-centred design methodologies with interior design has led to an association between user experience design (UXD) and user engagement in spatial design development (Boess & Kanis, 2008). Studies and initiatives have been established to facilitate the importance of UXD in enhancing the user experience in interior spaces (Vermeeren et al., 2016; Thüring & Mahlke, 2007), and a call has been made for researchers to broaden the significance of UXD in the interior space.

- The Emotional Component of Design

The emotional aspect is the key to the success of project interior space design. Product design often needs to consider leisure (Jordan, 2002).

According to Norman (2004), emotions are another key element that plays an essential role in determining user satisfaction and designing applications.

To elicit positive feelings, users build interactive products with utilitarian and behavioural aspects in mind (Norman, 2004; Hassenzahl, 2007). Hence, a comprehension of the complex nature of putting interior designers into users' shoes has invigorated them for a successful UXD approach to inner spaces (Decety & Jackson, 2004; Decety & Moriguchi, 2007; Roger, 2013).

Moreover, environmental dimensions, such as interior design setup, significantly influence user perceptions, decisions, and behaviours (Thüring & Mahlke, 2007). Scholarship and practice in the design space can benefit from appreciating how User Experience responds to physical contexts (Scott-Webber, Abraham, & Marini, 2000). This information becomes particularly useful when integrating a successful UXD into inside spaces.

- Aligning Design with User Experience

In 1997, Scott-Webber, Abraham, and Marini (2000) studied the alignment between the instructor, participants, and the environment based on the participant's ambient interaction paradigm. They identified four vital parts: context, purpose, cognitive responses, and responses.

Environmental settings and proxemic zones play a critical role in shaping individuals' quotidian lives. This information can also be explored further to understand the dynamics of user experience in physical contexts and provide scholars and practitioners in the design domain with a constructive guide.

To successfully implement a strong UXD approach in interior spaces, it is important to understand the complexity of placing interior designers in the user experience position. It has been demonstrated that empathizing is important in many fields of research (e.g., literature, cognitive science, psychiatry, psychotherapy, health psychology, biology) (Decety & Jackson, 2004). The identification of the Reflection Neurons Network has established a neurological basis for the ability of humans to understand the intentions and behaviours of other humans, influencing a bio-psychosocial approach to studies of empathy by allowing the exploration of design issues from the perspective of the user of design (Decety & Moriguchi, 2007).

- Empathy in User Experience Design

Empathy and understanding of users were techniques outlined in Carl Rogers's studies from 1959. These were defined as a way to understand the interior context, which includes emotional components and results. In UXD, it is crucial to investigate complex points to make the experience pleasant in the context of interior design (Roger, 2013).

Roger's person-centred approach is founded on knowledge of how users are engaged with design issues at a deeper level and how the user perceives another person's experience during the present interaction and encourages them to communicate with each other.

- Mechanisms of Empathy

Empathy mechanism: Empathy, according to the literature (Decety & Jackson, 2004), involves the predominant elements:

1. Behavioural empathy - The capacity to fathom another's position or psychological state while being an observer of the feelings and thoughts of others.
2. Emotional empathy - Includes being subject to and expressing another person's social or arousal condition and the capacity to respond with a suitable feeling.

Past research emphasizes the importance of putting oneself in one's users' shoes to design an appealing surrounding and provide a better experience of people's lives, on the most relevant end of the spectrum.

- Empathetic Interaction

This empathetic linkage balances introspection and extraversion as its framing, transcending our self-interested wants to include users' lived experiences and perspectives (Krznaric, 2015). This persistent connection allows participants to share social contact with each other and react to one another, highlighting the second element of compassion we defined in this book: empathetic interaction. Education regarding listening attentively to others' stories and offering constructive feedback while refraining from opinions of judgment is an essential part of empathetic exchange (Rogers, 1959).

Emotional design matters, especially for designers moving from rational and practical stylings to the personal and individual, as it argues that there is beauty in the experience rather than the situation. Understanding the needs of people both inside and out is critical for designing UX, and empathy has long been considered an essential quality of designers involved in UXD

(Mattelmäki & Battarbee, 2002), especially for interior designers who work on design challenges aimed at improving UX.

To do this, they need reasonable ethnographic research on the global consumer and user. To attend to users' voices, it is essential to interact with them individually. The lifeblood of an organization is its interactions with its users, how it understands the range of experiences its users have, and what they should expect from each touchpoint. It necessitates multiple approaches and measures that might help build a comprehensive and empathetic understanding of the users: collecting information, how users interact with a specific object (in most cases, the interior context), various pain points, and what course of action we can think of for improving the UXD.

Nonetheless, we also must understand the emotional and bodily senses, as much a part of our experience as the cognitive, intellectual, or rational. Experience is the active exchange between people and the environment or the constantly shifting texture of relationships. It connects interior design with User Experience Design (UXD), which is crucial for understanding users and enhancing their experience in domestic settings. As mentioned before, empathy and engagement with the consumer during the design process are the two main factors. Interior designers must understand users' emotional and physical needs in depth to provide optimal design solutions. We will then examine, in detail, how interior design can influence UXD.

2.1.3. The Influence of Interior Design Towards UXD

According to Gifford (2007), environmental psychology is the scientific study of people and their relationship with their physical environment. According to Wapner and Demick (2002), the concept of the

environment refers to a complex system composed of individuals with different physical, cognitive, and cultural characteristics and both physical and social components.

When designing for comfort, anthropometric data, materials, and shapes must be considered. According to Smardzewski in his book "Furniture Design" (2015), the anthropo-technical design (design for man) problem is described, and there are suggested designs for furniture in terms of dimensions and safety requirements. Ergonomic principles for the design of educational equipment that emphasize adaptability and anthropometry compatibility and satisfaction have been established (Oyewole, Haight, & Freivalds, 2010). Ohlendorf et al. (2018) explore the impact of ergonomic design on singers' seats regarding a resting position, static pressure to the bottom, and relaxation.

The Principle of Universal Design by Connell et al. 1997, guides designers and architects to create spaces that give users with differing abilities access, creating a more inclusive user experience.

Each physical place has environmental considerations, including light, sound, temperature, climate, and air quality. Thus, the success of the user experience is dependent on the alignment between the environment and the tasks the user is performing. A study by Stanton and Hedge in 2004 shows that while the human body can adapt to a broad range of external conditions, there are limits to the conditions within which we can function effectively, and moving outside those conditions' damages productivity and well-being.

Therefore, the environment needs to be designed for comfort, efficiency, and health, especially for the physical aspects of the interior environment. For example, the materials used in walls, floors, and ceilings

determine a room's acoustics; window positioning affects lighting; and the location of a building and the insulation level will influence parameters of convective heat.

According to Da Graça, Kowaltowski, and Petreche (2007), construction design is one of the most critical aspects of establishing a favourable educational environment. The user experience is everything in an interior space.

The National Clearinghouse for Educational Facilities discusses the powerful influences that interior quality, climate, humidity, airflow, light levels, air quality, and soundscape have on student outcomes (Schneider, 2002). With such internal measurement levels as discussed above, designers can create an experience within the user, leading to a superior design that caters to the user's needs and creates a distinguished life inside the predicted interior layout.

However, the internal elements of the physical environment are crucial to improving the quality of user experience design in interior spaces. When organizations design a user experience that encourages positive behaviours, they significantly increase the value users experience in their day-to-day lives.

The following section will delve deeper into the interior design elements and their influence on UXD.

2.1.4. How Can Interior Design Element Influence UXD?

According to Armaghan and Servatju (2014), an individual's living environment and interaction with the specific interior design elements will profoundly impact their experience. Therefore, creating a living space that

promotes comfort and function is paramount for physical and psychological well-being (Armaghan & Servatju, 2014). How people perceive and interact with their surroundings is heavily influenced by furniture, lighting, patterns, textures, and colour palettes. Adequate interior design is important because it can create a certain ambience, instigate certain feelings, and improve the user experience, resulting in a more positive and comfortable result.

According to Sharma and Dhanwantri (2017), interior design holds prominent significance in determining how a person interacts with the spaces that they are within. Indeed, a skilled interior Designer can elevate a space simply by playing with surface treatments and the volume of space. This subject, combining decoration, building, product design, and environmental psychology, works to develop a cohesive and functional interior environment. Interior design includes producing graphic communication and construction papers, programmatic data, and refinement of conceptual direction (Sharma & Dhanwantri, 2017). It ensures that a good user experience design is achievable only by considering and analysing the entire space, even related spaces to which hallways and staircases interconnect these rooms. Although each one may not be the same, they must all work together as a balanced whole that complements the entire composition as a space in its entirety can shape an experience for users when interacting with a space.

Understanding the importance of interior design components and how much they can affect the user experience. (2022) Well-designed interior spaces significantly impact an individual's experience.

Colour, texture, shape and form, proportion, light, balance, scale, harmony, rhythm, unity, variety, and emphasis are design elements that dictate one's internal configuration and impact the user experience (Sya'bani

& Iskandar, 2022). To that end, the next section will look at each of these and highlight their significance in implementation as they directly impact the design of the user experience.

Colour:

In interior design, hues are of monumental value, leading the shades to summon certain feelings and connotations. To select, evaluate, and apply colours that can deliver the best design results and optimise the user experience, designers need to understand the impact of colour on a person's emotions and perception of interior spaces.

Wenqin (2011) suggests that colour not only acts as a medium for complex emotions but is also the nature of human emotion. In interior design, colour adds visual character to physical spaces while reflecting people's needs for beauty, love, and a place to belong. Each colour serves a different visual impact on the eyes and uniquely expresses the feeling it represents. So, the research aims to examine the influences of colours' emotions on human in-home features while confirming the importance of using colours to create emotional expression in the residents' style (Wenqin, 2011).

According to Wang and Ma (2021), the colour of interior spaces affects people's psychological state, perception of time, and interpretation of temperature differently within the context of interior design. Furthermore, in the world of colour, designers know that the psychological aspect is key. Indoor space design has to include functional aspects, decoration, and practicality; a thoughtful design of these three elements can show the homeowner's personality and taste (Wang & Ma, 2021).

Integrating colour considerations in interior space design can enhance users' daily interactions with their environments. Colour psychologically affects humans; adequately studied, it can positively encourage (Wenqin, 2011). On the other hand, if colours are chosen randomly without considering the user's activities or needs, it can negatively impact the user's mood. Therefore, the interior designer needs to think even more about the colour's contribution to the user's entire experience since it is the most substantial part of the spatial quality.

Texture:

When it comes to space design, specifically design principles, the surface texture of a material is a major factor that contributes to the ambience of a space. It can set the design concept and the user experience design on fire or drown them in flames. Thus, choosing the appropriate ones is important (Kılıç, 2020). Purposefully incorporating materials or using materials in novel ways can provide a new experience and induce tension (2020).

However, Zhang and Peng (2015) found that the texture of such materials also affects interiors through the diversity of details and perception. Cleverly chosen furniture and equipment can be placed strategically in space to create different levels and styles. Analysing and synthesising the different types is important to create a more harmonious, comfortable, and visually stunning space. It is crucial that while choosing the material, they are getting the materials in a way that prohibits the well-being of individuals, for example, picking delicate materials in the room that create a warm and sound resting climate. Consequently, a design is most effective when it meets users' needs and demands, resulting in improved user experience design (Zhang & Peng, 2015).

Texture is one of the main elements of interior design that makes a big difference in the user experience. A well-designed texture with a good study of the interior designer selection plays a significant role in an internal space's aesthetic and functionality. For instance, soft to medium to rough textures can be used over the space. Additionally, such a design can be helpful for users with impairments, as it can help navigate the users through the space. This macro context can significantly affect efforts to shape user experience design (Zhang & Peng, 2015). Thus, interior designers must pay attention to the texture of their design.

Shape and Form:

Form refers to the skeletal structure of a space, everything from the walls to furnishings, decor, and accessories. Some of the most successful designs come from a potent combination. Zhou and XieNg (2014) emphasise that many different kinds of lines can have a meaningful impact on user experience design. It is likewise a consideration, as it ultimately also impacts user satisfaction (Higgins, 2015), a combination of expectations and how well the designer is aiding them in creating their three-dimensional outcome. Adding well-understood shapes that match a user's expectations and the environment around them can significantly improve the usability of a space.

Proportion and Scale:

Scale and proportion represent the comparative size of objects examining one another and the space they connect. An insight into these can help the designer create an agreeable and pleasant space that contributes to user experience design (Gangwar, 2017).

Mathematics:

Taking a cue from Elam (2001), most successful design compositions are based on mathematics and form geometric patterns. Jaglarz (2011) also believes that attention to design, including methods used, can significantly influence how interior space is perceived without the need for drastic changes. The visual illusion is a styling trick that can manipulate a space's size, dimensions, and mood by arranging internal items, mirrors, and lines.

Gangwar describes three general components needed for a well-designed structure: use, reliability, and beauty, concepts that date as far back as the Roman architect Vitruvius. In all three general areas, proportionality is important for functional spaces, structurally functional systems, and working well-looking places. Throughout history, mathematics has been used to artificially manipulate the proportions of generated slicks.

Vitruvius claimed that the architectural principles of symmetry and proportion are closely related to the symmetry of the human carcass. Le Corbusier took this approach further by introducing the "Modulor". He divided the human figure into units to define a modular system of architectural proportion, employing the golden ratio (Gangwar, 2017).

It exemplifies how thoughtfulness, foresight, and empathy in designing for people can elevate and enhance an experience. Creating a positive experience is always the goal when bringing users into a space.

Light:

Lighting is an important aspect that increases users' overall UX design. Innovative lighting design has become integral to modern architecture, establishing healthy, unique, and aesthetic environments while improving the human psyche (Mahmoud, 2018).

The lighting, both artificial and natural, is pertinent to each specific use and the corresponding need of the space.

Segmented Interior Lighting Design:

Each interior has its defined lighting design, and contrasting each scheme plays a vital role in devising the fundamental concept of the scheme.

Mahmoud (2018) explained that understanding users' needs enables designers to select the best lighting options to improve the experience within the designed space.

Balance:

Visual weight can vary in interior design based on size, colour, texture, and form (Jahanian, 2016). Dark items, large items, bright items, textured items, and items with complex designs all tend to look heavier.

To create balance, they typically need to pair these heavier pieces with a few lighter or similarly weighted pieces. In interior and exterior design, there are three common strategies for creating balance in a space: radial, symmetrical, and asymmetrical arrangements.

By understanding these, they can significantly improve user experience design and develop experiences that better the physical creation (Jahanian, 2016).

It is important to highlight that balance as a quality of interior space is a radical procedure and can significantly influence the relationship between diversely oriented human characters around the developed space.

Harmony:

The placement of objects, their colour choice, and their usage impact a space's user experience, so it needs to be addressed well. This process focuses on complementing thematically or stylistically, harmonising all aspects of a space.

According to Reddy et al. (2012), participants start with an inherent disposition to interact with the environment, creating either a positive or negative experience. Mixing physical, ecological, and cognitive facets is key to the profitable emergence of a pleasantly gratifying inner space (Reddy et al., 2012).

Unity and Variety:

The "United we stand, divided we fall" yet the interrelationship between concept and form is not as easy to define. Nevertheless, a place of extreme importance in interior design is the balance between unity and variety to create order, beauty, and complexity. The push and pull of harmony and contrast achieve an aesthetic balance that brings dynamism to indoor spaces and enhances the end-user experience.

As Qing (2009) argues, using different materials also brings textures and forms in interior space closer to those found in nature, which has a unique visual and emotional impact.

In contrast to the neighbouring space, the shapes, colours, and materials should complement each other and create several long-lasting and durable fronts.

It is also a device that creates motion and energy in the space, connecting people to people and their experiences with what they need.

Rhythm:

According to Thapa (2018), rhythm is about conscious repetition. Designers draw upon the power of repetition in still visual interest and a sense of rhythm in a space, repeating forms, colours, patterns, and textures. Like rhythm brings different parts of a musical composition together, rhythm in interior design leads to different design elements together in an unobtrusive way. A satisfactory interior design fails when the rhythm is not accomplished, and space becomes neither practical nor pleasing to the psyche nor rhythmic.

Chan (2012) most extensively describes rhythm on a design level, arguing that it is established through repetitions of varying intervals and stresses that rhythm affects cognitive performance. Another example is Thapa (2018), who focuses on rhythm in architecture, explaining how rhythmic compositions not only exist but also enhance the tone and perception of the surrounding environment.

Emphasis:

According to Qian (2018), setting a clear visual hierarchy makes it easier for designers to direct attention, create a specific emotion, and tell a story, contributing to user experience design. Emphasis is vital for creating a richer, balanced, and distinctive interior space by drawing attention to architectural features, artworks, objects, and views. This method establishes a uniform and engaging user experience.

Moreover, Qian highlights that interior design should embody a range of visual effects. The careful selection of elements, materials, and surfaces—walls, floors, and ceilings, to name a few—can facilitate the designer's

creation of an environment with a unique character appropriate to users' requirements, thereby enhancing the experience with the space (2018).

This researcher advocates a design process that creates happiness for customers and a great vibe. Ngoc and Fassi (2018), thus, recommend the implementation of a design thinking methodology that can enhance user experience design (UXD) inside the spaces or places that interior design creates. Such insights enable designers to determine what is required and what shortcomings exist as users engage with the system daily. As a result, the area is tailored to the people who reside there and promotes their health. This all-around thinking looks at everything in the context of the customer's journey, creating a tailored and deeper environment.

The research gap is identified through a narrative journey, covering topics such as the origins of UXD, the connection between Interior Design and UXD, and the impact of Interior Design on UXD, which is illustrated below in Fig 2.2 and 2.3.

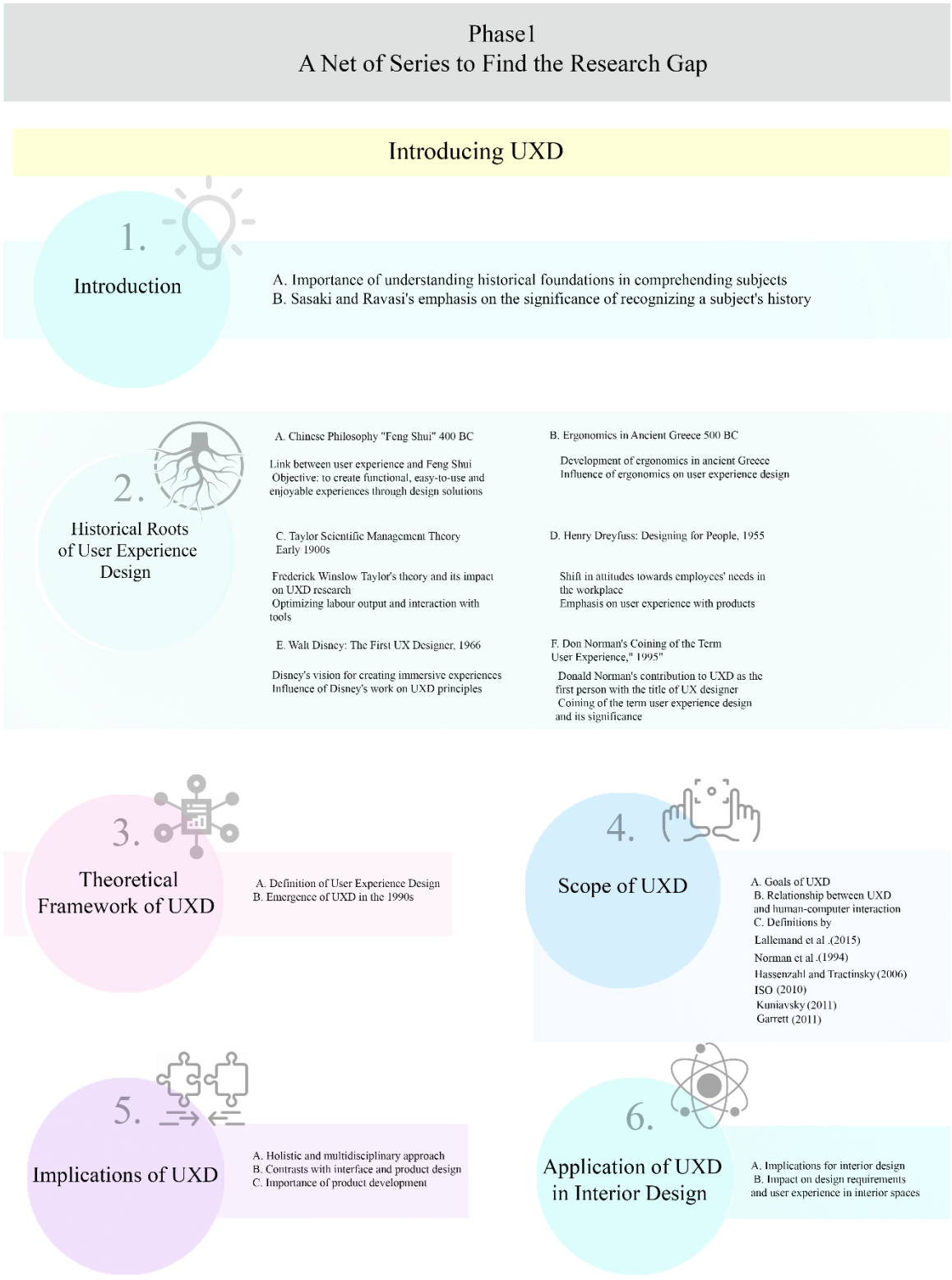


Fig 2.2: Introducing UXD

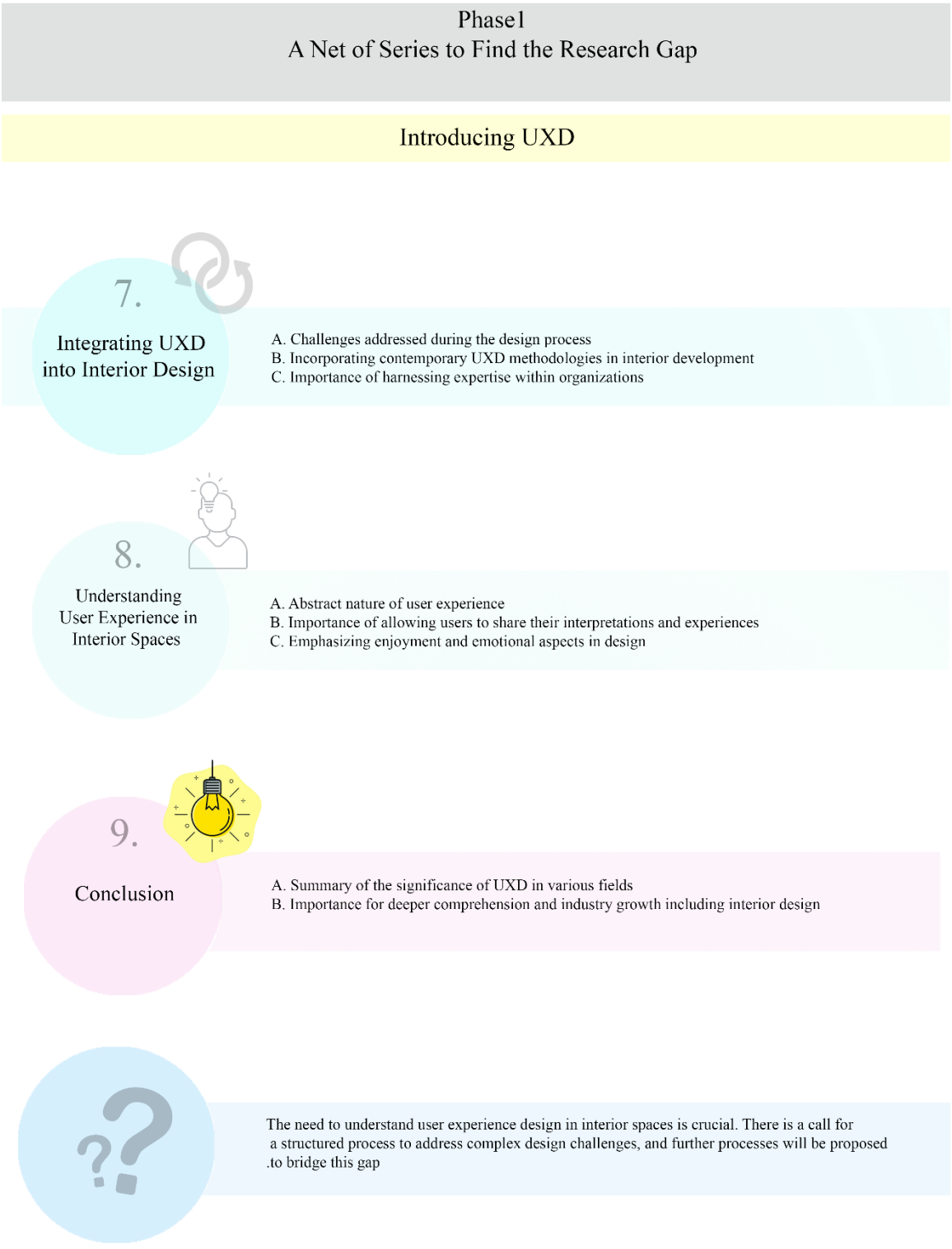


Fig 2.3: Introducing UXD

2.2. The Origins of Design Thinking

After a more in-depth exploration of user experience design—which significantly benefits from gaining a better understanding of users—and its relationship to interior design, the researcher will take the reader through the selection of a design thinking process. This will lead to a better understanding of the interior user experience.

As we navigate this journey, we will look at these methods and tools and adapt them to the designer's unique project challenges. Ultimately, design thinking will create opportunities for a richer understanding of the user while the designer is physically involved in the creative process.

- Emergence of Design Thinking:

Design thinking has emerged in the last 50 years as a powerful method of solving complex problems collaboratively. At its core is the user, who serves as a key part of the creative process and is empowered to participate in creating solutions that are functional but also personally relevant. Design thinking emphasises the importance of this connection between designers and users, fostering a greater sense of trust, understanding, and empathy, ultimately the catalyst for more powerful and successful outcomes.

Best known as a Nobel Prize-winning economist, Herbert Simon introduced design thinking in his 1969 book "Sciences of the Artificial". As Simon stated, design is the improvement of current states, where design thinking always looks forward to a better future (Simon, 1969).

In the 1980s, Nigel Cross, Bryan Lawson, and other academics forged a "designerly" way of problem-solving. According to Cross (1982), design needs alternative satisfactory solutions rather than searching for one hypothesised optimal solution. The 1990s,saw design thinking move from its theoretical application of the previous decade to a commercial application. The original godfather question of "How do designers think?" was changed to "How to Think Like a Designer." Design firm IDEO moved Design Thinking into the spotlight as a referent for creative approaches to organisational problem solving (Sköldberg et al., 2013).

In the 1990s, Design Thinking escalated, endorsing change in several disciplines (finance, information technology). Understanding the value and benefits of the design thinking process is essential for validating its effectiveness as we move forward. This claim is to be subsequent.

2.2.1. The Value and Benefits of Design Thinking

Having a process for Design Thinking would help change the whole structure, that is, everything within a design-forward company.

Great design comes from listening to diverse points of view. IDEO and Stanford d.school founder David Kelley reiterates this importance in creating an inclusive environment where different opinions are welcome. This process uses empathy, problem analysis, prototyping, and user testing to generate solutions that meet the needs of users (T. Kelley & D. Kelley, 2013). It encourages collaborative, human-centred design that bridges the gap between "designers" and "users" and welcomes input from all backgrounds.

In addition, it is a low-risk process, so ideas are developed without an extensive financial obligation. Understanding Design Thinking is vital to

understanding its opportunities for growth and development. It is difficult to understand its growth potential without clearly understanding what design thinking can and should mean.

With this in mind, the following discussion explores how design thinking can be favourable to extend this further.

2.2.2. Defining Design Thinking

Tim Brown, Don Norman, and David Kelley are the foremost design-thinking pioneers. Design thinking emerged in the late 2000s. Brown (2011) describes how designers use these principles to help companies attain their goals with technology by considering human needs, leading to a targeted request to effectively develop solutions that focus on functional, physically robust solutions.

In their exploration of human-centred design, Don Norman and David Kelley highlight the importance of considering the big picture and addressing the context, users, and environment in which the object will operate (Don Norman & David Kelley, 2013).

According to Jeanne Liedtka, design thinking focuses on abductive reasoning: it imagines an optimal future state and devises a plan to achieve it. The human-centred approach to problem-solving, applicable in other fields, is especially pertinent in interior design. When paired with UX interior design expertise, these design thinking principles result in innovative solutions and a better user experience (Liedtka, 2018).

Such a blend of design thinking and the principles of UX interior design can lead to innovative solutions and a more rewarding user experience. It leads

the researcher to the next section, which is all about design thinking and how UX interior designers employ this process.

2.2.3. Design Thinking as a Process for UX Interior Designers

Well-designed Interior spaces significantly improve the user experience (Teal, 2010), seeking a solution for poorly designed spaces and understanding that interaction with space should be meaningful instead of merely habitual (Kuniavsky, 2011). According to Dodsworth (2009), how people interact with their living spaces can significantly affect their quality of life. It strives to provide a positive and personalised environment for each user while taking a holistic approach for enhanced user experience and overall quality of life.

Design Thinking process is critical in interior design, as it has moved away from surface-level decoration to designing for human behaviour (Tu Ngoc & Fassi, 2018). This way, designers can create exciting ideas for future products and services that are good-looking, useful, and functional to use in real life.

At its heart, design thinking provides participants with social understanding, empathy, cultural awareness, and willingness to take risks by putting them in contexts where they must think and act like professional designers (Skaggs, 2018). This investigation, qualification, and research tools allow designers to understand human desires and shape information to stimulate the construction of settings where people, through aesthetics, need-finding, or the assaying of meaning, can consummate their encounters in behaviour patterns. In this way, design thinking has moved beyond aesthetics,

pointing towards the creative resolution of efficiency or commercial problems in a different, surprising, and engaging manner (Hodgkinson, 2013).

The world is adopting design thinking by storm, with over 60 institutions and colleges in the U.S. training their faculty on design thinking or developing additional courses or degrees (Goldman, Kabayadondo, Royalty, Carroll, & Roth, 2014). To teach learners skills needed in the 21st century, the Hasso Plattner Institute of Design, in collaboration with the business IDEO, claims that integrating design thinking in the K-16+ courses would enable learners to develop a set of 21st-century transferable skill sets (Callahan, 2019). Because design thinking approaches are used widely in diverse disciplines, this new learning pedagogy is becoming ever-present in higher education (Beligatamulla, Rieger, Franz, & Strickfaden, 2019). Understanding design processes and various kinds of approaches is important in developing innovative solutions to meet the specific unique needs and aspirations of the user in the field of interior design.

However, designers are questioned about designing objects in an accommodating, long-lasting manner geared towards individual needs and preferences. This version is often made by gaining insights with co-design sessions involving users and other stakeholders as necessary. A tenet of this discipline is intense collaboration with all parties that contribute to its practices and design methodologies that emphasise the needs and wishes of end users. Following the design thinking tools to user experience tools can help visualise and communicate how people, resources, materials, and information flow through the system while maximising system adaptability once put in place to ensure movement.

Demanding change in our society by changing behavioural patterns, business models, sites of activity, and places of assembly forces us to distrust habits and long-term conventions. Designers function as facilitators, endorsing the end-user and stakeholder ideas to co-create novel solutions within a participial facade (Sanders, 2002). Recent literature explores the possibility of raising the UXD research process to examine how designers and clients, but especially UX designers, work together while producing outcomes, results, and conclusions which can help ensure the most probable best solution when developing an interior space appropriate to the user and benefiting their unique experience.

Field studies, particularly ethnographic ones, are influential in informing design considerations and articulating representations. Concerning design thinking, personas, usage patterns, open data collection, and presentation tools, video sketching and review have always worked for them. Organising the UXD research process in joint design tasks with the users and designers in collaborative sessions is an efficient way to do the UXD research. In the past few years, design thinking has become increasingly popular in user experience design (UXD) as a compelling narrative device for communicating the scenario and understanding the minutiae of human behaviour in a way that is both lasting and exceptionally poignant. Since their emergence in the late 1990s, personas and user journey maps have gained traction within the UXD toolkit, especially in building fictitious yet well-researched clients for imagined work products (Cooper, 1999). These tools help build a shared understanding of user needs and the context in which they operate so that design decisions enhance user experience to be more apparent. Nevertheless,

these tools and a few more will be discussed in the next section as Design Thinking Process for Interior Designers.

Despite systematic methodologies, the design practice is enhanced by formal processes and has highly effective adjustments. Improving the skills of interior designers in using formal and informal design methods tools is significant. Doing this would be an instrumental contribution as it highlights how to use tools in interior design with patterns for specialists and interior designers.

This research investigates how UXD methods must be employed, where user data be collected and analysed per touchpoint for spatial designers to pursue efficient diagrams that maximise function. The role of spatial designers and how their out-of-the-box thinking creates a positive user experience within the physical environment is profound. Research driven by UXD (Fassi, Galluzzo, & De Rosa, 2018) in these domains must promote a wide range of points of view and approaches to develop a competitive advantage in spatial design and design tools. Using the design thinking process and associated tools, interior designers will gain insights into their users and create better user experiences. This section will explore the various stages of the design thinking process and the tools available at each phase.

To this end, the researcher will present the narrative journey culminating in detecting the gap between present knowledge and the asked questions, as illustrated in Figures 2.4 and 2.5. This summary will circle all of the topics previously mentioned, including the Origins of Design Thinking, the Value and Benefits of Design Thinking, Defining Design Thinking, and Design Thinking as a Process for UX Interior Designers, which will shed light on the "how" of identifying the knowledge gap.

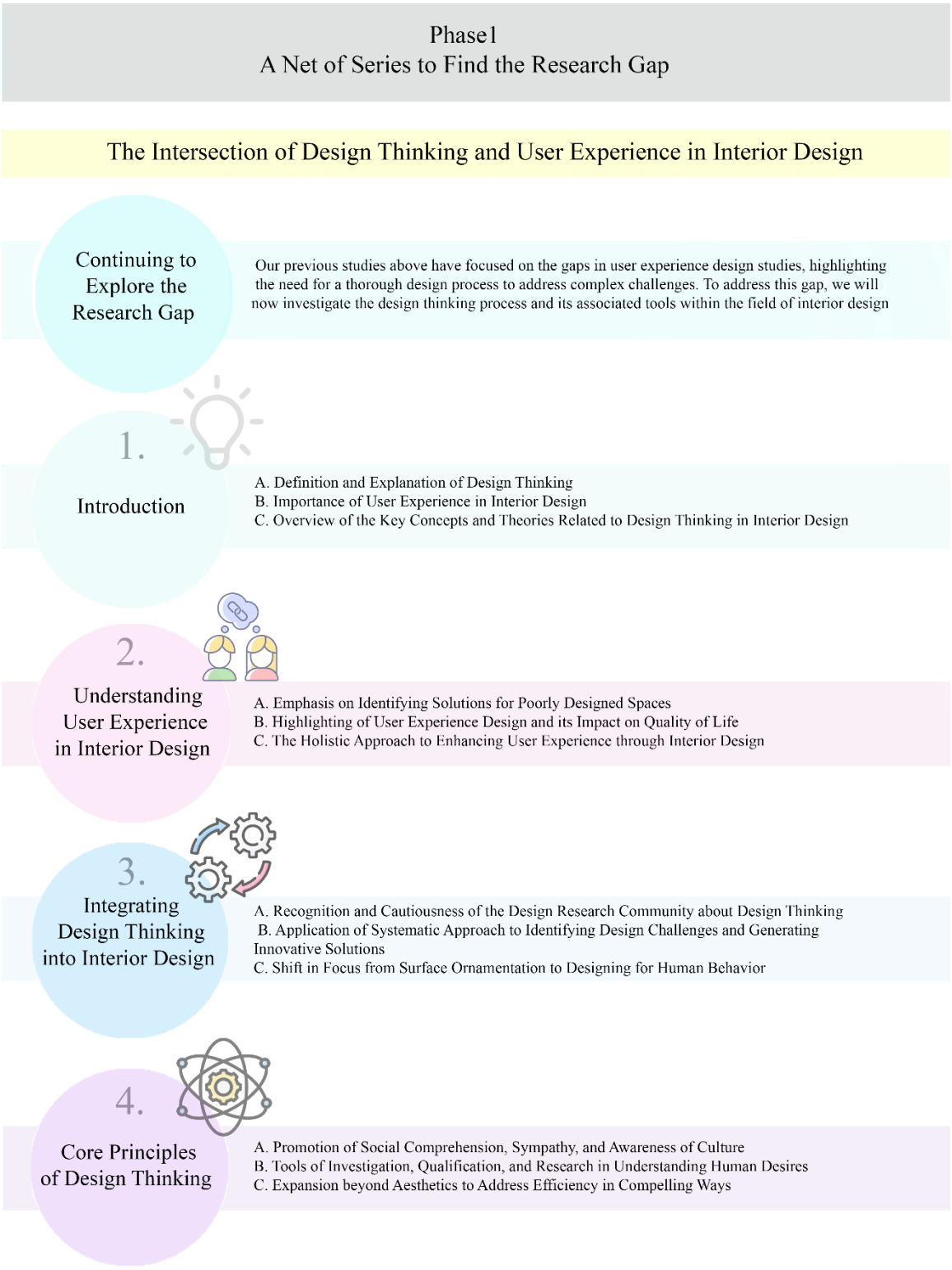


Fig 2.4: The intersection of design thinking and user experience in interior design

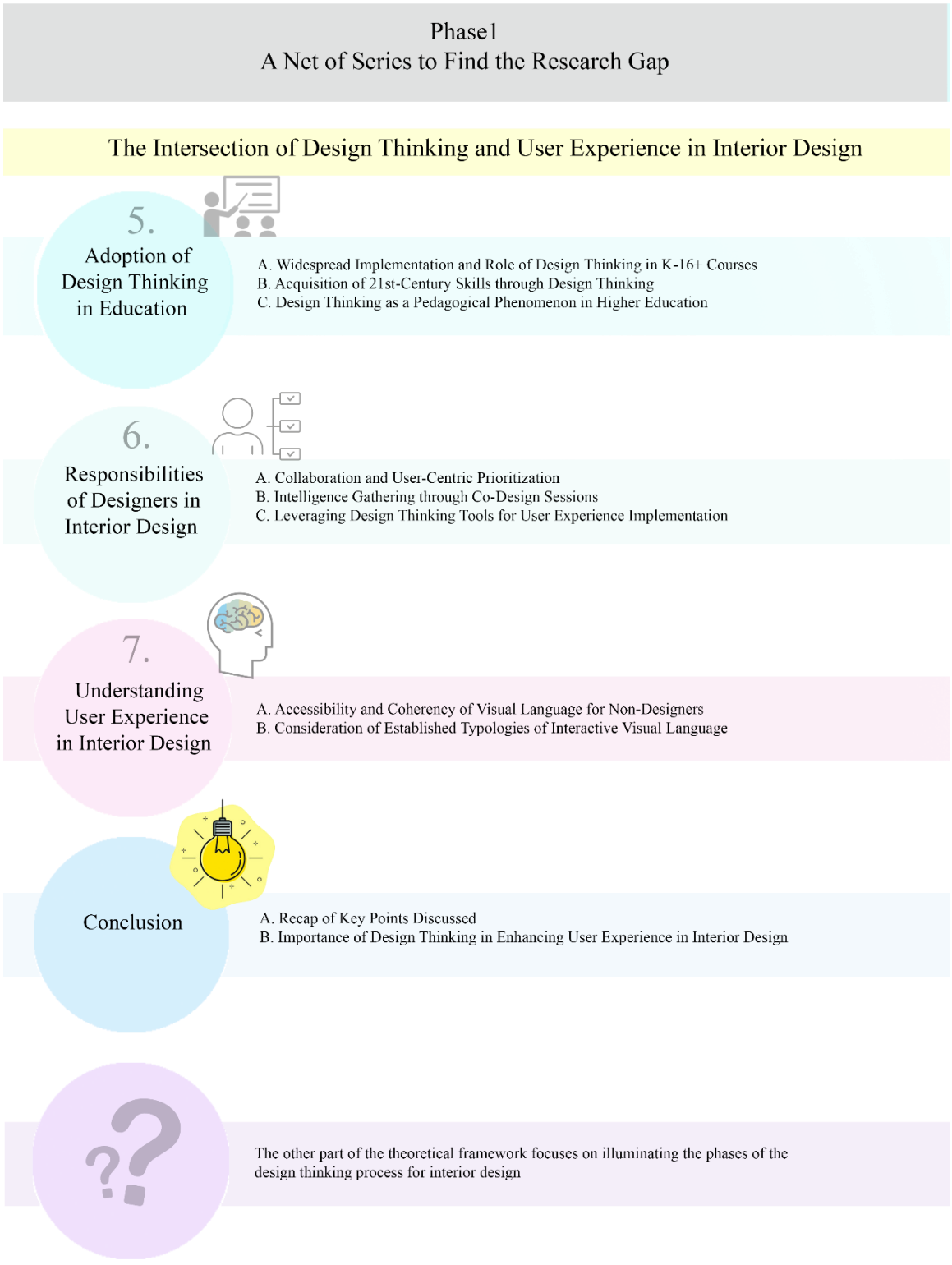


Fig 2 5: The intersection of design thinking and user experience in interior design

2.3. Design Thinking Phases Explained as a Design Process for Interior Designers

Design Thinking is a critical process UX designers follow to tackle complex problems. According to Rebeka Costa, this method allows designers to create new solutions and consider users' goals, problems, and tasks (Costa, 2019).

According to Tristina Oppliger, prioritising the user is one of the cornerstones of Design Thinking. Creative and innovative design enables designers to detect problems and develop cutting-edge solutions that can improve upon existing services to ensure the needs of the current users are effectively met (Oppliger, 2021). The iterative process enables designers to return to each stage as often as necessary, confronting assumptions, redefining challenges, and creating new solutions (Oppliger, 2021).

Integrating design thinking as a design process for interior designers could improve design development and allow them to produce novel, user-centred designs. To grasp design thinking fully, let us explore the phases of design thinking in Fig 2.6 and the related tools.

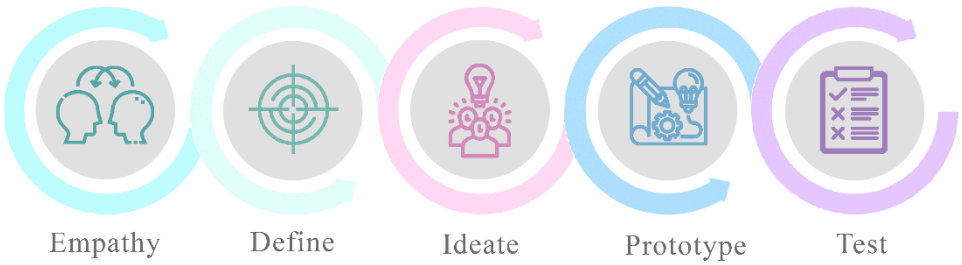


Fig 2.6: Five-step approach to design thinking

2.3.1. Design thinking phases

The Hasso-Plattner Institute of Design is simple, flexible, and expanded to five phases. Based on the Stanford design thinking process, these stages may be performed together or in a different sequence, with the possibility of returning to any stage at any moment during an iterated process.

Plattner et al. (2015) outline five stages of the Design Thinking process. which are (Empathy, Define, Ideate, Prototype, Test) and some associated tools.

These frameworks could establish new ways of involving participants across the design process and likewise offer designers a new mechanism for expanding their understanding of the adaptive capacity required to leverage these tools effectively.

2.3.1.1. The Empathy Phase



Hasso Plattner emphasises putting users' needs at the heart of the design thinking process. The first step involves understanding what the user likes, what they do not like, what they want, and what they do daily. Gaining such deep insights allows designers to create solutions that enhance user experience, which increases user satisfaction with the final product (Plattner et al., 2015).

Costa, a fellow writer, also states that knowing about psychology can help accomplish empathy in the interior design process (2019). They did this through informal conversations, questioning people more offhand, and getting to know their thought processes. During this phase of the design thinking

approach, designers should not make any presumptions about the user (Costa, 2019).

In addition, various tools and techniques help us imagine ourselves in our users' shoes. The user personas, alongside the user journey maps, can offer designers deep insights into user experiences, which can be vastly beneficial for interior designers.

a. User Persona as a tool

User personas are a way of personifying abstract user groups. They use fictitious characters to bring abstract ideas into a recognisable and relatable form. Per persona of insights collected from observational activities, they represent a range of user attributes.

Rather than being representative of a specific target group, it is important to demonstrate the range of user experiences to guide recommendation development for staying in touch, as indicated (Liedtka & Ogilvie, 2011). Unlike real people, user personas outline user groups' motivations, values, needs, and behaviours. They are crucial to understanding user needs and contexts by building empathy in the early stages of a design. They can also be data-inspired, reflecting the needs and wants of selected user segments in terms of their lives, beliefs, and behaviours.

Personas are not specific individuals but hypothetical descriptions of potential space users, with all niceties stripped away. Designers should walk in the user's shoes and understand their journey. These personas are formed based on data obtained through various research methods such as stakeholder mapping, shadowing, and questionnaires. The degree to which personas can guide designers' work directly correlates with their ability to be realistically

portrayed (Stickdorn & Schneider, 2012). Additionally, they help to focus on typical users throughout the user experience design process (Unger & Chandler, 2012).

The inclusion of user personas in the design of interior spaces offers several benefits. They aid in resolving disagreements that may arise during design and development decision-making processes while also providing momentum for designers. These insights delve into the genuine behaviours of real users.

b. User Journey Map as a Tool

A different tool is the user journey map, which helps us organise how to visualise the user experience in interior design. The journey map used touchpoints, which were rich in narrative information about the user experience and its emotional sensations.

The user journey map provides a complete view from the user's perspective of the different factors influencing the user experience (Stickdorn & Schneider, 2012). A user journey map permits the approximation of individual journeys, showing the proposed design processes at a system level. It also makes it possible to contrast different individual travels with one another (Halvorsrud et al., 2016). Customer journey maps are used by designers to identify areas where their work may be improved and to measure how well user experiences meet user expectations

User personas and user journey maps help enhance this understanding in the early stages of user experience design. They allow designers to empathise with users and deliver a unique user experience based on their needs.

These tools enable designers to implement user-centric features that foster intuitive and interactive environments, which can strengthen user contentment and fidelity, particularly in spatial design.



2.3.1.2. The Define Phase

According to Hasso-Plattner, this stage is where they focus on the problem the design is trying to solve. It underlines the need to use user research findings to get more specific about areas for improvement. Designers need not lose the human scale articulated in the user research frame. They need to frame it as the problem statement recommended by Plattner et al. (2015).

While developing ideas and testing designs, keep the user's goals in mind. Even seasoned designers learn while prototyping and testing. Please remember that the problem statement can be modified and partially adjusted.

Verifying every detail of the statement is better to avoid unpleasant surprises after the launch. People pay for products for good results; we should deliver for them. Plattner et al. (2015) argue that missing the necessary care and attention could initially lead to an imperfect end product.



2.3.1.3. The Ideation Phase

During the third phase, the next stage of the Design Thinking process, designers learn everything about the users, why they are designing that particular design and its impact on the users. Knowing this, designers can develop solutions that satisfy all three groups' needs. This knowledge is the foundation for the ideation phase when designers present an idea statement and leverage it to initialise the generation process.

There are several basic ideation techniques, but the most common approaches are ideating wild ideas or purposely creating the worst possible solution to the problem if it is likely to induce creative solutions. However, we shall discuss more of the tools we use for brainstorming (Plattner et al., 2015).

By embracing ideation phase tools, designers can explore all possible options and determine the most effective path forward for their design projects.

Brainstorming as a Tool

It is a tool used during the Ideation Phase; according to Tschimmel, ideas refinement through group involvement without being addressed or thought through in brainstorming sessions; the benefits of this tool are that it delivers a large number of ideas, with feelings and intuition taking precedence over reason. Although many groups use brainstorming with enthusiasm and great success, there are some shortcomings, including the prevalence of verbal communication and the presentation of thoughts aloud, the presence of experts in the group whose ideas strongly influence the other participants, the reserved attitude of the more hesitant, difficulty providing uncommon and imaginative ideas, the recurrent compulsion to start conversations about the issues, and the extreme reliance on the facilitator(Tschimmel, 2011). These shortcomings of traditional brainstorming gave rise to variations like brainwriting and brain sketching, which generate ideas via drawings generated by those who took part or the presenters.

In the "brainwriting" or "brain sketching" version, each participant writes or sketches each thought on a Post-it, which they then adhere to the wall or a piece of paper. This process allows each person to think more deeply,

as other connections are not immediately influencing their thoughts. Every new sticky note placed on the wall acts as a catalyst for fresh ideas. The benefit of this type of brainstorming is that it allows for the organisation and categorisation of ideas, both with and without the assistance of a moderator, in addition to the process of visualising ideas. Additionally, the Post-it version best enables an emergent assessment using, for instance, the Target tool. The concepts with potential ought to be inside the target after the review process. Post It may be moved or removed only briefly (Tschimmel, 2011).



2.3.1.4. The Prototype Phase

Prototyping—the fourth step in Hasso-Plattner's design thinking process—is where they take those ideas and turn them into prototypes or mock-ups for testing. To save on expenditure and time on a potentially costly project, user experience designers produce inexpensive mock-up designs of the product. This way, ideas can be tested without hesitance, and changes can be made at an early stage rather than making a costly error after production.

Prototyping is a tangible representation used to test possible solutions. The researcher has an input layer with techniques run in Plattner et al. (2015), such as imagining sketches, storyboards, and different drawing affordances. For Oppliger, it is less important whether prototypes are high-fidelity; what matters more is whether they will at least validate earlier solutions.

This stage is all about iterating with end users, figuring out which ideas fail and using feedback to adapt (Oppliger, 2021). Digital or 3D printing and VR prototypes allow for iterations in the user experience before the final design, incorporating enhancements as user feedback recommends.

a. Digital Prototype:

Digital prototyping uses software tools to create realistic, interactive models of design ideas (Agile, 2023). It tracks the collaborative elements of design and the team procedures, such as wiring, for designers, allowing for the interactivity of designs to simulate and check product functionality with prototype tools. These allow the building of high-fidelity prototypes with no code and include a library of components, animations, and interaction patterns. Digital prototyping allows users to test more accurately and gives a complete understanding of how the final product looks from the visual and functionality aspects (Agile, 2023).

b. 3D Printing & Rapid Prototype:

Creating and building in layers of 3D printing means that designers can output real-life models from their 3D virtual minds. This process permits complex designs with rich features that may be more cumbersome to create via traditional manufacturing techniques. Fast prototyping is also an information production method that uses computer-aided design (CAD) software and CNC devices to get design prototypes quickly to check that. Along with the concepts of Fast Prototyping and 3D Printing, designers can evaluate a product's form, fit, and functionality before entering the mass production step, thus resulting in significant time and cost savings in the prototyping process (Agile, 2023).

c. Paper Prototype:

Paper prototyping refers to low-fidelity prototypes, typically physical, hand-drawn versions of a design idea (Agile, 2023). The method is an easy and relatively inexpensive way of obtaining early user feedback in the design process and visualising design concepts. Designers can put the screens,

interfaces, or user workflow on paper to mimic the user experience. Designers can do fast iterations using simple materials such as paper, sticky notes, and Sharpies to adjust based on feedback. According to Agile (2023), paper prototypes are the most effective for users to test and improve interaction and procedures.

d. VR Prototype:

Virtual reality (VR) technology produces more immersive simulations for engineering the domains of the ArborXR (2023). This latest multi-sensory technology enables engineers to see and better evaluate their designs in a virtual universe. It assists architectural engineers in constructing physical simulations of buildings and systems, experimenting with various design alternatives, and visualising how a building will appear and behave in the real world—without incurring the expense of building physical prototype models. It allows engineers to build complete virtual prototypes of products, enabling them to find flaws in design and changes needed to a design before wasting time building physical prototypes. With VR gear more reusable than other equipment in this field, it can be the most cost-effective option in the long run, especially when much of the VR content needs to be tested, reviewed, and corrected before use (ArborXR, 2023).

Upon selecting the most suitable prototype, the final phase of testing the design begins.



2.3.1.5. The Test Phase

The last phase of the Design Thinking process is inviting users to a moderated testing session. In this session, users interact with the design and voice their thought processes while a facilitator

records the test. Then, they determine problems to solve and adjust accordingly.

Plattner et al. (2015) stressed the importance of being prepared and having the experience to receive reasonable feedback. Validation is also important in the testing phase, confirming whether the central thesis of the design and problem is articulated and whether the benefits to the user are useful (Oppliger, 2021). Present designs without explanation — use open-ended questions to gather authentic user feedback. If any difficulties are revealed, designers revert to prototyping with the idea that the information is iterative and will improve the design and ultimately yield a higher-quality final product (Oppliger, 2021).

After extensive research into various tools and techniques, the researcher was particularly inspired to use a user journey map, an infrequently used tool in interior design. The author: This tool will enable interior designers to create user experience designs that enhance their knowledge of users and improve the experience. The following section walks through using the tool.

Before proceeding with the literature review, the researcher will summarise and identify the research gap. The following summary will show the milestones leading to open knowledge gaps so the reader can understand. It will incorporate all the points discussed, primarily those associated with the Design Thinking stages as a Design Process for Interior Designers, which will elaborate further, supported by Figures 2.7, 2.8, and 2.9.

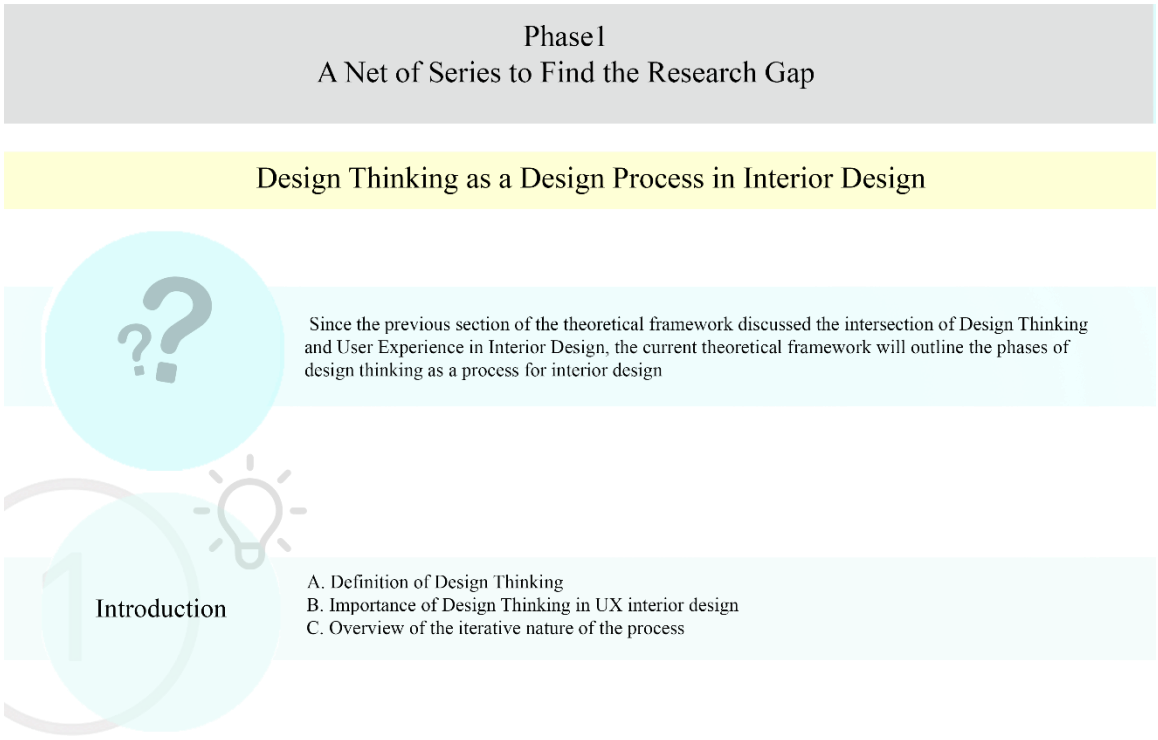


Fig 2.7: Design thinking as a design process in interior design

Phase1
A Net of Series to Find the Research Gap

Design Thinking as a Design Process in Interior Design

2. The Phases of Design Thinking

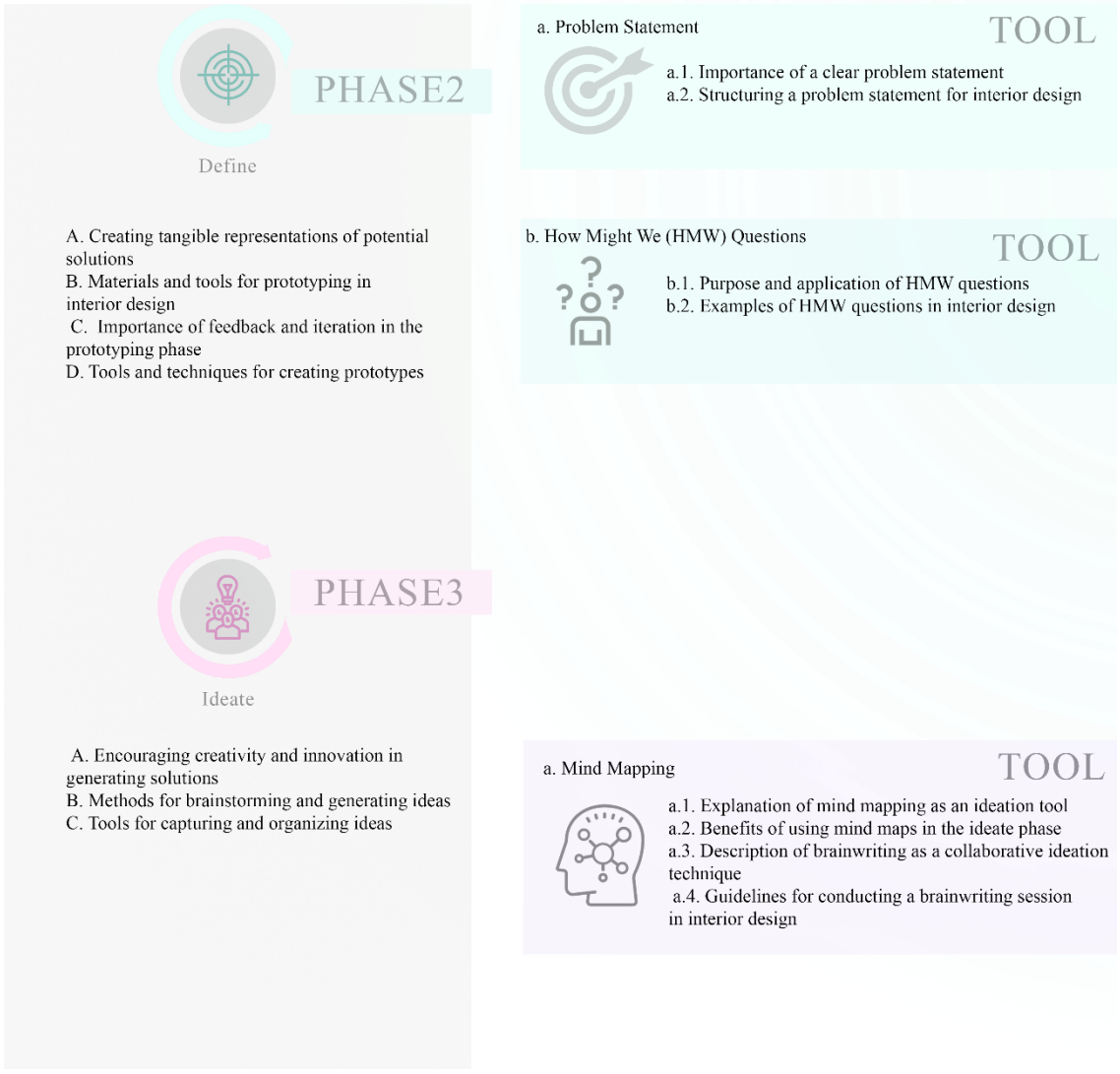


Fig 2 8: Design thinking as a design process in interior design

Phase1
A Net of Series to Find the Research Gap

Design Thinking as a Design Process in Interior Design

2. The Phases of Design Thinking

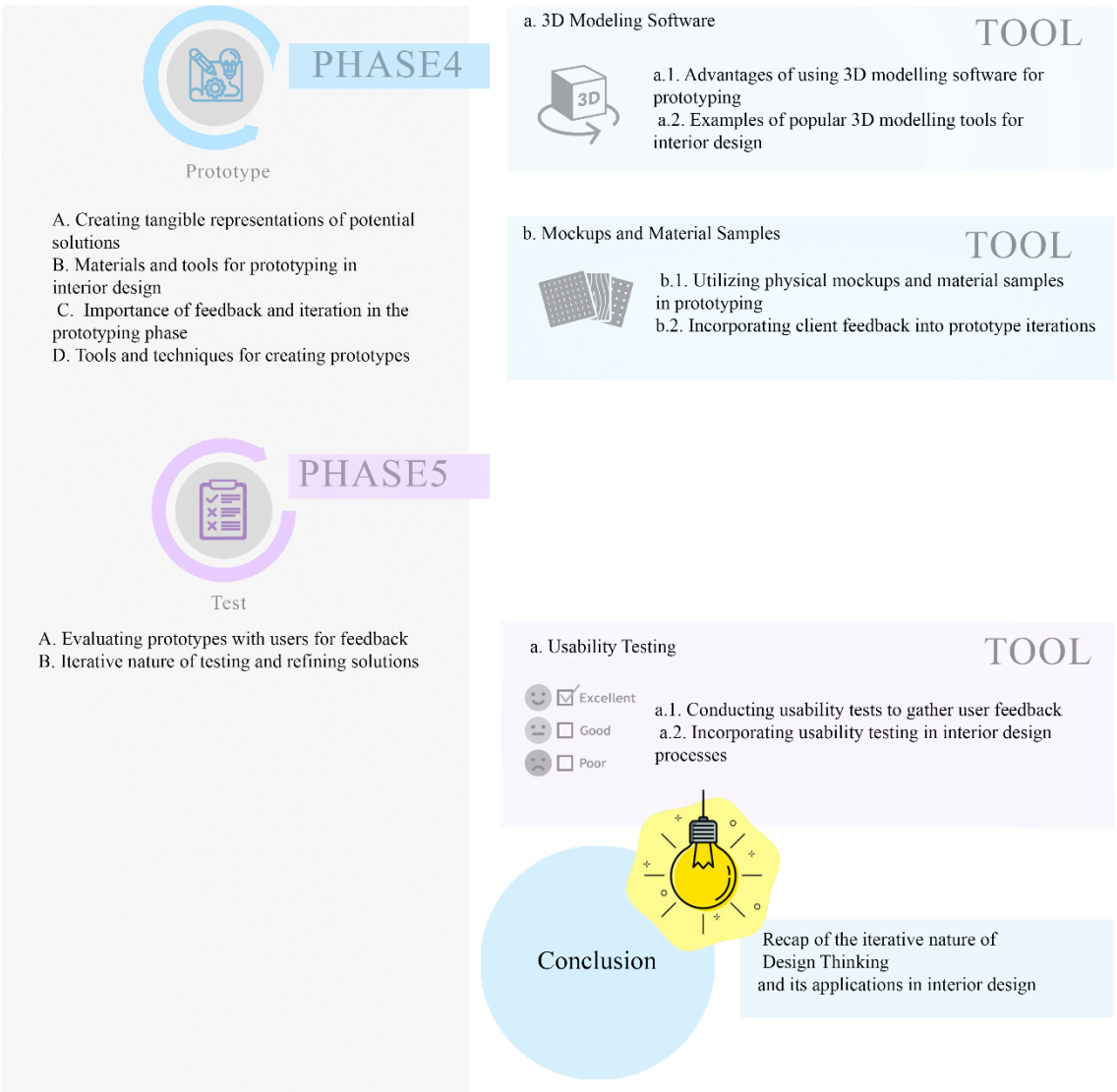


Fig 2.9: Design thinking as a design process in interior design

2.4. User Journey Map as a Tool for UX Interior Designers

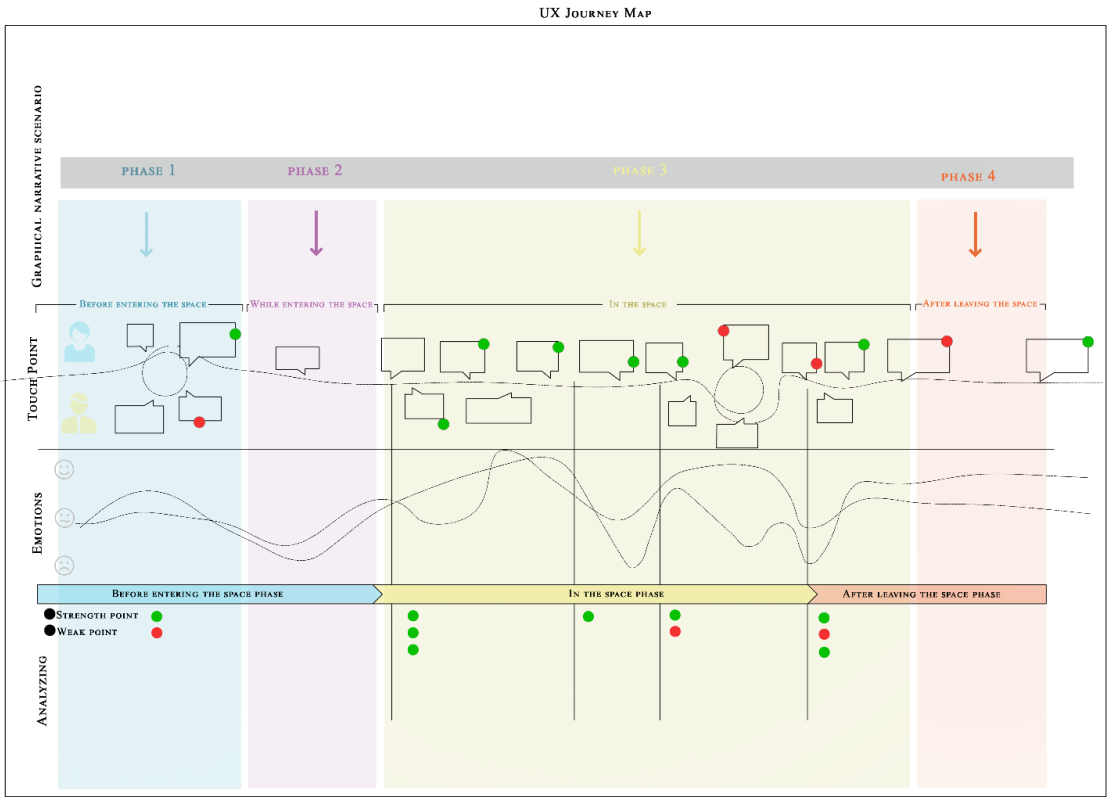


Fig 2.10: UX journey map

In turn, the researcher has explored different tools and methodologies used in the past to produce more satisfying designs. Although all the tools mentioned above are important and have their purposes, it is the research gap that exists. The aforementioned tools have limited applications in interior design, unlike in many other fields where they are used by service providers, design agencies, and consulting firms to assist UX design, as evidenced by case studies (Trischler & Zehrer, 2012). However, they are seldom utilised in interior design by designers.

The target this research has chosen to focus on is the user journey map, which is one of the tools that is very useful in helping designers understand

users better before improving their experiences. This section about the User Journey Map will cover:

The Illustration of the User Journey Map, as shown in Fig 2.10

- Defining the User Journey Map Tool
- Key Elements of the User Journey Map
- Importance & the Benefits of the User Journey Map
- The Relevancy of the User Journey Map Tool for UX Interior Designers
- User Journey Map Tool for UX Spatial Interior Designers, and
- User Journey Map Tool for UX Spatial Interior Designers

2.4.1. The Illustration of the User Journey Map

Before exploring the definition of the user journey map as a tool and going Before explaining the definition of the user journey map tool and its elaboration, it is important to give a graphical representation of the user journey map as illustrated by the author above in Fig. 2.10. This will help readers understand every important aspect and feature of the user journey map. When reading, its concept will be easily understood.

The author also shows the designer's steps in the user journey. At each phase, the emphasis is on how the designer can observe the user's feelings and facial expressions before proceeding to the next phase.

In the first phase, the designer identifies user expressions via touchpoints, employs emojis to depict emotions (unsatisfied, neutral, and extremely satisfied), and reviews the user experience for the touchpoints and emotions.

The second, third, and fourth levels also carry on the same mission of understanding and evaluating user statements and feelings, and then there is a remarkable stage.

2.4.2. Defining User Journey Map Tool

According to Adam Richardson (2010), a user journey map visualises the user's interaction with a design, exploring the user's experience in terms of their goals and motivations from start to finish. Behaviour mapping is critical to understanding user behaviour and optimising the user experience, emphasising interactions through the different touchpoints (Kankainen et al., 2012). A user journey consists of several vital components (Patricio et al., 2011; Norton and Pine II, 2013) representing user personas, touchpoints, pain points, motivations, and emotions instrumental in understanding user requirements.

By better understanding these factors, user satisfaction and loyalty can be enhanced (Vianna et al., 2012; McDonald et al., 2011; Stickdorn & Schneider, 2012).

2.4.3. Key Elements of User Journey Map

Journey maps are complex visualisations of many aspects, such as views, moments, actions, mindsets, emotions, channels, touchpoints, aspects, and possessions. Creating a journey map starts with telling the story of the actor (Kaplan, 2016). Depending on the map's goal, this subject will likely be anyone. Since the story is uncomplicated, they should include only one point of view per map.

Once the mapper has identified the subject, they must decide which specific experience to map. It will be a current journey or an ideal "to-be" experience, where the mapper builds an itinerary for a product or service that is not yet on the market. During the journey, we must ensure that the user has clarity of purpose. Journey maps are most effective when they depict a sequence of actions (Kaplan, 2016).

Kaplan asserts that the essence of a journey map's story lies in what the user is doing, experiencing, and thinking while on the journey. Data points that capture this information can be obtained through research methods such as fieldwork, contextual inquiry, and diary studies. Depending on the map's intended use, it may need to be presented in greater or lesser detail (Kaplan, 2016).

According to Kaplan, user objectives and actions must align with touchpoints and channels. Touchpoints represent the moment the user interacts with the company, while channels refer to the means of communication or service delivery, like a website or physical store. These elements require special attention as brand inconsistencies and disjointed experiences often occur (Kaplan, 2016).

The main goals of the journey-mapping process are to identify gaps in the user experience, particularly in omnichannel journeys, and to take the necessary steps to improve it. Ownership and insights are critical but often overlooked components. Any insights gained from the journey mapping process must be communicated. Ownership should also be assigned to other sections of the journey map, if politically feasible, to ensure that it is clear who is responsible for each aspect of the customer experience. Without ownership, no one is accountable or empowered to make any changes.

Even if all the essential components are present, two journey maps can have different designs and suit the situation. When deciding which parts to include, trade-offs in scope, focus, and breadth versus depth must be made. Knowing the elements of a user journey map is important and beneficial for the designer. The upcoming part will explain further.

2.4.4. Importance & the Benefits of User Journey Map

According to Gibbons (2018), organisations utilising UX maps receive the following advantages:

Natural Model Replication:

- Assemble a map based on how users think, leading to stakeholders talking to each other.

Shared Vision:

- Aligns everyone who wants to make the customer experience better.

Visual Communication:

- User journey maps provide a cohesive picture of the data about the user or service across stakeholders.
- Reduces redundancy in decision-making.

Design Phase Guidance:

- It helps designers navigate a user's experience and feelings.
- Enables proper design iteration when needed.
- Streamlines feedback, providing a compromise for designers.
- The future state of the design developed.

(Gibbons, 2018)

The benefits of user journey maps discussed by Budikusuma (2023):

- Discovery & Optimisation:
- Assists designers in finding insights about the user.
- Provides enhanced user experience design.

Data Display & Communication:

- Displays data properly.
- Improves communication with end-users and stakeholders.

Identification & Improvement:

- Identifies pain points and opportunities for improvement.
- Enables a more pleasurable user experience.

User journey maps are an essential practice tool for designers:

- They allow for new insights gained.
- Become good negotiators during the design process.

(Budikusuma, 2023)

2.4.5. Understanding the User Journey Map: A Vital Tool for Interior Designers

User Journey Map — Visualisation of a user's journey through an internal space — demonstrating the phases, actions, and pain points.

From a user point of view, this helps when designing; users can mould the design according to what the designer knows. It also examines user

engagement with the specific places that they occupy (Marquez & Downey, 2015).

In the interior design market, user journey mapping is a new trend that hopes to change this by promoting a transition from designing for users to designing with users in mind. It guarantees that space usage is observed to see whether it fits all end-consumer needs and experiences in the core replica of user experience in interior design.

One approach to integrating user experiences into free or open design is user journey mapping, which abstracts the visible elements of interaction and user experience into a more woven narrative. This concept intends to develop a more distributed and meaningful design (Tschimmel, 2012).

As interior designers, they must navigate design alternatives through multiple lenses and often work through external replicas of their conceptions. By utilising design thinking to develop customer journey maps, interior designers understand how to put themselves in the users' shoes, discover both needs and wants and take user experience design (UXD) to the next level, creating meaningful orders with spatial design and function.

In addition, the user journey map is a key assessment tool for interior design projects from the user's perspective. It helps to make sense of experiences, identify obstacles, and discover innovations. When designers map out the user experience, they have more visibility into how users feel, react, and complete tasks within a space. By acknowledging frustrations, designers can then create environments that generate satisfaction.

For example, interior designers can use these maps to trace a user's path, guiding the users through specific elements within a space to enhance their experience.

Then, we will explore the importance of user journey mapping in interior design. The aim is to help designers represent a genuine user experience by identifying enhancements, pain points, and actionable insights (Risdon, 2011).

While interior designers focus on enriching user functionality in their spaces, their responsibility extends to creating usable spaces through memorable, enjoyable experiences. User journey mapping is a way to have internal discussions about purposeful interior/peripheral design and a heads-up on root cause user-related exceptions focusing on findability/navigation.

Moreover, user journey maps also depict touchpoints in an interior space, highlighting key interactions between users and designs. The information extracted from these maps has motivated studies in user experience design (UXD) that emphasise the impact of emotions or cognition on users as they traverse an environment (Patrício et al., 2011; Teixeira et al., 2012).

User journeys are more than just the stages or touchpoints that users go through — they are the emotions that users experience in the context of interior design. An immersive experience in its own right, the user journey allows interior designers to design experiential designs that amplify user satisfaction and engagement at every stage of the design process. It encourages understanding users' experiences, how they perceive and

encounter them, and how they found patterns amplify their experience in those places (Trischler et al., 2012).

Now that you have learned about a user journey map, its elements, why it is important, and the many benefits it provides for interior designers, we will look at how you can implement these things in interior design. The next section will provide a full explanation of this investigation.

2.4.7. Translating Elements of the User Journey Map into the Interior Design Space

Understanding the key segments of a user journey map is crucial for creating a compelling user experience in interior design. After a designer has created and finalised a user journey map, the next phase incorporates those insights into the interior design. In 2023, Smith pinpointed four crucial sequential stages in converting these components into action steps: analyse, ideate, prioritise, and execute.

a. Stage One: Analysis

Organising potential data sources helps designers recognise pain points and touchpoints throughout the user's journey. However, learning how to resolve these conflicts in future projects can help broaden our horizons (Smith, 2023).

b. Stage Two: Ideation

Once the designers locate and truly validate key pain points of the journey, they focus on creating real solutions and examining whether other processes or tweaks might be more appealing to customers (Smith, 2023).

c. Stage Three: Prioritization

Once generating ideas for improvements, a key aspect is prioritising what changes are likely to have the biggest impact on both the customer and your experience. This means comparing the return on investment for the project to the work to get there. It also helps rate each project on a 3-point scale for its expected impact on customer experience (Smith, 2023).

d. Stage Four: Execution

Execution ensures that – after prioritising and aligning, the plan must be executed. Transparent, cross-functional, accountable, adaptable action plans. It ensures timely resolution of issues and a variety of feedback. Accountability to new measures and flexibility are critical to keeping the design designer on track (Smith, 2023).

Smith's (2023) focus on organisations can be adapted to the stage of an interior designer. The analysis phase is characterised by empathising with the user and collecting data. The second design phase will focus on creating a concept and concept that matches the user data collected. In phase three, the designer will focus on the most viable solution based on cost and resources. Finally, the interior designer will bring the selected concept to life, aided by the highlights presented by Smith.

In this section, the researcher shall describe the approach followed to identify the research gap in the literature review. This summary will showcase how the knowledge gap was discovered and reference previously discussed topics, including the User Journey Map Illustration, definition, key elements, importance, and benefits, and the user journey for interior designers and UX spatial interior designers. Hence, figures 2.11 and 2.12 will illustrate the overview.

2.4.8. Case Studies of Using the User Journey Map in Interior Design Projects

Recent studies underscore the transformative advantages of integrating user journey mapping and service design methodologies within interior design. The case study conducted by Akdag and Ergen (2021) on customer journey mapping in gas stations highlights the critical role of user experience in the creation of effective physical environments. Their implementation of customer journey strategies during the design phase illustrates that mapping can significantly enhance service environments, ultimately establishing a competitive advantage for businesses.

This body of research emphasizes the importance of incorporating interdisciplinary perspectives to prioritize user experiences, drawing insights from human-computer interaction, marketing, and spatial design. Such an encompassing approach not only guides decisions related to spatial layout and functionality but also reinforces brand messaging. The role of spatial designers is pivotal as they adopt a human-centred perspective, facilitating collaboration across diverse disciplines to innovate and refine user experiences.

In a similar vein, Kiannu's (2021) research highlights the importance of integrating service design methods into interior design initiatives. By harmonizing these methodologies, interior spaces can be crafted to seamlessly extend the provided service, thereby enhancing overall service delivery. The case study of Artenio exemplifies this concept, demonstrating how the owner redefined her understanding of the business by viewing the physical environment as an extension of the service itself. This paradigm shift was

catalysed by insights gained from the integration of design thinking and customer journey mapping with interior design tools such as space planning.

Ultimately, the amalgamation of user journey mapping and service design within interior projects fosters innovative design outcomes, enabling businesses to create distinct layouts that balance comfort and functionality while addressing the needs of both operations and customers. By adopting this cross-disciplinary framework, designers can strive for a more coherent and user-focused design solution, thereby paving the way for ongoing improvement and competitive success in the marketplace.

Phase1
A Net of Series to Find the Research Gap

The Comprehensive Guide to User Journey Maps in Interior Design

Continuing to Explore the Research Gap

The prior focus of the design thinking process is on user experience design, particularly on the use of a user journey map tool. However, despite its potential to offer valuable insights into user behaviour research indicates that interior designers are not fully embracing this tool. The user journey map is a powerful asset that allows designers to address design challenges and gain a deeper understanding of t heir users. The upcoming theoretical framework aims to highlight the user journey map as an invaluable .resource for interior designers

1. Introduction

A. Clarification on User Journey Maps
B. Significance of User Journey Maps in UX Interior Design
C. Overview of the comprehensive guide

2. Understanding User Journey Maps

A. What are User Journey Maps
B. Elements and Functionalities of a User Journey Map
C. Historical Background and Influential Publications
D. Evolution towards Relationships and Interactions

3. Creating User Journey Maps

A. User Perspective and Touchpoints
B. Visual Representation of User Interaction
C. How to illustrate the User Journey Map effectively

4. Importance of User Journey Maps in Design

A. Utilizing User Journey Maps to Enhance User Experience
B. Understanding User Requirements and Conduct
C. Benefits and Impact on Design Processes

Fig 2.11: The comprehensive guide to user journey maps in interior design



Fig 2.12: The comprehensive guide to user journey maps in interior design

2.5. UXD and Design Thinking as a foundation linked to a structure

According to Dinuzzi (2018), design is more than producing material products; it is a structured, systemic process to address problems. Key to this process is design thinking, a methodology focused on user contribution from start to finish of any design process. The cyclical design thinking benefits UX interior designers, allowing them to create visually attractive spaces while remaining functional and user-friendly.

Design thinking is considered to be an integral part of user experience design (UXD), and both of these disciplines are essential for developing the best possible user experience. UXD well-done results in spaces that are contemporary, beautiful, and enjoyable. The combination with design thinking emphasizes the need for empathy, creativity, and collaboration to solve design problems. Combining these two methodologies allows interior designers to take an innovative approach that advocates a human-centred environment that increases user experience and encourages frequent usage.

The design thinking strategy consists of five phases, all design— and functionality-based enough to guide you to a solution that better meets your users' needs—not just for improved interior design but for a more satisfactory quality of life overall.

However, we must understand that the tools behind this structure have their bounds regarding detailed interior design scenarios (Dinuzzi, 2018).

The author will summarize the approach taken to identify the research gap, illustrated in Figures 2.13 and 2.14. This summary will explain how

researchers pinpointed the knowledge gap and will cover the key points discussed in the section.

Phase1
A Net of Series to Find the Research Gap

The Intersection of UXD, Design Thinking, and Interior Design
Leveraging the User Journey Map

Continuing to Explore the Research Gap

Upon conducting an in-depth analysis of prior research on user experience design and the principles of design thinking as a means of exploring its methodologies, including a detailed exploration of the user journey map tool, it is essential to establish connections between these components to form a comprehensive understanding. Consider envisioning these elements - user experience design, design thinking as a systematic approach to exploring its methodologies, and a detailed examination of the ,user journey map tool - as interlinked components, much like the way a foundation supports a structure enabling a holistic comprehension of user experience within an interior space

1. Introduction

A. Definition of UXD and Design Thinking
B. Importance of a systematic approach in design
C. Relevance of Design Thinking in UX interior design
D. Introduction to the user journey map as a tool

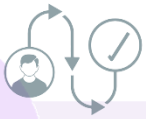


2. UXD and Design Thinking in Interior Design

A. UXD's focus on visually appealing and user-friendly designs
B. Design Thinking's emphasis on collaboration, creativity, and empathy
C. Integration of UXD and Design Thinking for user-centric designs in interior spaces

3. The Role of Design Thinking in Interior Design

A. Five Stages of Design Thinking
B. Tools used in Design Thinking for identifying user needs and improving user experience
C. Limitations of Design Thinking tools in interior design



4. User Journey Map in Interior Design

A. Evaluation of the effectiveness of the user journey map tool
B. Exploration of how the user journey map can enhance a designer's creative process
C. Investigation of how the user journey map can help identify and address user needs

Fig 2.13: The intersection of UXD, design thinking and interior design leveraging the user journey map

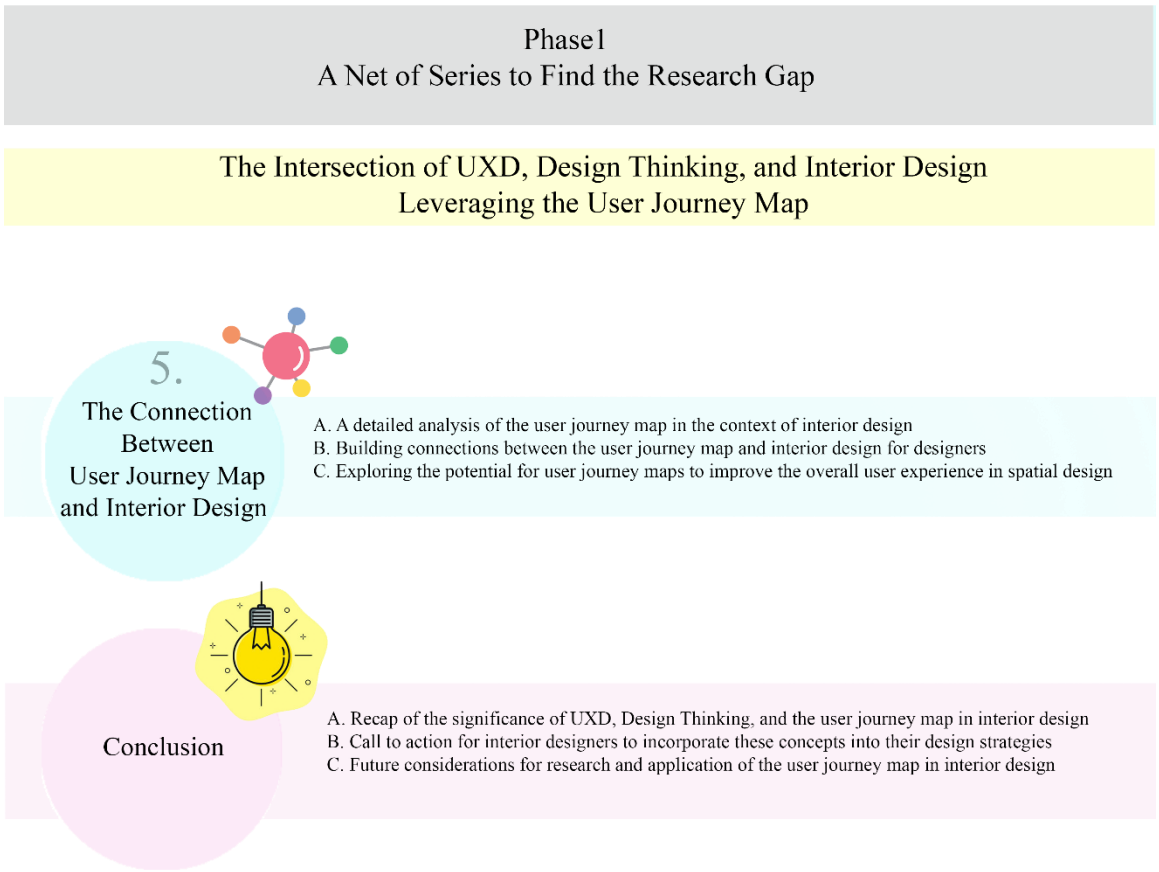


Fig 2.14: The intersection of UXD, design thinking and interior design leveraging the user journey map

2.6. Conclusion

The literature review describes the concept, its significance in history, and its impact on interior design.

In addition, the research focuses on the definition, purpose, and benefits of Design Thinking, including the stages of the Design Thinking procedure according to UX interior designers and the use of the User Journey Map as an instrument for these professionals.

Moreover, the research includes an informative overview of the User Journey Map tool, its important components, and its advantages to UX interior designers. The User Journey Map is a base form of Design Thinking and UXD, a method this study has raised. As user experience design and its relationship to the design process are multispecialty interactions requiring knowledge of all the stakeholders involved, this literature review fills an important gap in our knowledge of what is needed to design for human behaviour. This study clarifies how using a user journey map could enhance interior designers' knowledge of the user experience. Furthermore, this research aims to explore the effectiveness of using a user journey map to enhance the understanding of user experience for interior designers.

In Phase One, the literature review was established; it acquired the first objective of the research study by demonstrating the association between user experience design and interior design spaces and reviewing various user design tools.

However, the problems will be elaborated, articulated, and clarified in chapters Four and Five in the second stage. The discussion focuses on the advantages of a user journey map for comprehending the user experience,

specifically in interior design environments, which qualifies the second objective of the investigation.

The study will authenticate the customer journey map as a tool for interior designers through a qualitative methodology. Nevertheless, the researcher will summarize the process that identified the research gap, referencing Figures 2.15 and 2.16. This recap will emphasize the steps to uncover the knowledge gap to understand readers adequately.

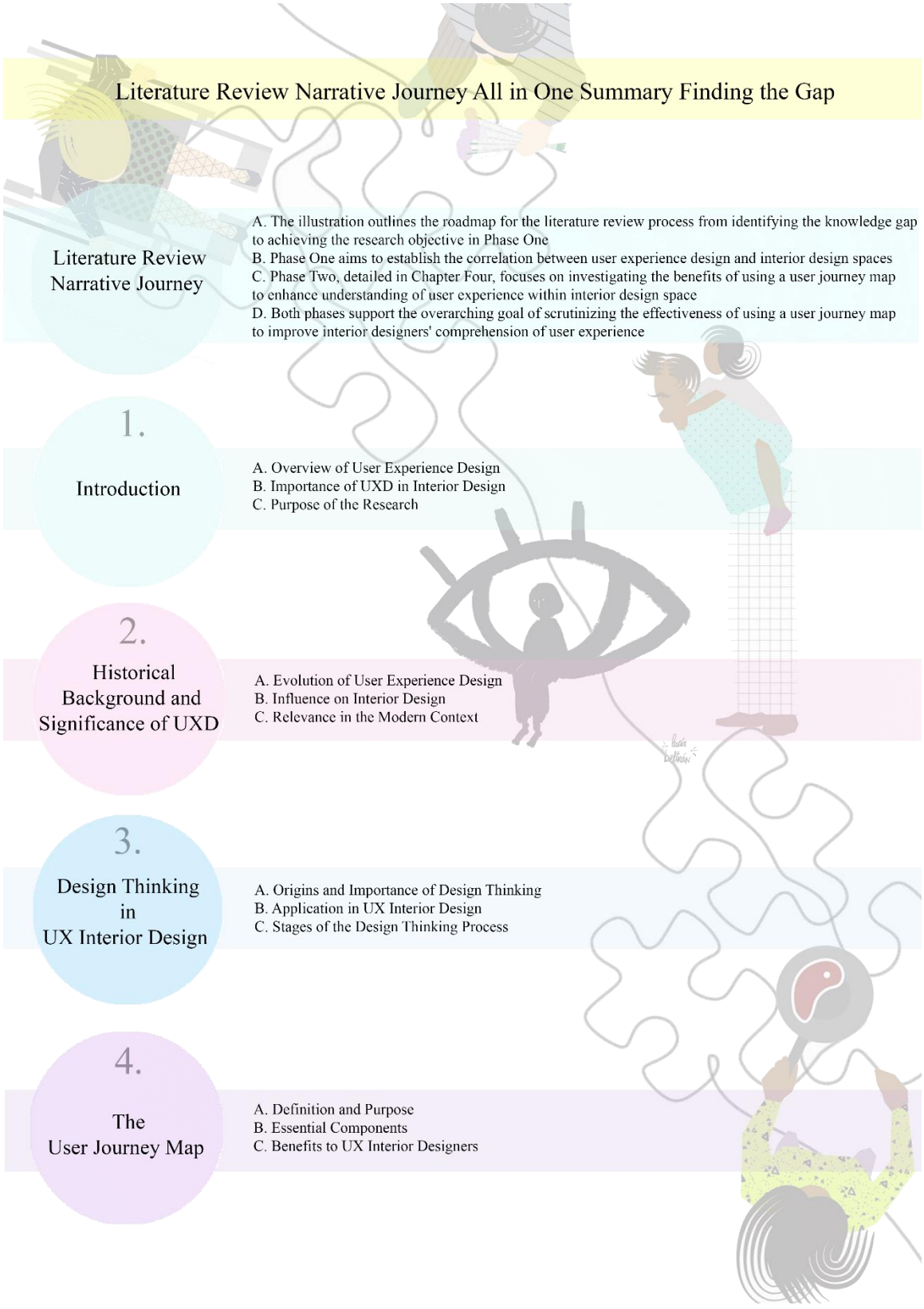


Fig 2.15: Literature review narrative journey, all in one summary, finding the gap

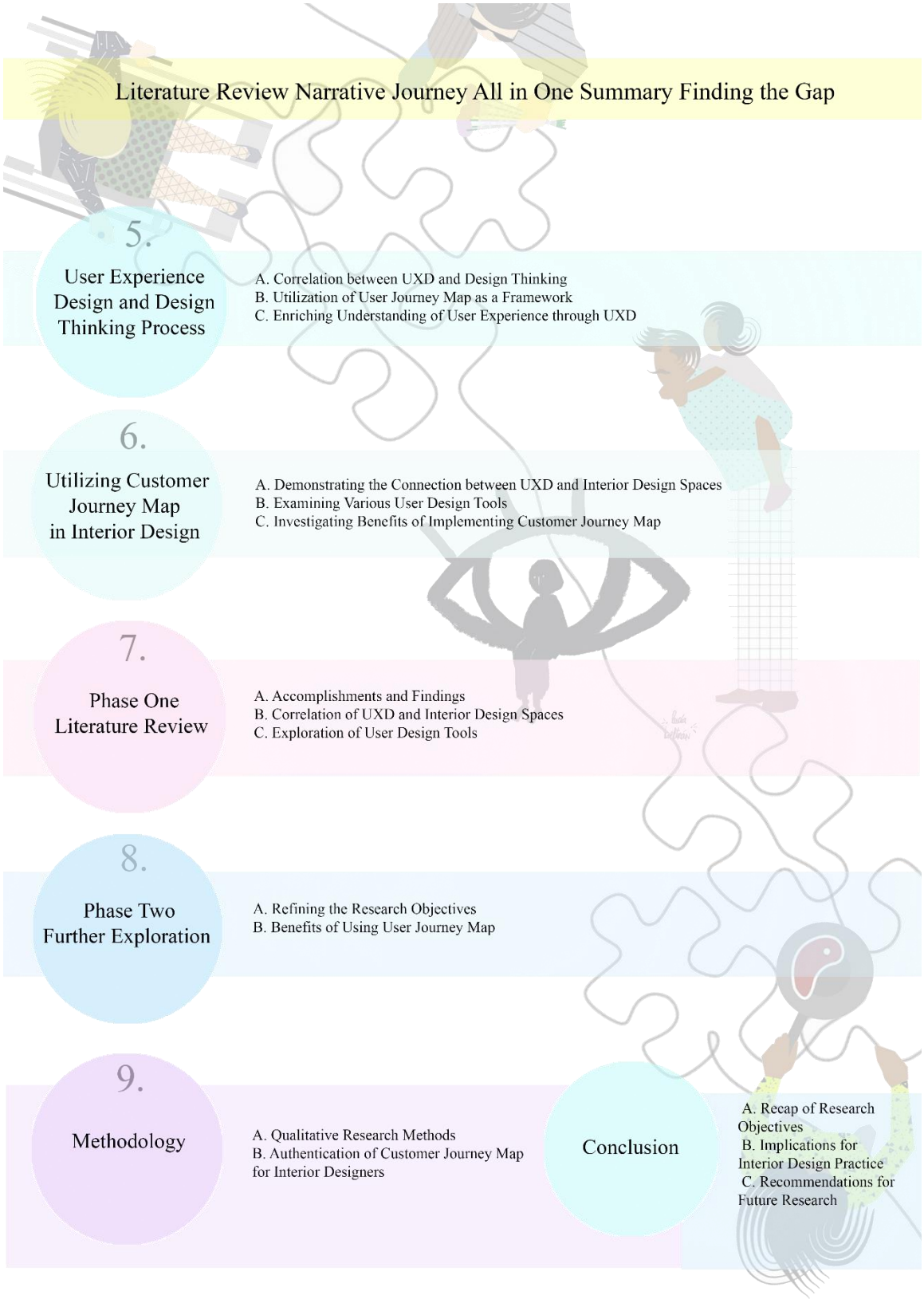


Fig 2.16: Literature review narrative journey, all in one summary, finding the gap

2.7. Knowledge Gap

To provide reason for the study and coherence for the reader, the researcher must identify a gap in the existing literature to develop an improved design process that can effectively comprehend human behaviour. The fundamental inquiry that arises is:

1. How can innovative approaches and techniques be employed to advance the comprehension of user behaviour and experience?
2. Furthermore, what benefits can interior designers derive from these methodologies and approaches to enrich the outcomes of the internal spaces they design? What is the Problem, How to Solve it?

2.8. What is the Problem, how can we Solve it?

For the contextual study, the literature research studies the history, importance, and influence of UXD on interior design. In addition, it reviews the origins, relevance, and advantages of Design Thinking; it also describes stages of Design Thinking as a process for UX interior designers and the User Journey Map as a tool for UX interior designers.

Yet, they do not convincingly verify the user journey map as a technique for creating a holistic representation of user experience for interior designers. This lack of awareness makes it difficult to understand the potential benefits of incorporating new processes like the user journey map within interior design.

Thus, Chapter Four aims to explore the impacts of utilizing a user journey map to enhance insights about user experience regarding interior design environments. This stage will elicit the next step for this inquiry.

Chapter Three: Methodology

3. Introduction

This section outlines the research methodology, referencing the insights of Silverman and Marvasti (2008), which indicate that methodology encompasses the data collection techniques and analysis methods employed to achieve the research aim and objectives.

The chapter commences with an overview of the methodological procedures utilized in this study. It proceeds to describe the research methods implemented, including focus groups (phases one and two), mapping the user journey of interior design students, and interviews, while also providing the rationale behind the selection of these methods.

The primary aim of this research is to investigate the effectiveness of using a user journey map as a tool to enhance the understanding of user experience within the field of interior design. The chosen methods served as foundational principles throughout the research process detailed in this chapter. Silverman (2005) emphasizes that methodology encompasses the deliberate choices of data collection and analysis designed to address the research aims and objectives.

The chapter opens with an introduction to the methodological approach adopted for this study, including a discussion of the applied research strategies—such as focus groups, user journey mapping, and interviews—along with a probe of the reasons for their selection.

Ultimately, this research aspires to validate the advantages of user journey maps and assess whether these tools enable designers to gain a clearer understanding of users' needs, thus enhancing user satisfaction and improving the overall functionality of interior design.

3.1. Research Philosophy

According to Tamminen and Poucher (2020), a researcher's philosophy and theoretical assumptions are crucial as they serve as the foundational lenses of social reality. A research philosophy encompasses the beliefs and assumptions we hold regarding the world, informing how we approach the research process and the methodological and strategic decisions we make (Jonker & Pennink, 2010).

The literature defines research philosophy as the research community's assumptions and theories about the research process. It defines how researchers practically collect, document, integrate, analyse, and utilize data (Crossan, 2003). Research philosophy leads to constructing a broad theoretical framework built on existing theories and constructs related to the research problem.

Ontology, which pertains to the nature of existence, and epistemology, concerning the nature of knowledge, are two essential components of research philosophy that guide researchers in their actions and decision-making processes (Scotland, 2012). As noted by Crotty (1998), ontology involves the nature of being and the assumptions one makes about reality. Researchers must determine what they believe to be true.

In this context, ontology refers to understanding how interior design influences user experience (Ngoc & Fassi, 2018), emphasizing a holistic perspective of the user and the space in which the design problem exists to enhance the overall design experience.

Epistemology is the study of how we acquire knowledge and the various types of knowledge (Cohen et al., 2007). Eriksson and Kovalainen (2015) describe epistemology as exploring knowledge, including its origins and limitations. This research examines the advantages of using user journey maps to gain valuable insights into user experiences in interior design.

This study adopts a postmodernist research philosophy, aiming to uncover the instabilities inherent in commonly accepted beliefs and explore the absences and silences that arise from them (Derrida, 1976). It also emphasizes the importance of examining multi-sited or uncharted spaces (Chia, 2003), which could be approachable using user journey maps as a valuable tool for interior designers.

The literature review indicates a specific need for qualitative research into how user journey maps can enhance interior designers' understanding of user experiences. While user experience design and user journey maps have considerable potential, their application in interior design is limited, highlighting a significant gap that should be addressed.

The research embraces a postmodernist philosophy that seeks to identify instabilities within widely accepted beliefs and to uncover the absences and silences that accompany them (Derrida, 1976). It needs to draw attention to gaps (Chia, 2003), in this case, the usefulness of user journey maps as critical interior designers' design tools.

Moreover, previous literature emphasizes the need for detailed qualitative studies to explore how user journey maps can enhance interior designers' comprehension of and ability to apply user experiences.

Despite the increased interest in this topic, user journey maps are often overlooked in the literature review.

3.2. Research Methodology

Furthermore, it is the preliminary aim of designing the research study. It not only delimits the parameters of an investigation but also provides a parameter for assessing whether the study was successful or completed (Gill & Johnson, 2010; Maxwell, 2012).

This study is grounded in pilot research that outlines the advantages of exploiting a user journey map to gain insights into the context of interior design venues. To achieve this research, aim effectively, a qualitative approach to research was adopted through user journey mapping as an implementation tool (Trischler & Zehrer, 2012).

A review of existing literature revealed that although user experience design tools have been successfully applied in various industries by service providers, design agencies, and consulting firms (Trischler & Zehrer, 2012), they are not widely accepted or specifically tailored for the interior design field. The first phase of the research emphasizes the need to validate the user journey map as a beneficial tool for interior designers. It justifies the exploratory analysis and validation process in the second phase of the research.

The qualitative research method was deliberately chosen because it provides an in-depth understanding of individuals' experiences with specific research methods (Henning et al., 2020). This approach facilitates learning about people in their natural environments while combining experiences and practices to foster change within their epistemological communities (Henning et al., 2020).

As Denzin and Lincoln (2005) describe, qualitative research is the multiple methods, interpretive research of phenomena in a natural occurrence where the events are explained based on the meanings given to the events by individuals. The essential purpose of qualitative research is to collect various empirical materials—a range of problems, events, experiences, life stories, and interviews—to create a conceptual understanding (Denzin & Lincoln, 2005).

This interpretive nature is at the heart of qualitative analysis, which aims to emphasize both the subjective and objective dimensions of human action, motivation, and description in their social and temporal contexts (Creswell, 2009). Primarily exploratory, qualitative scientific investigation seeks to discover the meanings that underlie and give a pledge to such exercises, a methodology, and a challenge throughout a person's life (Mason, 2019). It also assists in understanding the components of their lives (Denzin & Lincoln, 2011).

3.3. Research Strategy

Based on the research philosophy, the first phase of the research procedure has two phases:

The first phase will primarily focus on examining the relationship between user experience design and interior design spaces, particularly emphasising interior designers' underutilisation of user experience design tools.

The second phase will investigate the benefits of employing a user journey map to comprehend user experience in interior design spaces and establish its utility as a tool for interior designers.

3.3.1. Phase One: Literature Review, Demonstrate the correlation between user experience design and interior design spaces while examining various user design tools

Before debating the attributes of phase one, an important consideration is the researcher's responsibility in acquiring, analysing, and transforming data into research knowledge. The various tasks assigned to the researcher during the study play an important role in understanding, learning about, and communicating the study results.

Phase One, and its respect for the Literature Review presented in Chapter Two, is the initial attempt to do righteousness by the overlap between the research process and the existing body of research. The literature review is not a methodology but a systematic process through which the researcher identifies knowledge gaps. As Moher et al. (2009) noted, a systematic review aims to identify all empirical data that meets predetermined inclusion criteria to address specific research issues or hypotheses. Implementing precise and methodical procedures for evaluating publications and relevant data minimises bias, leading to reliable results from which judgments and conclusions can be drawn.

The first section of the second chapter examined the literature to contextualise the issue's genesis, primarily to bridge the gap between user experience design and interior design spaces and identify some of the various UX design tools to help understand what we were missing and frame the problem. This phase focused on achieving the following goals:

Master existing literature and provide a new definition of user experience design in interior design. The research aimed to critically analyse User Experience Design (UXD) and its significance and impact on interior design through its historical context.

Explore the roots, relevance, and advantages of Design Thinking, stages of Diagrams as a process for UX interior designers, and a User Journey Map as a tool. The literature is well covered on the User Journey Map tool and explains its key components and usages for UX-based interior designers. The study highlighted the importance of the User Journey Map tool, which is a core tool of Design Thinking and the UXD framework.

The literature review identified a significant knowledge gap in designing for human behaviour, the fundamental role of user experience design, and its connection to the design thinking process.

The literature review part of the study dealt with the historical and contextual significance of user experience design (UXD) and the research areas it has covered in the context of interior design, as well as the history, significance, and benefits of Design Thinking for UX interior designers.

Nevertheless, one of the most explicit and notable results of this literature review was the poor understanding and insufficient evidence of the advantages of applying user experience design tools, especially the user

journey map, for understanding user experience in interior environments. As a result, Chapter Four also launched Phase Two to bridge this gap.

3.3.2. Phase Two: Explore the benefits of using a user journey map as a tool to enhance the understanding of user experience within interior design spaces

The literature review initially revealed a significant gap in understanding the benefits of using user experience design tools, particularly the user journey map, in comprehending user experience within interior spaces. Consequently, Phase Two aims to explore the advantages of leveraging a user journey map to enhance the understanding of user experience in interior design and to validate its applicability.

This gap will be addressed through fieldwork conducted in Phase Two. The objective is to utilize the user journey map to examine the impactful role of conversation in an experience design context.

In summary, Phase Two seeks to investigate the benefits of incorporating a user journey map into the interior design process. The findings from this phase, detailed in Chapter Four, were achieved through four key steps: conducting a focused group Phase One discussion with practitioners, mapping the user journey of interior design students, interviewing instructors from interior design studios, and conducting a subsequent focused group discussion with the same practitioners from Phase One. These steps were taken to validate the advantages of the user journey map, ensuring user satisfaction and enhancing functionality in interior design for students, educators, and professionals alike.

The findings from this phase confirmed the benefits of the user experience design tool, the user journey map, as utilized by interior designers, thereby addressing the gap identified in Phase One. While Phase One underscored the significance of user experience design in interior design, particularly concerning user journey maps; it did not demonstrate the effectiveness of employing the tool to improve the understanding of user experience. In contrast, Phase Two successfully fulfilled the research aim of investigating the effectiveness of using a user journey map to enrich the understanding of user experience in interior design.

3.4. Data Purpose

Different methods were used for data collection to ensure complete coverage of all aspects of the research.

Phase one consisted of a literature review to clarify what user experience design is about within interior design spaces and research into various user-designed tools. It aimed to compare the adoption of user experience design tools in the interactive design field with that of the user journey map in the interior design field.

Finally, in the next stage, the researcher continues phase two through the exploration of the user journey map benefits for interior designer,

3.5. Research Methods

This study employed qualitative research methodologies, such as research strategy, literature review, and constructive design research. Multiple

methods were used during phase two to accomplish the research aims and objectives.

This chapter deals with research methodologies. Research methods open up differently (Hennink et al., 2020). A mixed-method approach was used, consisting focused group, mapping user journey map, and interviews.

In line with this, the ISO definition of method validation states that it includes the confirmation, investigation, and provision of objective evidence that established requirements for a particular use are met (ISO, 1994). This approach was well-suited to validating the applicability of a particular method.

The methods used evaluated if using a user journey map benefits interior designers to better understand user experience. The following section goes into more detail on the methods taken in this research.

3.5.1. Phase Two: Explore the benefits of using a user journey map as a tool to enhance the understanding of user experience within interior design spaces

In modern design practice, the user journey map surfaced as a powerful tool for clarifying and improving the user experience. As Adam Richardson (2010) describes, the user journey map gives a temporal view of a user when interacting with a product or service; this representation gives an idea of the user's aspirations, objectives, and motivations. This detail-oriented research technique—one of the cruxes of customer journey mapping—allows for a meticulous study of user behaviour, including their intent, touchpoints, tools, and pain points at every journey stage.

User Journey Map is a visual depiction of the user experience with a design; it captures the main steps of your design's experience before, during, and after implementation (Vianna et al., 2012) and shows the multidimensional, time-based nature of the user experience. According to Kahn et al. (2011) and Stickdorn and Schneider (2012), it is essential to help understand the user journey touchpoints to identify the user motivations and offer insights into the reason for the journey.

Kaplan (2016) highlights the significant components of creating a user journey map, including identifying the story's central character or "actor" and ensuring clear user goals along the journey, be it the whole experience itself or an individual touchpoint in said experience. Data for the user journey can come from different research methods, such as fieldwork, diary studies, etc., as these would address user actions, experiences, and thoughts along the journey.

User journey maps play a vital role during the design phase, offering designers valuable insights into users' emotions and experiences with their creations, ultimately enhancing their work (Gibbons, 2018). Additionally, Budikusuma (2023) emphasizes that user journey maps foster a deeper understanding of the design process for users.

This study examines the significance of user journey maps and their benefits in improving user comprehension, thereby contributing to a more refined inner design functionality. It will focus on three effective methods to demonstrate their advantages in interior design for students, educators, and practitioners. These methods include conducting focus groups, visually mapping the experiences of interior design students, and performing interviews. The subsequent section will provide a more in-depth exploration of these methods.

a. Focused Group:

Criteria for Selecting a Focus Group in This Research:

1. To collect diverse viewpoints from practitioners in the field.

2. To engage with professionals possessing expertise in the relevant area.

3. To gain insights into how practitioners navigate real projects and their strategies for understanding users.

4. To assess the effectiveness of various tools utilized in the study of user experience design.

5. To identify practitioners' perceived limitations of user experience design and explore potential enhancements.

6. To investigate individual practitioners' perspectives on user experience design.

7. To tackle the challenges associated with understanding users in order to improve design quality.

The research initiates with a focused group phase one discussion, according to Susanto et al. (2024), focus groups represent a methodological approach employed in research to collect data through facilitated group discussions centred on a specific topic designated by the researcher. This method underscores the significance of group dynamics and focused dialogue in obtaining rich, qualitative insights.

Wherein findings derived from diverse research methodologies are iteratively analysed to validate the user journey map specifically designed for interior designers, which includes stakeholders such as students, educators, and practitioners.

The initial phase employs a method that assesses practitioners' familiarity with the concept of user experience design, allowing the researcher to investigate the limitations practitioners encounter in comprehending users on a deeper, more nuanced level.

Additionally, a tool will be introduced that aids in broadening the understanding of users, thereby enhancing their experiences in interior design and establishing a foundational inquiry.

In the subsequent phase, a comprehensive exploration is conducted, scrutinizing the advantages of the user journey map for practitioners while evaluating its efficacy in facilitating user tracking and augmenting design functionalities.

Insights gathered from focused group phase one informed the selection of an additional methodological approach: mapping the user journey of interior design students.

This methodological strategy aims to assess the extent to which designers apply the user journey map in the design process to adequately address user needs within the confines of functional interior environments.

b. Mapping User Journey Maps:

Criteria for Selecting a Mapping Analysis for This Research:

1. To investigate how interior design students utilized user journey maps to deepen their understanding of users.

2. To examine how these students integrated insights gathered from users into their design elements.

3. To connect the user journey maps created by the interior designers with the outcomes of the 3D prototypes.

4. To evaluate the benefits of employing user journey maps for interior designers in enhancing user comprehension for improved spatial design.

In conjunction with this, the research examines the methodologies utilized by students in leveraging these maps, critically evaluating how effectively they translate the insights gained into concrete interior design elements that align with user satisfaction.

The findings resulting from this evaluative phase underscored the subsequent methodological step: conducting interviews. The evidence extracted from mapping the user journey of interior design students reinforced the notion that students experience substantial benefits from this tool.

Consequently, the researcher aimed to validate these findings through interviews with interior design instructors, thereby expanding the applicability of the user journey map for both students and educators. The following section elaborates on the interview methodology.

c. Interviews:

Criteria for Selecting Interviews for This Research:

1. To corroborate findings from previous methods, specifically by mapping the user journeys of interior design students.

2. To ensure that the user journey map provides value from alternative perspectives, such as those of educators.

3. To obtain deeper insights into their expertise within the academic realm.

To enhance the research framework, the investigator carried out interviews with interior design instructors acquainted with the user journey map. The results from this methodological approach affirmed the positive impact of the interior design student user journey map as a tool for enhancing user satisfaction and optimizing the functionality of interior design.

Furthermore, these findings indicated that interior design instructors could utilize the user journey map as an educational instrument, integrating it into their curriculum to foster a deeper understanding of intended users among students. This, in turn, promotes the creation of designs that are more functionally congruent with user needs.

Looking forward, following the validation of the user journey map through these two methodological sources, the researcher aspires to broaden its application within the design process. The aim is to present the synthesized findings from the preceding methodologies to the focused group in phase two, which consists of the same practitioners from phase one.

This presentation will serve to corroborate that practitioners will also derive significant benefits from implementing the user journey map as a tool for enhancing user satisfaction and improving the overall functionality of interior design.

3.5.2. Data Purpose

The literature review conducted in phase one enabled the researcher to recognize and articulate the research gap. In phase two, data gathered from Focus Group Phase One and Phase Two with practitioners, along with the mapping analysis of students' user journey maps and interviews with interior

design instructors, further substantiated the efficacy of the user journey map as a valuable tool and helped to address that gap.

3.5.3. Research Sampling

The validity and relevance of research findings are significantly influenced by the methods used for sampling and data collection. These methods should align with the research aims and objectives, adhere to contemporary theoretical frameworks, incorporate a limited range of diverse participant perspectives, and be clearly articulated in the findings while acknowledging any limitations (Gibbs et al., 2007). However, Kvale and Brinkmann (2009) emphasize the importance of maintaining a focused sampling approach for effective analysis. Consequently, it was essential to restrict the number of samples to concentrate on the resulting analysis. For this study, the selected samples are categorized as follows:

The first category includes four practitioners in the field of interior design, with the researcher facilitating a focused group discussion among all participants simultaneously. In the second category, fourth-level students studying interior design were selected, wherein sixty user journey maps were reviewed, from which sixteen students were chosen to illustrate how interior design students derive insights through user journey mapping and how to translate these findings into design elements. The third category encompasses interviews with four chosen interior design instructors to validate the benefits of utilizing the user journey map.

3.6. Designing the Focused Group, Mapping User Journey Map Analysis, and Interviews

A well-structured research design is imperative for obtaining reliable results and formulating rational conclusions. This design effectively integrates the selected methodologies with the research aim and objectives, thereby facilitating the proficient collection of data and the application of relevant analytical techniques using credible sources.

Moreover, the research design encompasses three distinct methodologies: Focus Group discussions with practitioners (conducted in phases one and two), mapping the user journey map of interior design students, and conducting interviews with interior design instructors. These methods have been meticulously selected and tailored to align with the specific aim and objectives of this research, resulting in effective data collection processes.

3.6.1. Focused Group

The design of the focus group commenced with an initial phase and concluded with a subsequent phase.

The researcher organized the focus group by engaging four practitioners in interior design to investigate their understanding of user experience design and their methodologies for collecting user data. In the initial phase, the researcher initiated the discussion by presenting three questions, each centred around the concept of user experience within the realm of interior design. These questions served to facilitate a narrative throughout the discussion. The questions posed were as follows:

1. How can you ensure that the optimal user experience is integrated into your design?

2. What steps do you undertake to achieve the best user experience?

3. How do you ensure that users have an optimal experience?

The discussion in the second phase with the same practitioners primarily focused on the user journey map as a tool and the practitioners' willingness to incorporate it into their design processes to enhance user satisfaction and design functionality. Four questions were addressed in a cohesive narrative flow, including:

1. What are your thoughts regarding the utilization of the user journey map tool?

2. In what ways do you believe it will enhance the user experience in design?

3. How do you think it will improve the interior design process?

4. Would you consider incorporating the user journey map into your practice?

Phase one of the focus group served as a foundational method to inform subsequent approaches, emphasizing the advantages of the user journey map for interior designers. Phase two, conducted with the same practitioners, functioned as a conclusive effort to validate the effective utilization of the user journey map by interior designers, including students, educators, and professionals.

3.6.2. Mapping User Journey Maps

The qualitative approach utilized in this research, which focuses on the user journey map, was a vital component for the final-year interior design students in the design course. This approach was particularly important as the research centres on the user journey map, prompted the students to be equipped with this tool. Consequently, the researcher evaluated how the students implemented the user journey map and explored the extent of its positive impact on the overall design outcome.

The tool used by the final-year design students will be presented below as an initial example.

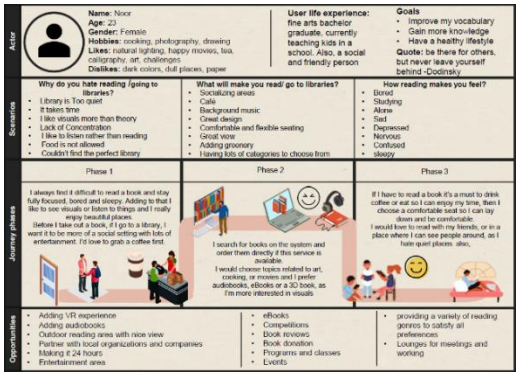


Fig 3.1: User journey map example 1

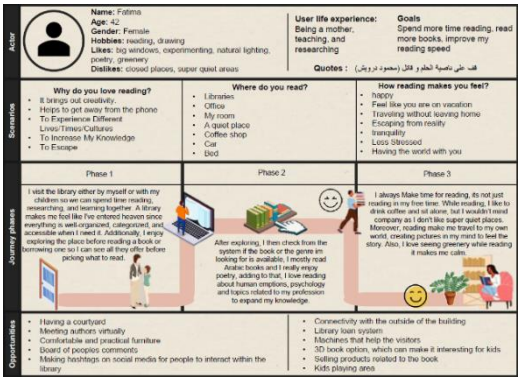


Fig 3.2: User journey map example 2

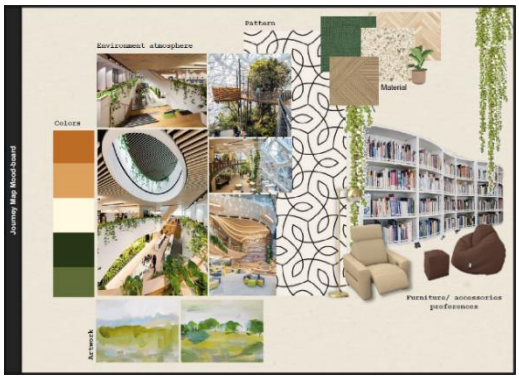


Fig 3.3: User journey map example 3

The following discourse elucidates several user journey map tools exemplified in Figures 3.1, 3.2, and 3.3, which were developed by students in the Interior Design program. These visual representations illustrate how students customized their journey maps while ensuring the integral components of user experience were preserved.

One exemplary user journey map was constructed by an interior design student focusing on a library space design project. The overarching objective was to create a library environment that catered to both avid readers and those less inclined toward reading. To achieve this, the designer conducted surveys targeting both demographics, thereby acquiring insights that informed the journey mapping process, ultimately allowing for design considerations that aligned with user needs and preferences. Information gathered encompassed a variety of demographic factors including participant names, ages, hobbies, and reading habits.

The students delineated the library visit into four distinct phases:

1. Arrival and Tour: Upon entry, visitors were guided on a tour designed to awaken their senses and foster a sense of anticipation.
2. Engagement Activities: The event featured a series of talks and book club sessions, which were instrumental in enhancing visitor engagement and overall experience during their time at the library.
3. Themed Area Exploration: A designated themed area was created for the exploration of new literature, character dress-up activities, and other interactive experiences aimed at increasing visitor participation and enjoyment.
4. Accessibility and Free Exploration: The concluding phase was intentionally structured to maximize accessibility, allowing

individuals the freedom to navigate the library at their own pace, seek out books, or enjoy the amenities provided by the library café and shop.

Feedback from users indicated that during the initial phase of their visit, many felt overwhelmed due to the absence of clear signage and direction. Conversely, the second phase, characterized by sections that focused on auditory and visual materials, proved to be more engaging. The third phase offered a tranquil environment conducive to research, while the final phase provided an opportunity for visitors to relax in a warm and inviting library café.

It is imperative for the researcher to provide a succinct overview of the user journey map and the methodology employed by the interior design student in its development. This background information is essential for establishing a foundation upon which specific insights into the user journey map design process can be articulated. Further elaboration on this topic will be provided in Chapter Four.

Subsequently, the following section will outline the methodology utilized for the purposefully organized group interviews conducted by the researcher.

3.6.3. Interviews

In pursuit of the research's aim and objectives, the researcher adopted a qualitative approach and conducted interviews. The process commenced with formulating interview questions and creating semi-structured questions comprising seven key inquiries listed in the Interior Design Instructors Pilot Study section as the final modified questions.

Longhurst (2003) defines interviews as verbal communications (or dialogue) between the interviewer and the subjects of inquiry to gain information from other people. Additionally, Kallio et al. (2016) argue that qualitative semi-structured interviews strengthen the findings' objectivity, reliability, and credibility.

The practice of using semi-structured interviews was valuable for triangulating the findings derived from the use of user journey maps among interior design students. This method was adopted to complement the findings gleaned from the inspection of the user journey map.

Seven types of semi-structured questions were designed, and interviews were arranged for four interior design teachers.

3.8. Focused Group, Mapping User Journey Maps, and Interviews Data

It is imperative to underscore the methodology employed for data collection. The researcher adopted three distinct approaches to gathering data: Focused Group discussions, Mapping User Journey Maps, and additional techniques. Importantly, the data sets were collected within the geographical context of the Kingdom of Bahrain.

3.8.1. Focused Group

The researcher arranged a meeting with four female practitioners. Initially, the researcher reached out to the participants to confirm their availability for a designated time. All four participants agreed to the proposed time and location.

During the meeting, the researcher gathered everyone around a table and provided each participant with a draft paper to record their insights on the research topic. After allowing time for brainstorming, the researcher facilitated a discussion among all the participants.

The conversation lasted between 20 and 30 minutes, after which the researcher collected the draft papers. Following the discussion, the researcher transcribed the participants' comments.

3.8.2. Mapping User Journey Maps

Introducing the user journey map to students was necessary as they were unfamiliar with its use within the field of interior design practice. During its introduction, students were assigned a two-week deadline to create user journey maps for two users (a reader and a non-reader). These maps are produced on real people having real experiences. Thereafter, submissions for this undertaking journey maps were uploaded on Teams.

3.8.3. Interviews

Data on the motivations was collected by creating and scheduling individual interviews at times preferred by the individual. All instructor interviews of 14–20 minutes each, were held via Microsoft Teams. Each interview was recorded for documentation and reflection. Then, transcriptions of the recordings were made for later review and analysis.

3.9. Focused Group, Mapping User Journey Maps, and Interviews Data Analysis

This section describes how data was analysed, including Focused Group, Mapping User Journey Maps, and Interviews.

3.10.1 Focused Group

Focused groups were analysed utilizing thematic analysis, a qualitative research method that enables the identification, examination, and presentation of themes or patterns within a dataset. This approach, often referred to as thematic investigation, enhances our understanding by elucidating new insights and knowledge (Elliott, 2018). Thematic analysis serves to facilitate a more coherent comprehension of the results and conclusions for both the researcher and the audience.

Following an initial phase of familiarization with the focus group discussions, we systematically identified key terms, selected pertinent codes and characteristics, and subsequently developed themes through careful interpretation of the data. This rigorous process culminated in the establishment of a conceptually distinctive model. The six stages of thematic analysis provided a robust framework for the effective examination and interpretation of the data.

3.10.2 Mapping User Journey Maps

User journey maps were analysed using thematic analysis. The research method, popularly known as thematic investigation, is a procedure for identifying, analysing, and reporting themes (patterns) within a data set that often sheds new light on insights and new knowledge (Elliott, 2018).

It helps the researcher and the reader better understand the results and findings. After becoming familiar with the user journey map, identifying keywords, choosing codes/characteristics, forming themes, and interpreting the data with these codes/keywords/themes, we develop a conceptually distinctive model. These six phases established the base for the researcher to analyse the data.

3.9.3. Interviews:

The interviews were subjected to thematic analysis, a qualitative research method as described by Xu and Zammit (2020). This approach entails identifying patterns within the data, documenting these patterns, and interpreting their significance. Following the transcription process, the data analysis was executed in six distinct stages:

1. Familiarization with the data
2. Identification of key concepts
3. Selection of relevant codes
4. Development of overarching themes
5. Interpretation of the identified keywords, codes, and themes
6. Construction of a conceptual model

3.10. Pilot Study

3.10.1 Interior Design Instructors Pilot Study

According to the study by Arain et al. (2010), an exploratory study has to test possible approaches to wide and deep research. The objective of a pilot

study is not to miss any major faults that can be costly in terms of time and money.

The aim of a pilot study is less to answer specific research questions than to ensure that researchers do not embark on a large-scale study with a poor understanding of the methods they propose to use (Polit & Beck, 2017).

Based on the methodology, an initial pilot interview was performed with one faculty member, which refined the questions for the planned focused group interviews. The semi-structured interview direction was used to collect data for the interior design educators. The questions used are presented below.

Previous Questions Before Modifications	
1.	Can you clarify how helpful the user journey maps were for interior designers in developing design concepts and interior configurations to enhance the user experience?
2.	Did the interior designer create a design that improves the user experience for their clients?
3.	Additionally, please suggest a method for further developing the tool to improve the user experience within interior spatial design.

We validated this through an academic lens about why our interview questions were not achieving the research goal we set out to achieve, which from the University Faculty we reached out for. So, the first three of these questions were reformulated into seven distinct narrative questions that clearly partnered with the research's aims and objectives.

Based on the input above, the following updated questions will guide our subsequent interviews.

Final Modified Questions for Focused Group Interviews	
1.	How familiar are you with the concept of user journey maps in the context of the design process?

2.	In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?
3.	From your point of view how user journey map can influence the final design outcome?
4.	From your perspective, what are the key benefits of incorporating user journey maps into the design process? Are there any drawbacks or challenges associated with their use?
5.	How do you think user journey maps can help improve the overall user experience and satisfaction with the designed spaces?
6.	In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?
7.	Do you think there are specific types of interior design projects or spaces? Where the use of user journey maps is particularly effective? Could you elaborate on such instances?

Final input was taken from a university faculty member on the previous set of questions that needed refining for clarity and focus. The changes made to the questions were, therefore, very much targeted at ensuring that those questions were tight and organized at the right level to enable the interviewee to provide a clear and constructive response in line with the goals and objectives of the research.

3.11. Reliability and Validity

According to Selltiz et al. (1976), the reliability of the sources pertains to the consistency, stability, and repeatability of sources and allows the investigators to collect and maintain information systematically. This idea pertains to how well a research method can generate the same results from one testing session to another. It means that a researcher who carries out a

similar study with similar subjects should produce similar results every time and have well-established procedures.

On the other hand, Bratuch and Bacs (1987) complement Le Comple and Goetz (1982) in defining research validity with the accuracy and truthfulness of scientific results. This study also interviewed university faculty as another level of the pilot study for this research to provide more credibility. It was to hone the study design, clarify the questions, and align the approach with the concerns of the chosen community. Researchers should be aware of elements that might have an impact, negative or positive, on the validity and the reliability of their findings and respond by adopting the most appropriate measures to minimize and manage the associated risks (Brink, 1993).

Data saturation has been achieved, as outlined by Fusch et al., op. cit., showing that the user journey is a meaningful tool in the interior design landscape (2015). Data saturation is defined as having sufficient information to replicate the study, at which point no more data can be obtained, and coding additional data is no longer worthwhile. It indicates strength and completeness in the results.

3.12. Summary

This knowledge and its epistemological foundations are explicitly articulated within the Philosophical-Methodological Framework of this study, as referenced in the preceding section. It engages in a thorough examination of the study's ontological and epistemological considerations and elaborates on the rationale behind the selected methodological approach.

This section presents a comprehensive outline of the research strategy, encompassing the two-phase research design and the methods employed for the collection of research material during the second phase. The discussion includes:

1. Research coding,
2. Research design methodologies,
3. Methods of data collection,

The relationship of each method to data analysis, and the reliability and validity associated with these methods.

Chapter Four: Analysis

4.1. Introduction

This chapter provides a comprehensive analysis of data collected through qualitative methodologies, focusing primarily on design methodologies and the researcher's experiential insights. The objective is to develop visual data mappings, particularly in relation to research adaptations derived from this study. Additionally, it outlines the researcher's role in processing and analyzing the collected information.

The analytical framework consists of four interrelated phases. The first phase involves examining a select group of practitioners to assess their familiarity with user experience design in practical contexts. This evaluation sets the stage for the second phase, which includes analyzing and experimenting with a user journey map tool among interior design students to evaluate its perceived benefits. The researcher has integrated themes identified in the literature review, particularly from section 2.1.4, which discusses how interior design elements can influence user experience design. These themes highlight significant dimensions related to internal scenarios that are critical for user experience.

In the next phase, the researcher reviewed 60 student journey maps and conducted a detailed analysis of 16 interior design student user journey maps, concluding that the majority of students gain substantial benefits from using the user journey maps.

The third phase involved conducting interviews with interior design instructors who possess expertise in using the user journey map tool. This

phase resulted in the identification of seventeen themes that support the idea that the user journey map is a valuable resource for both instructors and students.

Finally, the fourth phase—referred to as the focused group phase two—involved re-engaging the same practitioners in a follow-up discussion and analysis. The primary objective was to determine whether practitioners, in addition to students and educators, could also benefit from the user journey map in their interactions with clients. Findings from this phase reinforce the notion that practitioners view the user journey map as a powerful tool for enhancing client engagement and fostering deeper insights, ultimately contributing to improved functionality in interior design.

The next section will provide a complete overview of the evidence supporting the assertion that the user journey map is an invaluable resource for interior design students, educators, and practitioners alike..

4.2. Designing Analysis Methods

This part answers the study's analysis once the data collection process is completed because it is a significant part of determining the research process and how the data was analyzed. Its analysis will help the researcher properly interpret the results.

The challenge was that the data's structured nature produced disparate output, requiring custom analysis techniques to turn it into information. It included final visual mapping data (user journey maps) and 3D renders of interior spaces for undergraduate students. In addition to the user journey map, interviews and discussions have been conducted.

During the analysis phase, the researcher took on various roles to examine and validate the data, examining each type of data from multiple perspectives. The data was used in the most productive manner possible.

4.3. Analyzing Visual

This study primarily comprises visual data supplemented by discussions. While visuals offer limited affordances for interpretation and analysis, their presentation varies regarding verification or dismissal based on the research question. Occasionally, visuals can introduce new exploration opportunities. Due to diverse sources, visuals within the same category or from the same source are deemed distinct. For example, user journey maps and 3D renders created by different interior design students exhibit variations in techniques and abilities and in graphical representation according to user needs.

The researcher categorizes the visuals broadly as "subjects", specifically user journey maps and 3D interior renderings. Aligned with the theme familiarised in the literature review in section 2.1.4, focusing on "how interior design elements can influence user experience design". Pictograms are designed for each subject (interior design elements) to facilitate easy reference and identification of themes.

4.4. Focused Group: Phase One

A focus group was selected as a method to gain insights into the dynamics within interior design offices, specifically concerning user experiences and the strategies practitioners employ to achieve optimal design

outcomes. The objective was to explore the steps practitioners take to cultivate exceptional user experiences and to identify tools that could be advantageous to them.

The researcher convened four practitioners and facilitated a discussion centred on three main questions, each naturally leading to the next:

1. How do you ensure the excellent user experience in your design?

2. What steps do you follow to incorporate the best user experience?

3. How do you ensure that users have a positive experience?

These inquiries unveiled four major themes highlighted by the practitioners as crucial for integrating the best user experience into their designs: User Research, Defining Users, Prototyping, and Analytical Tools.

In the following section, visuals will illustrate the key findings shared by the participants. The researcher will analyse and emphasise these findings and outline the major themes discussed.

4.4.1. How can you ensure you include the best user experience in your design?

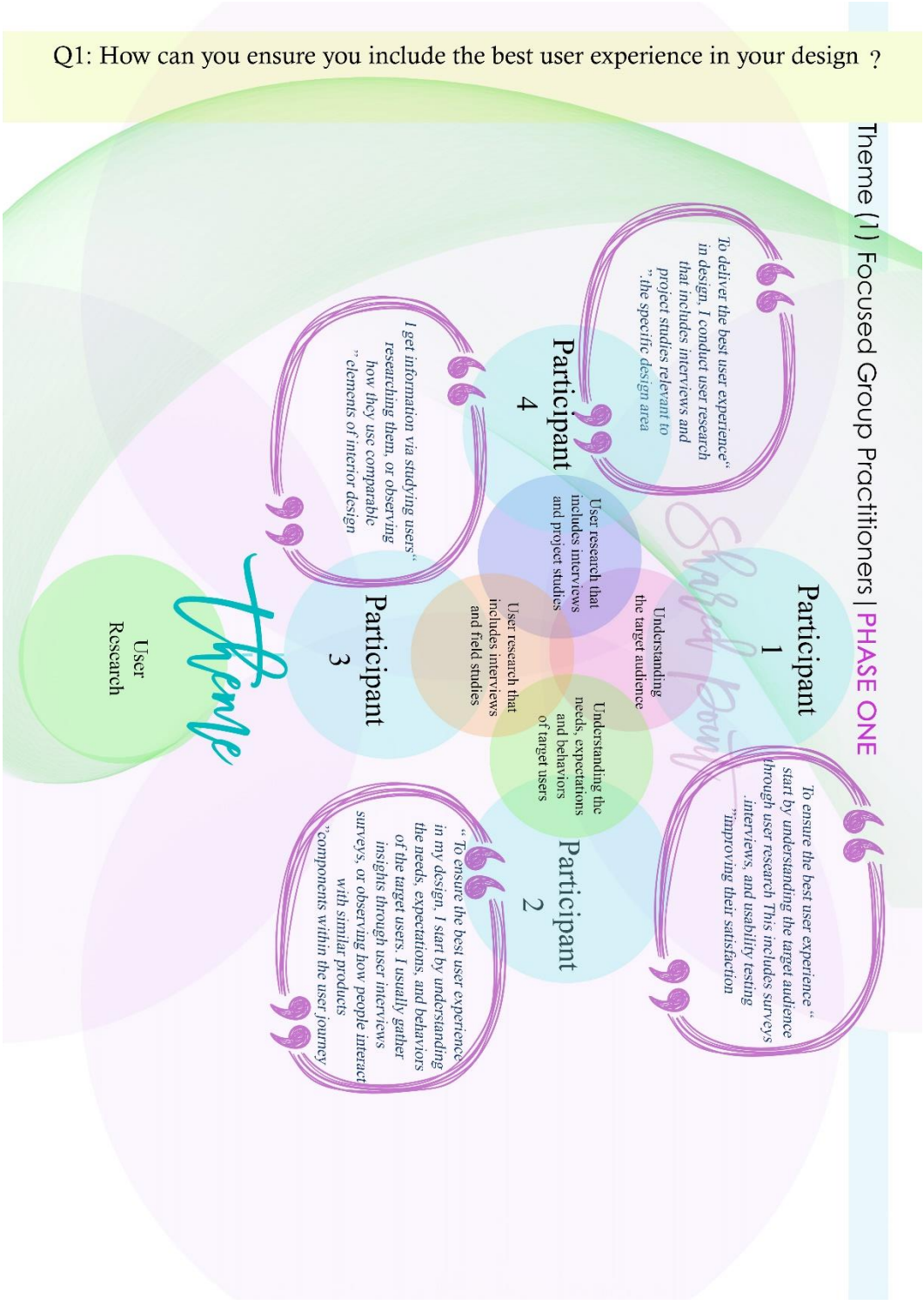


Fig 4.1: Theme (1) Focused Group Practitioners

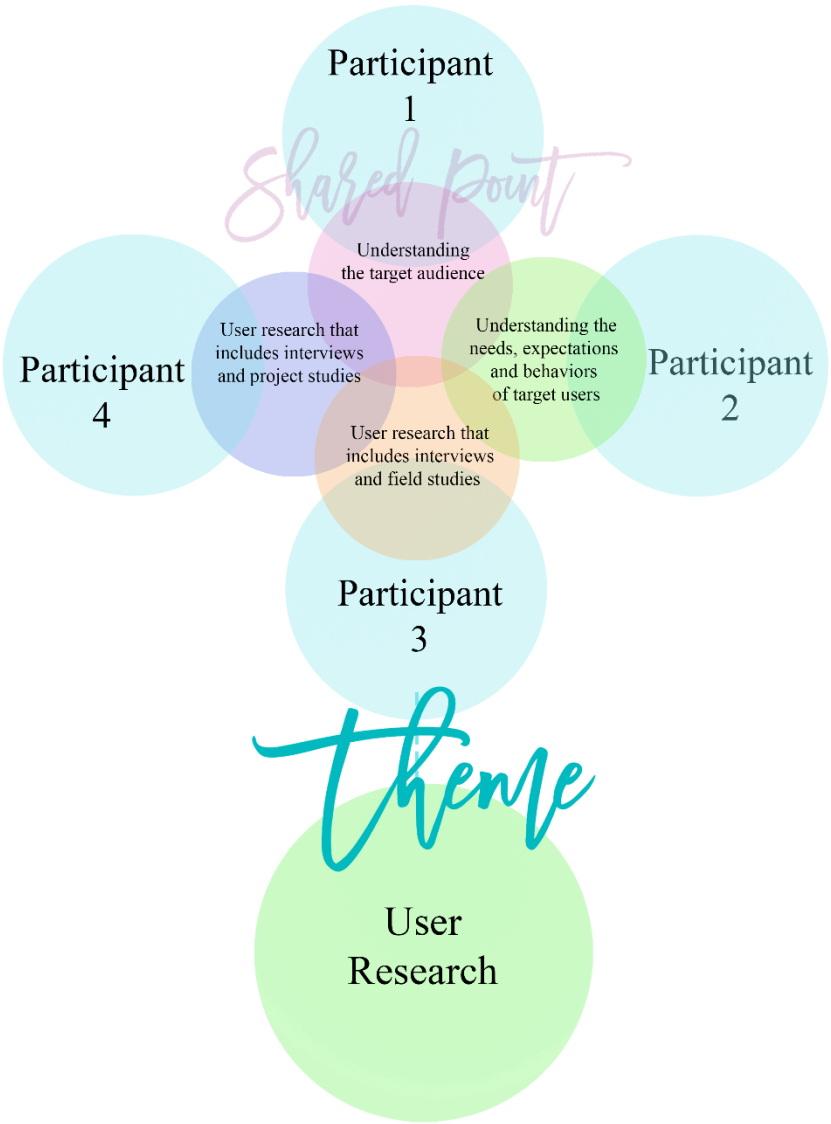


Fig 4.2: Theme User Research

1. User Research

The researcher underscored a pivotal question that shaped the focus group discussions among practitioners: "How can we ensure that we incorporate the best user experience into our designs?" This inquiry seeks to gather insights into how practitioners prioritise user experience design while developing products for their users.

All the designers acknowledged the necessity of conducting user research. One participant noted, “To guarantee the best user experience, we should start by understanding our target audience through user research, which encompasses surveys, interviews, and usability testing”.

Another participant added, “In my designs, I prioritise gaining insights into the needs, expectations, and behaviours of the target users.”

A third participant remarked, “The initial step in creating a successful user experience is to understand the desires and expectations of my target audience. I gather information by studying users, researching their preferences, and observing how they interact with similar products”.

Furthermore, a fourth participant emphasised, “To provide the best user experience in design, I conduct user research that includes interviews and project studies relevant to the specific design domain”.

In conclusion, all four practitioners universally agreed on the importance of conducting user research as an essential component in integrating the best user experience into their designs.

Building on the insights garnered from the discussion, the researcher formulated an additional narrative question to deepen the inquiry. The aim is to understand the specific steps practitioners follow to incorporate the best user experience, which will be explored in the next focus group session.

4.4.2. What are the steps followed accordingly to include the best user experience?

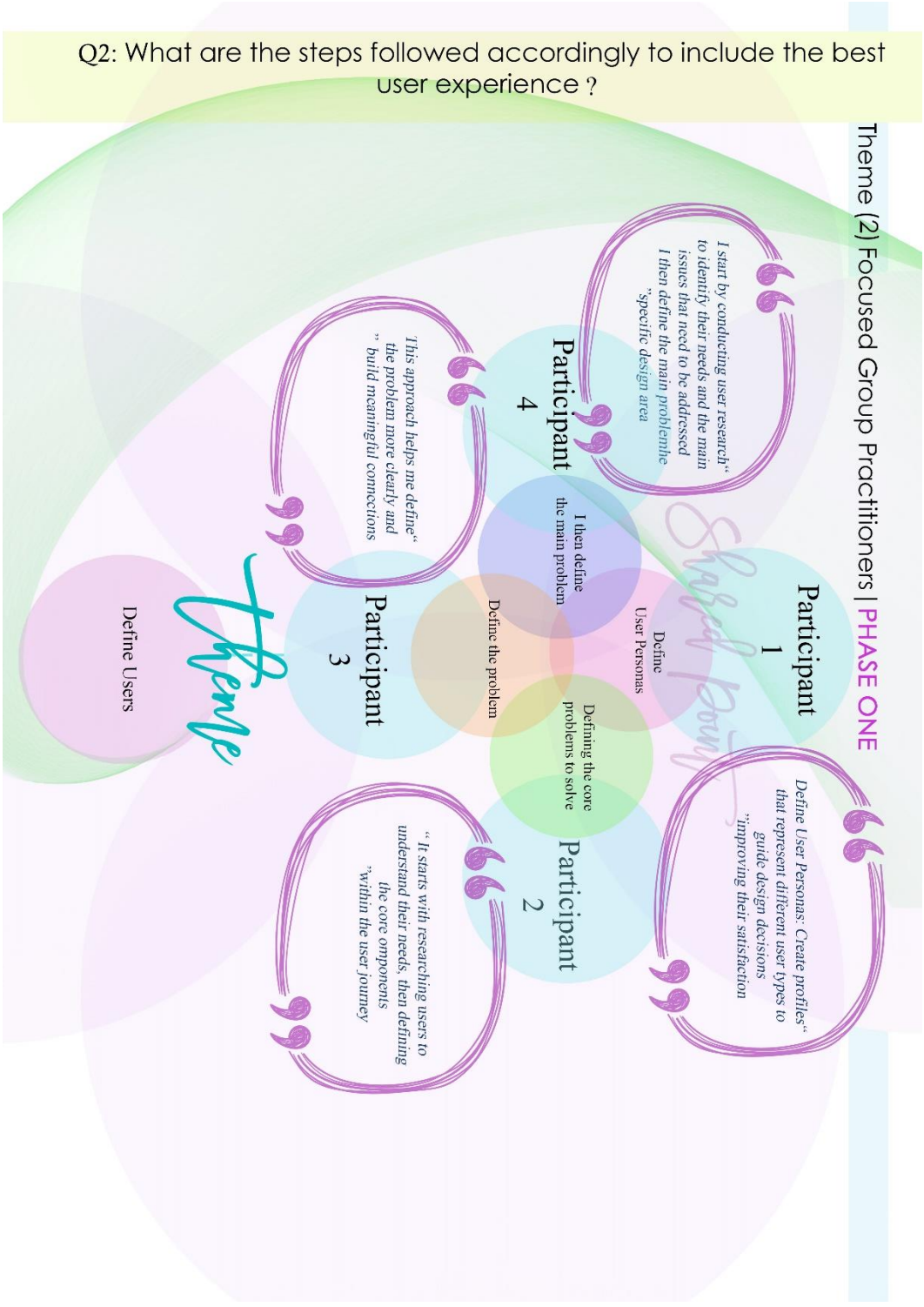


Fig 4.3: Theme (2) Focused Group Practitioners

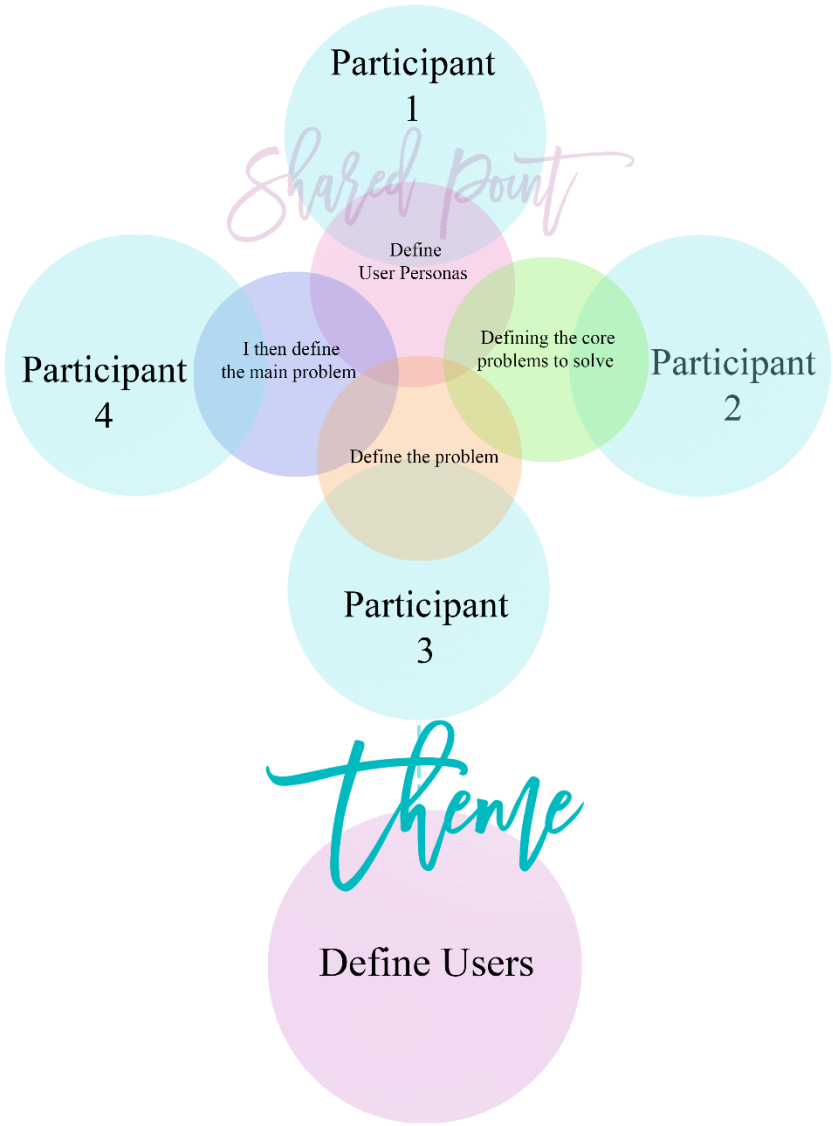


Fig 4.4: Theme Define Users

2. Define Users

The researcher asked the participants, "What steps do you take to ensure the best user experience?" This question aimed to clarify the methods that practitioners use to deliver optimal user experiences. All four participants emphasised the importance of defining user extremes.

Participant 1 stated, “I create profiles that represent different user types to guide my design decisions”. Similarly, Participant 2 remarked, “I follow a user-centred process, starting with researching users to understand their needs and then identifying the core problems to address”.

Participant 3 added, “I begin by actively listening to my users without judgment or assumptions during the initial stage. I ask them about their likes and dislikes and observe their expressions as they discuss or interact with their environment. This approach helps me clarify the problem and build meaningful connections”.

Participant 4 explained, “To ensure an optimal user experience, I place users at the centre of the design process. I start with user research to identify their needs and the primary issues to address, followed by defining the main problem”.

All four participants agreed that understanding users is a crucial step in ensuring the best user experience. They consistently prioritised users in their design processes. However, none of them mentioned specific methods, processes, or tools. Following up, another theme appeared during the session, “What steps do you take to ensure the best user experience?”, which will be analysed next.

Fig 4.5: Theme (3) Focused Group Practitioners

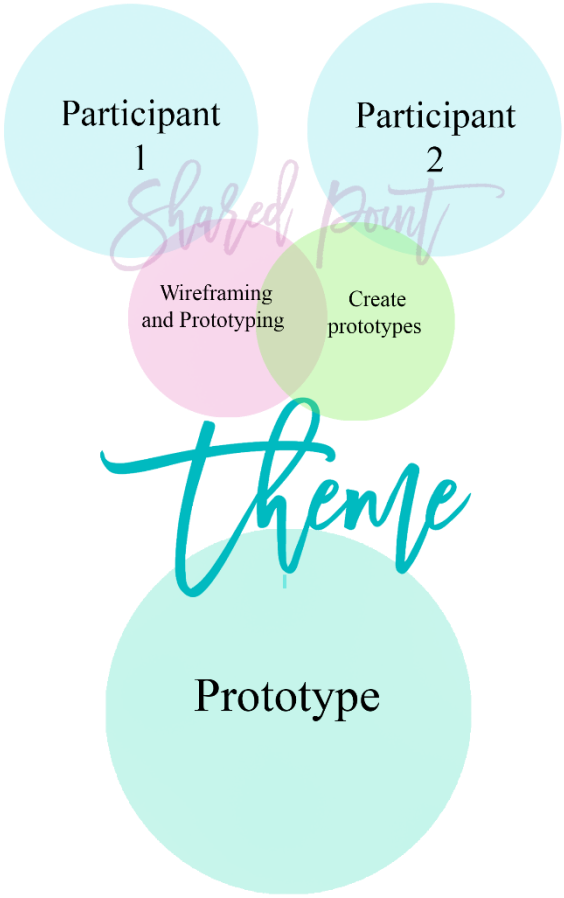


Fig 4.6: Theme Prototype

3. Prototype

The researcher engaged the focus group in a deeper discussion to gain additional insights into their strategies for ensuring an optimal user experience. During these discussions, two participants highlighted the importance of prototyping before finalising design decisions, emphasising that user satisfaction at the prototype stage is crucial before progressing further.

Participant 1 stated, “I develop low-fidelity wireframes and high-fidelity prototypes to visualise the design”. In contrast, Participant 2 mentioned, “I brainstorm and create prototypes, which I then test with users to gather feedback. Based on that feedback, I refined the design through multiple iterations”.

Both participants concurred that a fundamental step in ensuring an excellent user experience involves creating prototypes before settling on the final design. They typically use low-cost materials for prototyping, which they test with their clients to gather feedback. If client’s express satisfaction, the designer implements the agreed-upon design; if not, the designer revises the prototype and seeks further input from users until they are satisfied.

Moving forward, the researcher posed a follow-up question related to the previous one, inquiring how the practitioners ensure they provide users with the best experience. This question will be analysed next.

3.4.3. How to ensure that users are having the best experience?

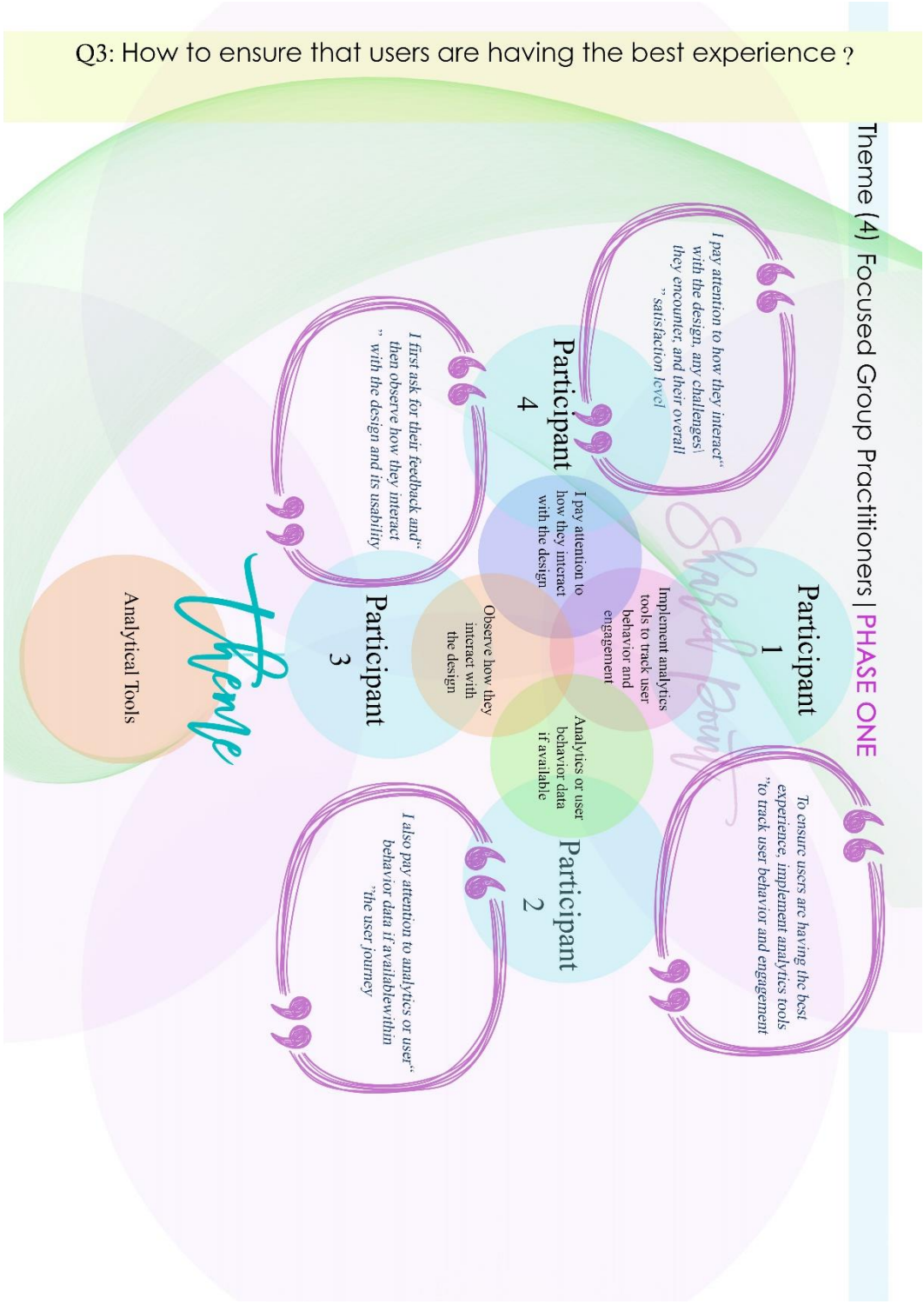


Fig 4.7: Theme (4) Focused Group Practitioners

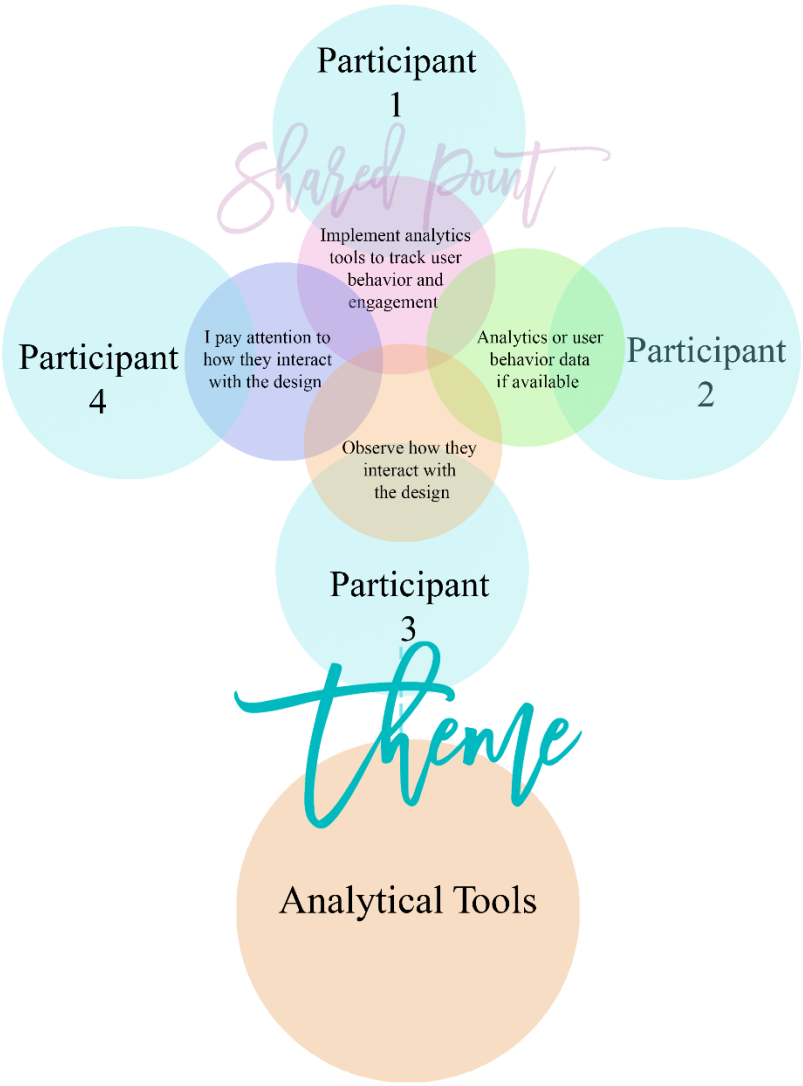


Fig 4.8: Theme Analytical Tools

4. Analytical Tools

The researcher subsequently engaged with the focused group of practitioners to explore how they ensure users have the best possible experience. The aim of the researcher in posing this question was to determine whether any participants were familiar with design tools aimed at enhancing user satisfaction and functionality, or if they had any further directions.

During the discussion, four participants concurred on the importance of analytical tools for gaining deeper insights into user behaviour. Some expressed that access to analytics regarding user behaviour would be highly beneficial, highlighting the limitations of current methods for gathering such data.

Participant 1 stated, “To ensure users have the best experience, we should implement analytics tools to track user behaviour and engagement”. Participant 2 added, “I also focus on analytics and user behaviour data, if available. The key is to continuously listen, learn, and improve based on actual user input”.

In contrast, Participant 3 remarked, “I first solicit feedback from users and then observe how they interact with the design and its usability”. Furthermore, Participant 4 noted, “I pay attention to how users engage with the design, any challenges they face, and their overall level of satisfaction”.

Consensus among the four participants emphasised that understanding how users interact with specific objects is crucial in ensuring the best user experience. They underscored the significance of user behaviour analytics, particularly in tracking engagement with their environment.

In the next section, the researcher will outline key findings that led to the selection of the other method and then begin analysing according to the first findings from the focus group. Nonetheless, it explains the rationale for its selection concerning the previous approach.

4.5. Summary of Focused Group Phase One with Findings

The first phase of the focus group aims to understand the dynamics within interior design offices concerning user understanding and their experiences. The researcher conducted a focused group discussion with participants to explore how they ensure the best user experience. The questions posed included:

1. How do you incorporate the best user experience into your design?

2. What steps do you follow to guarantee an optimal user experience?

3. How do you ensure that users have the best experience possible?

During the discussion, four participants identified key themes essential for achieving the best user experience in design: User Research, Defining Users, Prototyping, and Analytical Tools.

Based on these findings, the researcher aims to introduce the user journey map as a tool for interior designers. The user journey map is chosen because it integrates all the themes mentioned by practitioners, encompassing user research, defining users, and prototyping within a single tool.

In the next stage, the researcher will delve deeper into the use of the user journey map with interior design students and examine how they apply the insights gained from it into their 3D prototypes. This will demonstrate to practitioners the benefits of using the user journey map as a practical tool for future projects. The subsequent phase will analyse how the user journey map used by interior design students can enhance user satisfaction and functionality in their prototypes.

4.6. Why Focused Group? Findings, and what is Next?

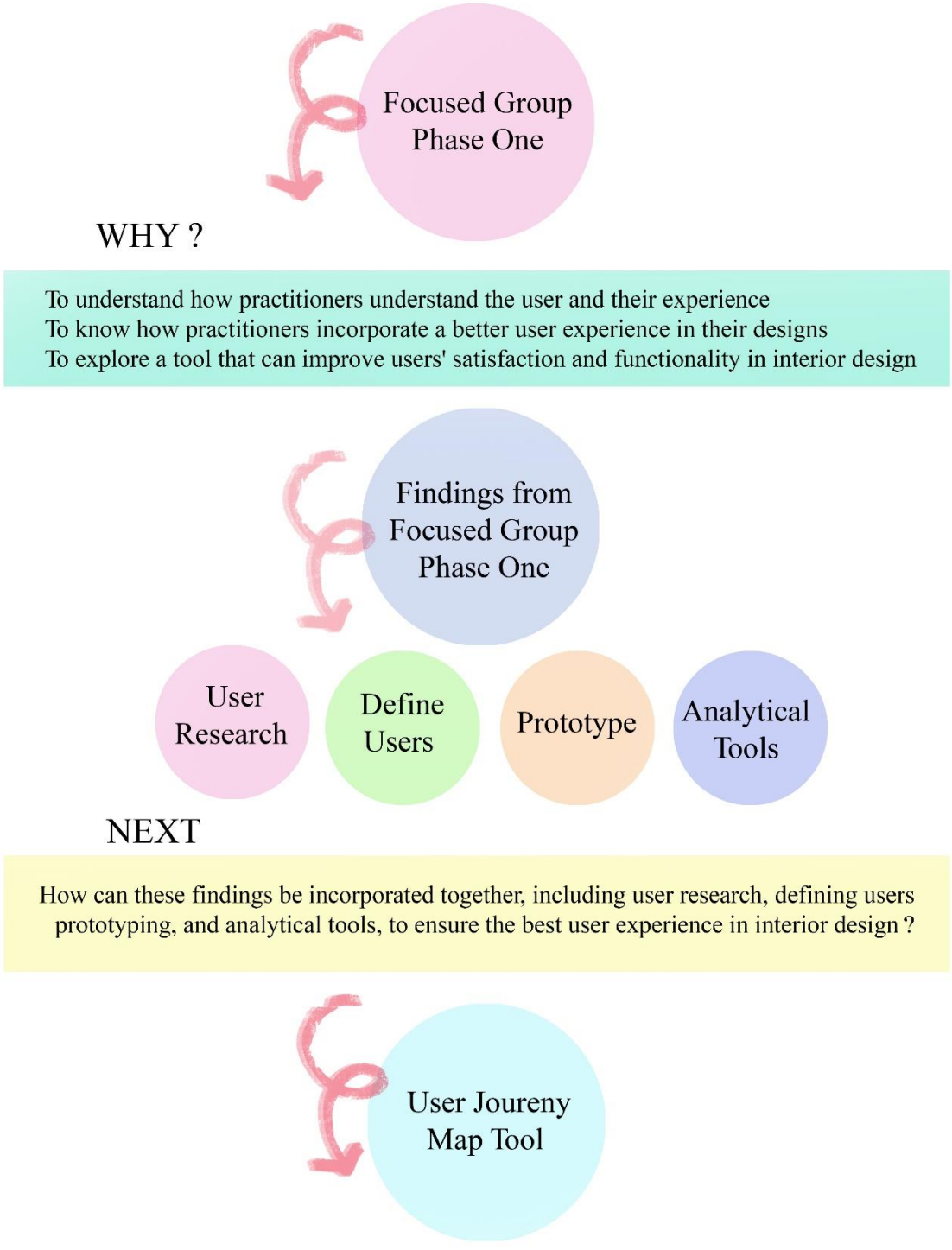


Fig 4.9: Focused Group Phase 1

4.7. User journey map analysis

In this analytical phase, the researcher collected qualitative data from interior design students who utilized user journey maps during their design processes. The primary objective was to achieve a comprehensive understanding of user needs and to effectively translate these insights into relevant interior design elements. This phase seeks to investigate how interior design students employ user journey maps to enhance user experience and to inform their design decisions based on the insights derived from their user engagement.

Visual analysis was conducted on the portfolios of 16 interior design students, employing pictograms grounded in nine thematic constructs identified in the literature review. These themes encompassed various interior design elements and evaluated their impact on the user experience within the interior environment.

In the course of analyzing the final design projects, which included both user journey maps and 3D renders, several critical factors were scrutinized: form and shape, colour, texture, light, proportion and scale, balance and harmony, unity and variety, and rhythm and emphasis. This examination sought to elucidate how designers integrated these elements while considering user preferences and requirements identified during the user journey mapping phase. Furthermore, the analysis investigated the students' capacity to translate these user needs into corresponding elements within their 3D renderings.

The findings revealed a disparity among interior designer students in their incorporation of the aforementioned design elements, with most students

successfully integrating all relevant aspects. In the subsequent section, a summary of the visual analysis will be presented, utilizing pictograms to assess the work of interior designer students from the initial stages of their projects. This analysis will demonstrate how effectively the interior design students leveraged user journey maps in their design processes.

4.7.1. User Journey Map Analysis

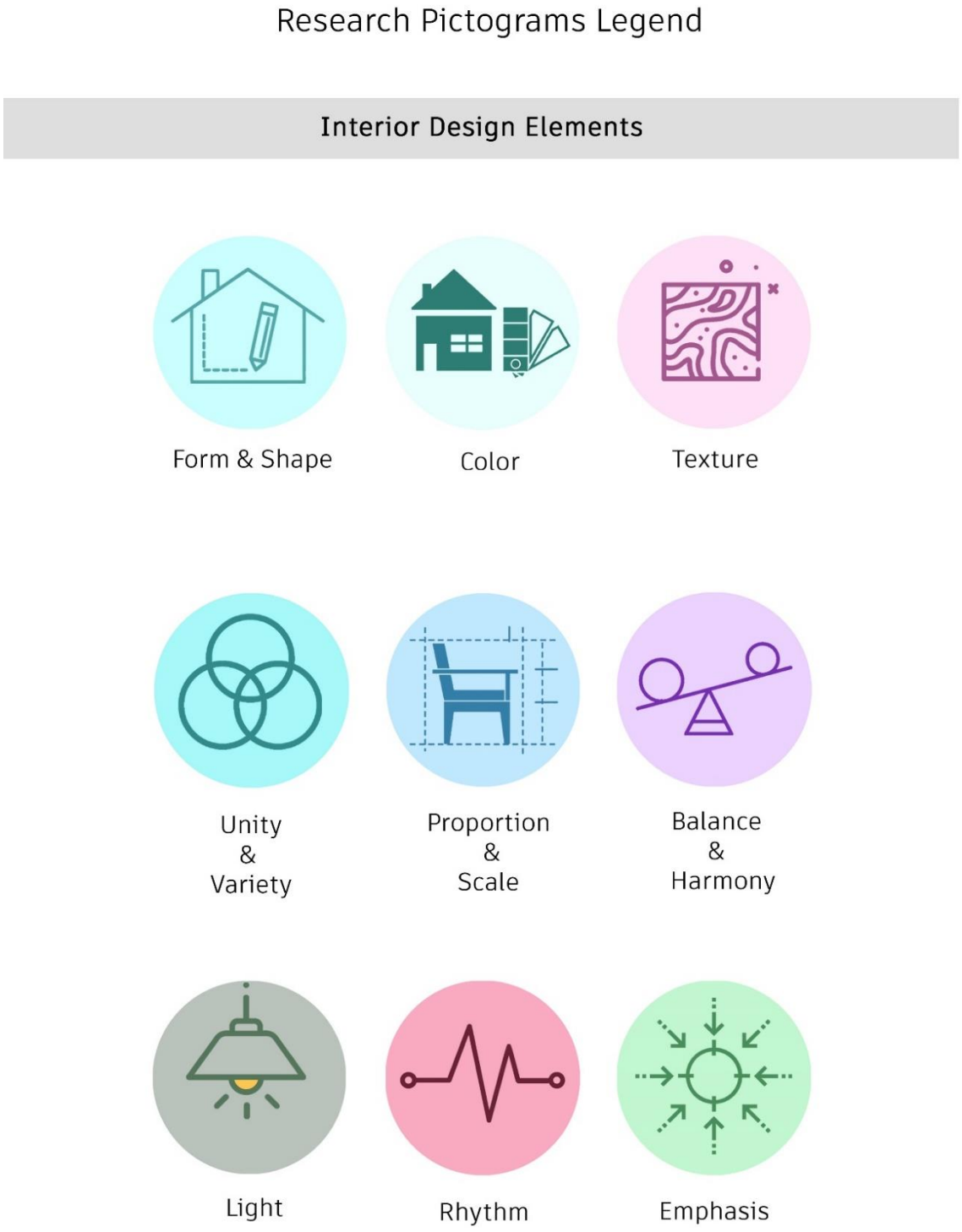


Fig 4.10: Research pictograms legend

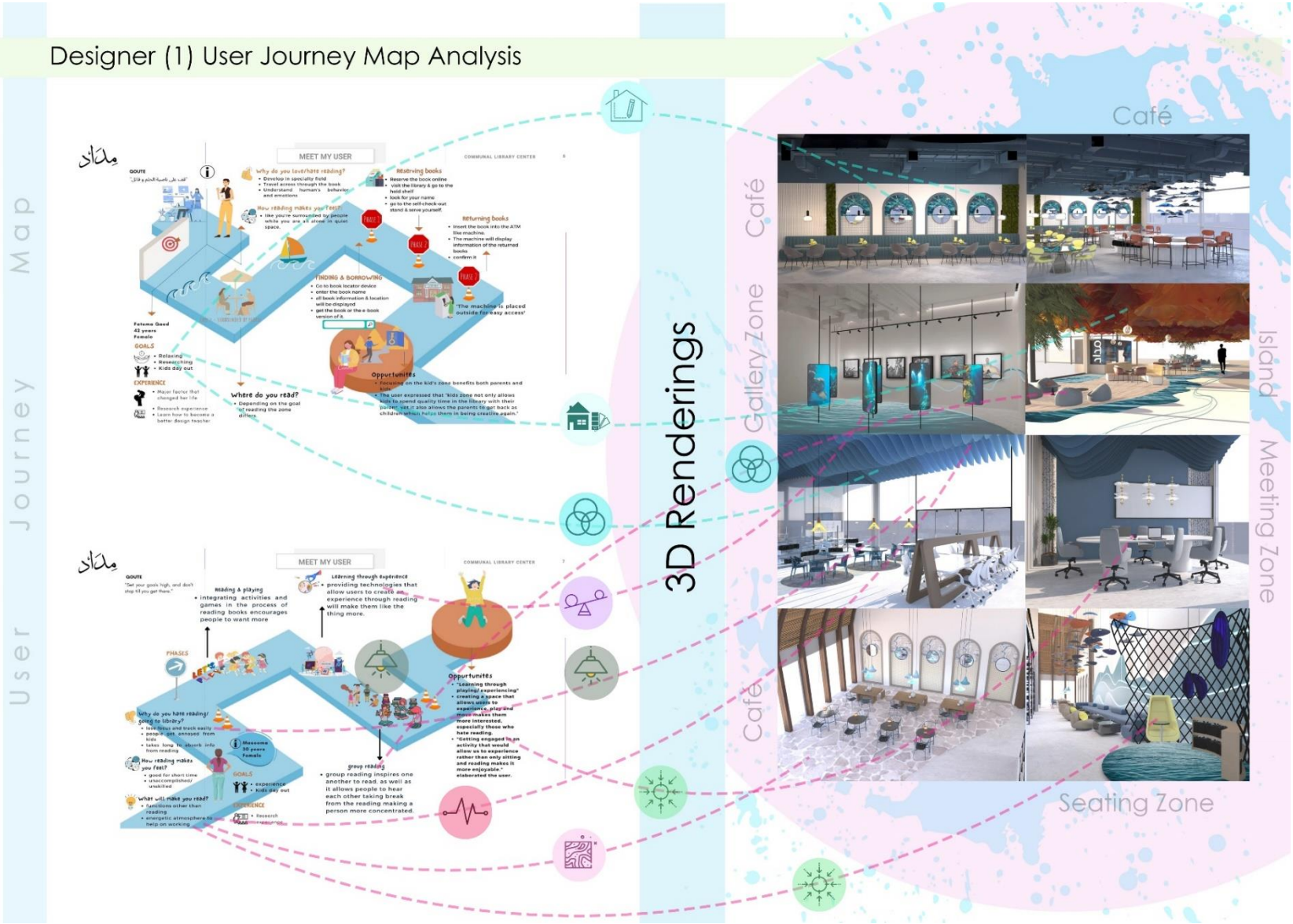


Fig 4.11: Designer (1) user journey map analysis

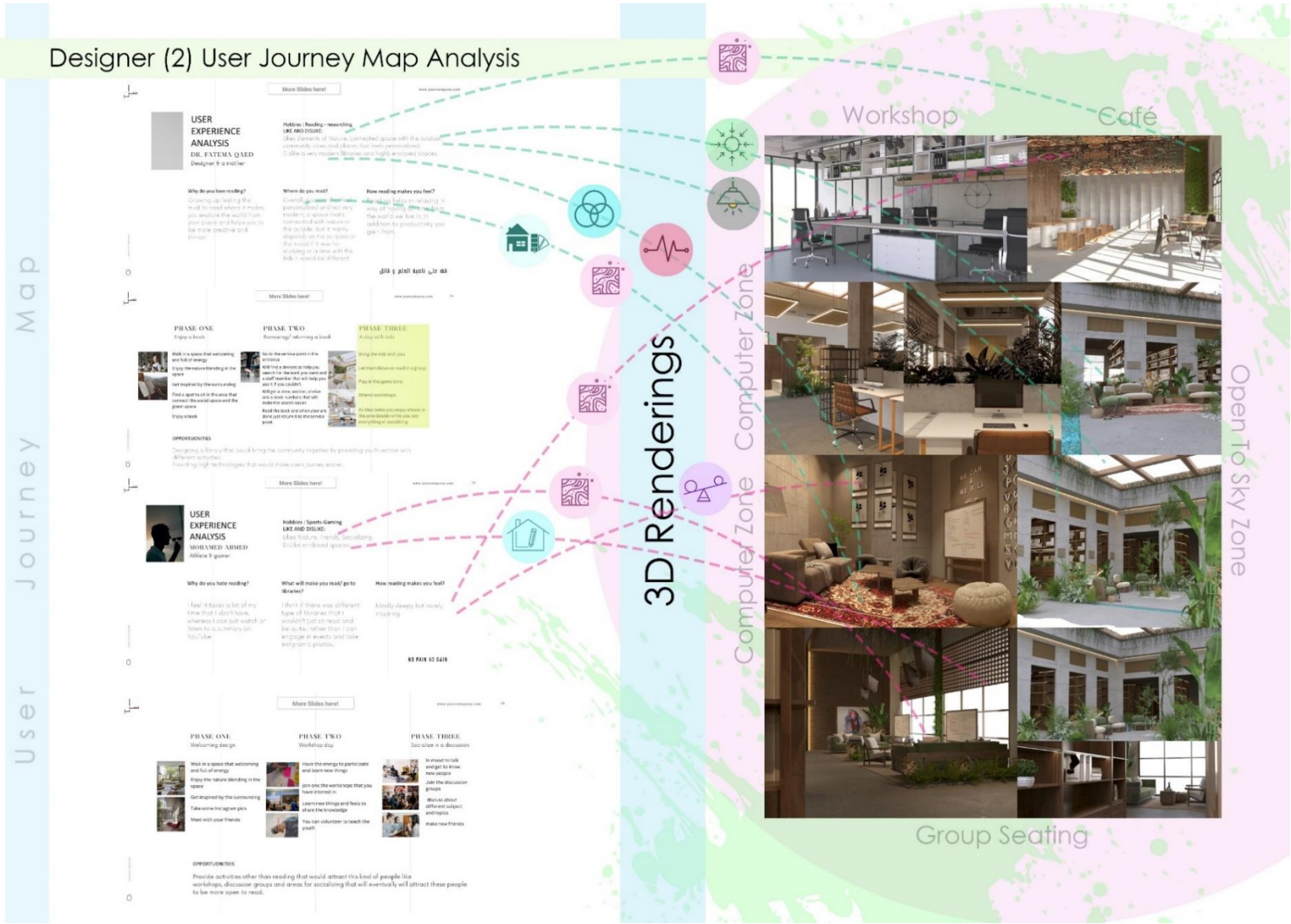


Fig 4.12: Designer (2) user journey map analysis

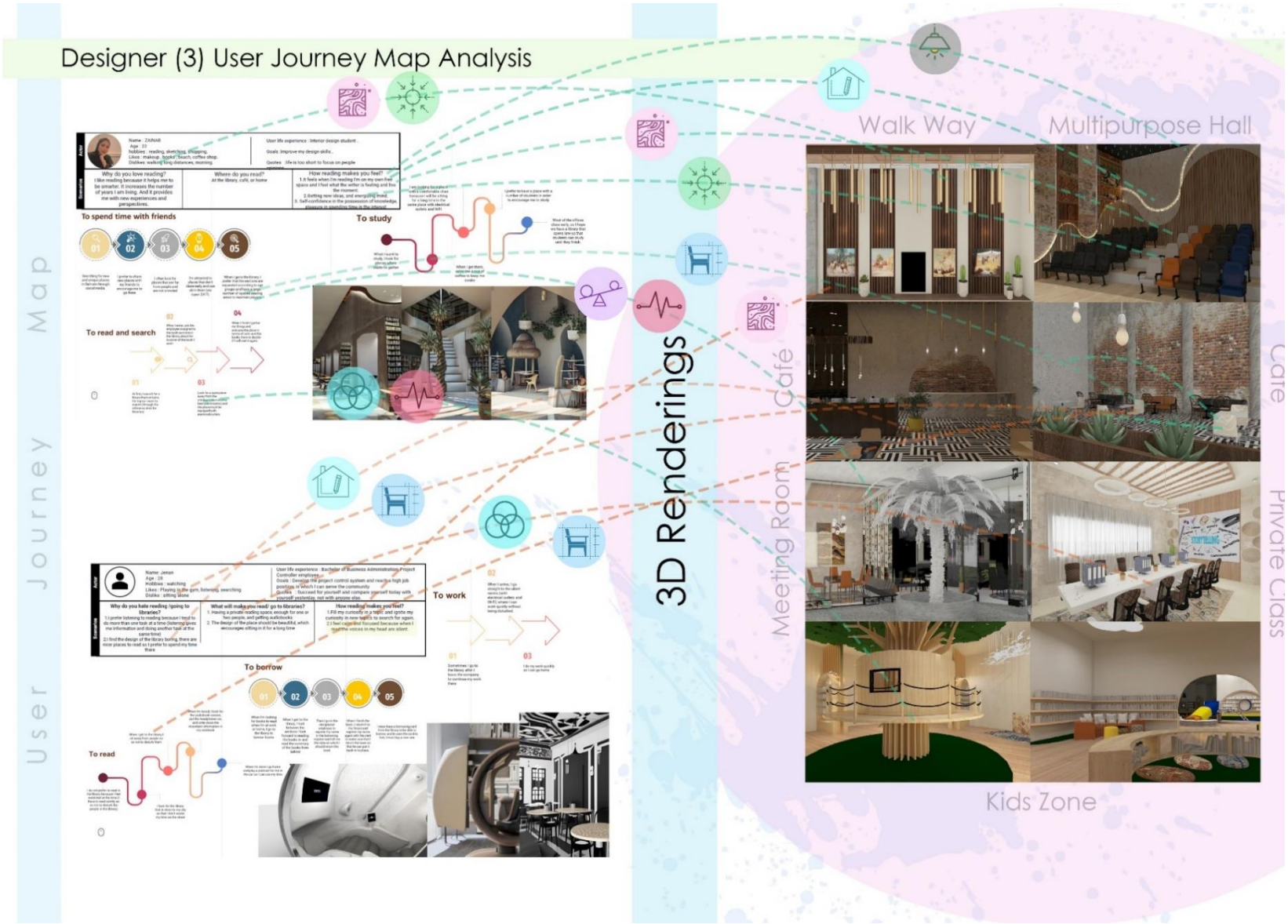


Fig 4.13: Designer (3) user journey map analysis

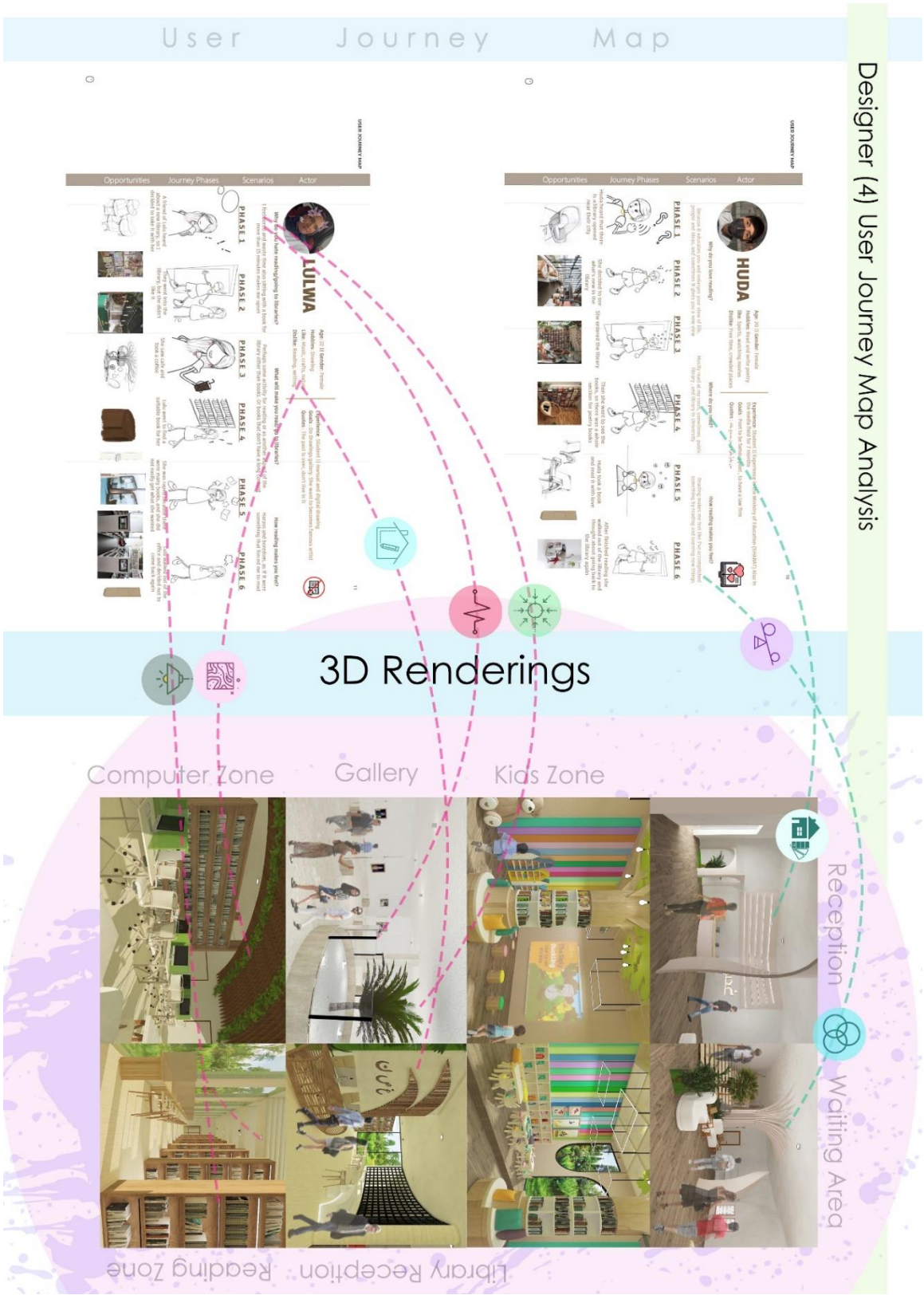


Fig 4.14: Designer (4) user journey map analysis

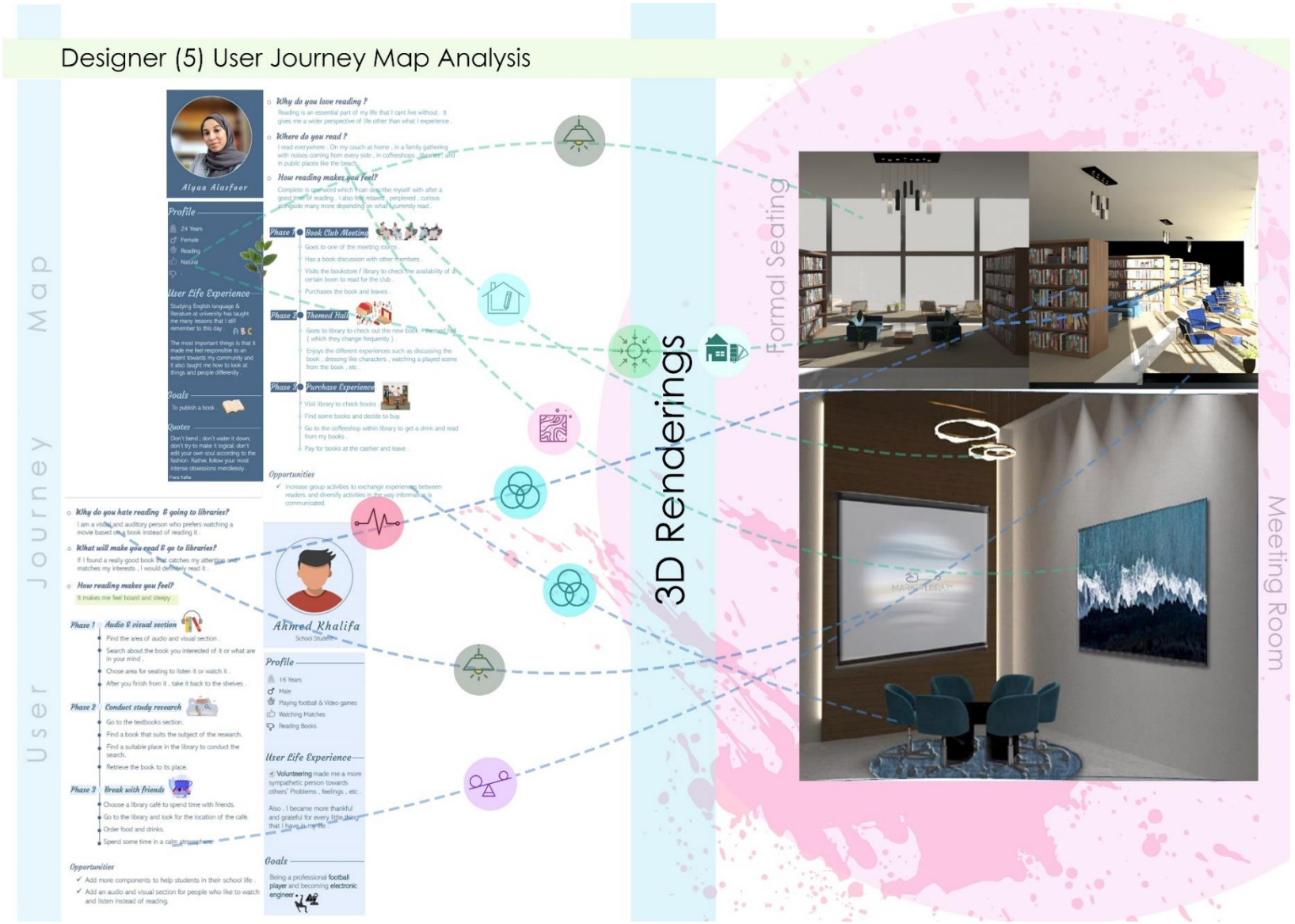


Fig 4.15: Designer (5) user journey map analysis

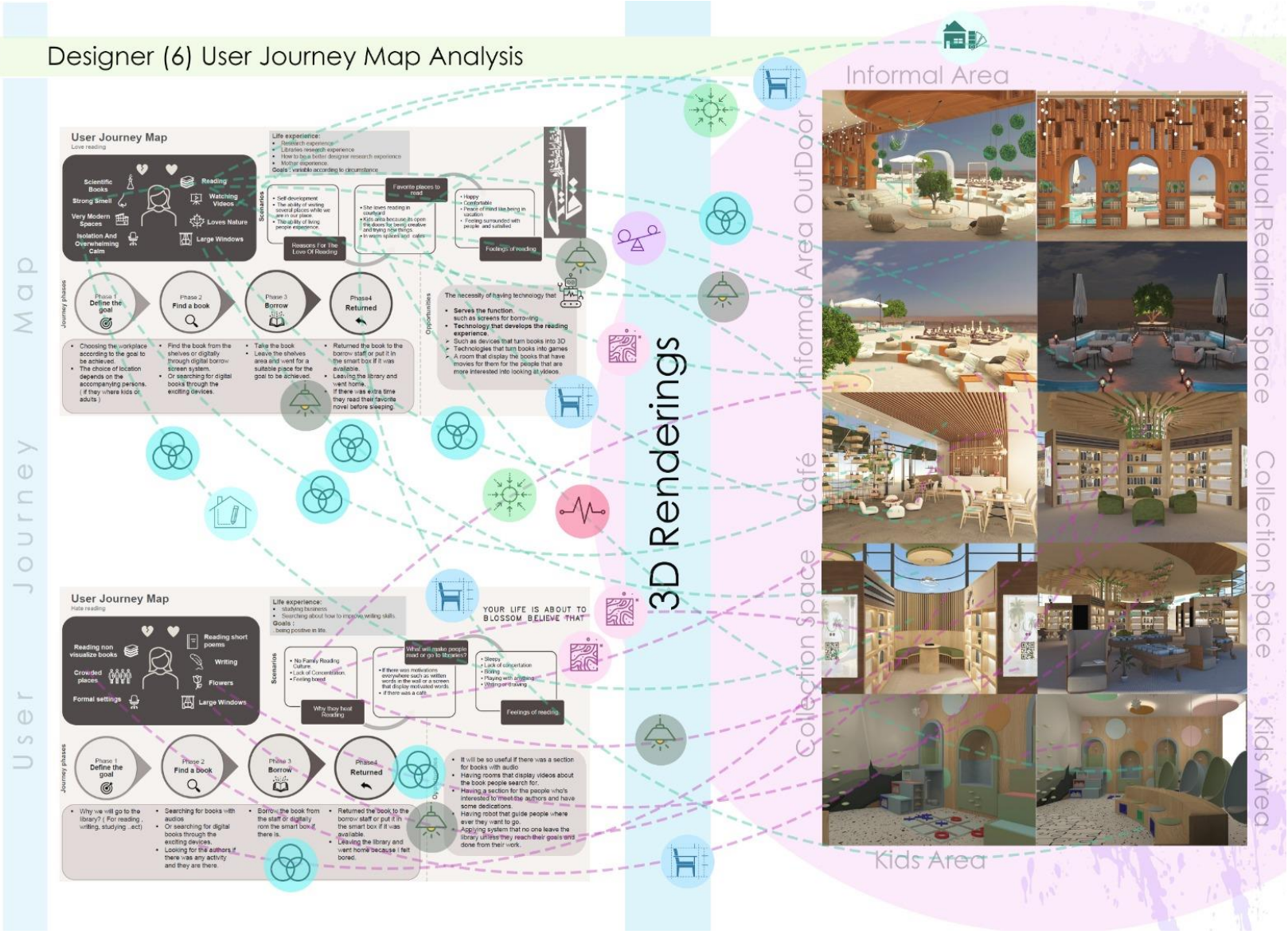


Fig 4.16: Designer (6) user journey map analysis

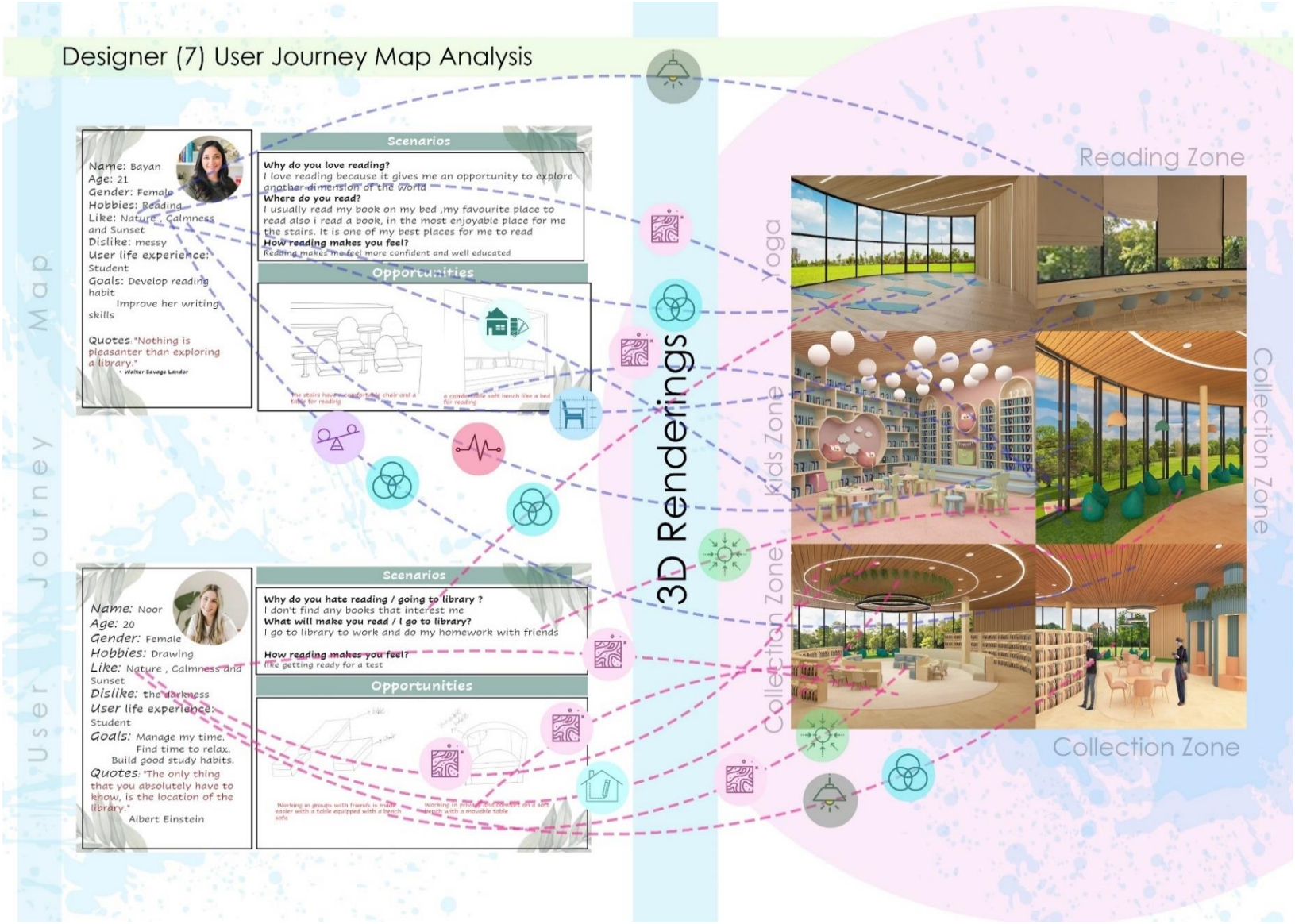


Fig 4.17: Designer (7) user journey map analysis



Fig 4.18: Designer (8) user journey map analysis

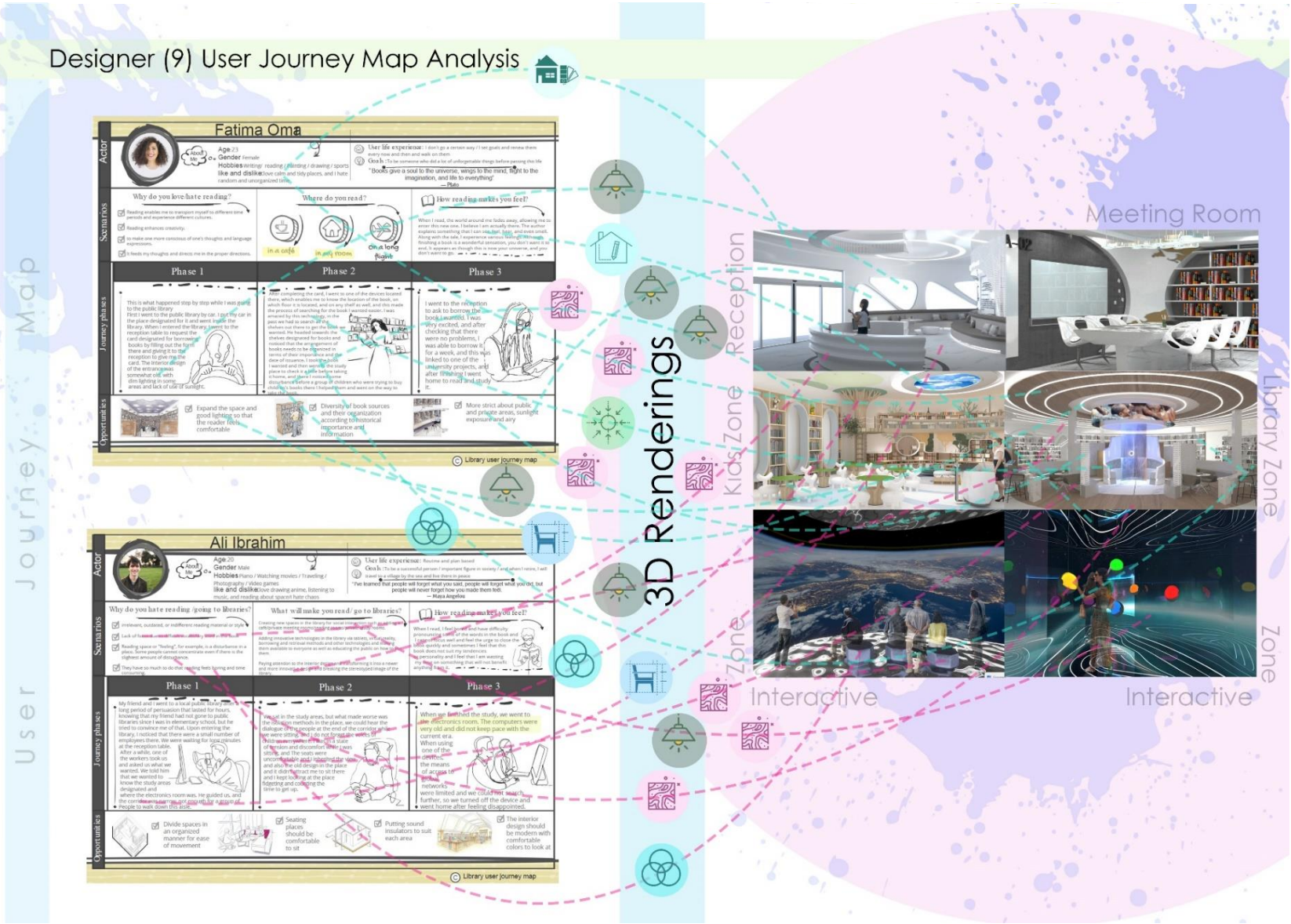


Fig 4.19: Designer (9) user journey map analysis

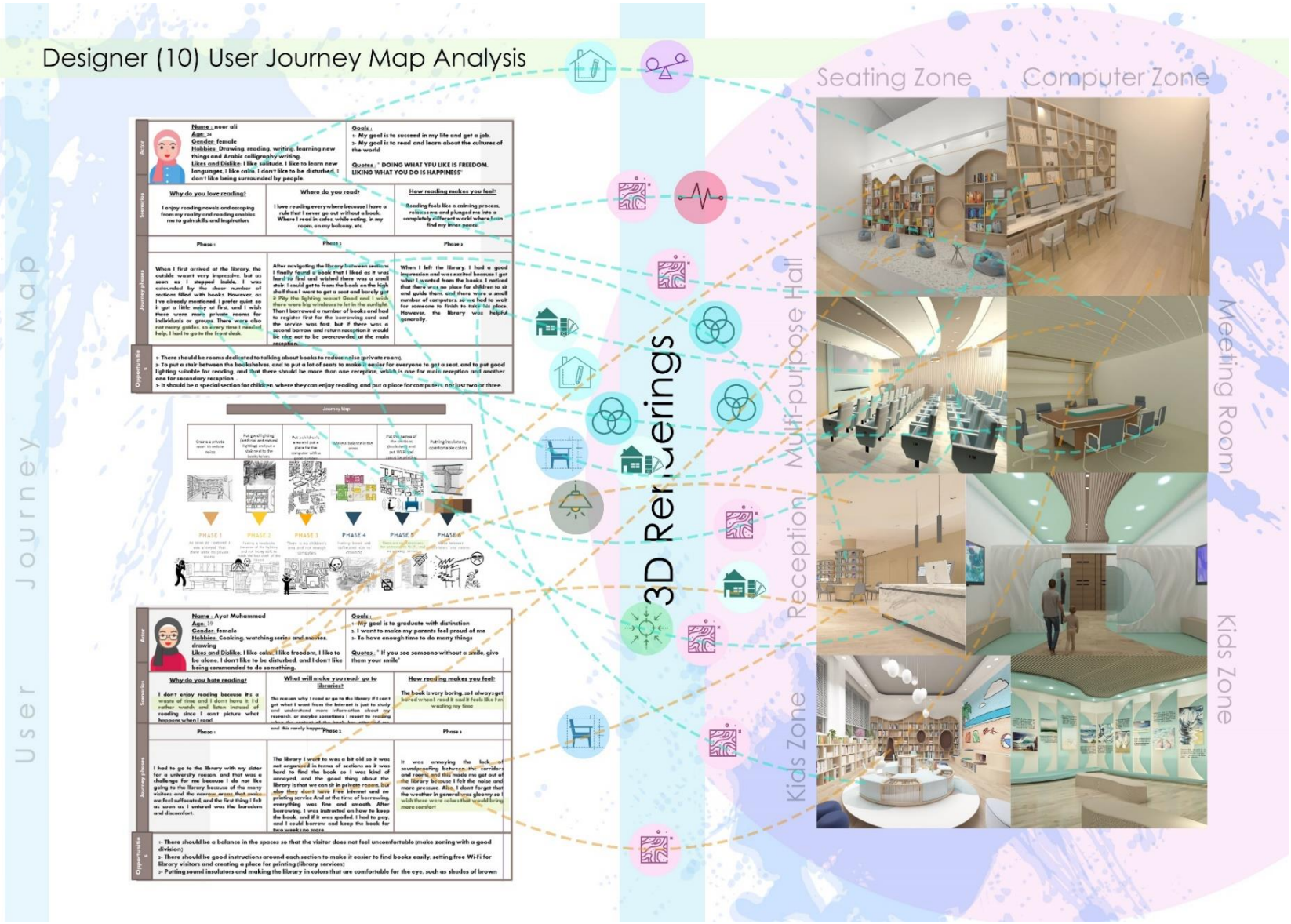


Fig 4 20: Designer (10) user journey map analysis

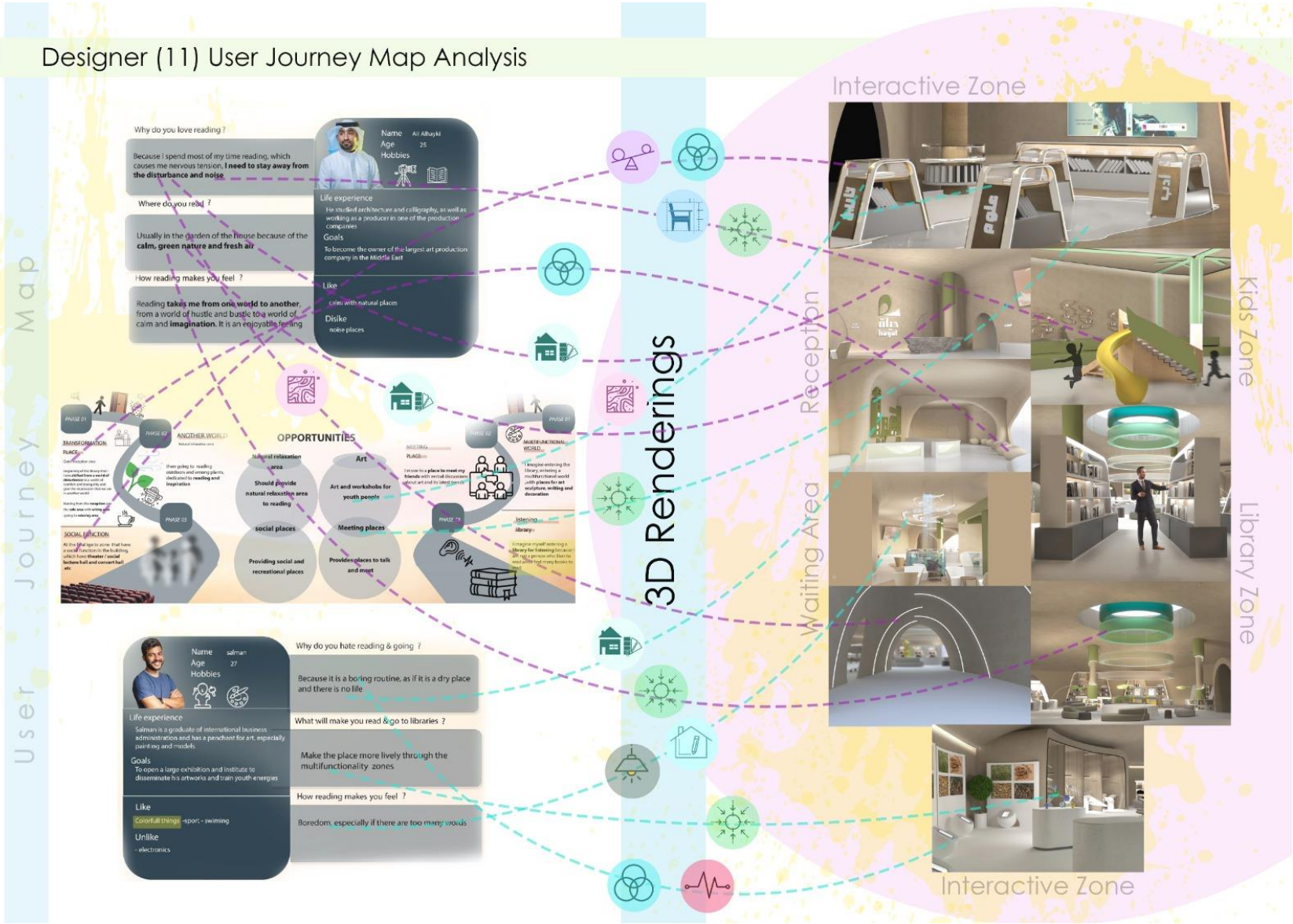


Fig 4.21: Designer (11) user journey map analysis

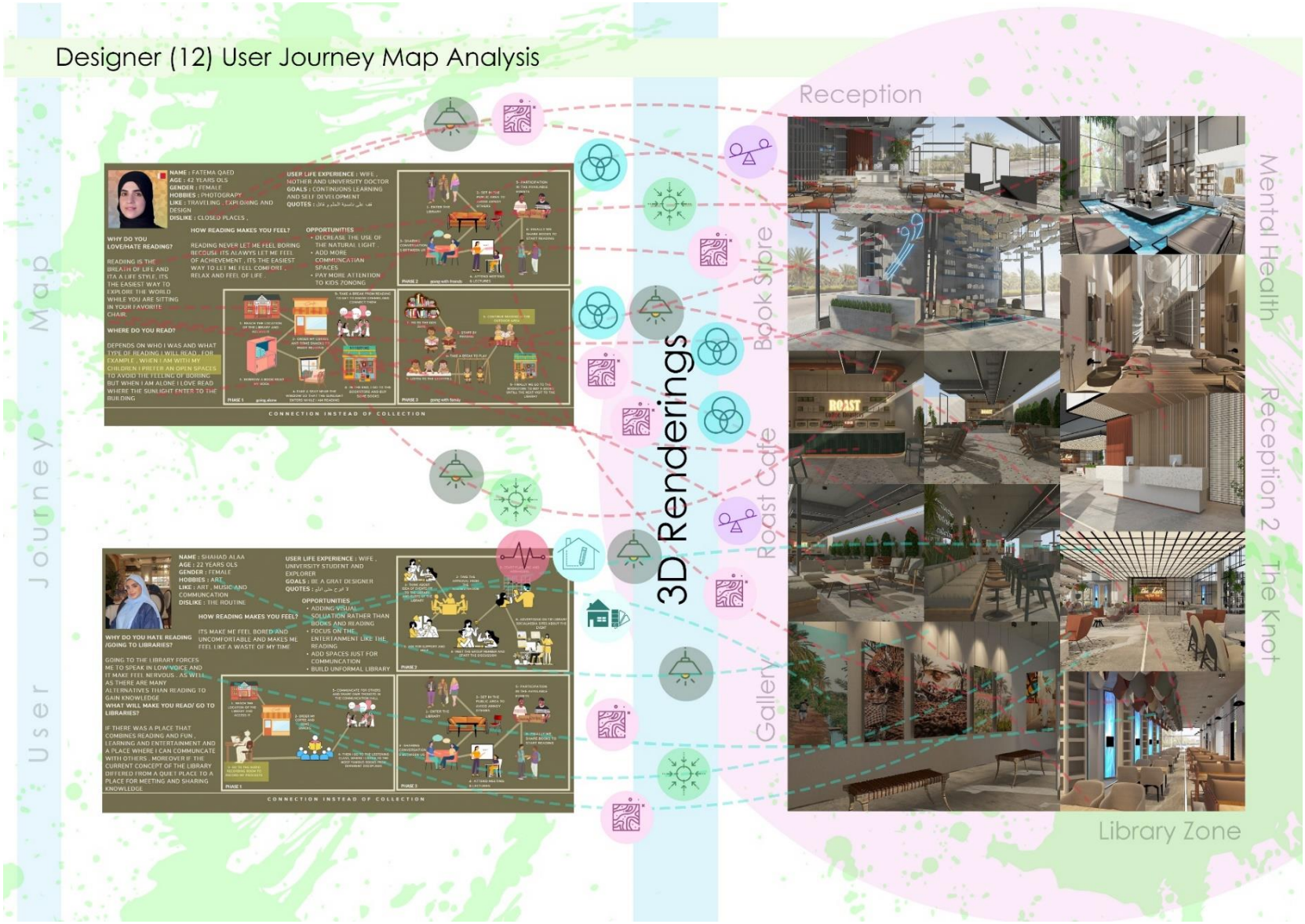


Fig 4.22: Designer (12) user journey map analysis

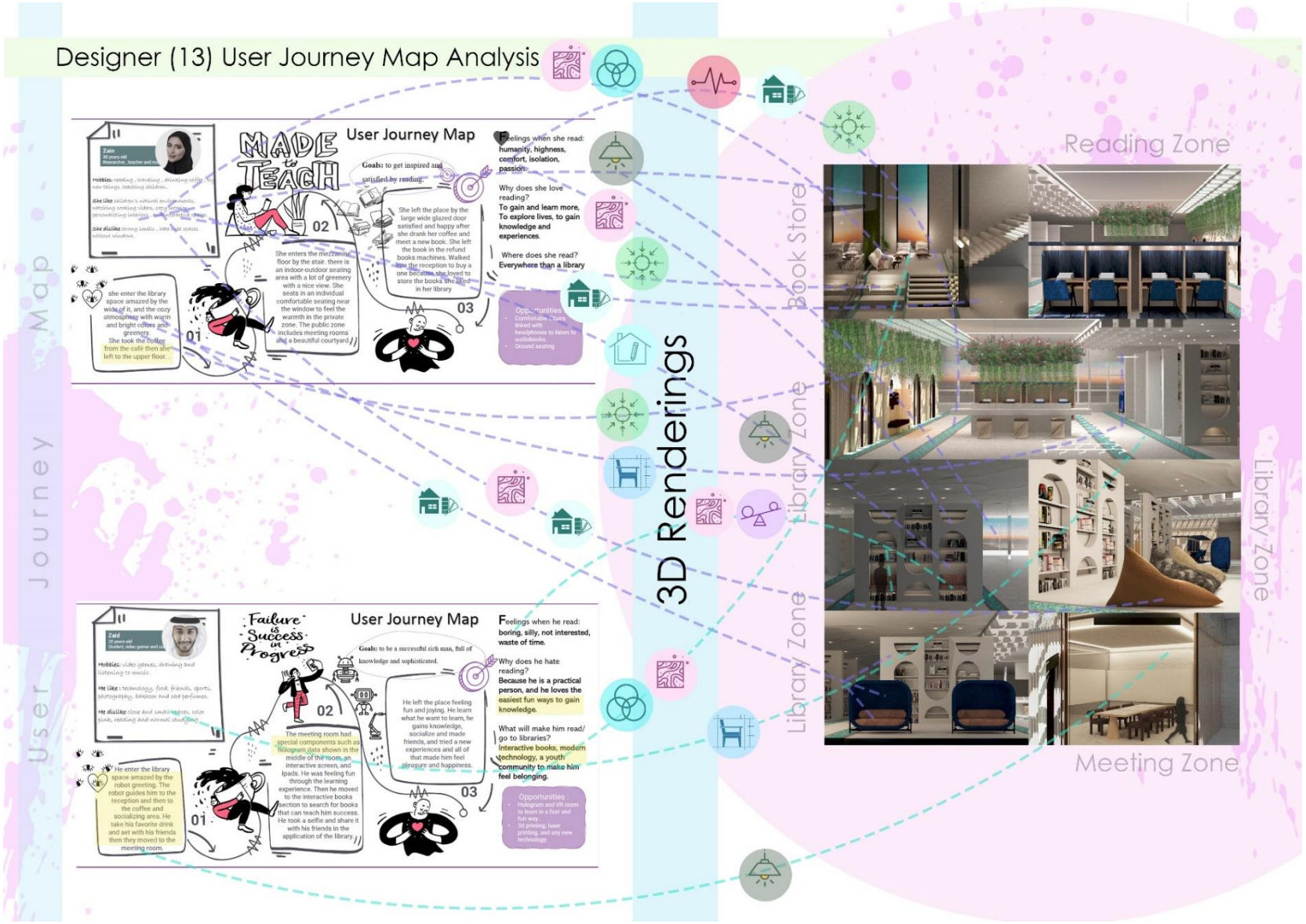


Fig 4.23: Designer (13) user journey map analysis

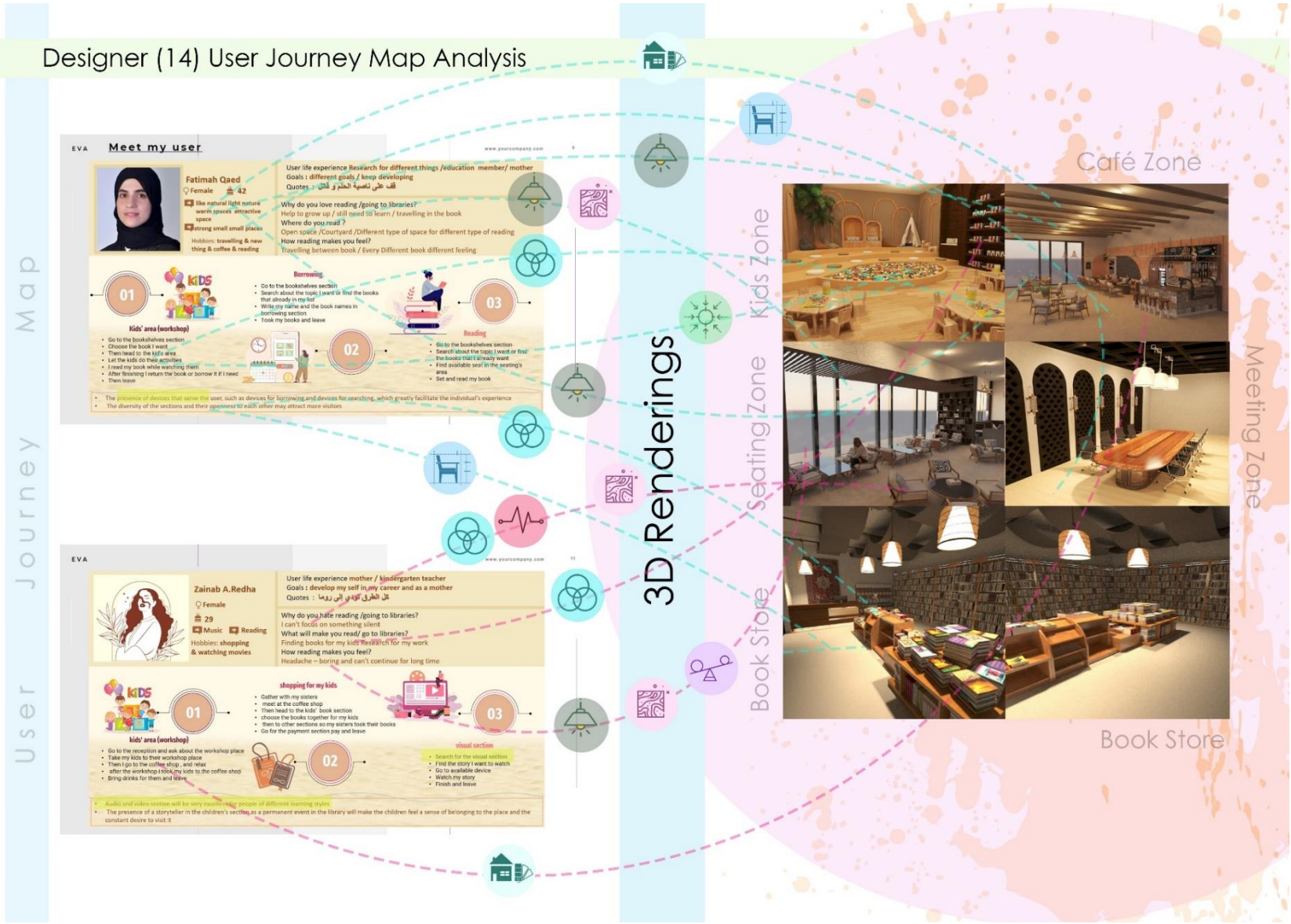


Fig 4.24: Designer (14) user journey map analysis

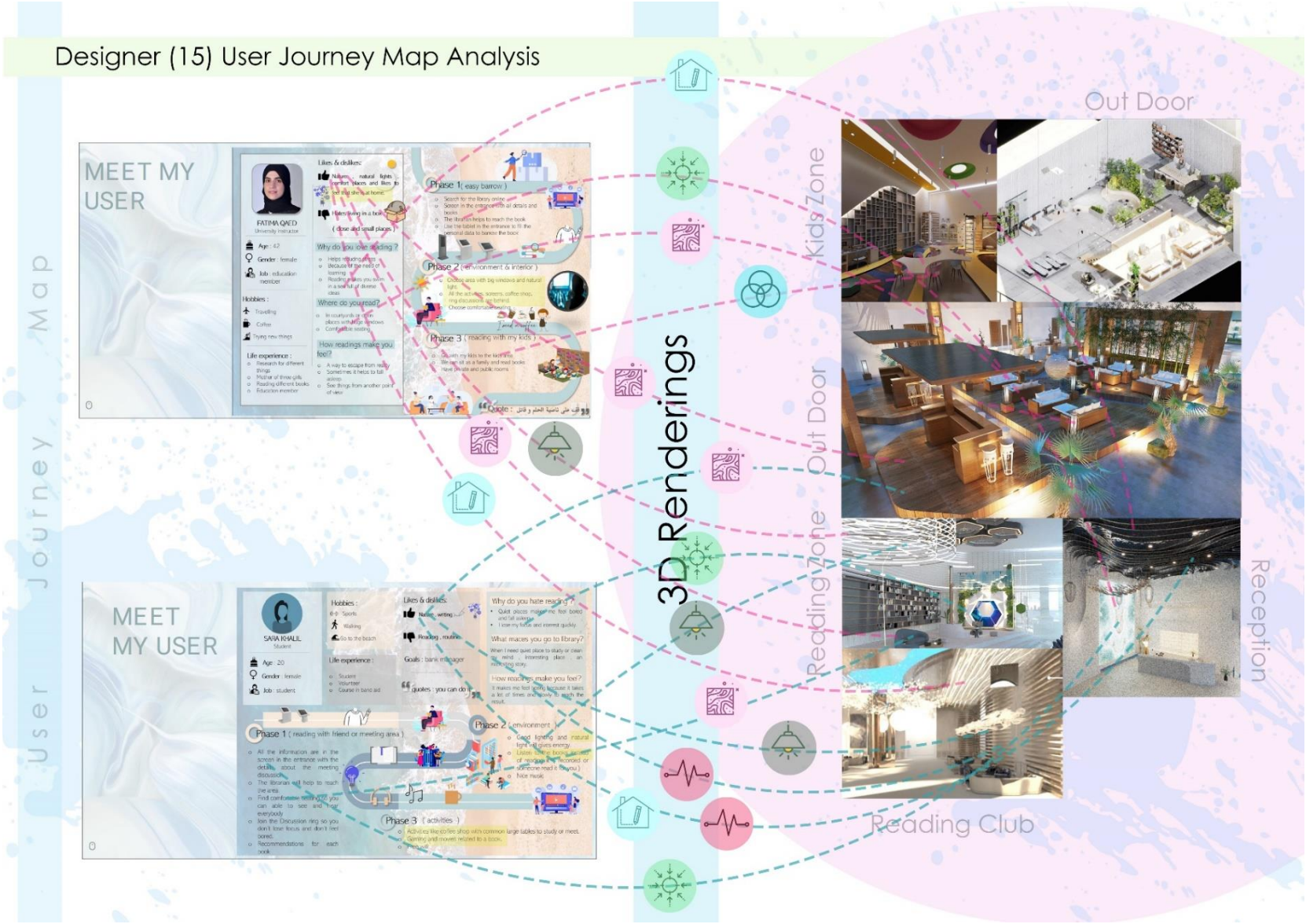


Fig 4.25: Designer (15) user journey map analysis

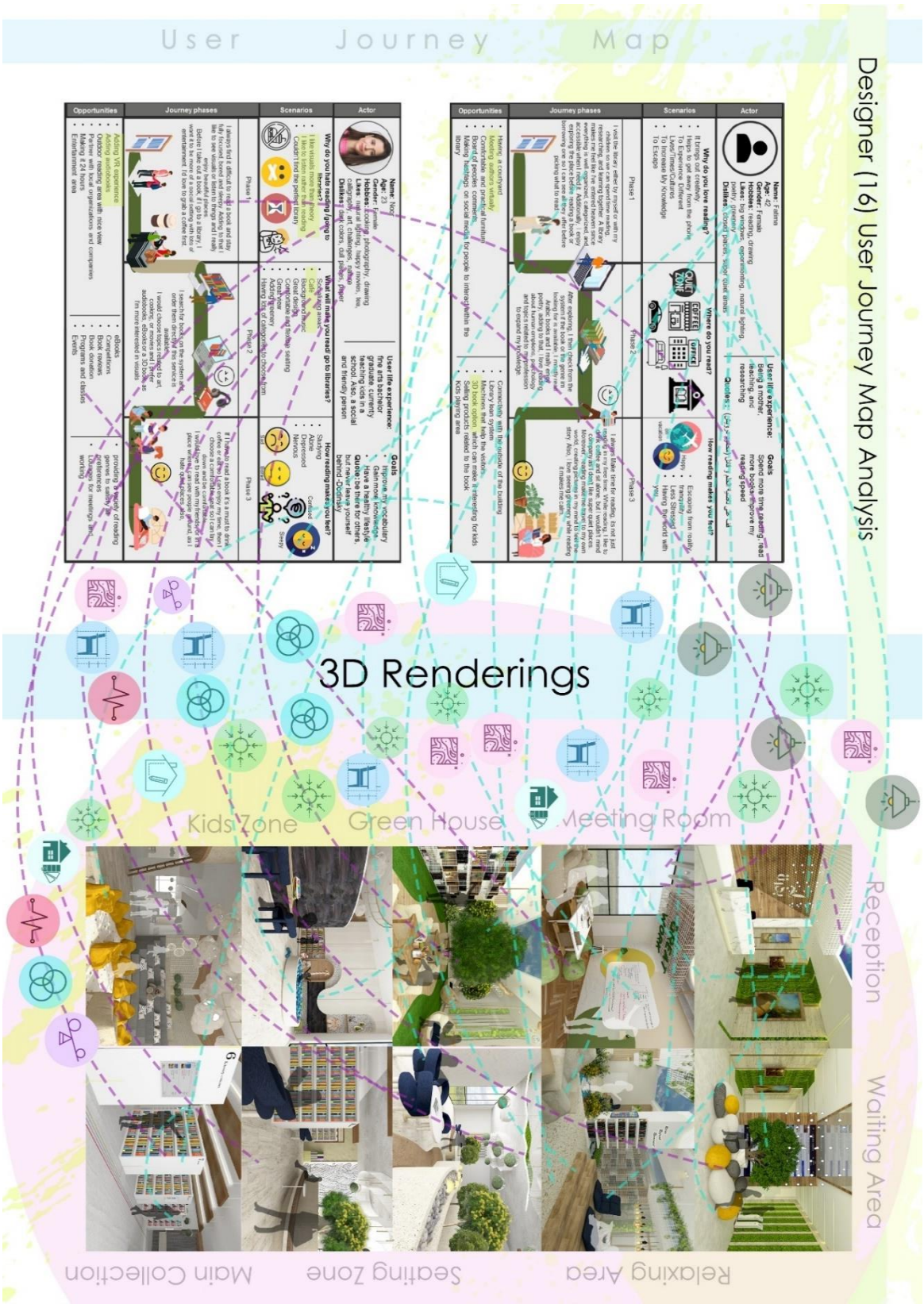


Fig 4.26: Designer (16) user journey map analysis

4.7.2. User Journey Map Analysis Summary

The researcher analysed how sixteen interior design students utilized user journey maps during their design processes. The analysis focused on how these students applied user insights gained from the user journey maps and translated these insights into 3D prototypes. The exploration highlighted the benefits of the user journey map in assisting students to achieve optimal interior design outcomes that effectively address users' needs.

The findings revealed that the majority of students successfully created 3D prototypes that responded to the needs identified through the user journey map. Notably, Designers Three, Six, Seven, Ten, Eleven, and Sixteen produced comprehensive designs by incorporating various elements to enhance user satisfaction and interior functionality. These elements included:

- Form and shape
- Colour
- Texture
- Light
- Proportion and scale
- Balance and harmony
- Unity and Variety
- Rhythm
- Emphasis

Conversely, Designers One, Two, Four, Five, Eight, and Twelve faced challenges in harmonizing proportion and scale—critical components for creating a symmetrical spatial experience. These difficulties often resulted in

designs that felt disjointed or unbalanced. Misalignment disrupted visual continuity, rendering the spaces ineffective and overwhelming for users.

Overall, the findings suggest that most interior design students gained significant advantages from the user journey map as a tool for enhancing user satisfaction and design functionality.

The next phase of the research will involve analysing interviews with interior design instructors who are knowledgeable about the user journey map. This analysis aims to validate the findings from the student mapping phase. By selecting specific interviewees, the study seeks to triangulate the results with insights from instructors, thereby confirming the benefits of incorporating the user journey map within the field of interior design.

4.8. Interviews Analysis

Upon thorough examination and mapping of the user journey specific to interior design students, the findings elucidated that this mapping exercise significantly enhanced students' comprehension of their users, thereby enabling the creation of functional environments aligned with user requirements. Nevertheless, the researcher identified a crucial need for further validation of the user journey map as a viable analytical instrument. In response to this need, data were gathered and assessed from the third phase, which involved interior design instructors with the objective of corroborating the insights obtained in phase two regarding the advantages of employing a user journey map.

The following analysis aims to elucidate how the researcher endeavoured to develop a graphical and engaging representation of the data,

thereby effectively communicating the findings while building upon the preliminary analysis of the user journey map utilized by designers. To facilitate this process, the researcher formulated seven key interview questions aimed at eliciting pertinent insights. The analysis was conducted in two interconnected phases.

Phase One: The interview responses were subjected to a detailed analysis tailored to each of the seven questions. Four candidates, whose responses were particularly substantial and relevant, were selected for inclusion in the review. To visually represent the salient keywords derived from each interviewee's responses, a bubble diagram was constructed. Although the number of participants was limited, their diverse perspectives contributed significantly to the depth and richness of the overall findings.

Phase Two: The responses collected during the interviews enabled an integrative approach for identifying patterns and thematic connections. This stage entailed the synthesis of the data to unveil commonalities and recurring motifs, culminating in the emergence of several higher-level themes. Through meticulous analysis of the responses, seventeen distinct themes were articulated, all of which related directly to the overarching objectives of the research.

This synthesis facilitated the construction of a holistic perspective regarding the findings. Subsequent sections will explore these themes in greater detail, constructing a narrative that enhances the comprehension of the results. Ultimately, the amalgamation of qualitative data with broader research inquiries aims to translate the rich information gleaned from the interviews into a more accessible format within the broader context of the study.

Interviewee (1)

Q1: How familiar are you with the concept of user journey maps in the context of the design process?

Key Words Bubble Diagram

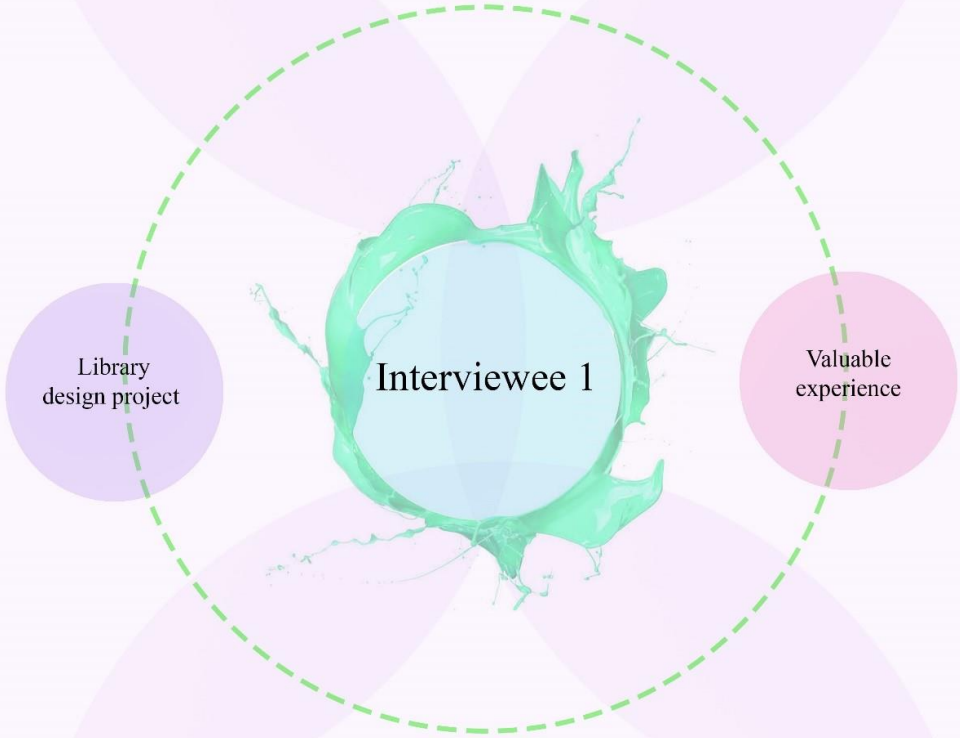


Fig 4.27: Interviewee (1) familiarity with user journey maps

Interviewee (2)

Q1: How familiar are you with the concept of user journey maps in the context of the design process?

Key Words Bubble Diagram

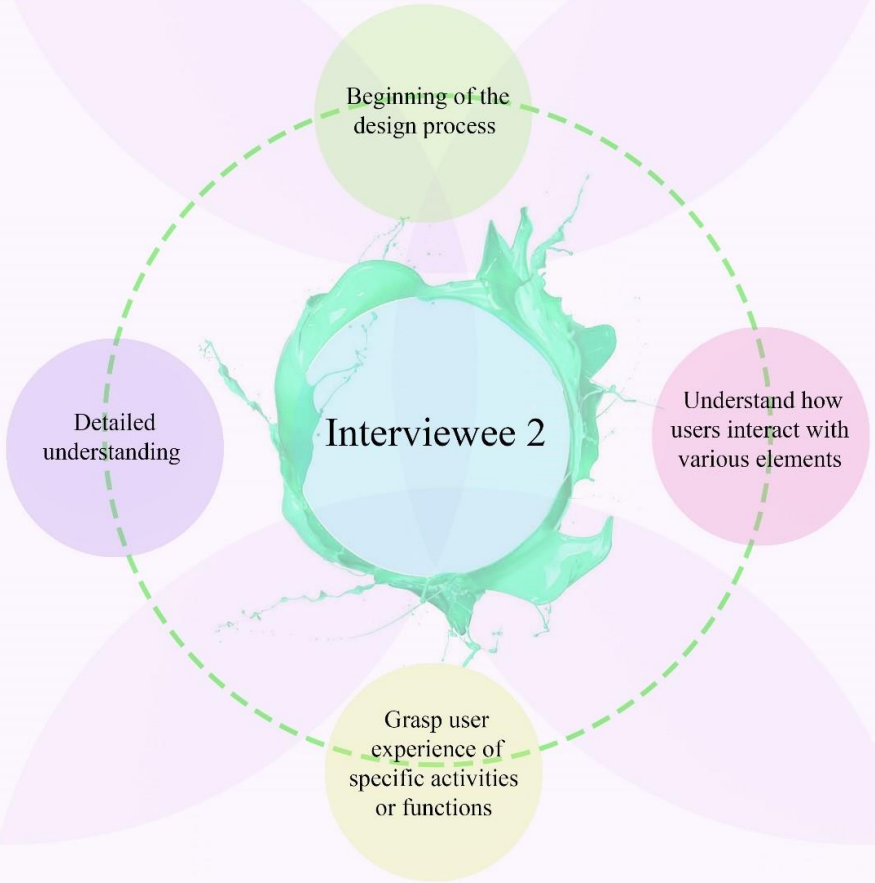


Fig 4.28: Interviewee (2) familiarity with user journey maps

Interviewee (3)

Q1: How familiar are you with the concept of user journey maps in the context of the design process?

Key Words Bubble Diagram



Fig 4.29: Interviewee (3) familiarity with user journey maps

Interviewee (4)

Q1: How familiar are you with the concept of user journey maps in the context of the design process?

Key Words Bubble Diagram

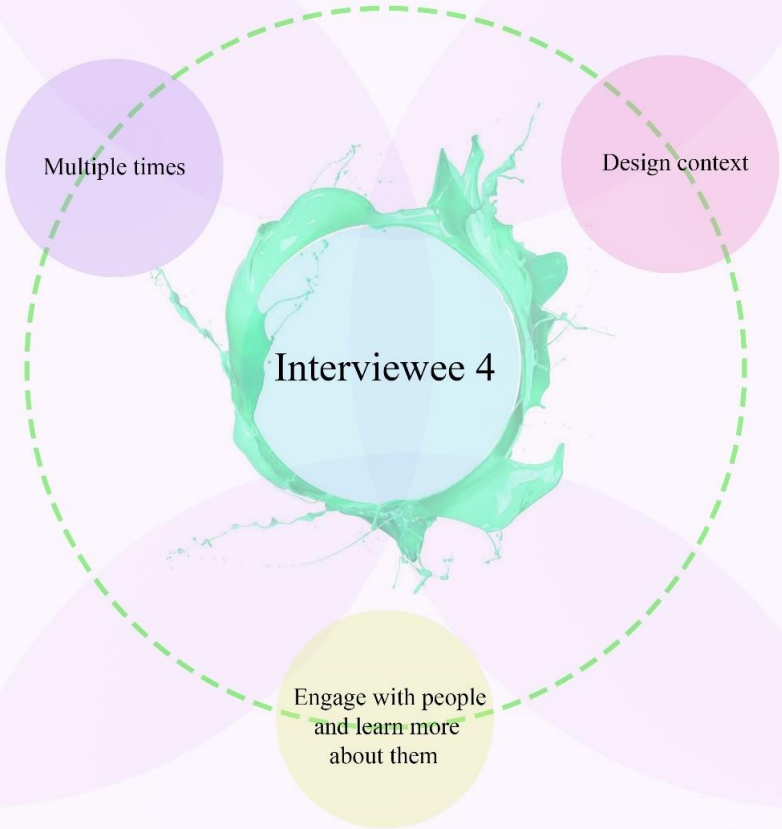


Fig 4.30: Interviewee (4) familiarity with user journey maps

Fig 4.31: Theme (1) familiarity with user journey maps

Fig 4.32: Theme (2) familiarity with user journey maps

Interviewee (1)

Q3: From your point of view how user journey map can influence the final design outcome?

Key Words Bubble Diagram

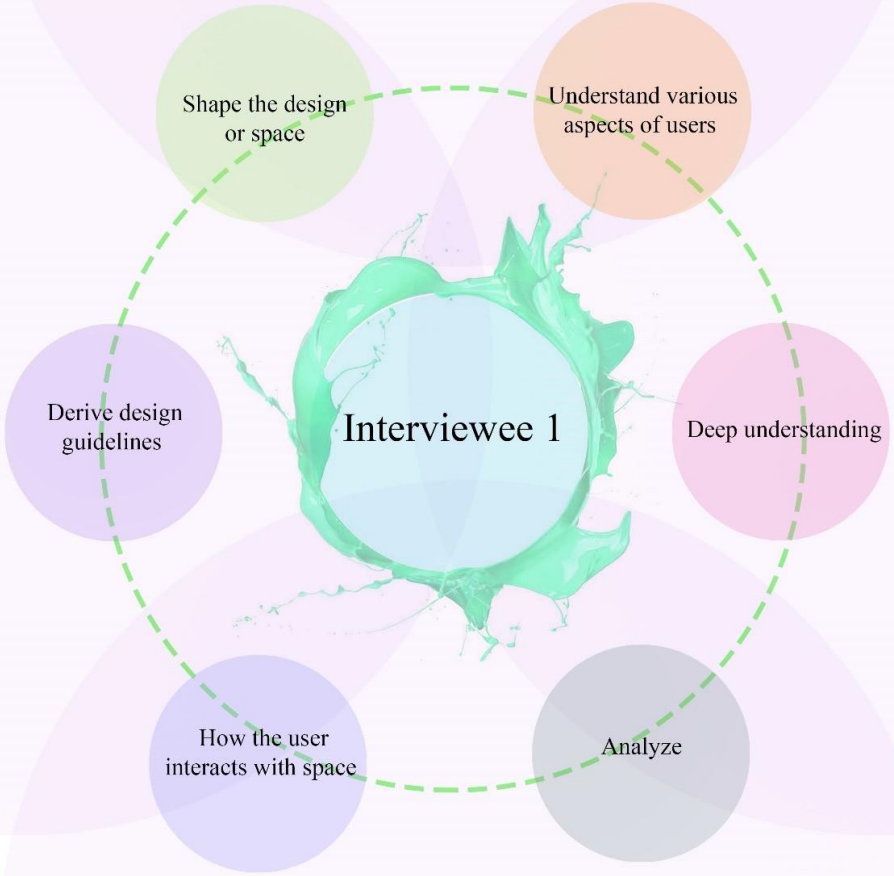


Fig 4.33: Interviewee (1) how user journey map influences design

Interviewee (1)

Q2: In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?

Key Words Bubble Diagram

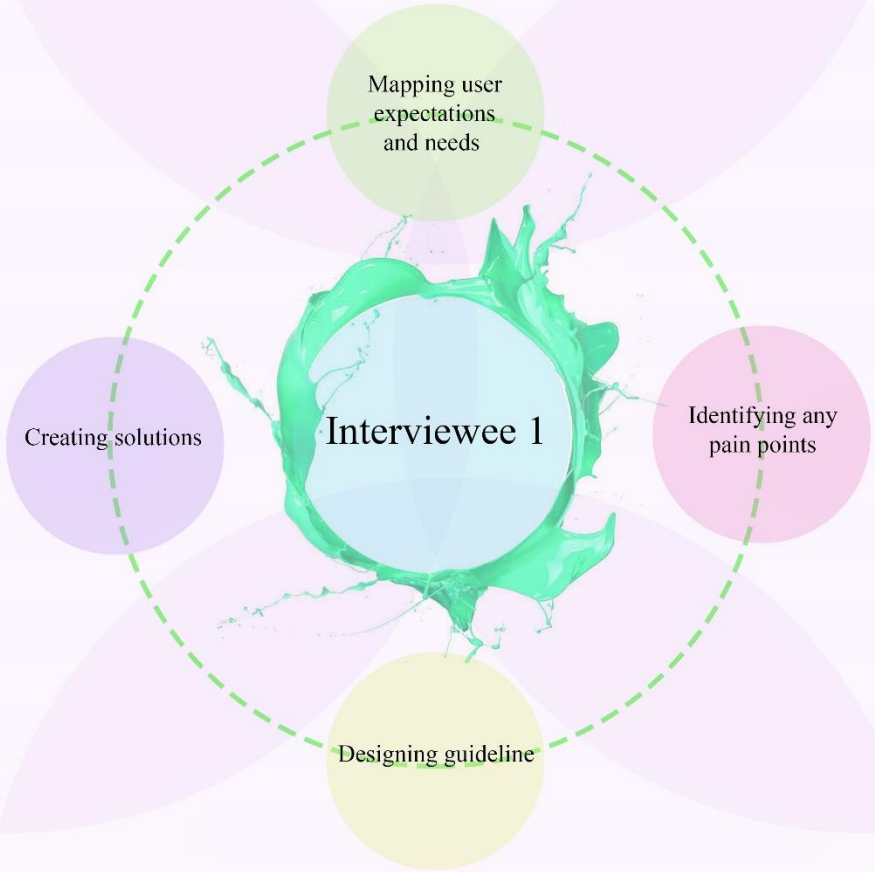


Fig 4.34: Interviewee (1) Role of user journey maps in understanding users

Interviewee (2)

Q2: In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?

Key Words Bubble Diagram



Fig 4.35: Interviewee (2) Role of user journey maps in understanding users

Interviewee (3)

Q2: In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?

Key Words Bubble Diagram

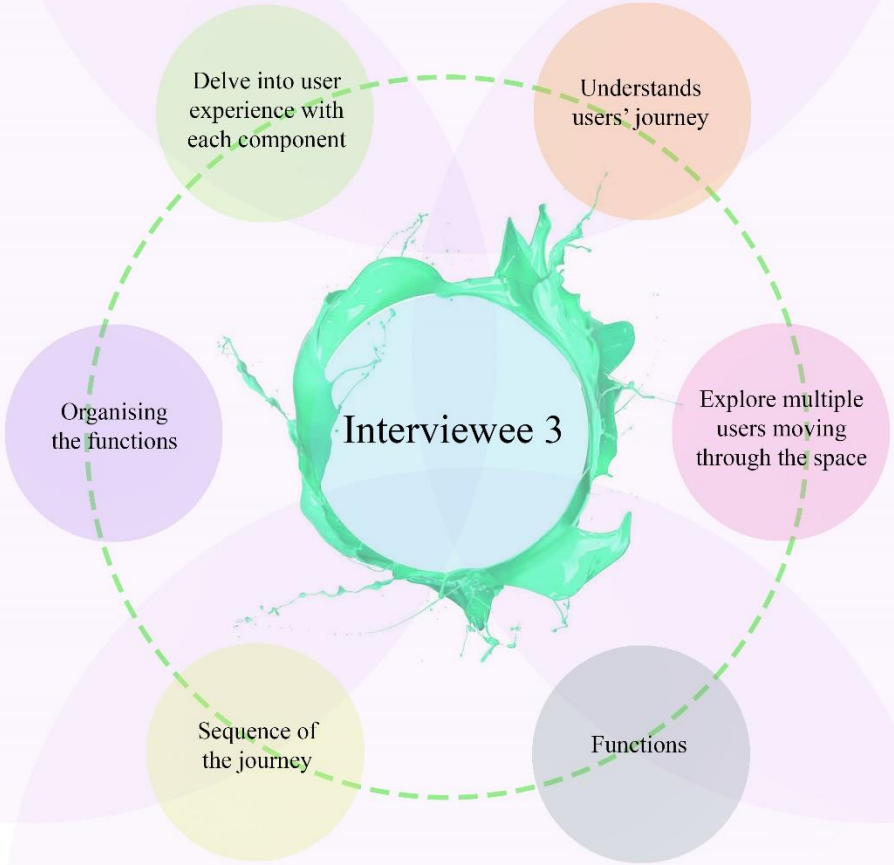


Fig 4.36: Interviewee (3) Role of user journey maps in understanding users

Interviewee (4)

Q2: In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?

Key Words Bubble Diagram



Fig 4.37: Interviewee (4) Role of user journey maps in understanding users

Fig 4.38: Theme (3) Role of user journey maps in understanding users

Q2: In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process ?

Theme (4)

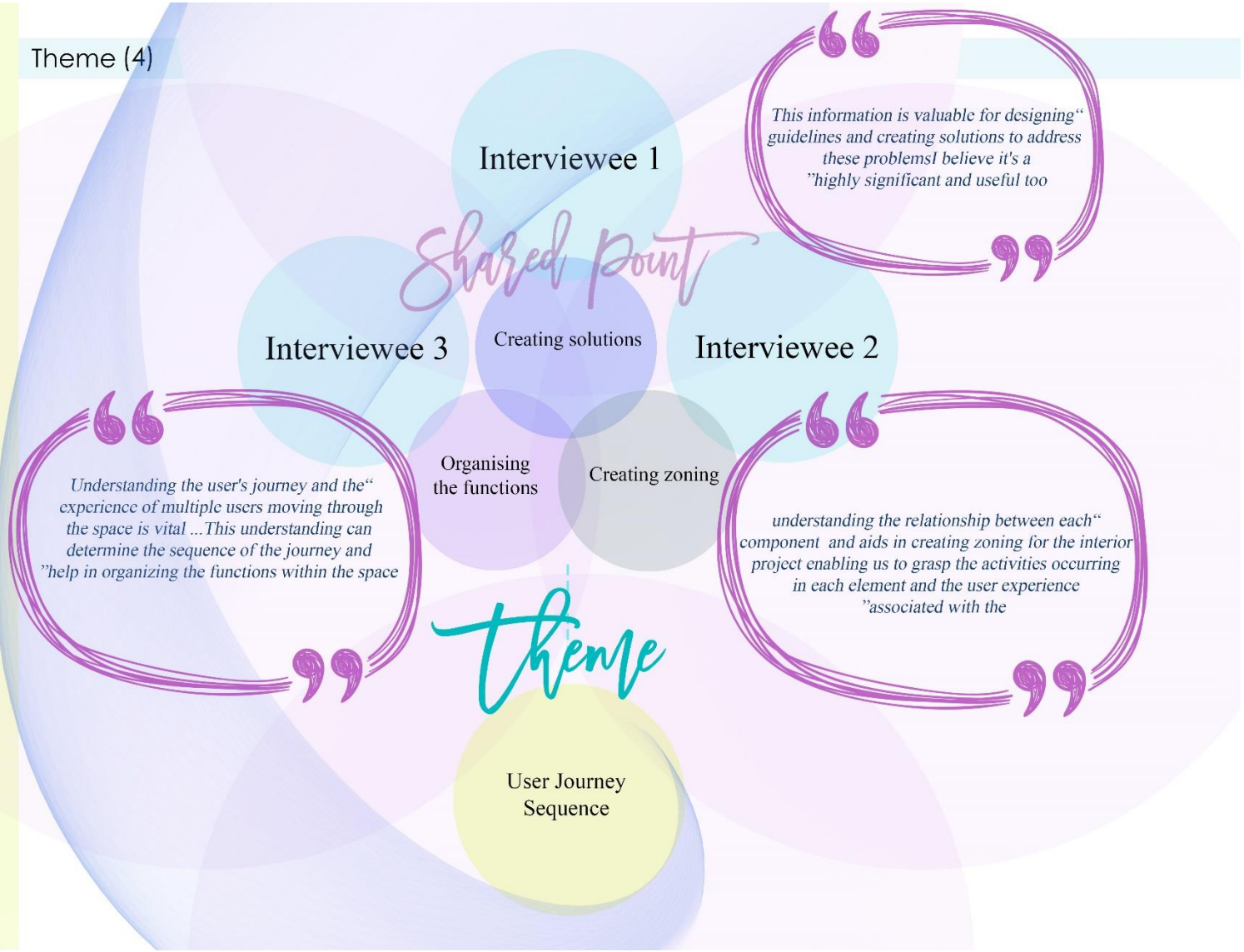


Fig 4.39: Theme (4) Role of user journey maps in understanding users

Fig 4.40: Theme (5) Role of user journey maps in understanding users

Interviewee (2)

Q3: From your point of view how user journey map can influence the final design outcome ?

Key Words Bubble Diagram



Fig 4.41: Interviewee (2) how user journey map influences design

Interviewee (3)

Q3: From your point of view how user journey map can influence the final design outcome?

Key Words Bubble Diagram

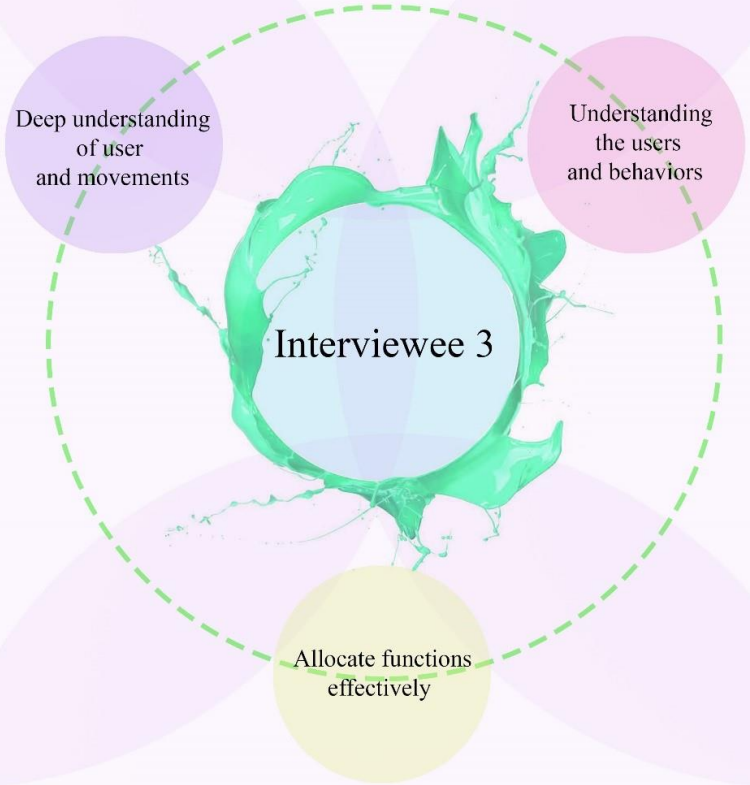


Fig 4.42: Interviewee (3) how user journey map influences design

Interviewee (4)

Q3: From your point of view how user journey map can influence the final design outcome ?

Key Words Bubble Diagram

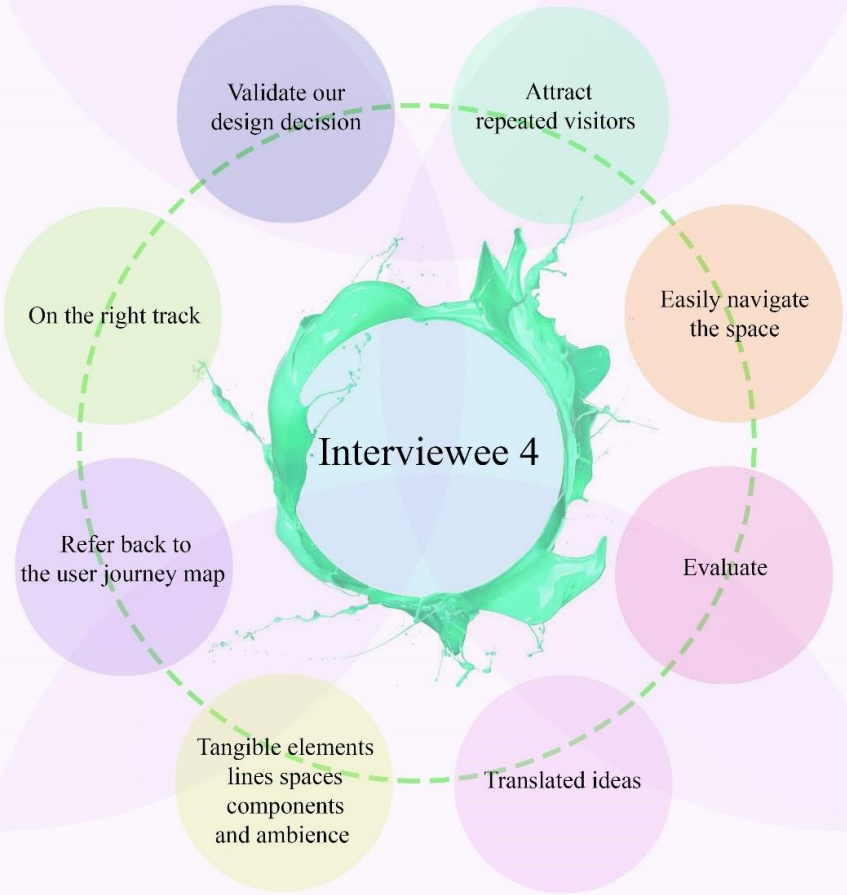


Fig 4.43: Interviewee (4) how user journey map influences design

Fig 4.44: Theme (6) how user journey map influences design

Fig 4.45: Theme (7) how user journey map influences design

Fig 4.46: Theme (8) how user journey map influences design

Fig 4.47: Theme (9) how user journey map influences design

Interviewee (1)

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process. Are there any drawbacks or challenges associated with their use ?

Key Words Bubble Diagram



Fig 4.48: Interviewee (1) key benefits of user journey maps in design

Interviewee (2)

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process. Are there any drawbacks or challenges associated with their use ?

Key Words Bubble Diagram

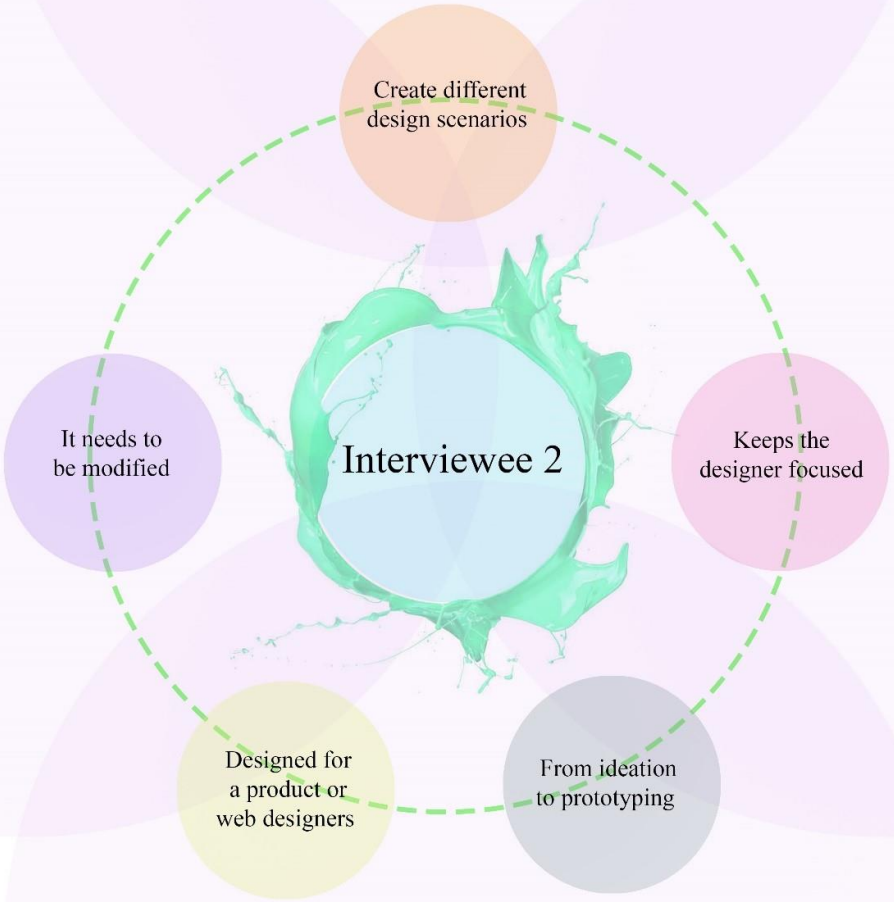


Fig 4.49: Interviewee (2) key benefits of user journey maps in design

Interviewee (3)

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process. Are there any drawbacks or challenges associated with their use ?

Key Words Bubble Diagram

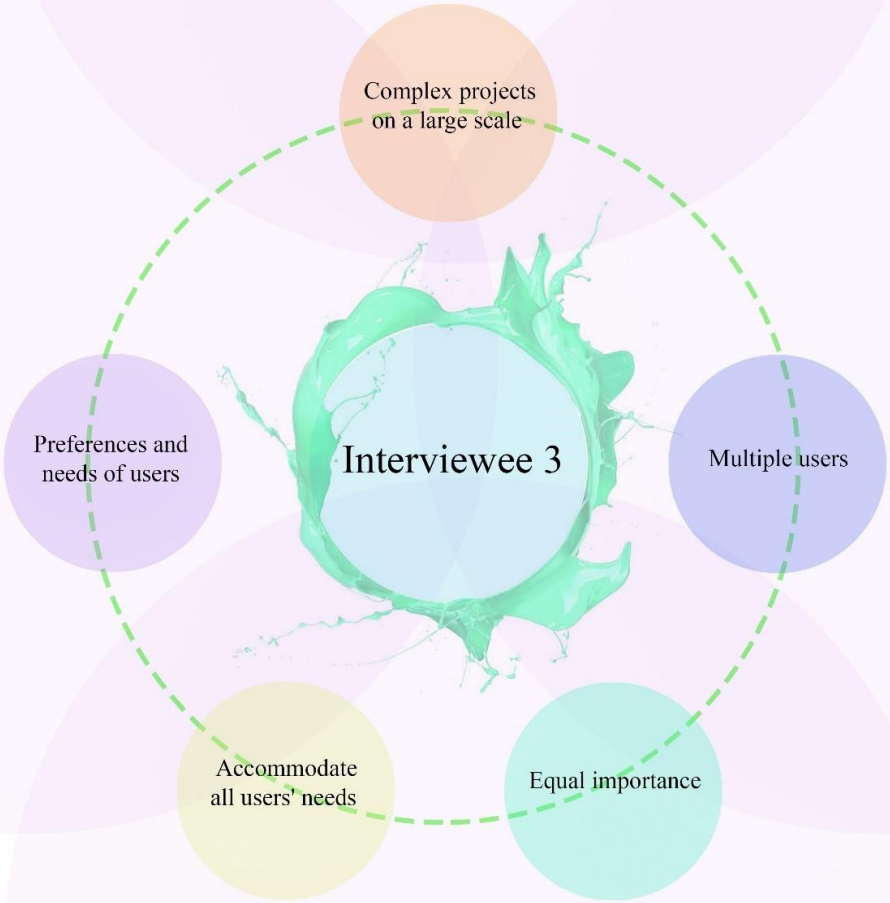


Fig 4.50: Interviewee (3) key benefits of user journey maps in design

Interviewee (4)

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process. Are there any drawbacks or challenges associated with their use ?

Key Words Bubble Diagram



Fig 4.51: Interviewee (4) key benefits of user journey maps in design

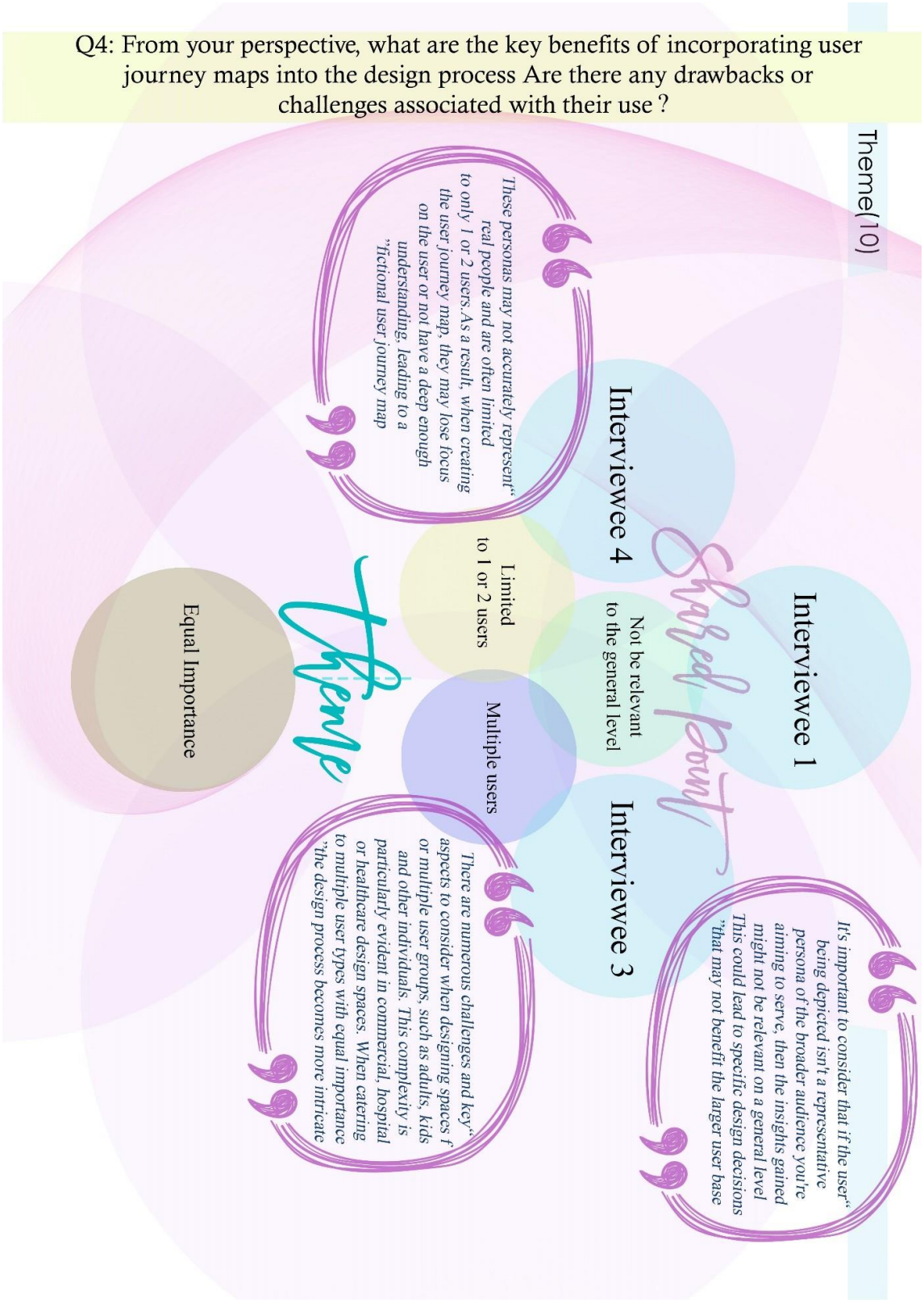


Fig 4.52: Theme (10) key benefits of user journey maps in design

Fig 4.53: Theme (11) key benefits of user journey maps in design

Interviewee (1)

Q5: How do you think user journey maps can help improve the overall user experience and satisfaction with the designed spaces ?

Key Words Bubble Diagram

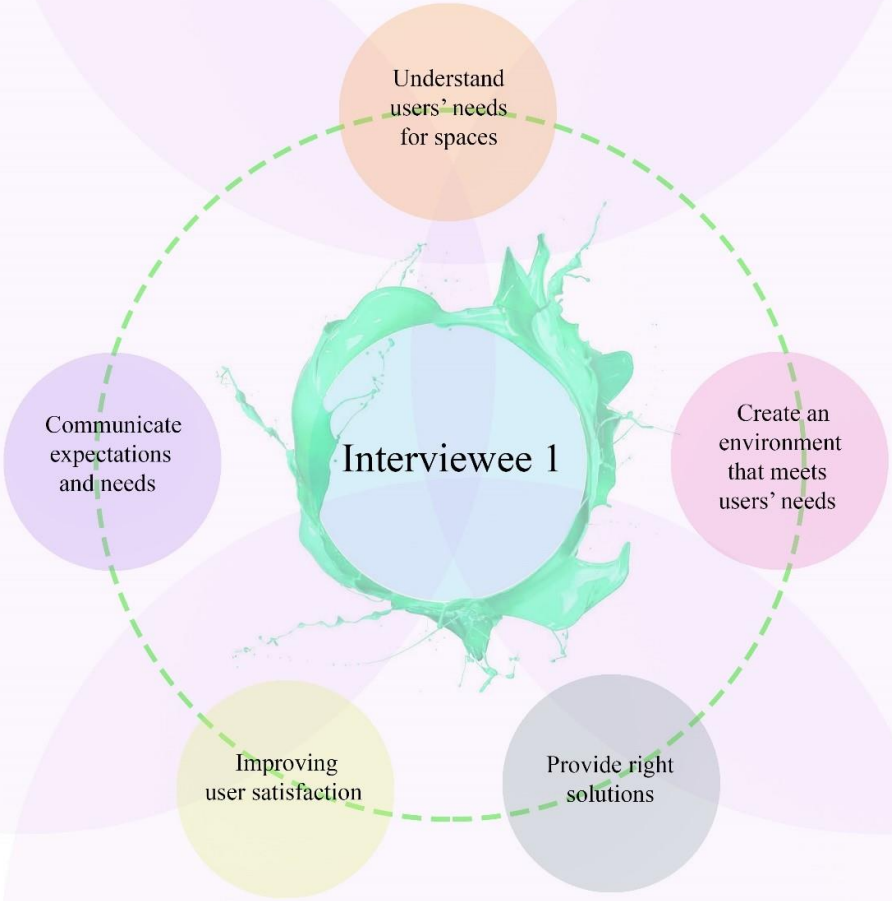


Fig 4.54: Interviewee (1) how can user journey maps improve experience and satisfaction

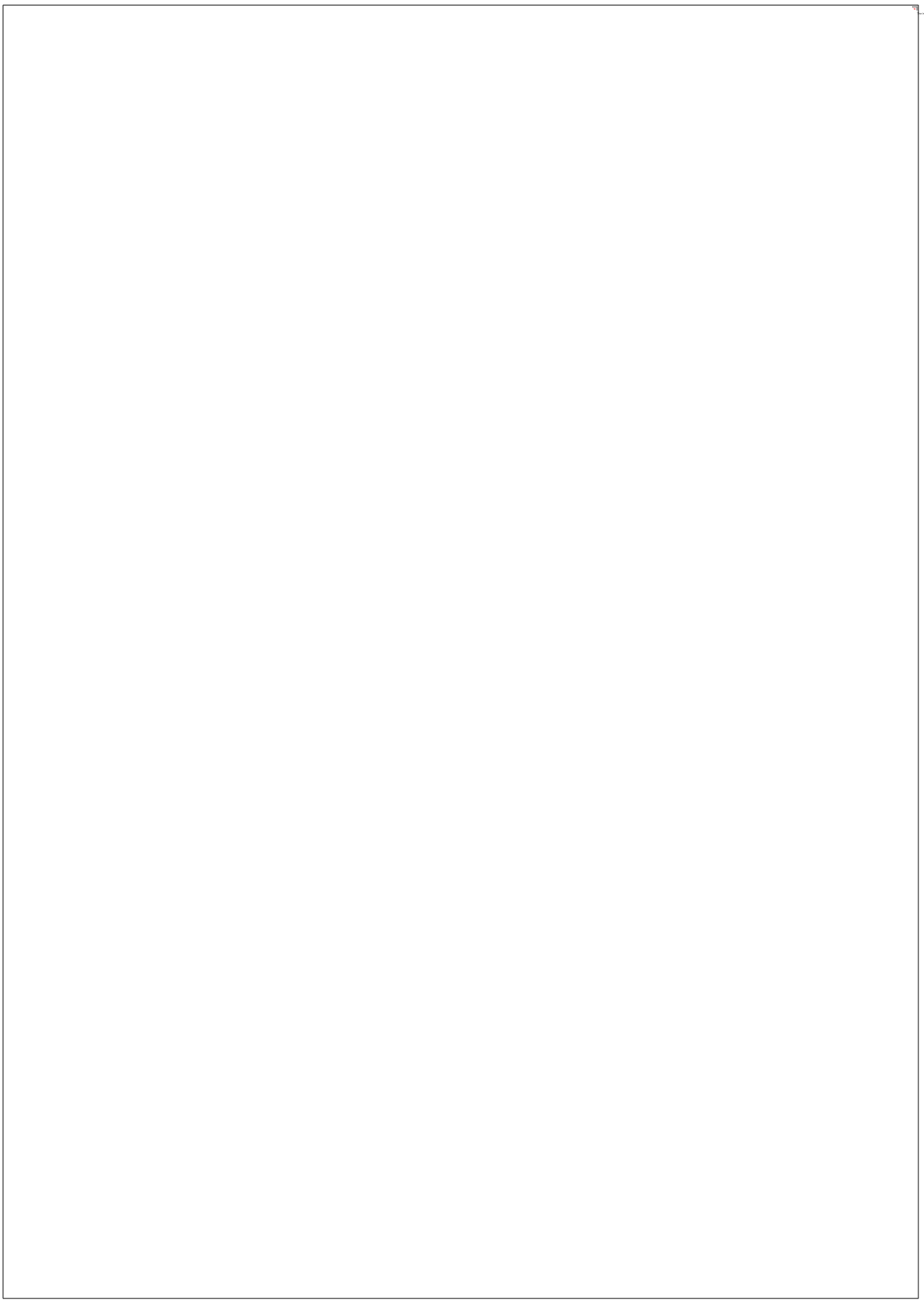


Fig 4.55: Interviewee (2) how can user journey maps improve experience and satisfaction

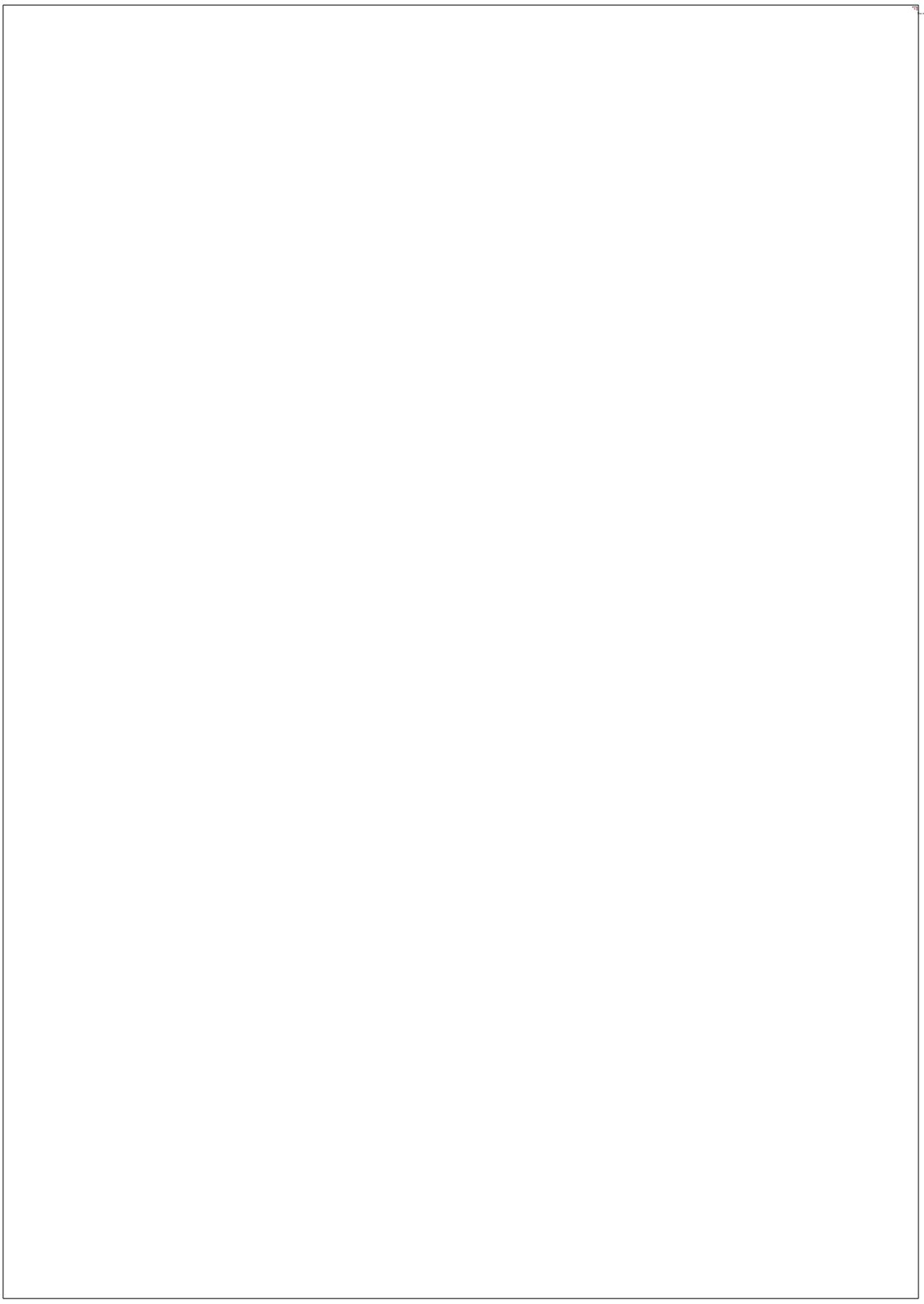


Fig 4.56: Interviewee (3) how can user journey maps improve experience and satisfaction

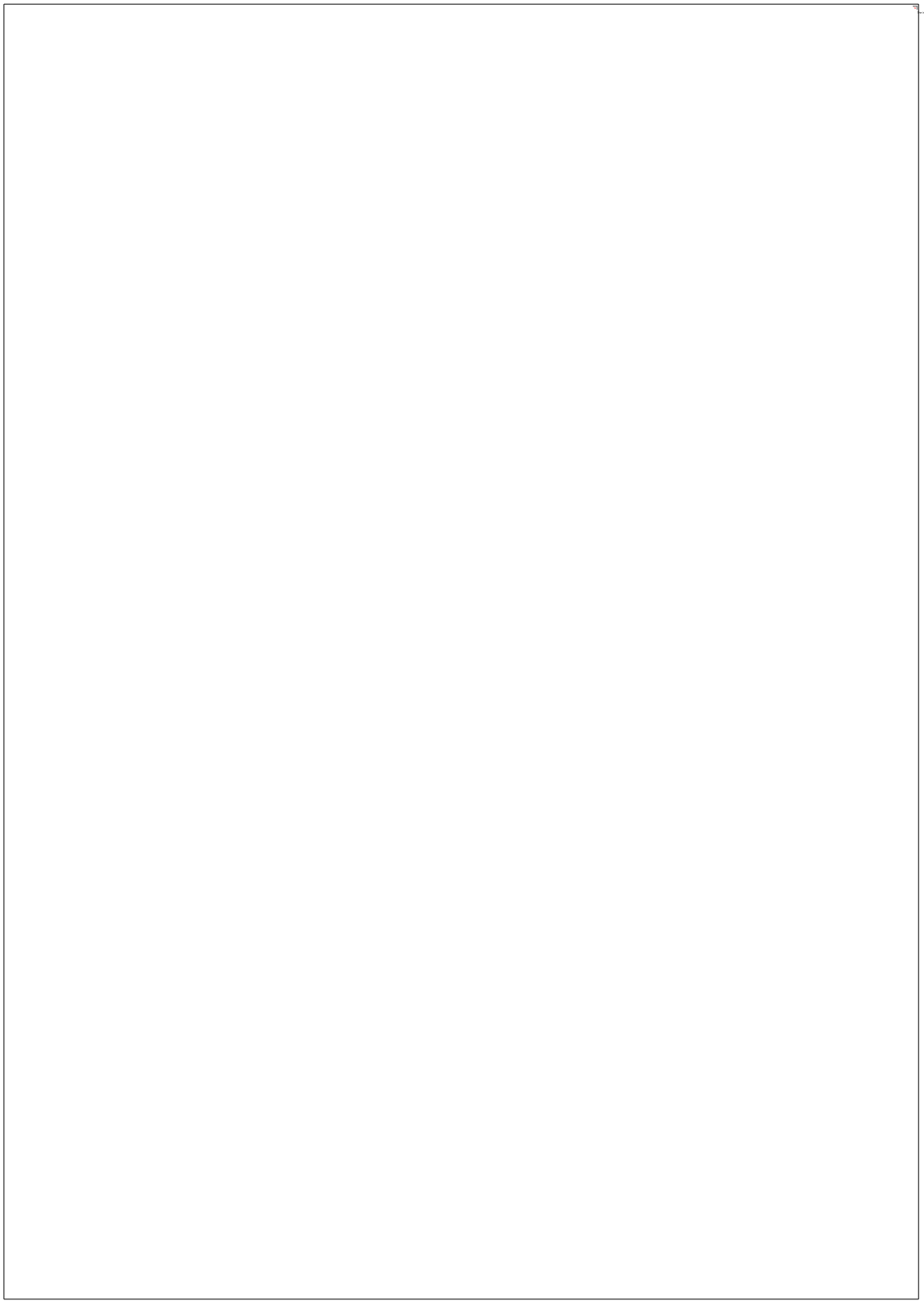


Fig 4.57: Interviewee (4) how can user journey maps improve experience and satisfaction

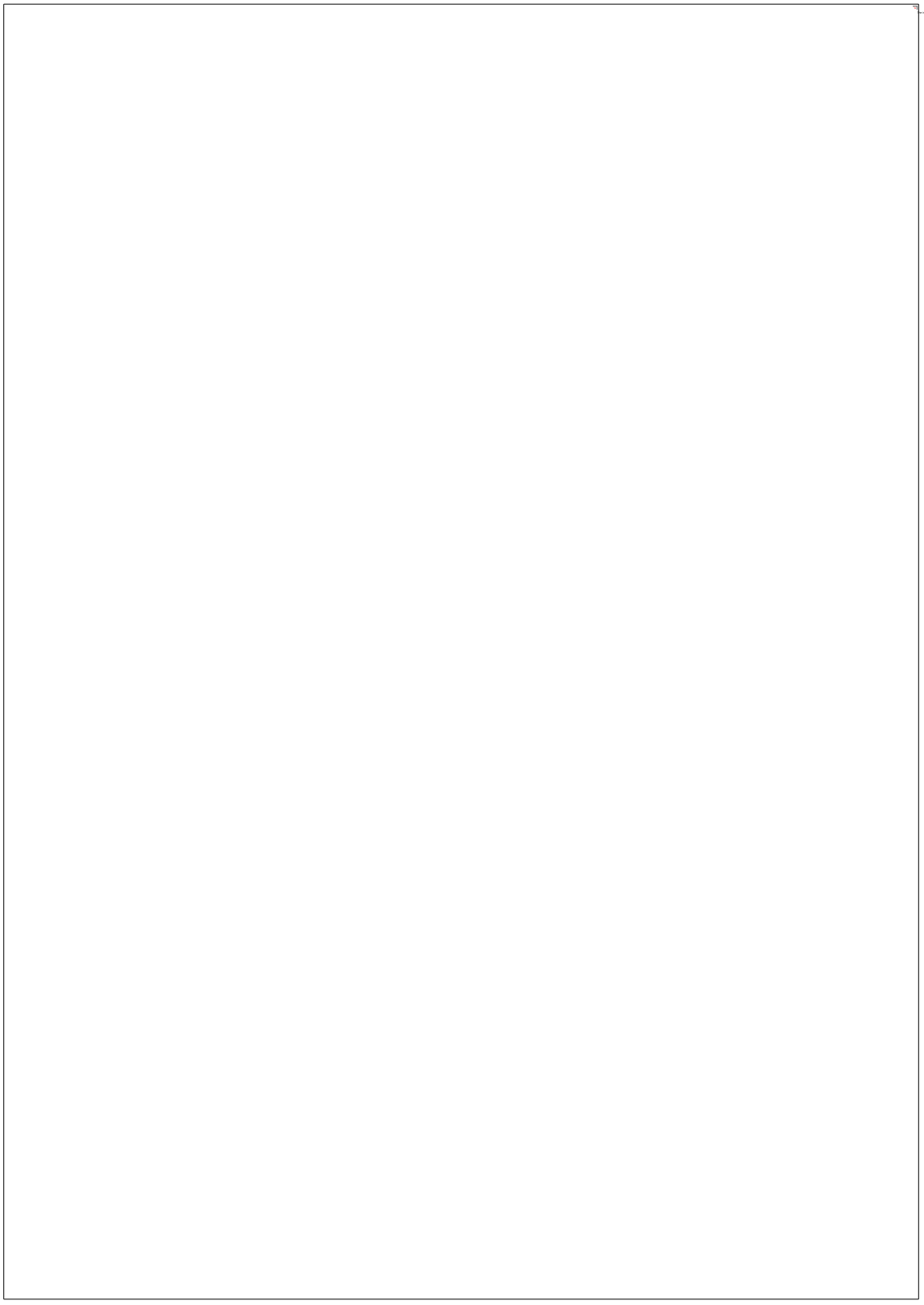


Fig 4.58: Theme (12) how can user journey maps improve experience and satisfaction

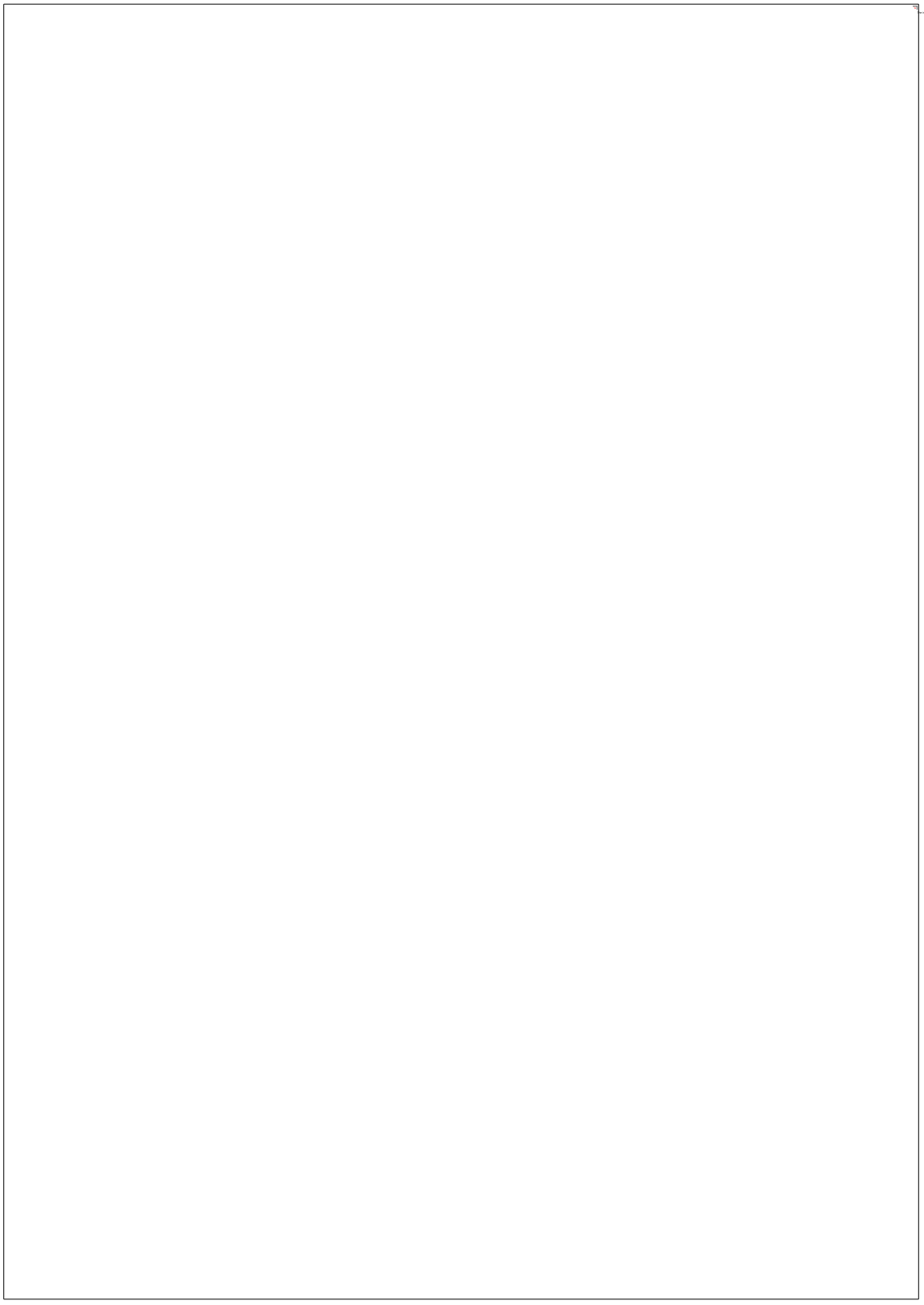


Fig 4.59: Theme (13) how can user journey maps improve experience and satisfaction

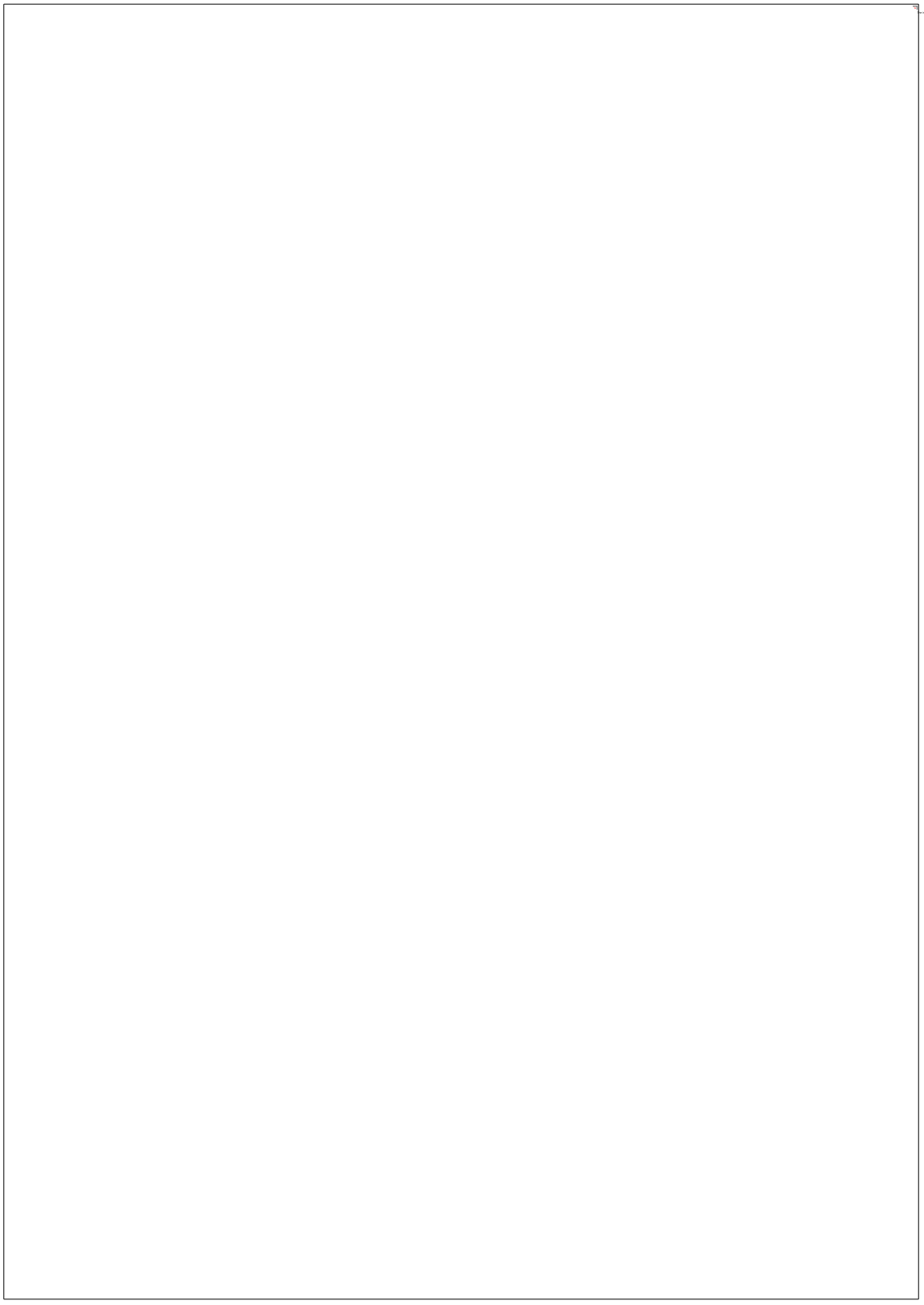


Fig 4.60: Interviewee (1) how integration of user journey maps enhances communication and collaboration

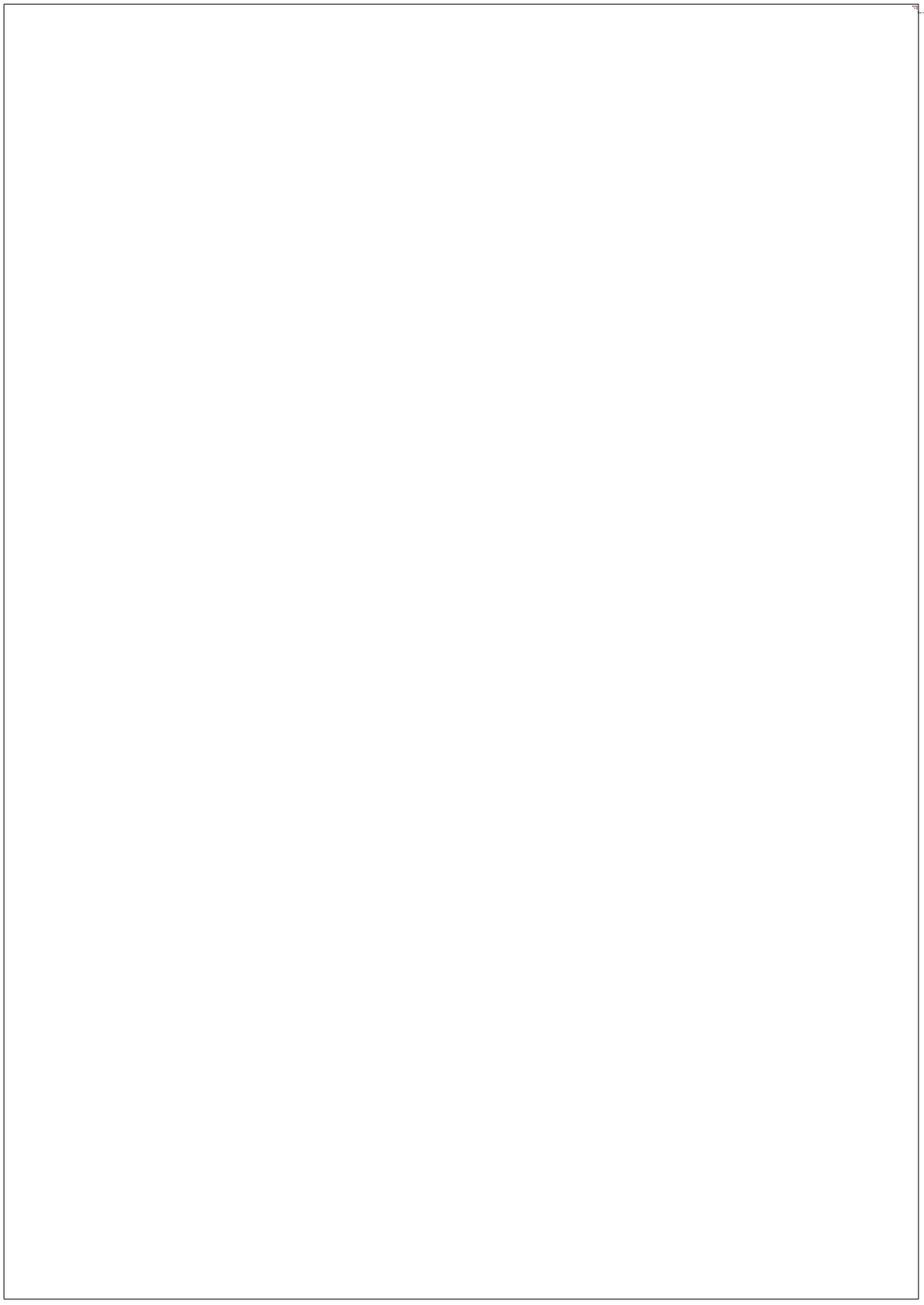


Fig 4.61: Interviewee (2) how integration of user journey maps enhances communication and collaboration

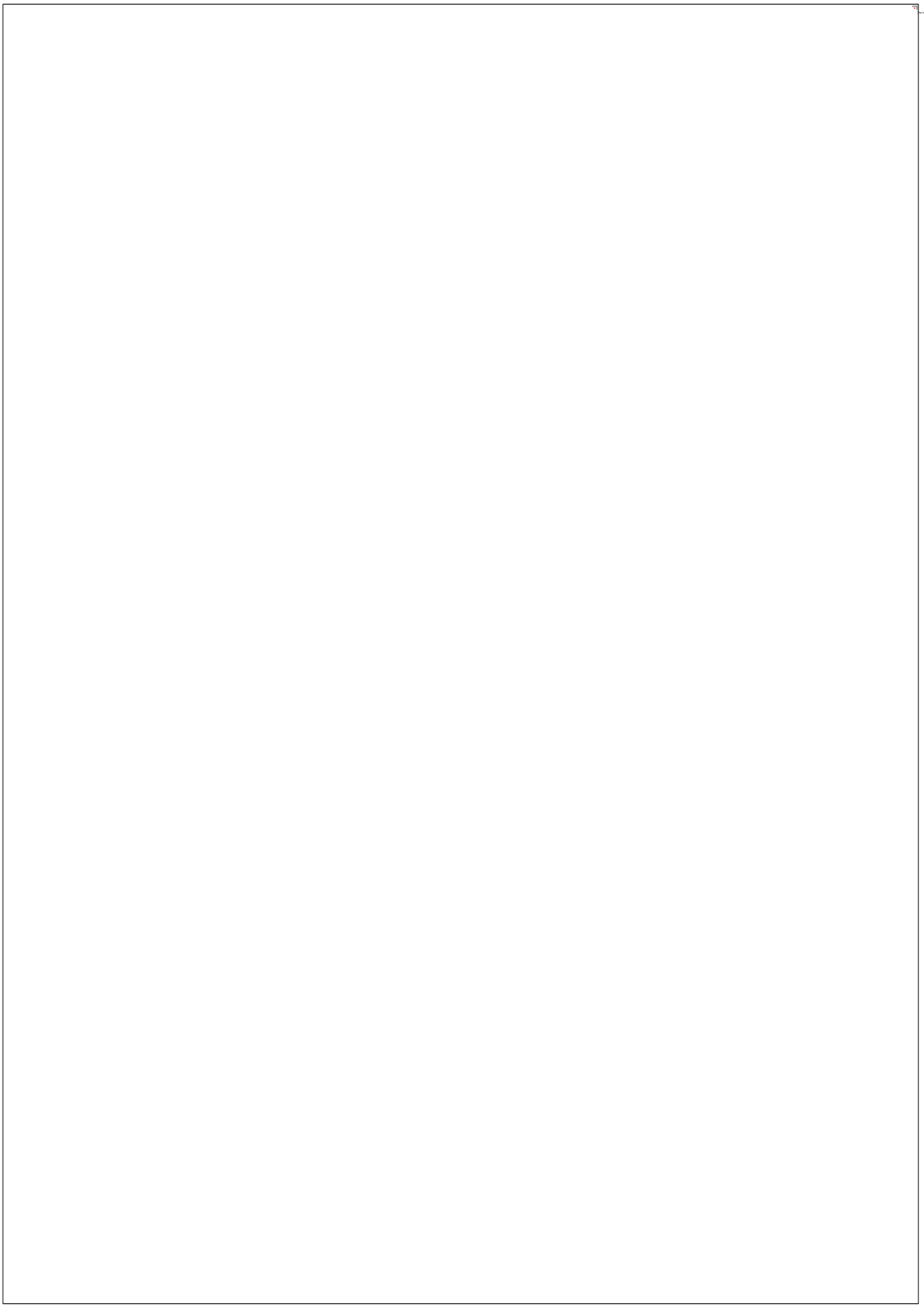


Fig 4.62: Interviewee (3) how integration of user journey maps enhances communication and collaboration

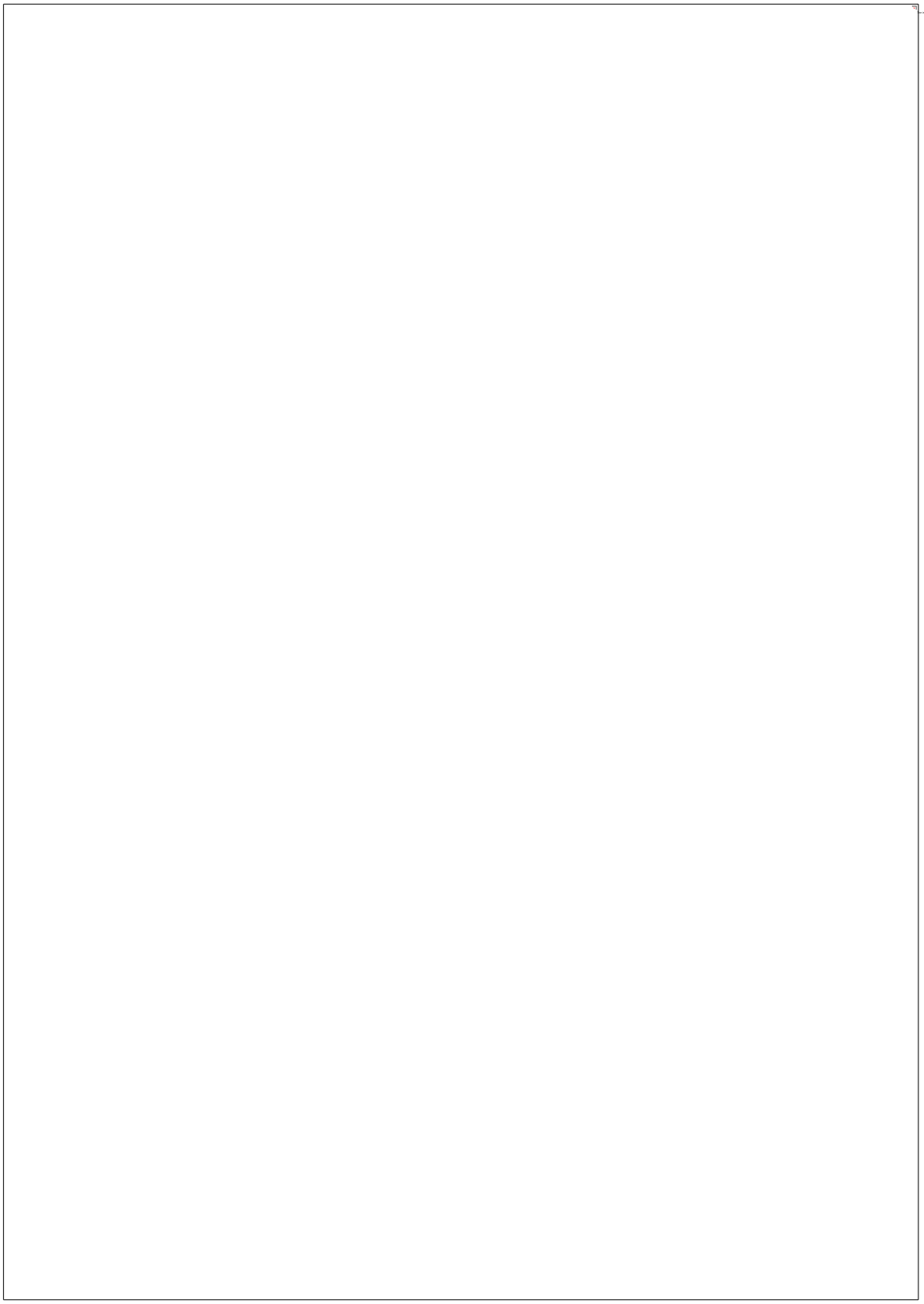


Fig 4.63: Interviewee (4) how integration of user journey maps enhances communication and collaboration

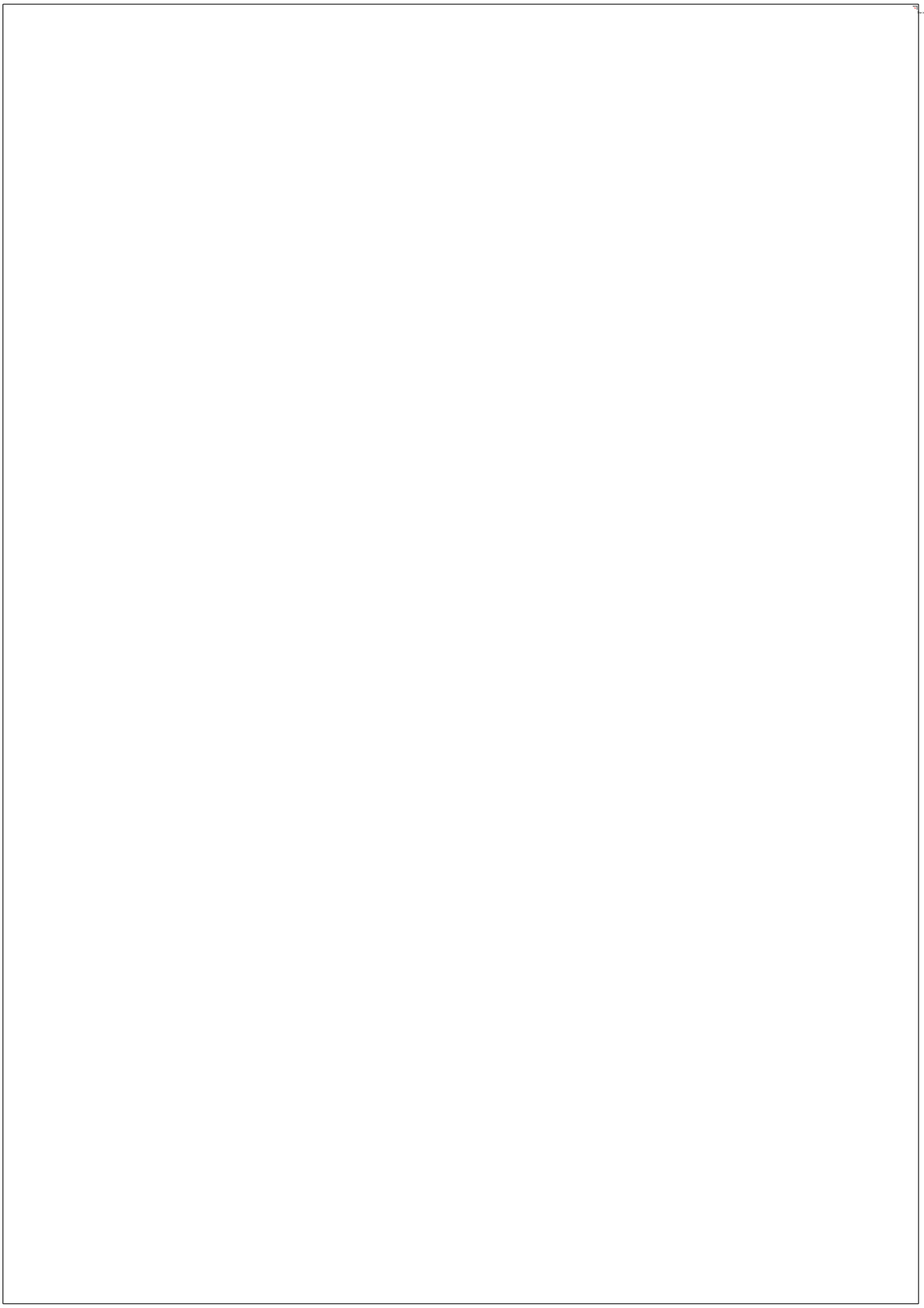


Fig 4.64: Theme (14) how integration of user journey maps enhances communication and collaboration

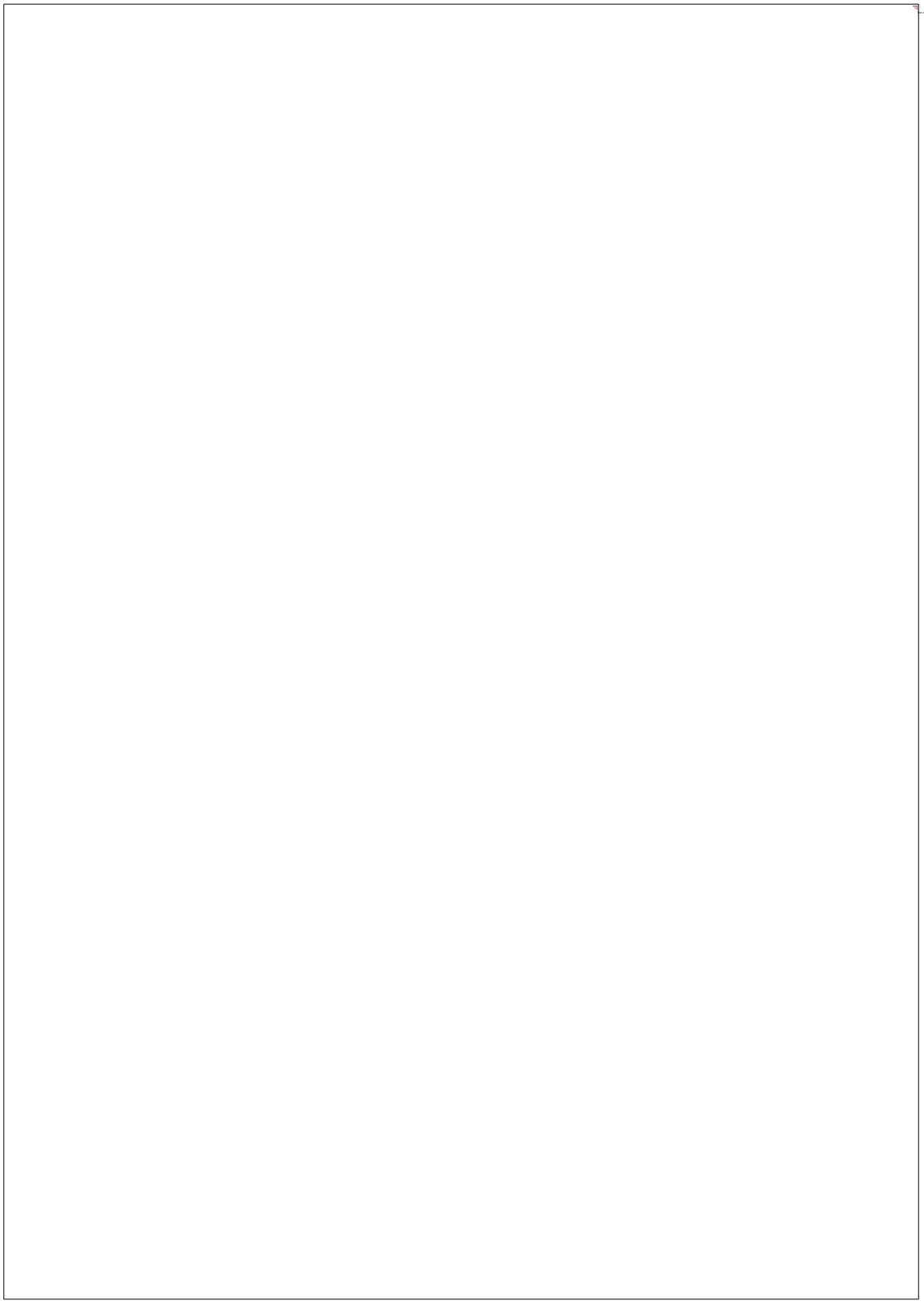


Fig 4.65: Theme (15) how integration of user journey maps enhances communication and collaboration

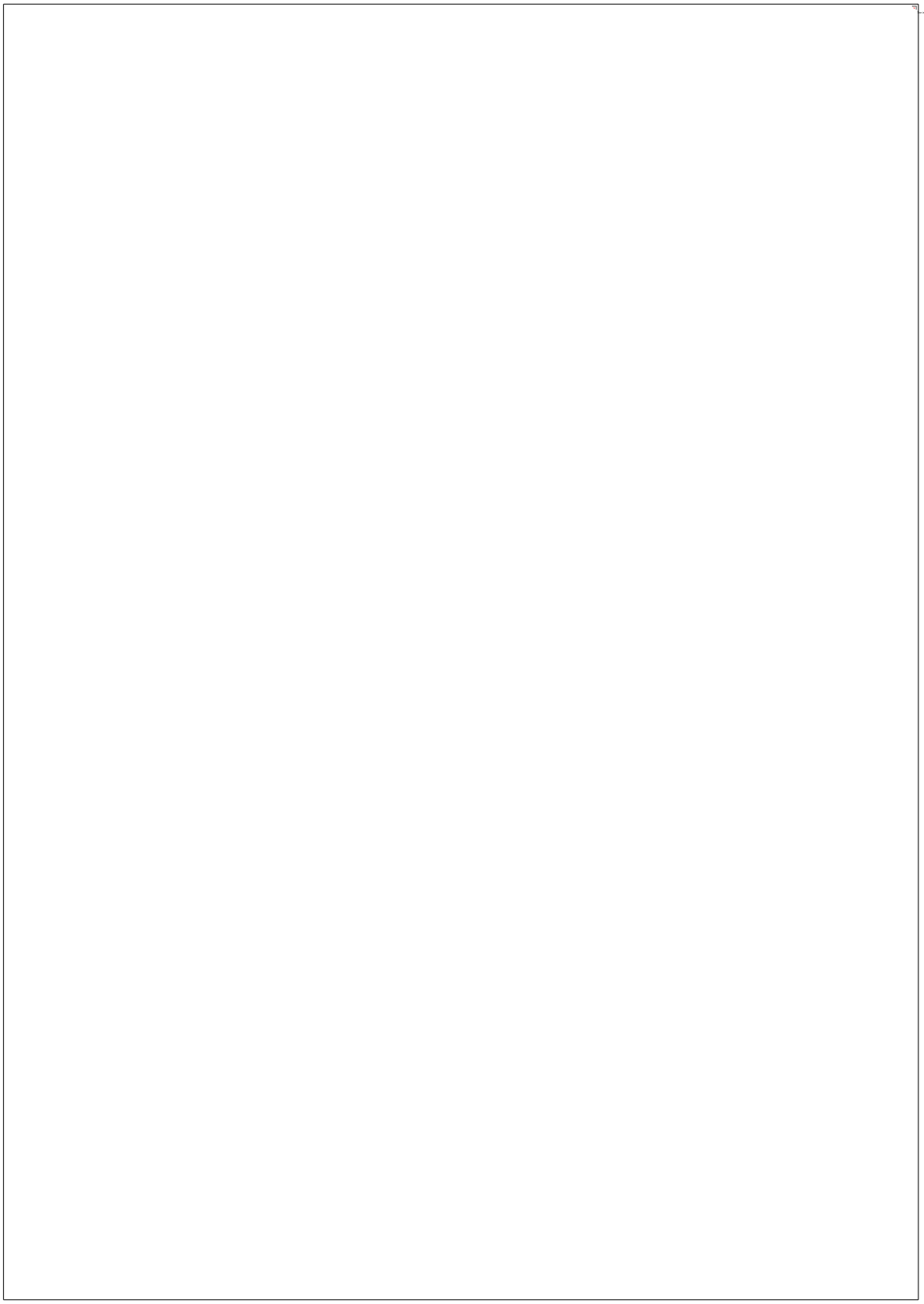


Fig 4.66: Interviewee (1) types of interior designs where user journey map is effective

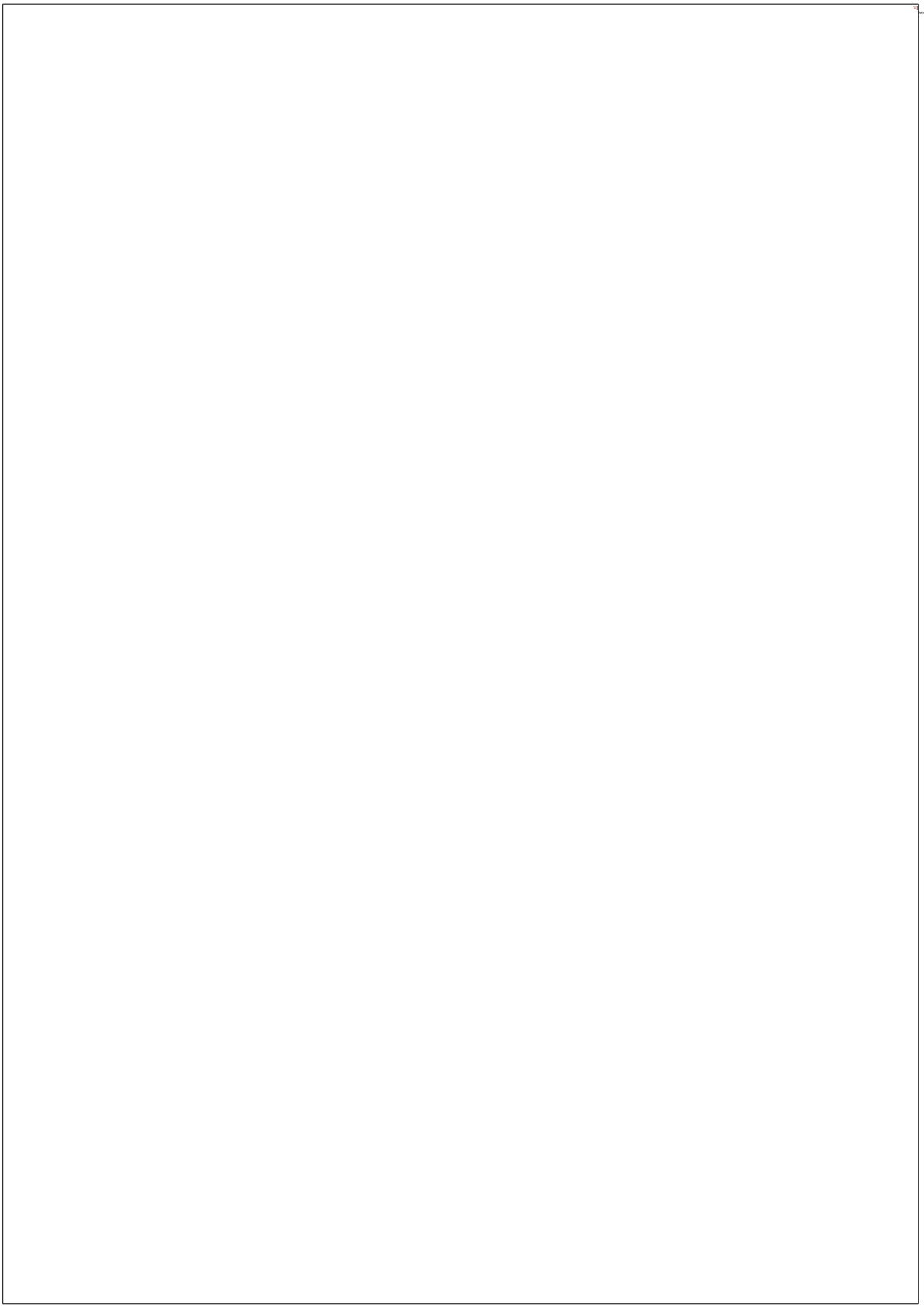


Fig 4.67: Interviewee (2) types of interior designs where user journey map is effective

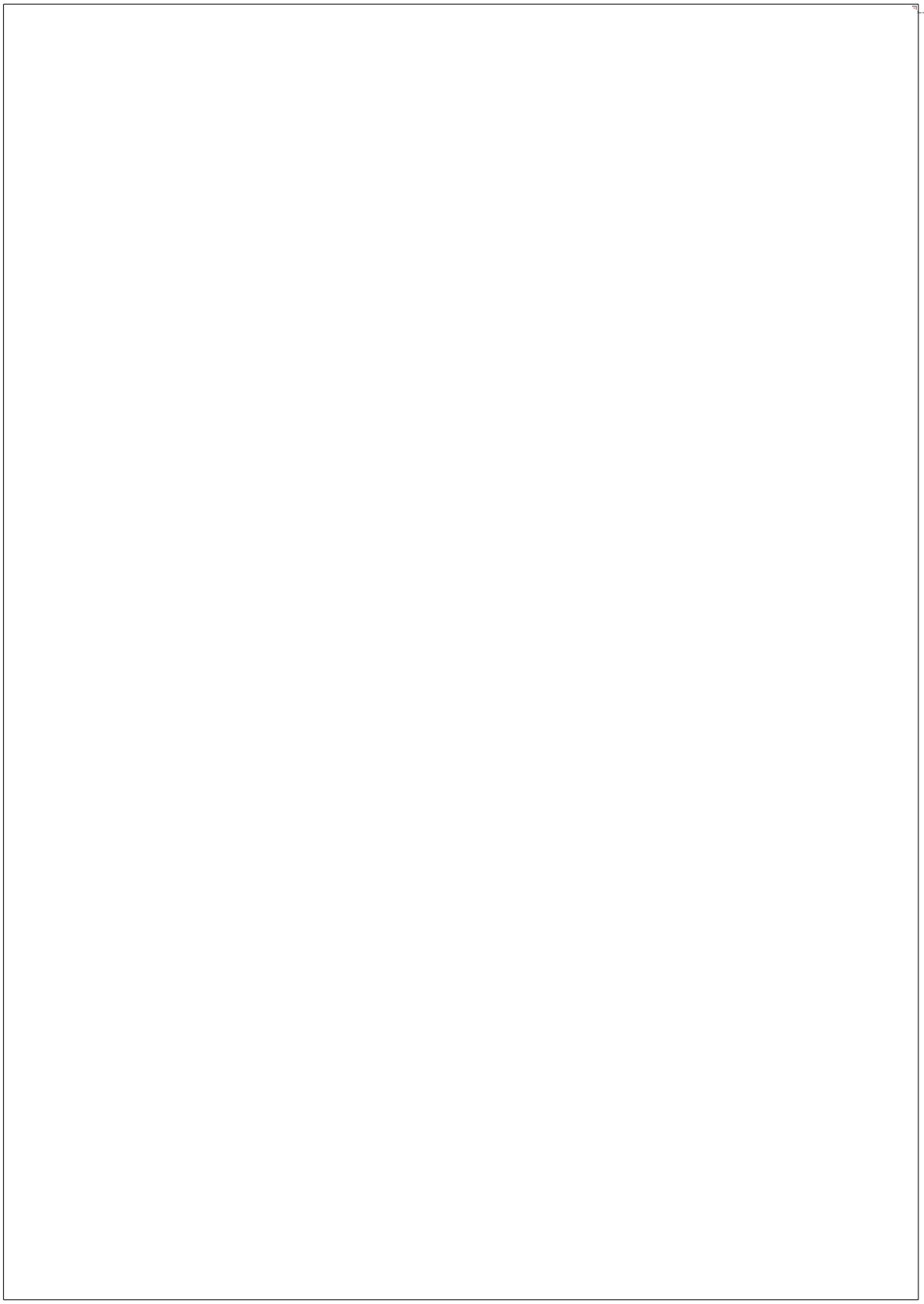


Fig 4.68: Interviewee (4) types of interior designs where user journey map is effective

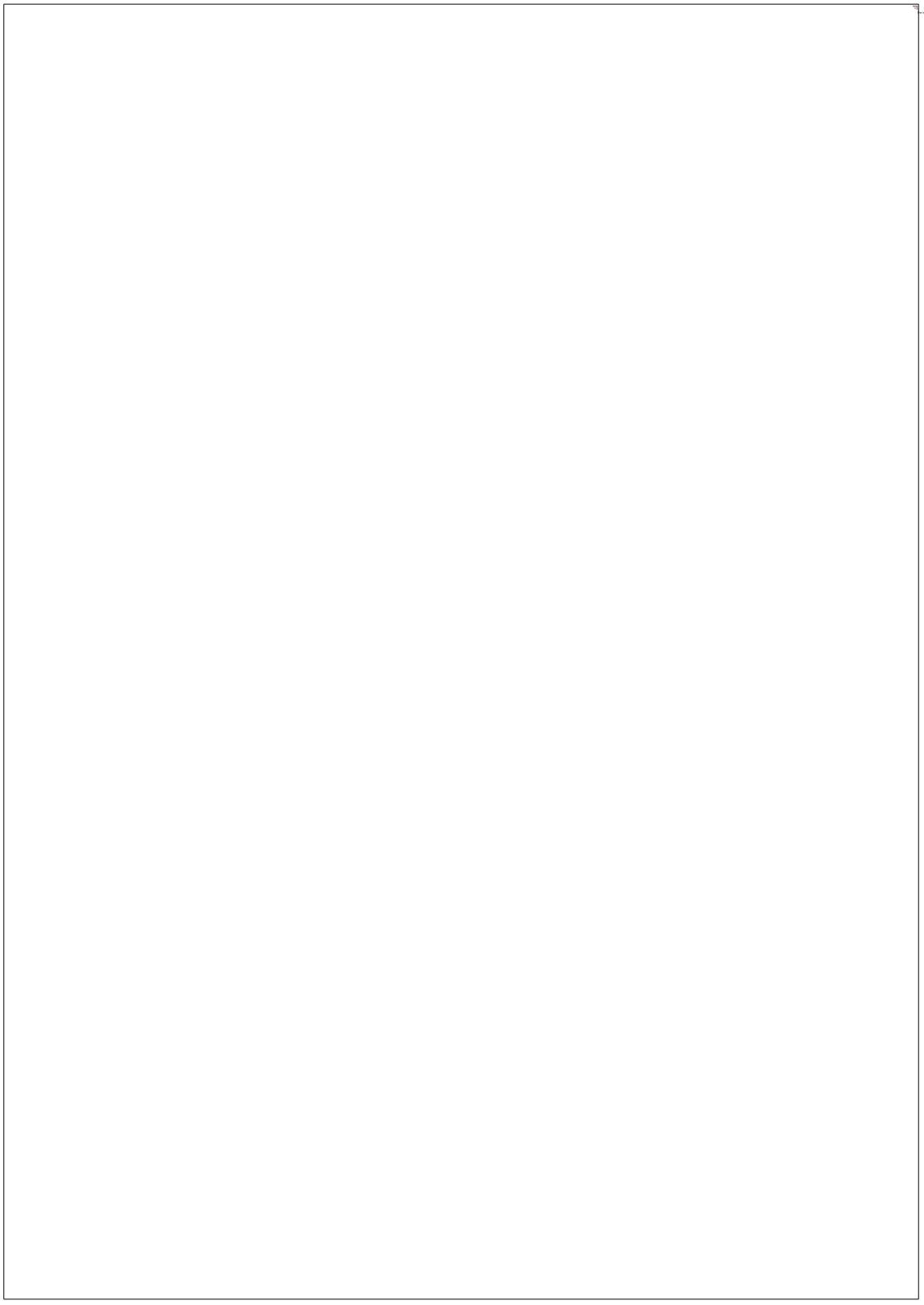


Fig 4.69: Theme (16) types of interior designs where user journey map is effective

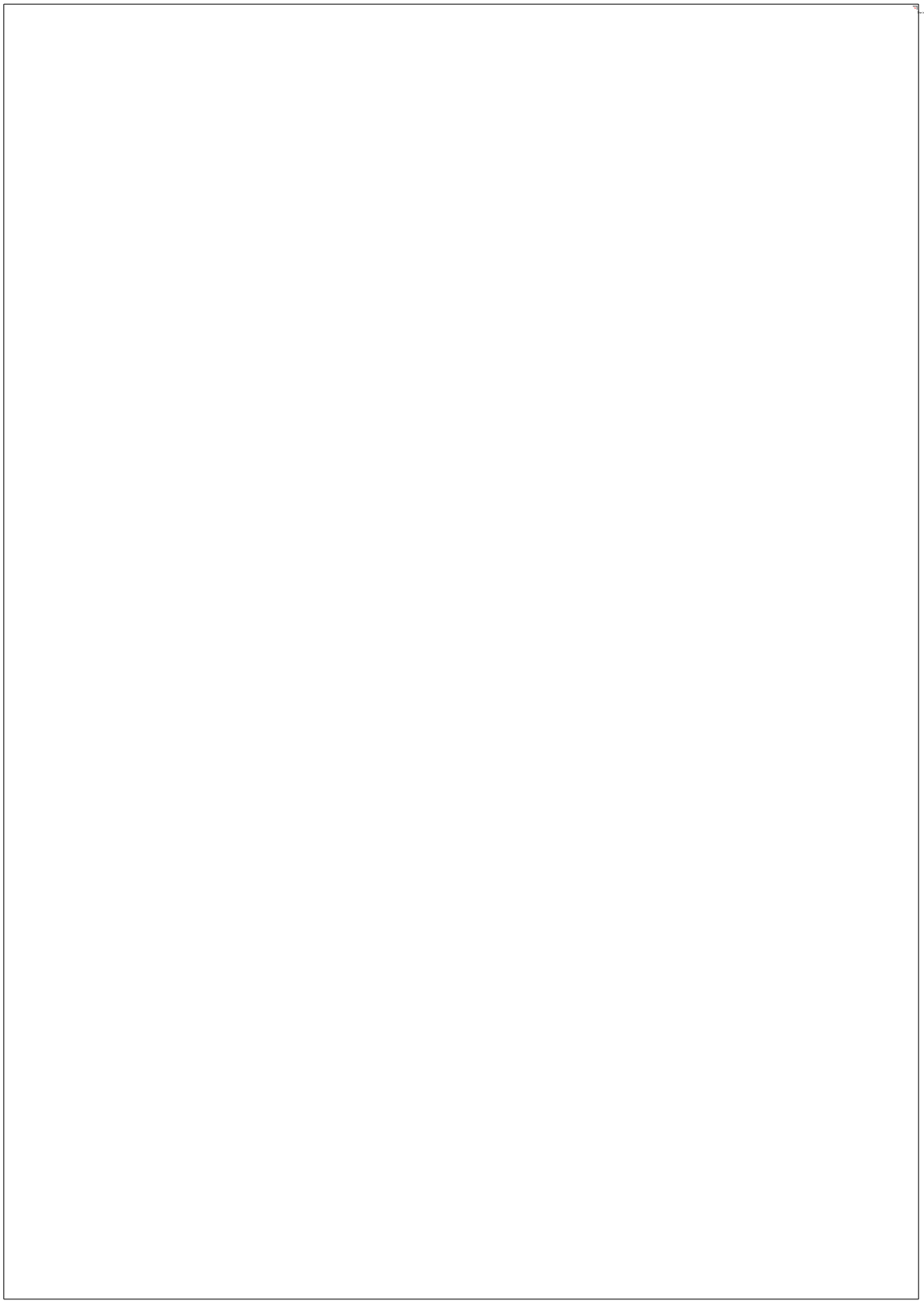


Fig 4.70: Theme (17) types of interior designs where user journey map is effective

4.8.1. How familiar are you with the concept of user journey maps in the context of the design process?

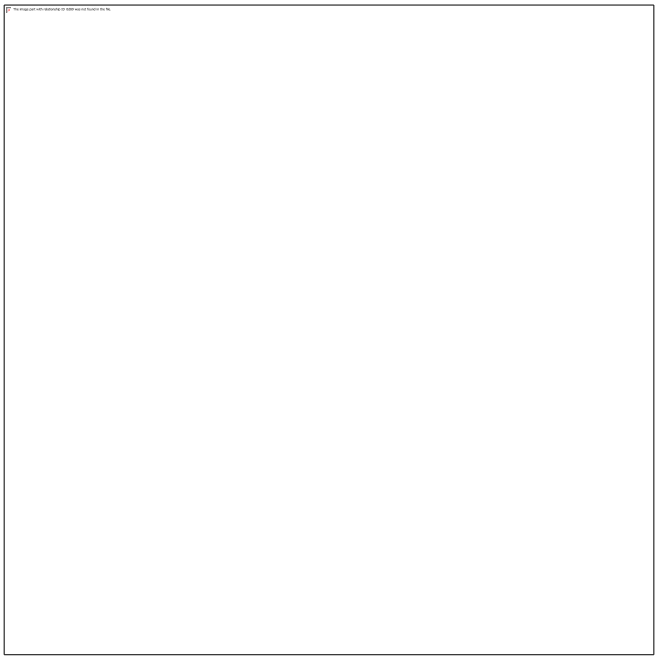


Fig 4.71: Commencement of design process

1. The Commencement of the Design Process

Quite a few similar themes could be analysed based on how familiar participants were with user journey maps and their use during the design process. That might mean a strong familiarity with user journey maps, which, according to them, are a crucial component at the top of their design work when interviewed about their experiences.

Interview 2 key quote was: "Adding the user journey maps in the beginning really was a key factor in helping me understand who this was for in much more detail". As a result, she became more familiar with users, which assisted in making design decisions based on needs, expectations, and pain points.

Interviewee 3 also went up front with user journey maps; however, she maintained that she would use them at several points in the design process, not merely upfront. She described how this approach enabled her to return to the user experiences and iterate on them as the project developed.

These interviews are linked by recognising how user journey maps can make the design process more effective. Interviewee 2 and Interviewee 3 are commonalities yet complementary horizons of understanding in their visualisation, indicating a profound relation between user journey mapping and design as a practice. It led to a conversation about the topic "The Beginning of the Design Process", which emphasises the importance of a product's user (or potential user) at the start of design. This theme is represented by the figure labelled Fig. 4.31: Theme.

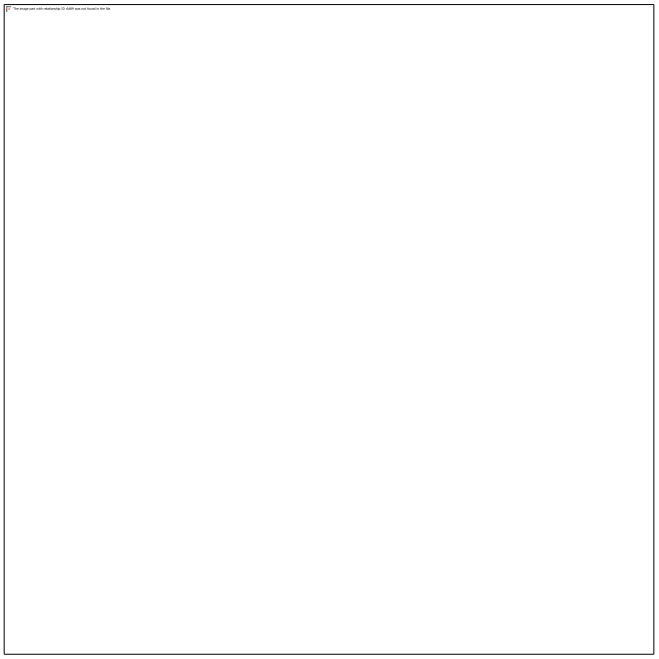


Fig 4.72: Empathizing with users

2. Empathy

This question encouraged a great conversation, and from there, we found an important theme: "Empathising with Users". Interviewees 2 and 4 touched upon the importance of understanding and involving users and how this process helps foster empathy in the design process. These results are further illustrated in Fig. 4.32: Theme—feeling user empathy.

According to Interviewee 2, user journey maps are handy tools that help designers see and study the users' interactions with various elements in a physical space. By charting such interactions, designers can develop a big picture of their users, particularly regarding their perception and use of the various objects in an interior context. Its intense insight provides important insight from which design decisions are made and improves the user experience overall.

User journey maps are utilised in a proactive manner (Interviewee 4). These maps are not just analytical tools for her but a way of actively involving the people she is designing. She would like to learn more about their experiences and struggles and needs to incorporate them into her designs, make them relevant to their real-life environments, and enhance their experience.

In the subsequent step towards finding common ground between the two respondents, the researcher found a common idea that both interviewees passionately dedicated themselves to: Empathy.

The accompanying figure (Fig. 4.32: Theme—empathising with users) presents samples of quotes from both interviewees and how we could obtain them to extract the theme.

This compassion-focused highlighting is evidence of a paradigm shift in the design process that catalyses a deeper, user-driven narrative that values users' voices and experiences.

4.8.2. In your experience, what role do you think user journey maps play in understanding user experiences and behaviours in the design process?

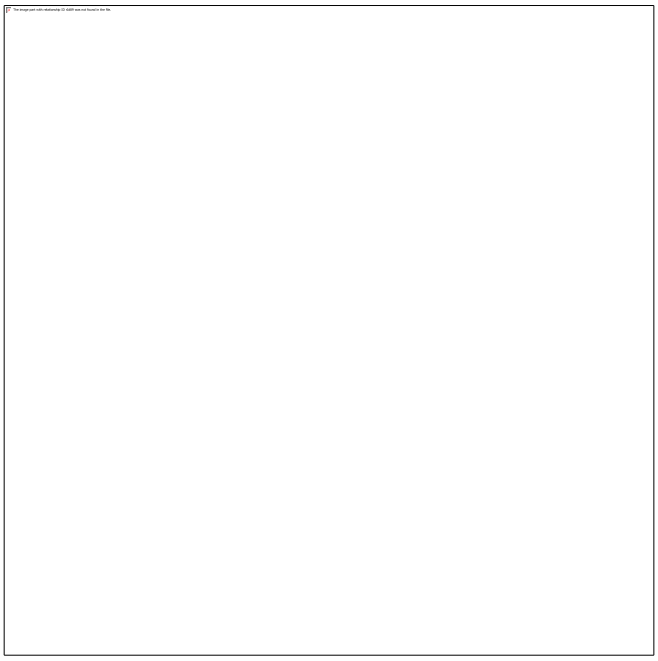


Fig 4.73: Designing for and with users

3. Designing for and with users’

Through narration, an interesting question was asked of the interviewees: "How has such a tool as a user journey map helped you understand user experiences and behaviours during design?"

This study explored how user journey maps play a key role in improving our understanding of user behaviour throughout the design lifecycle.

The interviewees' input has led to a few overarching themes. One of the key ones is a focus on "Design for and with users". Two of those interviewed stressed the necessity of mapping not just the users' touchpoints but also their pain points and the critical importance of retaining users in the end-to-end design process.

Interviewee 1 stressed the need to identify potential friction points or bottlenecks that users might face while accessing or using a product. They emphasized that designers need to think user-centric, in the sense that they have to think about user experience not only before design but also after design to ensure that the outcome is actually what the users expect and need.

Likewise, Interviewee 4 promoted the concept of early usage of user journey maps in the design stage. They stated that getting users involved at the beginning of the design process creates a collaborative dynamic between users and designers. It is crucial because it allows users to share pain points and touchpoints and describe them along the journey through an internal space.

The knowledge gained by both interviewees prompted the researcher to aggregate and present the theme of "Designing for and with users". Once a theme is identified, it is used to map corresponding figures to visually represent this theme, and this is with respect to the accompanying figure seen in Fig. 4.38: Theme—designing for and with users. This figure represents how the researcher synthesized the perspectives and insights provided by the participants, demonstrating the value of a collaborative approach in user-centred design.

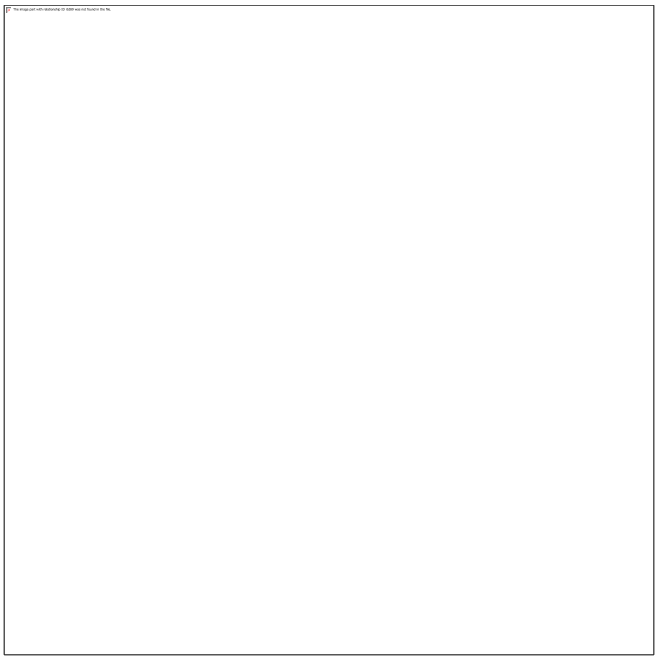


Fig 4.74: User journey sequence

4. User Journey Sequence

During the discussion, a theme emerged: "User Journey Sequence". Three interviewees emphasized the need to track their journeys in internal spaces with user journey maps to understand their experiences and behaviours during the design process. This results in more effective solutions that will inform the distribution and activation of internal zones and functions.

According to Interviewee 1, user journey maps are a great tool for establishing how internal spaces will be designed based on a user's experience. They emphasized that these maps can address current design problems and contribute to productive design solutions.

Interviewee 2 stated that user journey maps help designers see how various pieces connect. These maps are important in zoning interior design projects (to understand the activities related to each of the elements and the user experiences associated with them).

Interviewee 3 added that, as user journey maps, they illuminate the experiences of many users through the space. Understanding can clarify the order of the journey and help allot functions within the space based on the profile of the users the designer is designing for.

Interviewees 1, 2, and 3 mainly agreed on how function developed in internal spaces. All of them were confident that user journey maps are key to building meaningful functions that meet users' expectations. The figure, Fig. 4.39: Theme—user journey sequence, illustrates how the researcher came up with this theme.

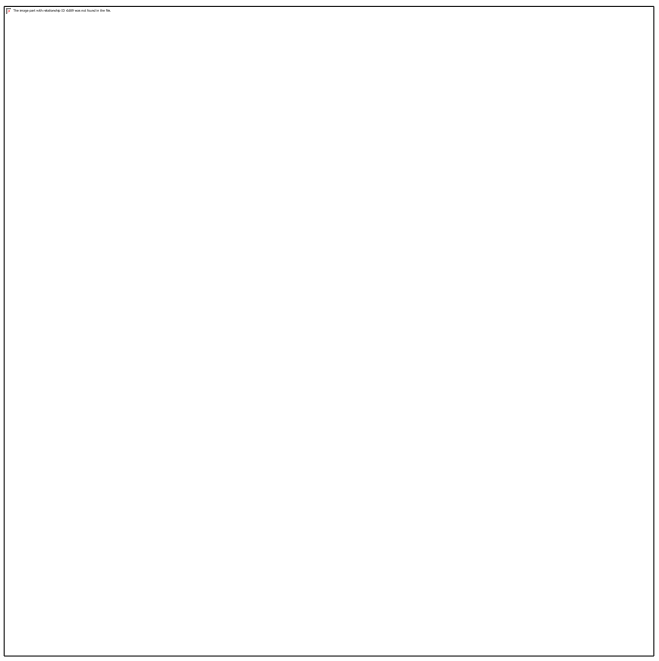


Fig 4.75: User interior interaction

5. User Interior Interaction

The second, narrowing down the questions asked during the interviews, resulted in the researcher's theme of "User Interior Interaction". Interviewees made one of the important points emphasising that you must study the participants' journeys before, during, and after being in a space. Designers

should have a basic knowledge of users' expectations so that designs and environments can be cohesive and well done.

In response to this question, Interviewee 1 emphasized the importance of user journey maps, noting that they are a must-have for describing user expectations and what they need. Those maps are visual representations of users' experiences, and they help designers identify critical touchpoints where users engage with the space.

Interviewee 2 expanded on this discussion by explaining how user journey maps enable designers to understand better the litany of things happening in the environment. Understanding and studying people's physical actions and patterns can help design spaces that will serve as a better catalyst in ensuring this engagement happens.

Expanding on this statement, Interviewee 3 provided a strong example highlighting the importance of user journey maps. She outlined a scenario that hypothetical users would follow, associated with a hospital environment—detailing the differing experiences of patients, visitors, and staff. It is just one example demonstrating how diverse interactions in a single space can alter the design and function of a particular area. Two different user groups, two different needs, and two different journeys highlight the importance of using user journey maps to optimize and improve internal layout.

There was a virtual agreement amongst all three interviewees that user journey maps are handy for understanding the layers of complexity of user behaviours in space. It leads to better, more gratifying design results in the end. Based upon the key findings above, the researcher started to elaborate further on "User Interior Interaction", as shown visually in Fig. 4.40. After

compiling these into a thematic representation, the following reflects a theme pulled directly from the interviewees' comments on the commonalities within the context of experience design and user-centrism in design narrative.

4.8.3. From your point of view how user journey map can influence the final design outcome?

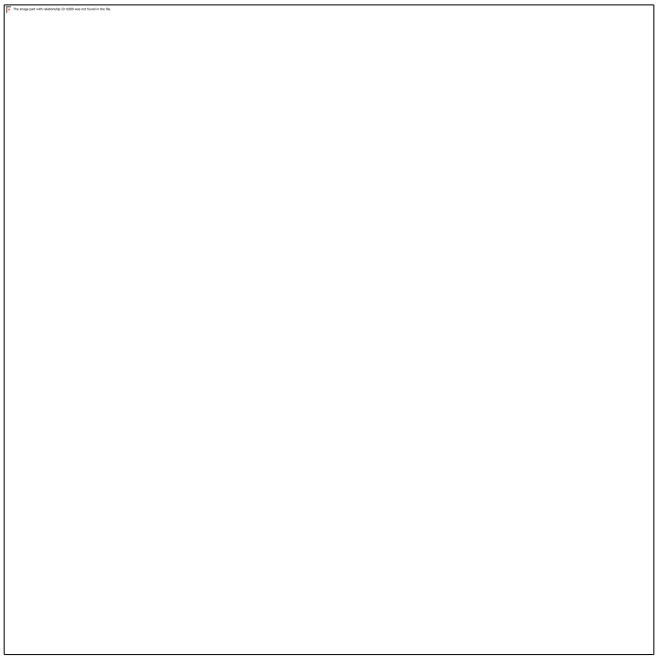


Fig 4.76: User understanding within interior space components

6. User Understanding within Interior Space Components

The third interview question from the analysis of interview themes examined the impacts user journey maps have on interior design outcomes. One of the main topics, "User Understanding in Components of Interior Space," underscores the necessity of immersing in user behaviour before embarking on the design process.

Three interviewees shared their observations:

When asked about what she learned from her user research, Interviewee One said that an understanding of how different users might interact had a

significant impact on future design direction; "Good design is empathy for the user experience".

Some interviewees, like Interviewee 2, addressed how journey mapping strategically keeps teams focused on user experience (UX), confirming that design elements meet user needs.

Interviewee 3: The structured journey map aligns the user journey and guides us to user-centred design solutions.

Together, these insights highlight the need (and virtually elevated role) for a "deep understanding of users" as part of the design process—essential to first-rate interior design. The accompanying figure (Fig. 4.44) graphically illustrates this insight synthesis.

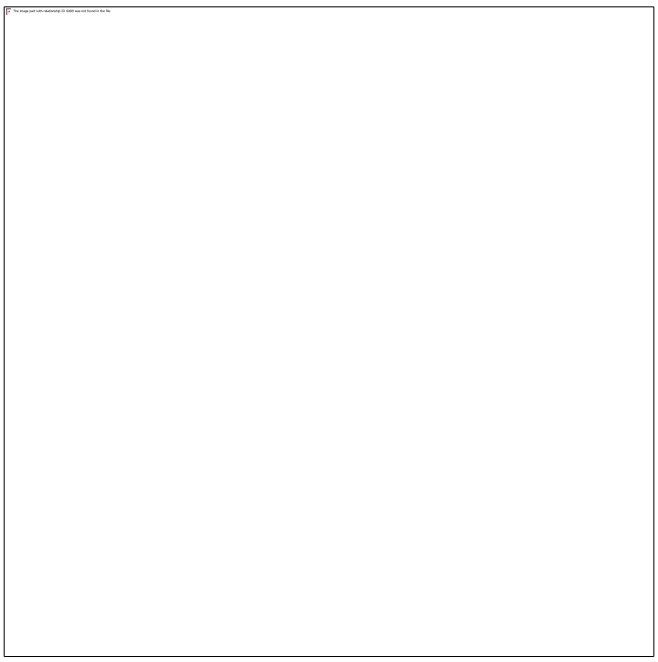


Fig 4.77: Interior functions according to user understanding

7. Allocate Interior Design Functions

The question of whether the user journey mapping method actually affected the resulting design was returned. In light of the findings and

responses the interviewees addressed, the researcher established an overarching theme they referred to as "Allocate Interior Functions According to Users' Understanding," which indicates that functions can only be allocated appropriately through a proper user behaviour analysis.

Interviewee 1 introduced the relationship between user journey mapping and successful design outcomes. Understanding how users engage with and move through the space helps inform the facility's design, primarily through the user journey map, which can help us examine the details of user interactions with particular functions.

In contrast, Interviewee 3 noted that a well-structured journey map has proved very valuable in this respect, as it allows for planning and organizing functions as needed. As mapped, both interviewees agree that user journey mapping helps prioritize top elements, affecting how interior functions align with users.

The accompanying Fig. 4.45 Theme (7), Thematic Extraction from Interviewees', is a representative example of the researcher's thematic extraction process based on the interviewees' comments.

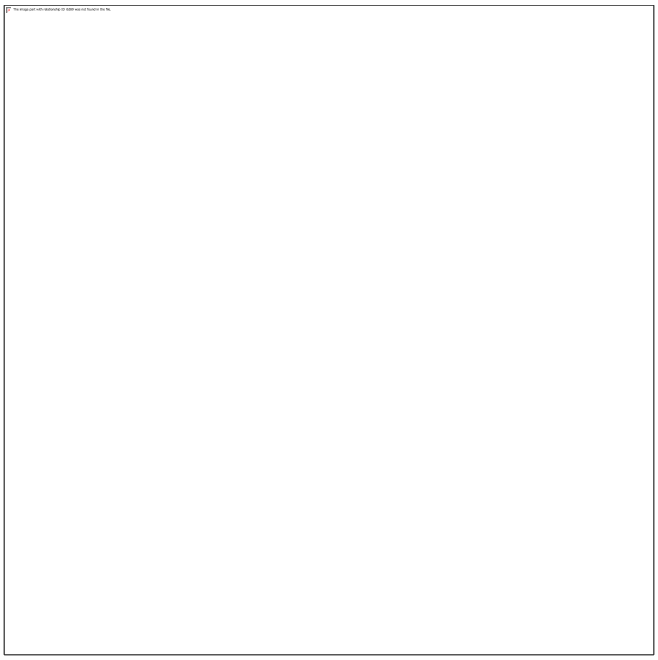


Fig 4.78: Translating user journey maps into design elements

8. Translating User Understanding of User Journey Map into Interior Design Elements

After a close inspection of the themes that came up from the interviews, one central theme emerged that responds to the key question:

"From your perspective, what is the impact of a user journey map on the final design outcome?"

It is a way to understand the significance of leveraging user journey map insights on interior space design properties in the design process. It translates into an explored aspect of the experience both at an environmental level and the user immersion experience, allowing vital first steps in the design.

Interviewee 1 explained that the user journey map provides insight into how users move through different parts of space and tremendously impacts

the design outcome. This profound work is a goldmine for designers, telling them what practices to pursue and what failures to avoid.

That is why we evolve designers' design journeys: to make it easier for them to pay close attention to the needs and interests of the end-user.

Their user-centric strategy shapes the space, promoting alignment between user expectations and finding a balance that allows users to thrive.

In a similar vein, Interviewee 2 emphasized the importance of creating a user journey map in the early stage of the design project as a foundation of the clear voice for the whole project. Downstream of the designers' "sensemaking" process, the initial framing of what the process will yield informs every project stage. The process runs from concepts to three-dimensional outcomes, all aligned to the user's needs. Not only does this foresight simplify the design process, but it also connects users more humanly to the designed environment.

Interviewee 4 added to this conversation that the user journey map is an important evaluative device. It allows designers to determine if they have accurately distilled user insights into real-life design components, such as the use of lines, spaces, components, and ambience in the interior.

Interviewees 1, 2, and 4 agreed that the core aspect of this discussion is channelling user insight into tangible elements that anchor and animate the interior space. The combined view is exemplified in the above Fig. 4.46 "Theme (8)," which shows the researcher's analytical process in deriving this meaningful theme from the rich insights gained from the interviewees.

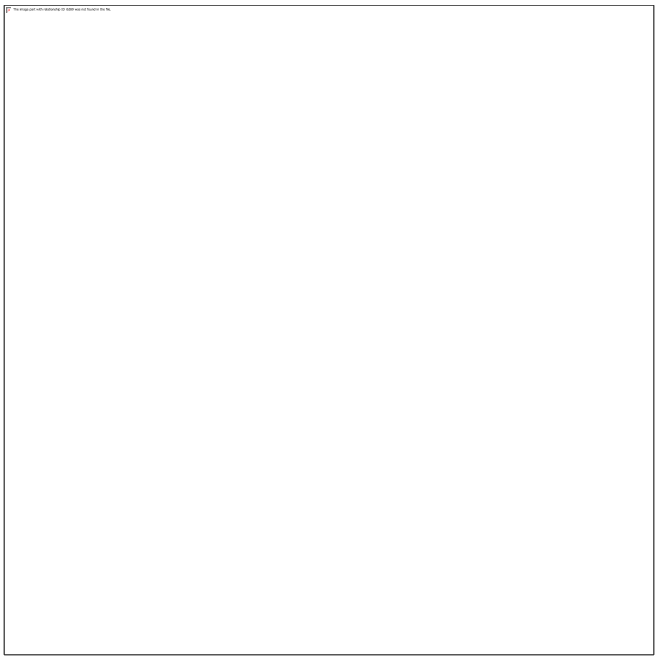


Fig 4.79: Tracking design decisions

9. Tracking Design Decisions

"In answer to the question, 'How can a user journey map impact the end design outcome from your perspective?', a key theme emerged from what the interviewees shared. This idea, named "Following up Design Decisions," emphasises the importance of user journey maps in enforcing a rational and structured perspective in the design process.

Once a designer has created a user journey map, it will become a helpful reference guide that is reviewed at different points in the design workflow. This structured reference allows the designer to focus on developing and delivering what will ultimately address the project's goals while helping minimise the risks of the idea straying to unrelated ideas.

According to Interviewee 2, the user journey map is an essential tool that can individually determine how informed the design will be. It contains

significant information that will aid the parties involved in making informed decisions on everything from colour schemes to materials and many other elements within the interior design process.

This knowledge is used in mapping when the designer uses the surface data to create the final design solution that satisfies the user's needs and wants.

Interviewee 4 reiterated that the user journey map catalyses the design process that leads to the outcome. They also stressed that it acts as a point of reference that the designer can return to at all stages of the design, making sure all considerations are in line with the user's experience or expectations.

Based on their assessment, only interviewees 2 and 4 ascribed the opinion that the user journey map enhances the design outcome at the decision stage regarding the importance of elements, colours, materials, and design in general. Their reflections suggest consensus around the notion of the map as a directional guide from which the design choices can emerge from insights within the context.

The figure (Fig. 4.38 Theme (47)) clarifies how this theme emerged from the depth of responses and insights gained through the interviews and reinforces the necessity of connecting user journey mapping to informed design decision-making.".

4.5.4. From your perspective, what are the key benefits of incorporating user journey maps into the design process? Are there any drawbacks? challenges associated with their use?

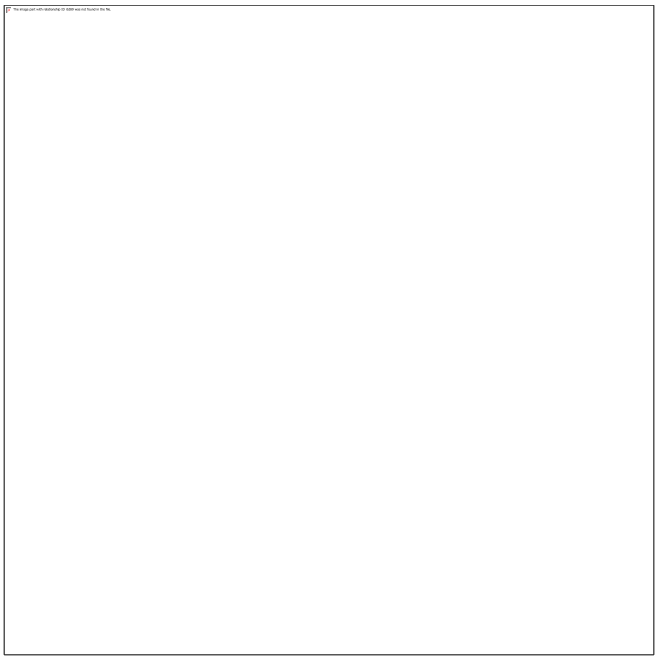


Fig 4.80: Equal importance

10. Equal Importance

While discussing the importance of user journey maps during design, it raised an important question: "What do you think are the most important benefits of user journey maps in the design process? Are there downsides or challenges to using them?"

Based on the interviews, their responses led to a theme, "Equal Importance," which shows the weakness of using user journey maps. Some designers may lose focus on the more extensive user base or overly focus on targeted personas, and this is why it is important to treat all user types equally throughout the design process.

One interviewee put it quite well, explaining that while user journey maps can be valuable tools, they may become a red flag if the user justifications shown on the map are not exhaustive enough of a persona to which the designer can generalize up to the wider audience. That disconnect

may lead to insight that is not broadly applicable and, subsequently, design decisions that only cater to a small cross-section of users. Therefore, this disconnection has the potential to estrange the wider user group and limits the design's ability to successfully produce a response as well as meet the needs of a wider audience.

By contrast, Interviewee 3 further expanded on this by highlighting that designing environments for different groups—adults vs. children or individuals with disabilities vs. non-disabled persons—proved to be a more nuanced and complex challenge. This challenge is even more pronounced in commercial facilities, hospitals, or healthcare spaces, as the imperative to accommodate all user types, irrespective of importance, adds complexity to the process. Both groups have different needs, and reconciling these is hard and leads to ugly and/or unhelpful design outcomes.

Also, Interviewee 4 mentioned that user personas lie, referring to the discrepancy between the user persona and the experience of a real person. In reality, these personas often represent one or two user archetypes, which is not enough—and this can lead to a misleading design path.

When designers use these narrow user journey maps to base their designs, they miss the holistic user experience and don't take the actual users into account. The user journey map that is produced as a result may be more fiction than fact and, therefore, counterproductive to what it was meant to achieve.

However, even though the three interviewees had different insights, Interviewees 1, 3, and 4 did float a common theme: that one should treat all

users equally in the design process so one does not fall into the trap of biases that can skew results for the design of the website.

As depicted in the figure above, Fig. 4.52, Theme (10) was undoubtedly established on the fortes the study wayfinding participants said and the analysis of experiences between different users; the principle of equal importance in the design process where each person contributes to the solution, advancing an earlier insight of better inclusion in the process.

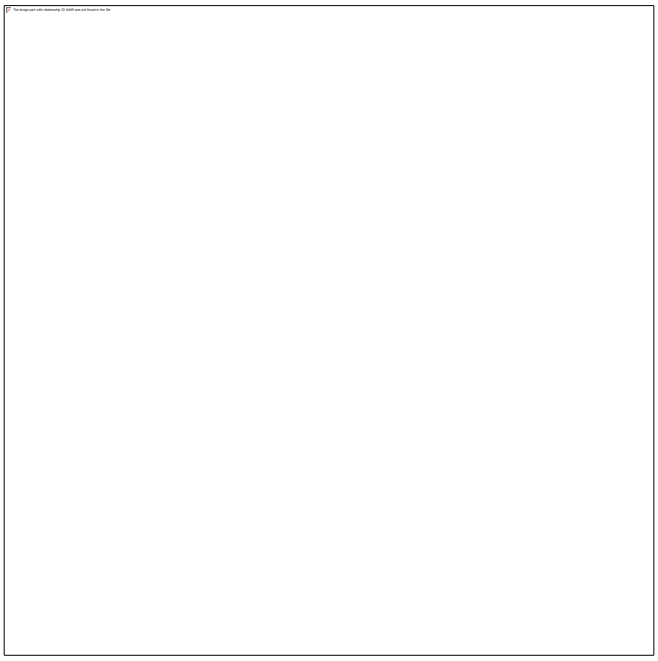


Fig 4.81: Meaningful design scenarios

11. Meaningful Design Scenarios

Building on the question before it about the benefits of expanding the design process to include user journey maps, the researcher discovered one key theme: "Meaningful Interior Design Scenarios."

The theme illustrates the general interpretation of user interviews, and it shows that, according to the users, journey maps help generate designs that closely encapsulate their needs and expectations.

Interviewee 1 stressed the need to define the user persona. It is done by understanding the user's needs, wants, and expectations so that space can be assembled with an acquaintance of the behaviours that could occur within it. When we put these three broad ideas together, we arrive at a wide-ranging but balanced theme that was echoed by Interviewee 1, who said that the idea and persona of the user, otherwise known as user experience design, plays a critical role for interior designers who wish to design spaces that final users can relate to and implement successfully.

The user journey maps are mentioned as a tool for interior designers by Interviewee 2 for practical purposes. These maps are a constructive way to capture user experiences and interactions and can lead to various design scenarios for spaces users interact with. Not only does it help in scoping out the user's journey through the space, but designers use it to look ahead at where they might bump into challenges and where they can create opportunities for interaction.

Despite their different emphases, the interviewees agreed on a common thread: the need to create meaningful scenarios for interior design. They all expressed a congruent viewpoint, illustrating that user journey mapping is essential in combining functional design with a positive user experience.

As detailed in the above-referenced figure as Fig. 4.53, "Four Pillars of Interior Design and User Journey Mapping: Visual Representation of the Synthesis of Themes," the researcher sorted and condensed themes based on the abundance of information offered by interviewees, developed from the synthesis telling the story of user journey mapping meeting robust interior design.

4.8.5. How do you think user journey maps can help improve the overall user? experience and satisfaction with the designed spaces?

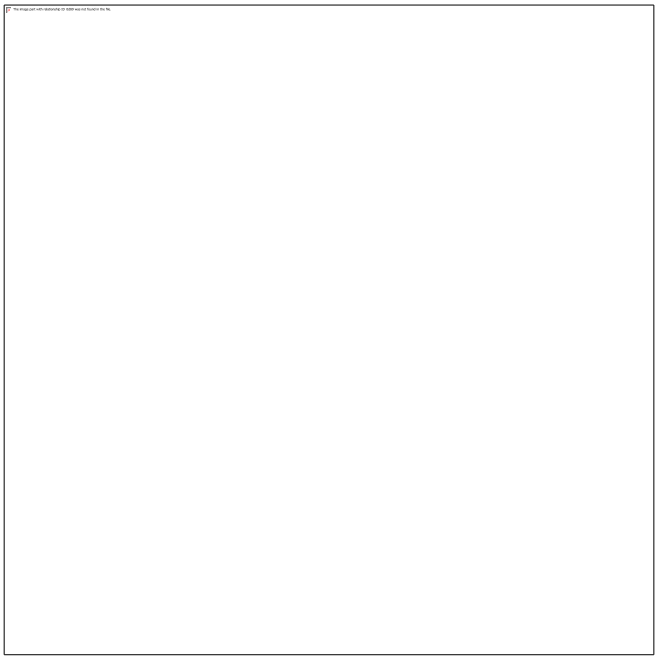


Fig 4.82: User journey narrative throughout interior

12. User Journey Narrative Throughout the Entire Interior Space

Exploring the cumulative themes derived from the interviews led to the discovery of a crucial fifth query: "How can journey maps elevate overall user experience and satisfaction with designed environments?"

In reply to this question, through the process of deductive analysis, the researcher discovered a pertinent theme called the "User Journey Narrative Throughout the Entire Interior Space". It highlights the core value of adequately mapping the user journey better to understand their needs, wants, and expectations.

These detailed maps equip designers with the tools they need to weave together the elements of successful interiors that fulfil both essential needs and act as a narrative, responding to the behaviours and emotions of people

who will fill these spaces. This approach allows users to enter a narrative that is integrated from the time they come into the environment to the time they traverse it.

Interviewee 1 stressed the importance of making a design journey map, which is helpful in understanding users' respective needs concerning different spaces. Knowing these needs allows designers to create environments to serve those needs. This targeted method results in increased user satisfaction as it offers meaningful and relevant solutions that align well with users' expectations.

Interviewee 2 brought up a very interesting point: the importance of user journey maps as key tools used by designers. An important aspect of this discussion was how these maps demonstrate a relationship between the different elements of interior design, how everything integrates together to create the human experience, and how users use what has been created for them.

A well-designed space would allow for intuitive navigation, allowing visitors to quickly get to where they need to go and receive the service they require while maintaining a positive overall experience.

Interviewee 3: Efficient navigation works for them in tearing down barriers that could cause users to develop an impression of frustration and consequently become mislaid or feel that their experience.

Conversely, Interviewee 4 emphasized that it is important to recognize the multiple touchpoints in the user journey. These touchpoints range from the interactions, spaces, functions, and other elements the user will encounter throughout the experience. They added that even if you get these things right,

you need to figure out pain points — points in the user experience where users may fall off — and the emotional responses users experience along the journey. Depending on the degree of kindness of the interaction with the space, a swath of emotions can be felt: excitement, demotivation, sadness, and/or even rage.

The accompanying figure labelled above Fig. 4. 58 Theme (12) visually represents how the researcher synthesized this theme. It illustrates the development process grounded in the questions posed and the thoughtful insights provided by the interviewees, showcasing the interrelationship between user journey mapping and the subsequent design innovations that can be achieved.

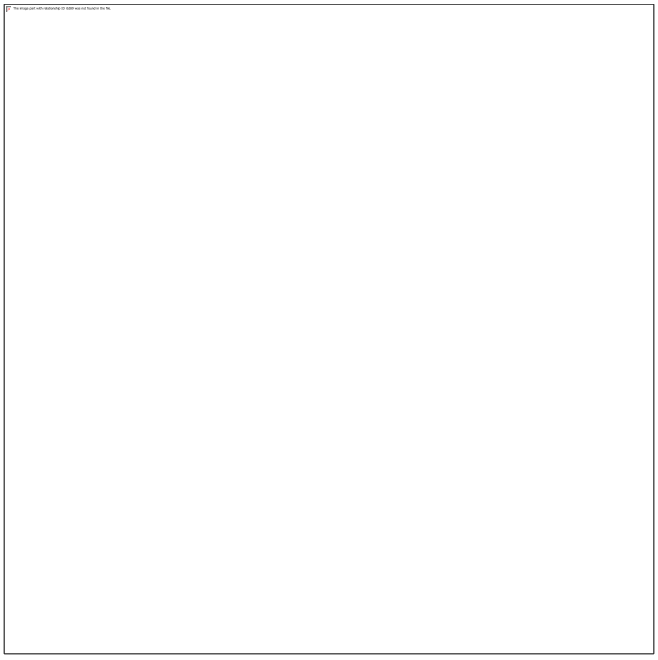


Fig 4.83: Memorable interactive user experience

13. Memorable Interactive User Experience

When asked the paramount question, "How do you think user journey maps can help improve the overall user experience and satisfaction with

designed spaces?" One particular theme stood out: "Memorable Interactive User Experience." Just like abstract art, negative space allows the viewer to create their own experience through the design. We want to design spaces that invite users in and hold their interest—a part of what will bring them back.

Interviewee 1 stressed the significance of mapping the user journey, which they described as an important tool for understanding users' different needs and expectations in a given space. Incorporating this knowledge involves identifying and analytically designing accordingly, which can meet those needs, regulate satisfaction, and help find a more enjoyable experience.

A well-designed space should allow visitors to navigate through it quickly, Interviewee 3 went on to elaborate. Some of these include an easy-to-see indicator at the service location, logical placement of services, and an instinctive form that permits users to find what they need without the risk of becoming frustrated. This, in turn, positions the design as a vital supply that enables—if not creates—a smooth and enjoyable user experience.

In line with these perspectives, Interviewee 4 noted that improving a design is a matter of "deliberately growing positive touchpoints and effectively ameliorating existing pain points." This process involves identifying attributes in the space that may induce negative feelings and acting out ways to avoid these feelings. Reframing potential discomforts into positive experiences enables the accomplishment of larger design goals.

According to Interviewees 1, 3, and 4, a space's practical design of height, light, and material conditions should be functional and create a well-rounded, positive experience. This attention allows users to have a higher

level of satisfaction and an engaging and unforgettable experience that users are more likely to be fond of and seek again and again.

The piece comes tagged with a figure above, identifying A3 interviewees and research analysis—labelled Fig. 4.59 Theme (13) gives pictorial evidence of how this theme is synthesised.

4.8.6. In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?

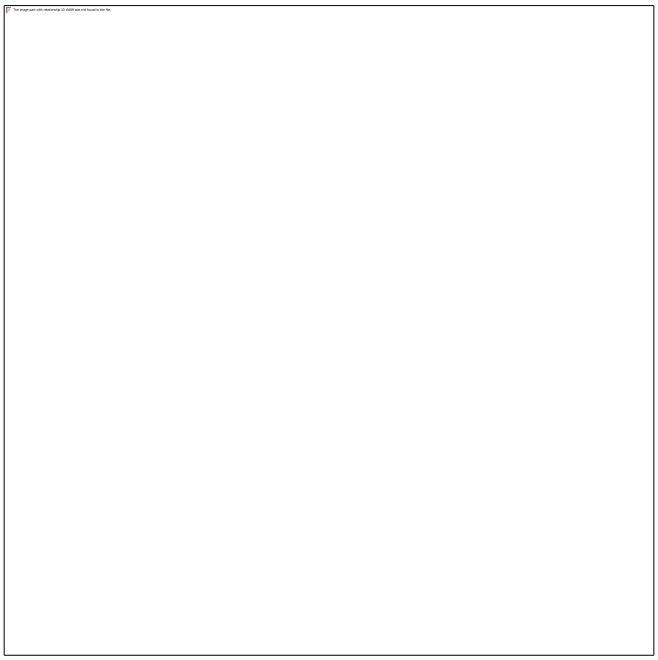


Fig 4.84: convey design idea via visual means

14. Convey Design Idea Through Visual Means

The sixth question that has sprung up for the interviewees is: "How do you think the user journey maps can improve communication and collaboration between designers, clients, and other people involved during the design process?"

Common themes identified by the researcher emerged in response to this question: "Convey Design Idea Through Visual Means". Such user journey maps are sumptuous communication methods for external parties involved in the project, which is discussed in this theme.

Interviewee 1 explained how user journey maps are a critical visual representation of user experience. They explained that designers can simplify complex ideas by focusing on a visual storyline, making the overall design concept more straightforward for team members, clients, and/or users to understand. Not only does this improvement in visual communication result in more efficient discussions, but it also elevates a mutual understanding among the varied participants of a project.

Interviewee 2 expanded on this idea and explained that user journey maps are critical for designers to convey their ideas for specific designs or spaces for stakeholders, clients, and users through the design process. Designers are not good with words, they said, which is why sometimes the idea or design itself is poorly translated. User journey maps, in this context, serve as a bridge: a way to convey the project vision in a way that's understandable to various groups involved in the project to permit everyone to arrive at the same terminus together.

Interviewee 4 presented another approach by asserting that traditional communication relies on physical or tangible tools to pass the ideas. They said the user journey map acts as an important prop that helps walk through the user experience while also pinpointing pain points and key elements of the design that need focus. As a designer, they expressed that having the user journey map as part of their arsenal allows them to sell their vision to clients, "This is what I envision, this is what I see is missing in the existing spaces,

what do you think?” Creating a visualization of an idea helps them set expectations and allows the client to provide feedback in a way that gets implemented.

Interviewees 1, 2, and 4 all agreed that user journey maps serve as communicative devices that accurately and effectively express design concepts across stakeholders involved in the design project.

The above figure, which also appeared in the interview's analysis section, called Fig. 4.64 Theme (14), is a visual representation of how the researcher synthesized the themes according to the questions posed and the valuable insights provided by the interviewees. Organizing the information in this manner provides insight into how the feedback relates to each other thematically and reinforces the value of user journey maps to the realization of shared design best practices.

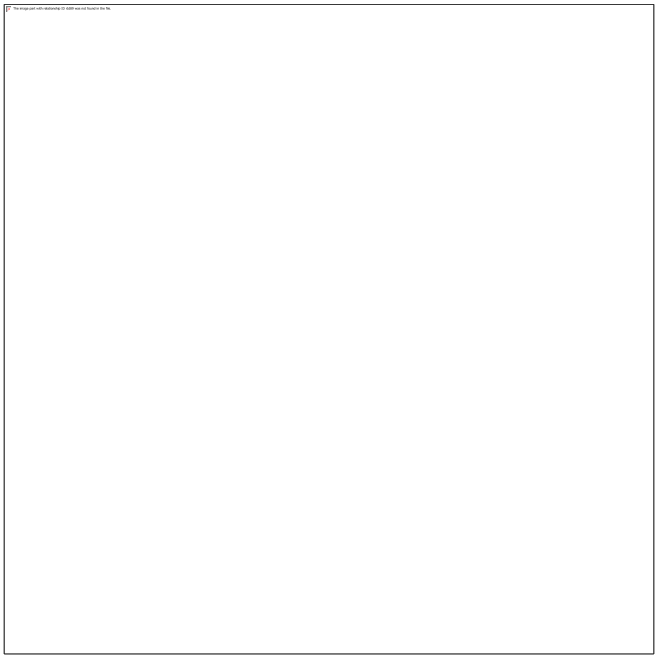


Fig 4.85: Proper design solution

15. Proper Design Solution

The sixth question asked in the research had a new and interesting theme: "How do you think it can improve the communication and collaboration among designers, clients, and other stakeholders throughout the design process?" Based on the diverse perspectives and aspirations expressed by the interviewees, the researcher derived the theme "Proper Design Solutions". The theme emphasizes that working closely with stakeholders and integrating various perspectives can significantly streamline the process of generating design solutions. User journey maps help to reduce redundancy in the design process and actively iterate through subsequent stages of the design process for a more holistic approach to a solution(s).

The first interviewee mentioned having the user journey map handy for conversations and brainstorming. They said that these are overall maps that summarize vital facts of user experience, and this is a story that must drive the design on a kind of paper. Gathering these artefacts in advance aligns the team and builds familiarity for all involved so that we can get deeper into brainstorming and explore solutions.

Interviewee 3 noted the practical benefits of user journey maps in distilling faster and more effective solutions for clients. By minimizing design duplication, they said, clients' design-process complaints can be mitigated, which creates a better overall experience.

This efficiency not only creates successful projects but also fosters trust between designers and their clients, as stakeholders feel included in the process and that their expectations are being carefully understood and considered.

Interviewees 1 and 3 agree that using user journeys can significantly improve the design process's communication and collaboration between designers, clients, and stakeholders. User journey maps help create a shared understanding of the problem space that promotes dialogue and idea exploration, which is crucial for designing successful solutions that meet all end-user goals.

The figure above in the interviews' analysis section, Fig. 4.65, allegorically demonstrates how the researcher subsumed this thread, mapping the transposed query to the most apparent order-of-value offer each informant gave to the interviewer. The illustration helps contextualize the observations and emphasize the relevance of the recurring theme created in the research.

4.8.7. Do you think there are specific types of interior design projects or spaces? where the use of user journey maps is particularly effective? Could you elaborate on such instances?

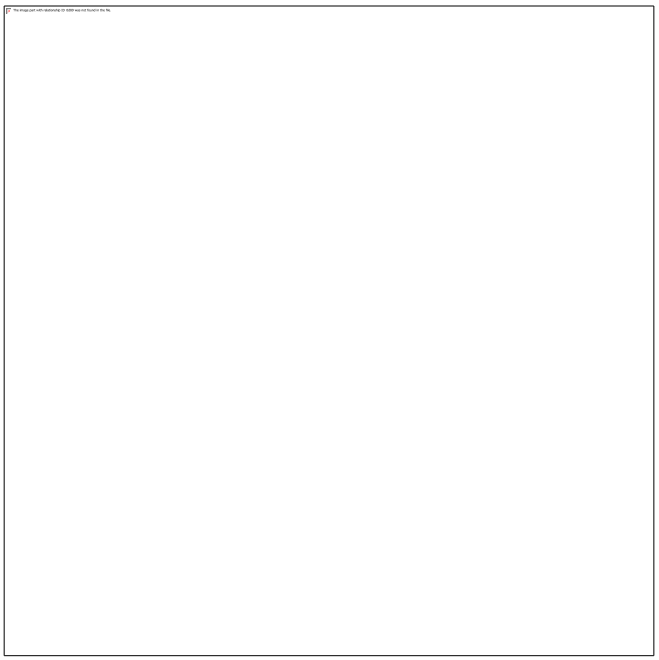


Fig 4.86: Adapt and tailor the user journey map

16. Adapt and Tailor the User Journey Map

When analysing the interviews in the research, the crucial question of this analysis has been underlined:

"In what types of interior design projects or spaces do you think user journey maps will be especially effective? Can you provide examples?"

The research identified the recurrent theme "Adapt and Tailor the User Journey Map" through the interviewees. It highlights that environmental factors should be customised for each user journey mapping element to reflect unique design project requirements truly.

Interviewee 1 put forward a valuable perspective, as seen in the next passage, where they discuss how user journey maps could be potentially useful in library design. They posed a fascinating hypothetical: What must a library do to interest people who are inherently uninterested in reading?

This train of thought gave rise to the notion that a library is not just a storage place for books but an organ actively producing reading.

A user journey map can help designers understand user demographics, preferences, and behaviour patterns at a granular level, thus avoiding the common pitfalls with traditional library environments where user journey maps have not been used.

This conscious act can transform otherwise negative user experiences into positive ones.

For the same reason as Interviewee 1, Interviewee 2 stated that user journey maps were equally viable in library design. They cited several

successful examples from last semester's projects, and senior design works to support their claim. Interviewee 2 echoed:

"Although user journey maps are suited to many interior design projects, the content and queries posed on the map should correspond with individual project characteristics and objectives to produce results."

This became a principle for ensuring that the insights gleaned from the user journey map are relevant and actionable.

Interviewees 1 and 2 shared that the user journey map should be customised and should reminisce, respectively. They realised that this flexibility makes it usable across several domains and a strong asset for enhancing user experience while designing.

The accompanying image, titled "Fig. 4.69: Theme (16)", is a pictorial depiction of how this theme emerged for the authors based on their questions. It was subsequently richly supported by quotes from those interviewed. This thematic analysis framework emphasises the continuously changing landscape of the user journey maps, indicating that it can represent multi-domain information such as interior design.

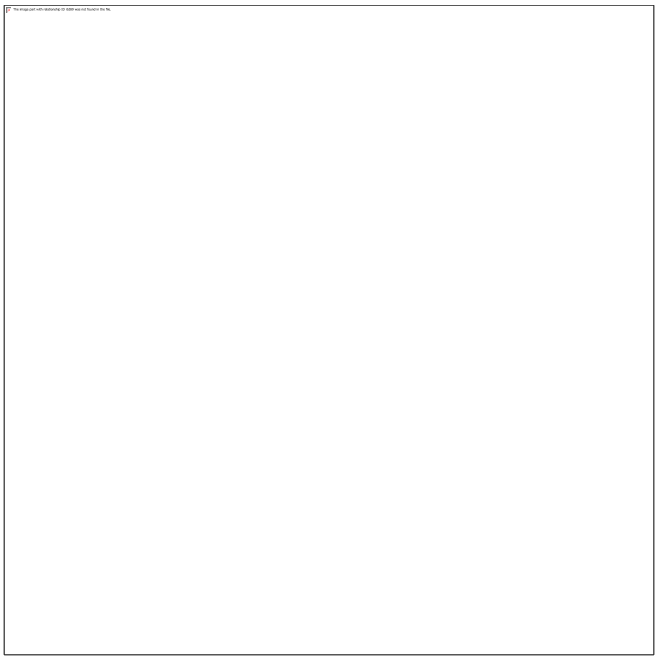


Fig 4.87: Interior design enhances user lifestyle

17. Interior Design That Enhances Users' Lifestyle

A significant trend emerged from the seventh question in the study, which asked, "Do you believe that user journey maps are particularly effective for certain types of interior design projects or spaces? Can you explain those kinds of instances?" By thoroughly reviewing the feedback and suggestions of the interviewees, the researcher determined the theme "Interior Design that Enhances Users' Lifestyle." This theme focuses on how the specific user journey maps can support the designers in understanding and meeting users' desired needs in a social context to help users better the overall quality of life and interaction with spaces.

Interviewee 1's natural insight was particularly illuminating regarding the degree to which targeting is a fundamental requirement—in targeting the preferences of someone who does not identify as a reader.

They also emphasized the importance of creating spaces that foster reading, which can help create a broader reading culture. Just as they refine delights in the posh workshops, they apply their expertise to the less glamorous environments of the library.

User journey maps might help make library visits more interesting and enjoyable, but few libraries actually use them.

In a somewhat complementary manner, Interviewee 4 highlighted the necessity to optimize the user journey and overall experience, especially in a commercial context such as a retail store, hypermarket, apparel shop, or place to eat. He also mentioned that enriching the user experience is good for increasing sales or profits and delivering great moments with users that they remember. While this is true on all scales of design, it is important in residential design: the goal is not simply to create a pretty room; the goal is to create an experience that produces the needs and lifestyles of the people (families in particular) who will occupy the space.

Both Interviewees 1 and 4 had a clear vision of improving clients' lifestyles through the environments in which they live as pivotal. They stressed the importance of user journey maps that make it easier to systematize this process from beginning to end with better insight into user behaviour and preference.

The first, Fig. 4.70 (17), graphically illustrates how the researcher combined and formulated this higher-order theme from the interviews, thus displaying the relationship between the inquiry and the participants' insights.

4.9. Going through The Journey of All Themes Extracted from Interviewees

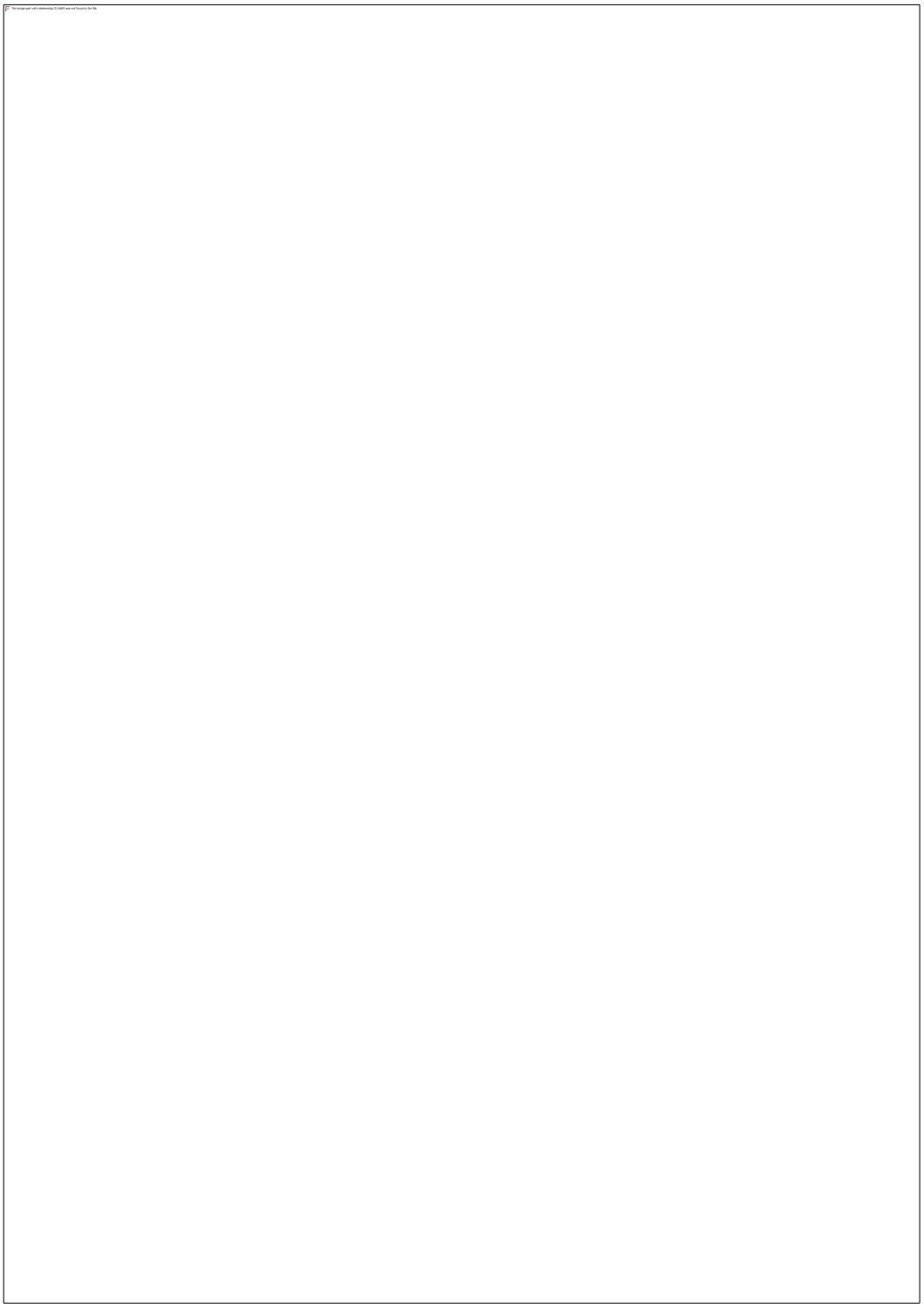


Fig 4.88: Journey of all themes extracted

4.9.1. Interviewees Analysis Summary

The findings derived from interviews with interior design instructors affirm the efficacy of the user journey map as a critical tool for augmenting user experience and enhancing functionality within the domain of environmental design. These interviews also yielded additional insights into the multifaceted advantages associated with the user journey map. An in-depth exploration of the collected data revealed seventeen distinct themes, which elucidate various aspects of the design process:

1. The Commencement of the Design Process: This theme delves into the initial phases of design, underscoring the significance of thorough research and an understanding of user needs from the outset.
2. Empathy: This aspect highlights the necessity for designers to adopt the users' perspective throughout the design process.
3. Designing for and with Users: This theme advocates for a collaborative methodology in which designers engage closely with users throughout the entirety of the design process.
4. User Journey Sequence: This theme analyzes the chronological progression of user interactions within a space, examining how design elements can either facilitate or hinder this journey.
5. User Interior Interaction: This theme investigates the dynamics of user engagement with the interior environment, focusing on the interplay between the physical space and its occupants.

6. User Understanding Within Interior Space Components: This theme explores how users interpret various elements within interior settings and the implications of these interpretations for functionality.
7. Allocating Interior Design Functions: This theme addresses the organization and arrangement of spaces within a given environment to support specific activities, prioritizing practicality and usability.
8. Translating User Understanding of the User Journey Map into Interior Design Elements: This core theme centers on the conversion of insights garnered from user journey mapping into concrete design components.
9. Tracking Design Decisions This overarching theme emphasizes the importance of documenting and reflecting upon design choices made throughout the process to ensure alignment with user needs.
10. Equal Importance: This theme underscores the imperative of considering all users equitably within the design framework.
11. Meaningful Design Scenarios: This theme focuses on the development of design scenarios that hold intrinsic value and significance for users.
12. User Journey Narrative Throughout the Entire Interior Space: This theme discusses the incorporation of a cohesive narrative of the user's journey within the design, promoting a seamless experience throughout the spatial context.
13. Memorable Interactive User Experience: This theme advocates for the creation of interactions that resonate with users long after their engagement with the interior space has concluded.

14. Conveying Design Ideas Through Visual Means: This theme examines how visual representation can facilitate the communication of design concepts to clients and users.
15. Proper Design Solutions: This theme highlights the necessity for bespoke solutions that specifically address the unique needs and challenges of users.
16. Adapting and Tailoring the User Journey Map: This theme stresses the importance of flexibility and adaptability in the user journey map to respond to evolving user dynamics.
17. Interior Design That Enhances Users' Lifestyles: This perspective posits that design should meaningfully enrich users' lives, enhancing the quality of life and overall well-being.

Collectively, these themes represent a nuanced narrative that reflects the complexity and often non-linear nature of the user experience, validating the substantial benefits of the user journey map.

Subsequent to the validation of the user journey map's advantages by both interior design students and instructors, an analysis of the concluding phase has been conducted, concentrating on the second group phase involving interior design practitioners. This final phase seeks to elucidate the findings garnered from both interior design students and instructors while providing illustrative examples of user journey maps. It aims to demonstrate the user journey map employed by interior design students in their design processes and the translation of these findings into 3D prototypes. The overarching objective of this phase is to encourage practitioners to leverage user journey maps to enhance user satisfaction and optimize the functionality of interior

design. The forthcoming section will provide an analysis of a focused group discussion.

4.9. Focused Group: Phase Two

The researcher facilitated a follow-up discussion with the same group of practitioners from phase one to gather insights on how the user journey map enhances the understanding of users and improves the functionality of interior design spaces. This approach aimed to address the challenge of understanding users on a deeper level during the design process. The user journey map is particularly beneficial for both interior design students and educators. To illustrate its advantages, the researcher presented the user journey map of interior design students to the focus group.

During the session, the researcher outlined the guidelines for creating a user journey map and provided examples of how interior design students have used the tool to gain insights into their most challenging users. Additionally, the researcher demonstrated how students translated their findings from the journey map into 3D prototypes. The researcher also shared insights gathered from interviews with interior design instructors and practitioners.

The session began with the researcher posing four primary narrative questions, each accompanied by a secondary question to stimulate discussion. The questions were as follows:

1. What are your thoughts on using the user journey map tool?

2. In what ways do you believe it will enhance the user experience in design?

3. How do you think it will improve the interior design process?

4. Would you consider integrating the user journey map into your practice?

The findings from the discussion with the focus group affirmed the value of the user journey map in the design process. It deepens practitioners' understanding of users, ultimately leading to improved functionality in interior design.

4.9.1. How about using the user journey map tool?

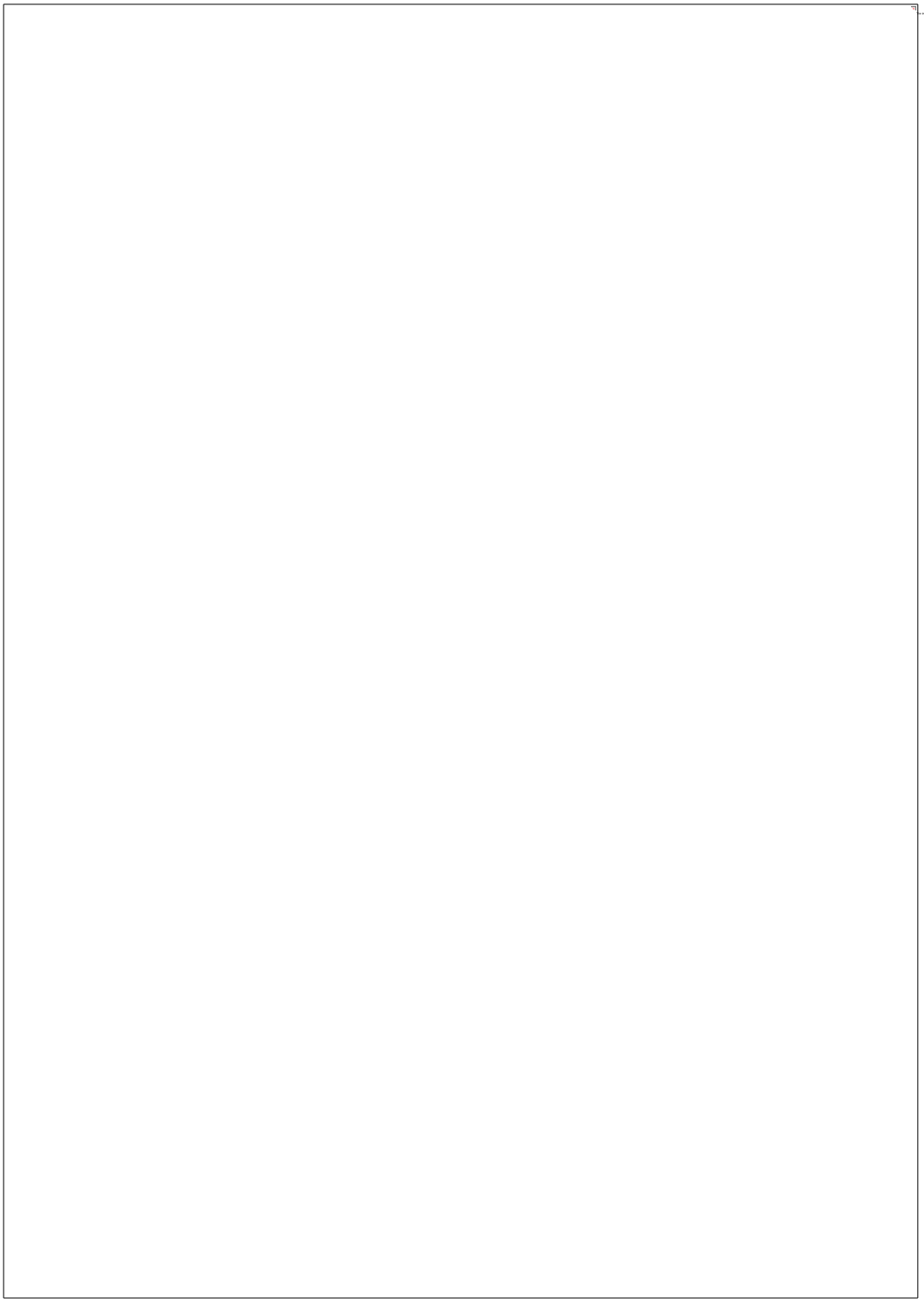


Fig 4.89: Theme (1) Focused Group Practitioners

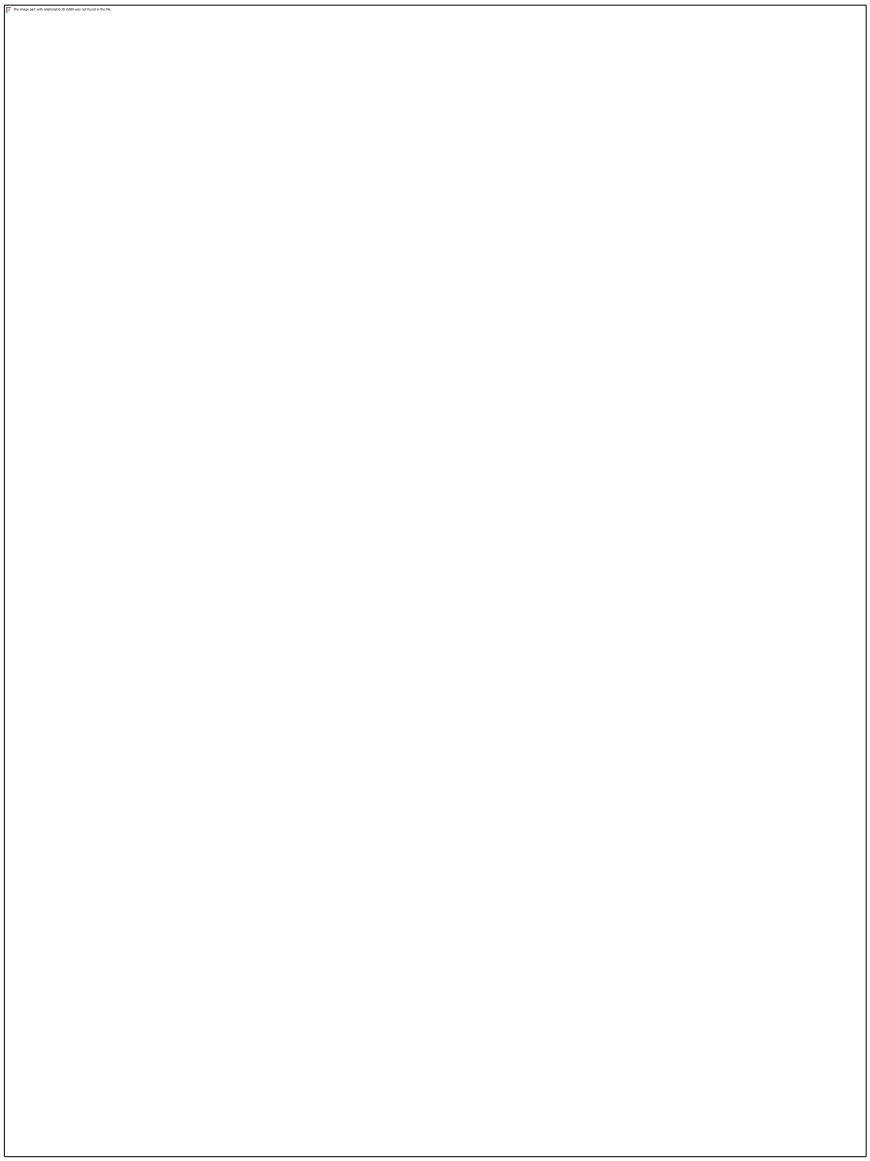


Fig 4.90: Theme Accurate design decisions

1. Accurate Design Decisions

The researcher convened a focus group discussion where participants were presented with a user journey map, along with examples from interior design students who had utilised the map to translate their users' insights into 3D prototypes. Following this, the researcher posed a question to the practitioners about the potential of the user journey map as a tool in their

projects. The aim of this inquiry was to assess the utility of the user journey map for practitioners.

All four participants concurred that user journey maps facilitate accurate design decisions. Participant 1 remarked, “This clarity informs design choices, making it easier to pinpoint areas for improvement and enhance overall satisfaction.” Similarly, Participant 2 noted, “By mapping out each step, emotion, and potential pain point, I can identify where users may feel frustrated or confused and subsequently find ways to improve those touchpoints.”

Participant 3 commented, “Utilising a user journey map can be extremely advantageous for gaining a deeper understanding of users. By identifying not only their personas but also their pain points and touchpoints, we can consciously enhance interior design to better meet user experiences.” In agreement, Participant 4 stated, “This approach helps us meet users' expectations and improves their experience within an interior space. Moreover, it leads to better design outcomes, as we can trace or follow users based on the specific functions for which we are designing or planning to design.”

All participants affirmed that user journey maps yield accurate design decisions, resulting in an enhanced user experience and functionality in interior design. Subsequently, the researcher initiated a narrative discussion to further explore with the practitioners how they believe this approach could enrich the user experience in design. The details of this discussion will be addressed next.

4.9.2. How do you feel it will enhance the user experience in the design?

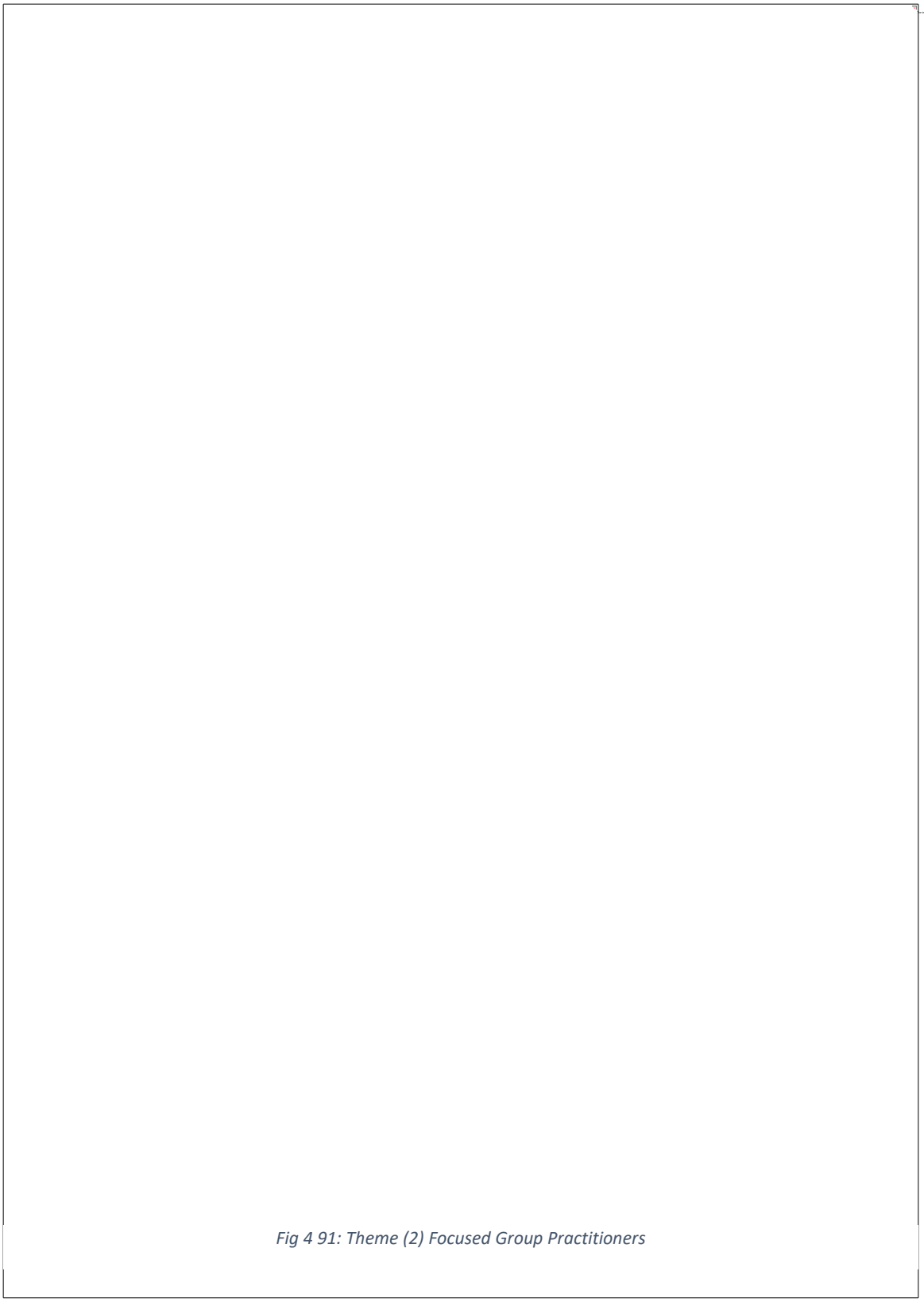


Fig 4 91: Theme (2) Focused Group Practitioners

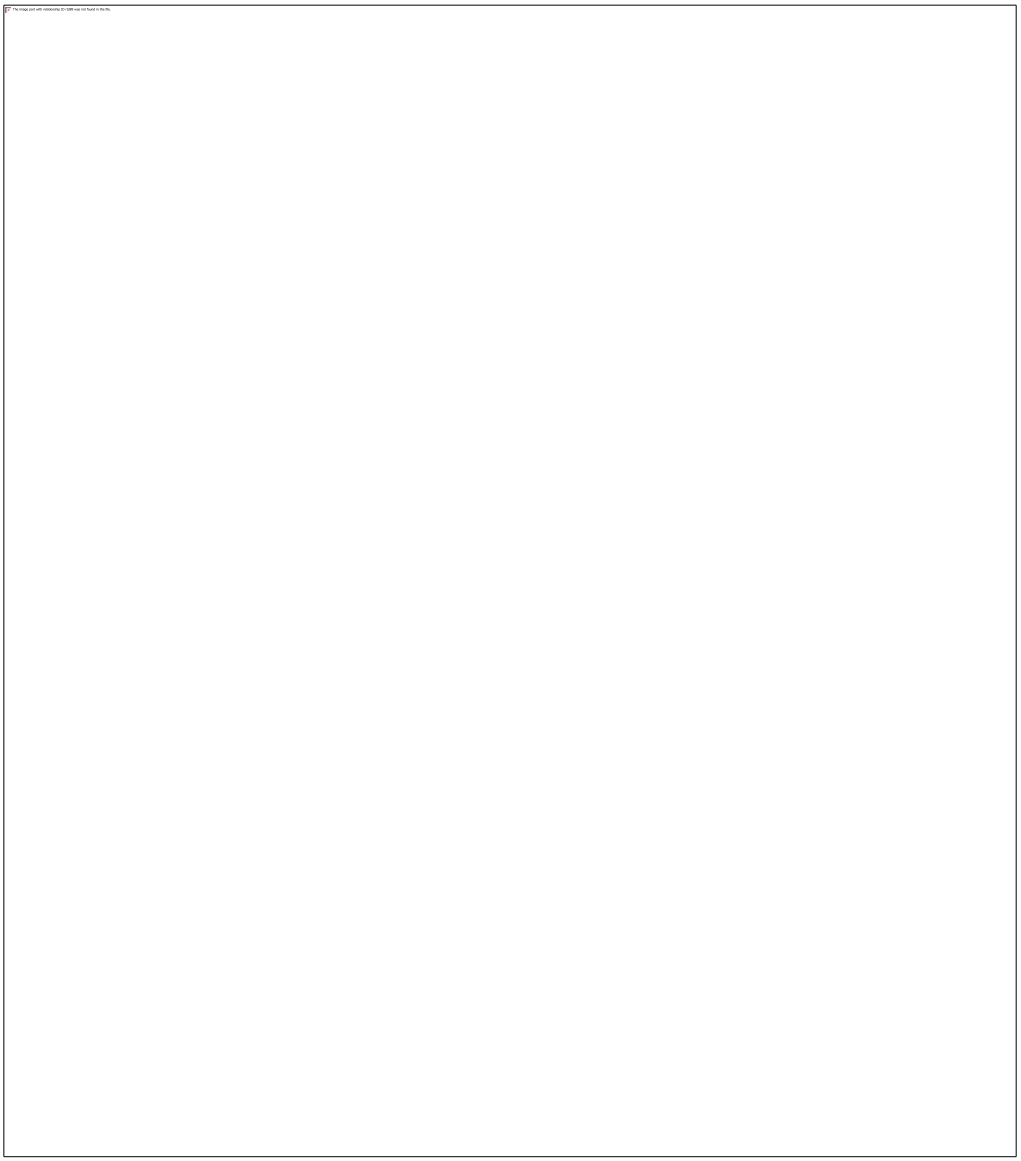


Fig 4.92: Theme Delivering Smooth and Enhanced User Experience Design

2. Delivering Smooth and Enhanced User Experience Design

During the session with the cohort of practitioners, the researcher underscored the potential of the user journey map in enriching the user experience within the realm of design. The primary objective of this discourse was to ascertain the efficacy of the user journey map in fostering a deeper comprehension of user behaviour.

Four participants articulated that user journey maps facilitate a more streamlined and enhanced user experience by delineating how users engage with design elements and their corresponding reactions. This understanding ultimately contributes to the optimisation of functionality within interior design.

Participant 1 explicated, “The user journey map enhances user experience by enabling designers to empathise with users. By grasping their motivations and frustrations, designers are equipped to craft more tailored solutions”.

In a similar vein, Participant 2 asserted, “It assists in stepping into the users’ perspectives and understanding not solely their actions but also their emotional states at each phase. This comprehension simplifies the identification of pain points or discrepancies within the experience that might remain veiled otherwise. By addressing these areas early in the design process, I can devise solutions that are smoother, more intuitive, and ultimately more gratifying for the user”.

Participant 3 added, “By comprehending the responses and sentiments of the target user at each touchpoint, designers can pinpoint pain points and transform them into affirmative experiences”.

Moreover, Participant 4 remarked, “The user journey map can enhance the user experience in design by elucidating the stages users traverse, along with their emotional responses and reactions to specific design elements. This knowledge aids in creating optimal designs that align with user expectations, harnessing insights garnered from the user journey map”.

Consensus among the four participants emerged regarding the contribution of the user journey map to a more seamless and enriched user experience design through the aggregation of insights pertaining to user interactions within their environments. By discerning what fulfils and frustrates users, designers can formulate designs that proficiently cater to user needs.

The researcher subsequently elaborated on the assertion that the user journey map augments the interior design process. The ensuing analysis will explore this theme in greater depth next.

4.9.3. How do you feel it will enhance the interior design process?

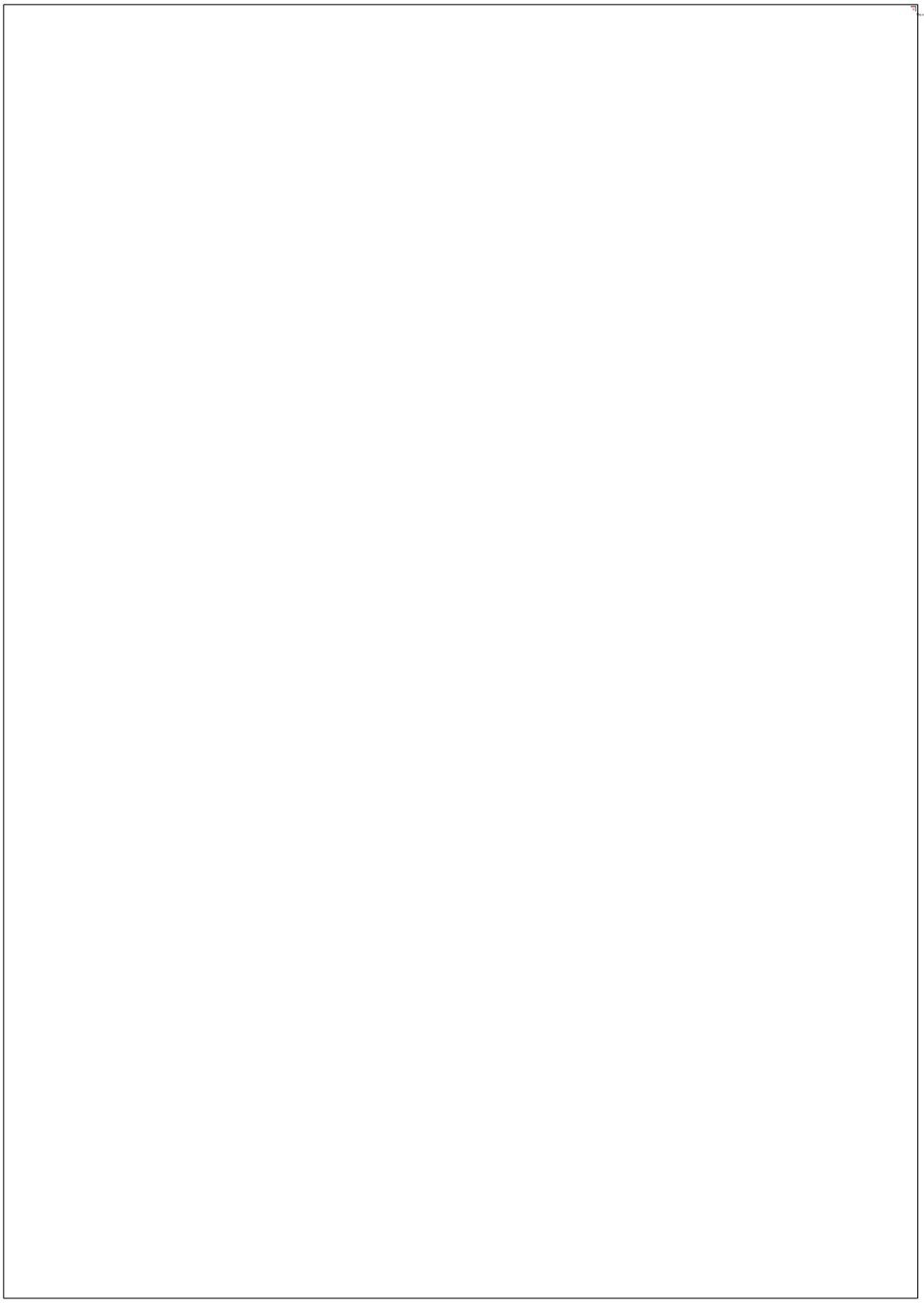


Fig 4.93: Theme (3) Focused Group Practitioners



Fig 4.94: Theme functionality

3. Functionality

In the next phase of the discussion, the researcher emphasised the belief among practitioners that user journey mapping can significantly enhance the interior design process. The objective of engaging with these professionals is to explore how user journey maps can support their design efforts and to ensure that these maps are both practical and advantageous in the design workflow.

Two participants noted that user journey mapping can streamline the design process by first analysing user behaviours, which in turn enables designers to allocate design functions according to the characteristics of their target users.

Participant 1 stated, “It highlights user expectations and experiences within a space, allowing designers to create environments that resonate with users. This approach can lead to designs that are both functional and visually appealing, effectively meeting the needs of clients.”

Similarly, Participant 2 commented, “I believe that incorporating a user journey map into the interior design process can significantly enhance the overall experience. It helps me understand how people navigate and interact with a space throughout their day. This visualisation allows me to consider their needs, emotions, and behaviours in various areas, such as how they feel upon entering a room, using a workspace, or relaxing in a lounge. This understanding enables me to create environments that are not only functional but also emotionally supportive, rather than focusing solely on aesthetics.”

Both Participants 1 and 2 concurred that user journey mapping enhances the design process by fostering a better understanding of target users and ensuring the maximum functionality of the environment.

Three additional participants emphasised how user journey maps can enhance the design process. The researcher will analyse and discuss the other theme next.

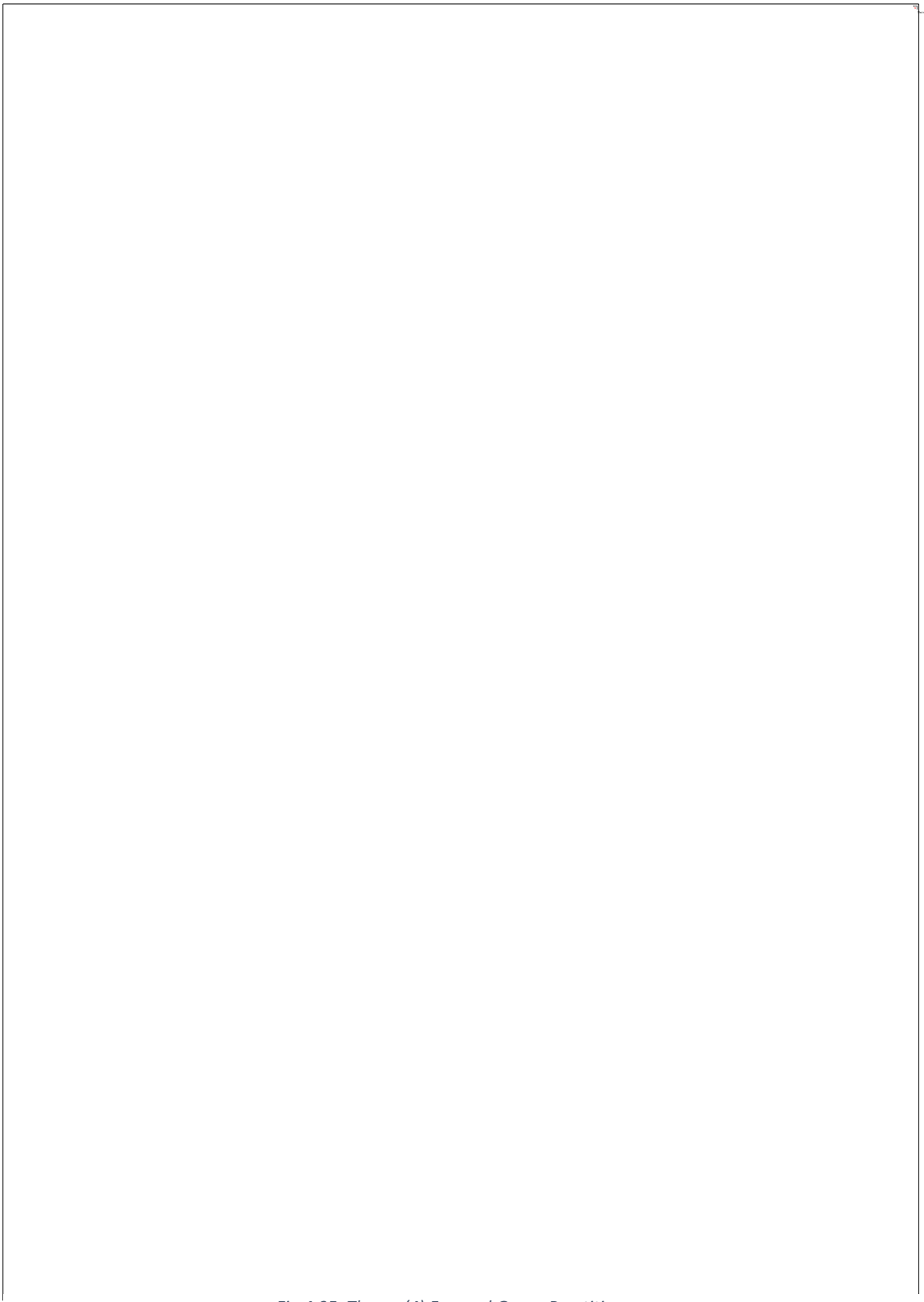


Fig 4.95: Theme (4) Focused Group Practitioners



Fig 4.96: Theme communication tool

4. Communication Tool

During the session with practitioners, the discussion centred on how user journey maps can significantly enhance the interior design process. Three participants emphasised that these maps improve design by providing visual communication. By consolidating extensive information gathered from users

onto a single sheet, user journey maps facilitate clearer communication among stakeholders, team members, and even the users themselves.

Participant 1 remarked, “In the interior design process, the user journey map streamlines communication between designers and clients. It highlights user expectations and experiences within a space, enabling designers to create environments that truly resonate with users”.

Likewise, Participant 3 stated, “Implementing these stages comprehensively is crucial for maintaining focus. If we find ourselves deviating, we can revisit each stage. This approach fosters effective visual communication among our team and stakeholders”.

Participant 4 added, “Moreover, it serves as an effective visual communication tool that allows our team to address any obstacles we encounter, leading to a more effective and satisfying design”.

All three participants concurred that user journey maps significantly enhance the design process by acting as a valuable communication tool between designers, teams, clients, and others. They are easily understood and can be clearly explained to others.

Next part will discuss further how user journey maps will enhance the interior design process according to practitioners.

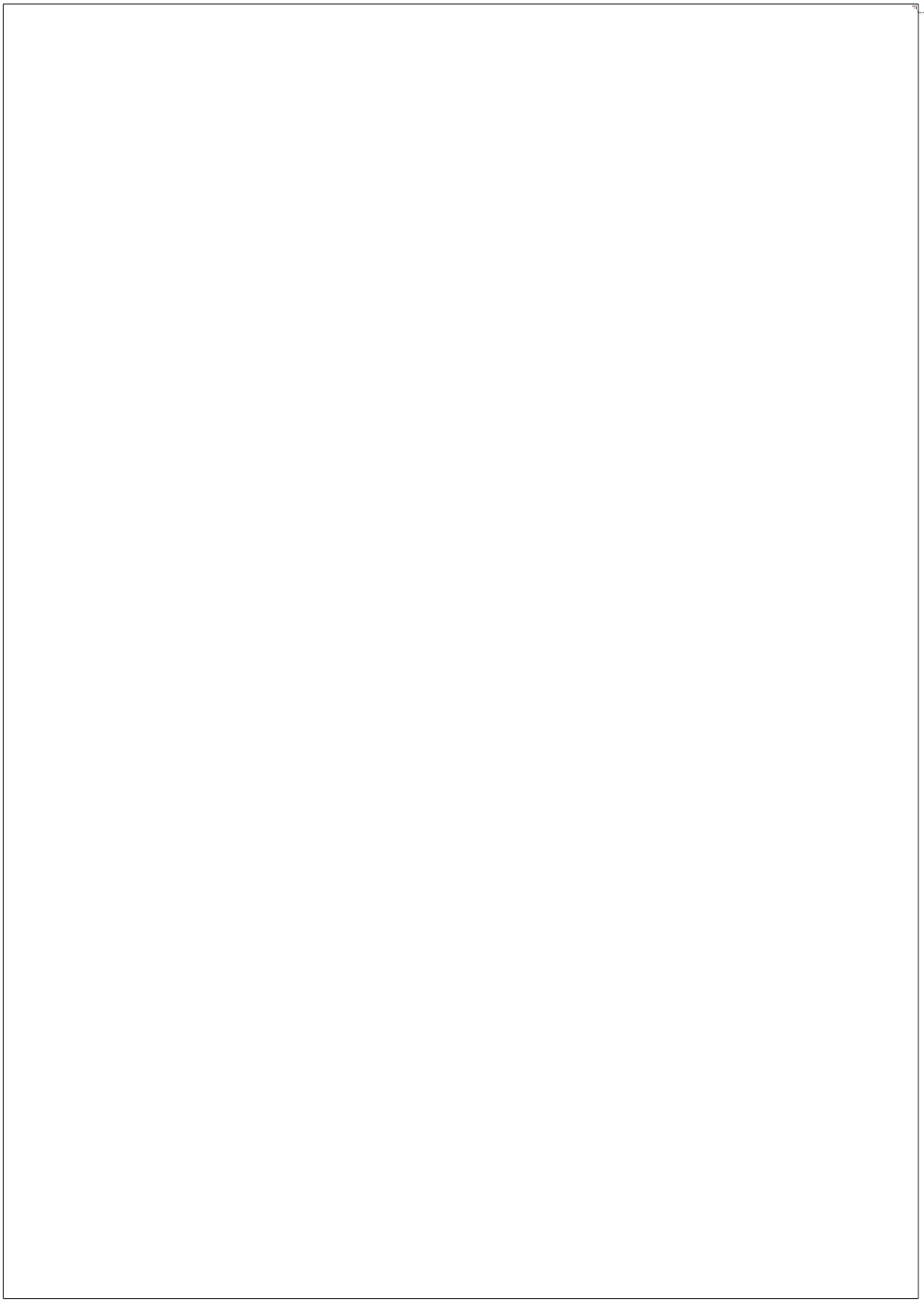


Fig 4.97: Theme (5) Focused Group Practitioners

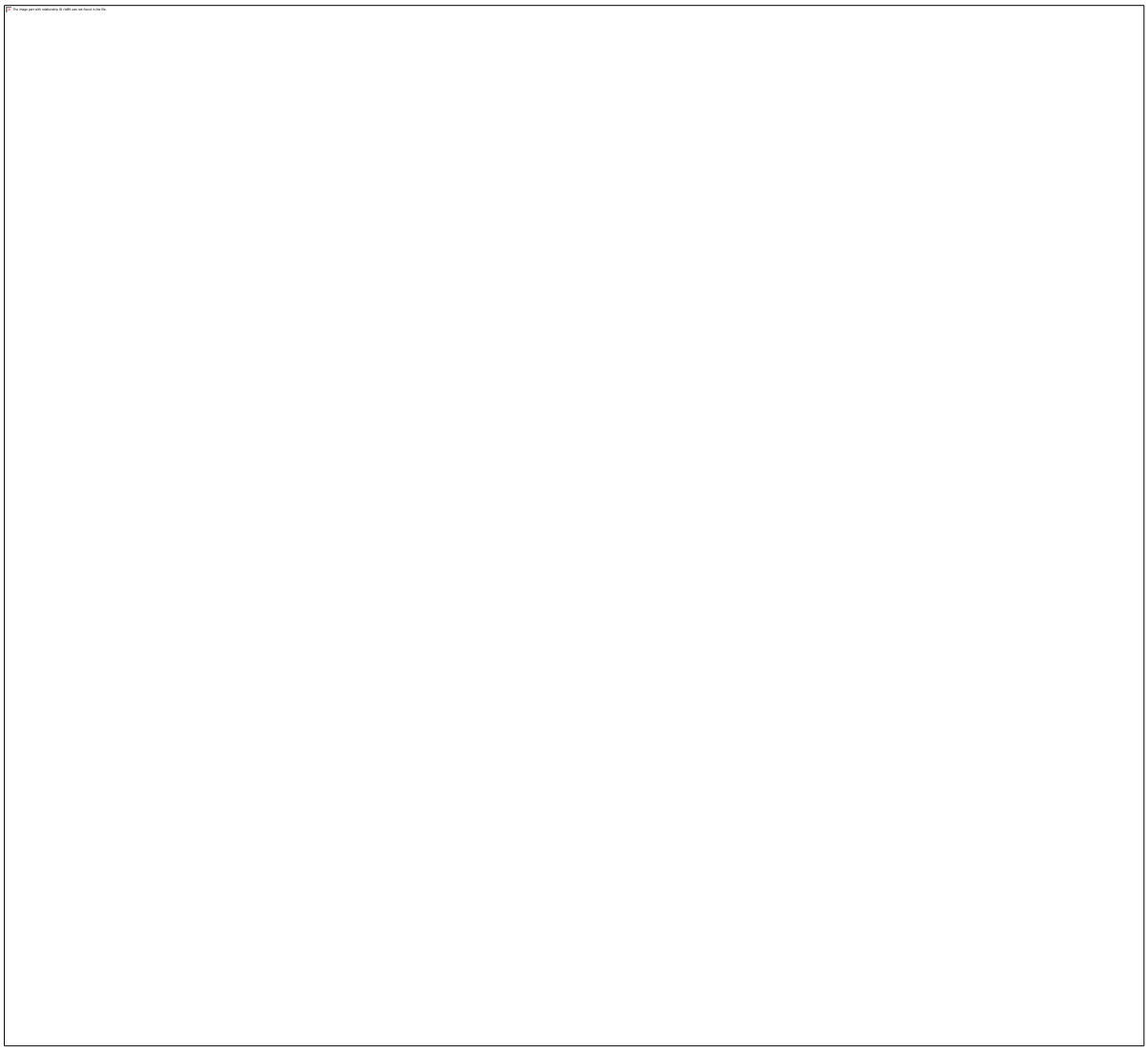


Fig 4.98: Theme Revisiting the user journey map phases

5. Revisit the User Journey Map Phases

Throughout the session with practitioners, the discussion centred on how user journey maps can significantly enrich the interior design process. Two participants emphasised that these maps enable designers to revisit the user journey at any stage of the design process—whether before, during, or after—to ensure they are addressing users' needs and enhancing the functionality of the interiors.

Participant 3 noted, “The user journey map can elevate the interior design process by allowing us to reassess it at each stage, including planning, concept development, sectional elevations, and 3D renders and models.”

Similarly, Participant 4 stated, “It empowers us as designers to review the insights we gather from our clients through the user journey map.”

From this discussion, participants identified several key themes regarding how user journey maps enhance the design process. A prominent theme is that these maps improve the functionality of spaces by offering insights into how users interact with each component. Another vital theme is that user journey maps serve as an essential visual tool.

Looking ahead, the next phase of the analysis will explore whether practitioners choose to adopt user journey maps. This forthcoming section will provide a more in-depth examination of this topic.

4.10.4. Will you use it (the user journey map)?

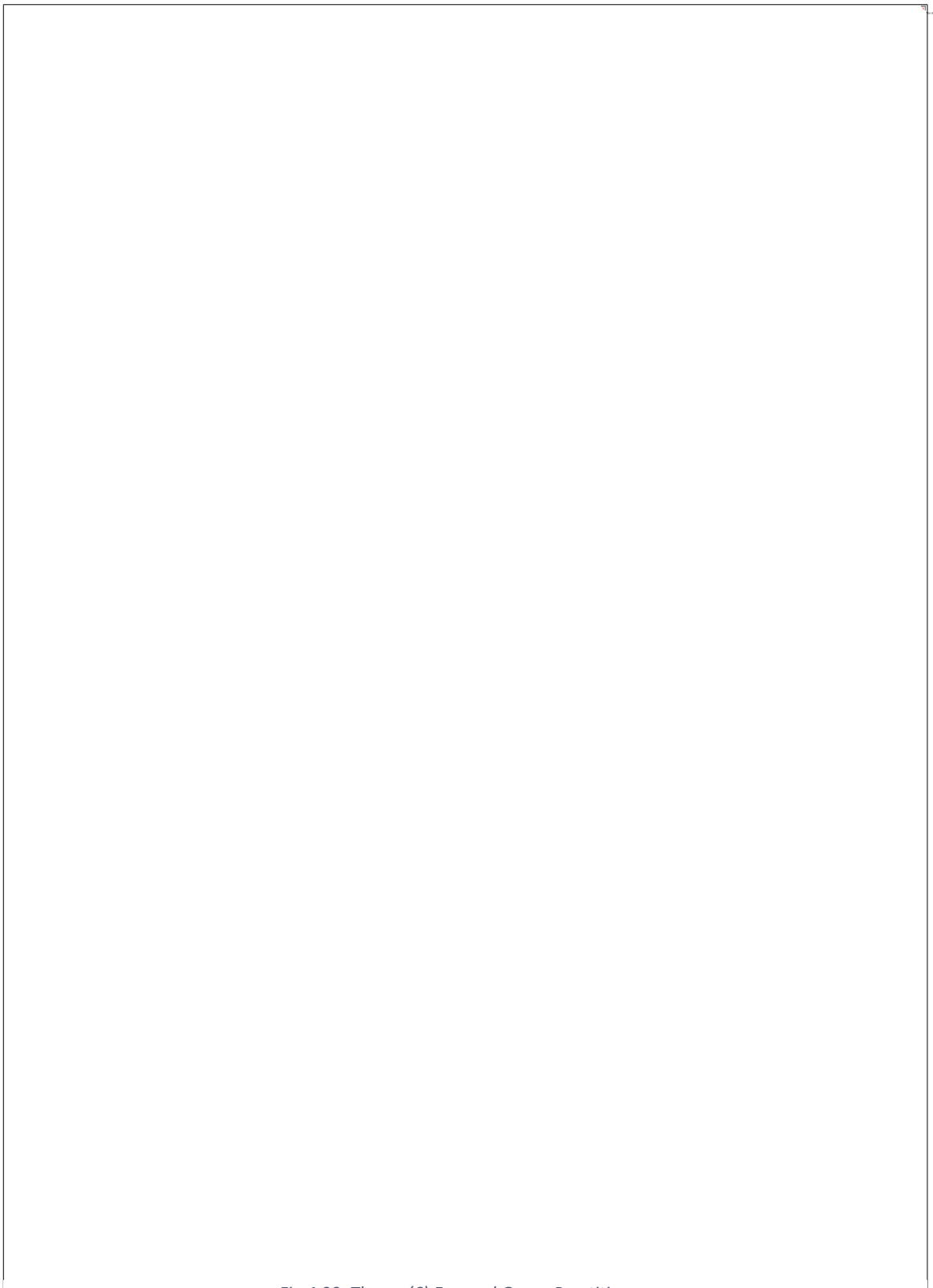


Fig 4.99: Theme (6) Focused Group Practitioners



Fig 4.100: Theme user journey map improves user satisfaction and functionality

6. User journey Map Improves User Satisfactions and Functionality in Interior Spaces

As the session concluded, the researcher underscored the significance of integrating the user journey map within the design process for practitioners in the field of interior design. The researcher probed whether participants

would adopt the user journey map to deepen their understanding of client interactions, to which four participants responded affirmatively, recognising its myriad advantages, particularly in enhancing user satisfaction and functionality within interior environments.

Participant 1 articulated, “Yes, I would be inclined to use the user journey map. It offers a structured methodology for analysing and improving user experiences. Its visual representation facilitates effective communication of concepts among team members and clients, ultimately leading to more informed design decisions and superior outcomes”.

Participant 2 reiterated this perspective, asserting, “Yes, I would certainly consider incorporating a user journey map into my interior design practice. It serves as an invaluable instrument for comprehending how individuals engage with a space over time, encompassing not only its aesthetic aspects but also its functionality and ambience. By charting their interactions, I can design with heightened intention, crafting environments that are more intuitive, comfortable, and aligned with the genuine needs of users”.

Participant 3 concurred, stating, “Yes, I will unequivocally utilise it, as it benefits all stakeholders involved, including interior designers, end users, and other relevant parties. It fosters effective collaboration while striving to achieve an optimal user experience for the intended audience”.

Finally, Participant 4 affirmed, “Absolutely, I will employ the user journey map. It is an immensely valuable tool for acquiring a more profound understanding of clients. Furthermore, it contributes to designing solutions that more adequately address users' needs”.

Given the unanimous consensus among practitioners regarding the advantages of the user journey map, as well as its intrinsic value to their design methodologies, the researcher intends to formulate comprehensive guidelines for the user journey map within this study. These guidelines are poised to assist practitioners, interior design students, and educators in enhancing both user experience and the interior design process. The user journey map guidelines will be presented in Chapter Five.

4.10. Summary of Focused Group Phase Two with Findings

The target of re-engaging the same focused group from phase one is to demonstrate how a user journey map can enhance user satisfaction and functionality within interior design offices. The group will be presented with findings from the researcher’s analysis of user journey maps created by interior design students. The researcher will illustrate how these insights can be integrated into 3D prototypes, which represent key elements of interior design.

Furthermore, the researcher has explored the perspectives of interior design instructors and has shared these insights with the focused group. The primary aim is to highlight the advantages of utilizing a user journey map to deepen the understanding of the users for whom practitioners design, ultimately enhancing the functionality of interior spaces to better address user needs.

After presenting the findings from the mapping of interior design students' experiences and the feedback from instructors, the researcher seeks to determine whether practitioners will embrace the user journey map as a tool

for improving their understanding of users and enhancing the functionality of interior design.

Results from phase two of the focused group revealed strong support for the notion that user journey maps can provide substantial benefits to practitioners. Six key advantages of using user journey maps in office environments were emphasized:

1. More accurate design decisions

2. A smoother and enhanced user experience

3. Improved functionality

4. An effective communication tool

5. The ability to revisit user journey map phases

6. Increased user satisfaction and enhanced functionality in interior spaces

These findings collectively suggest that the user journey map is a valuable resource for practitioners in the field. Moving forward, the researcher will provide actionable design guidelines for utilizing the user journey map as a process for interior design students, educators, and practitioners. In Chapter Five, the researcher will outline these guidelines to ensure improved user experiences and enhanced functionality in interior design.

4.11. Why Focused Group Phase Two? Findings, and what is Next?



Fig 4.101: Theme (4) Focused Group Phase two

4.12. Chapter Summary

This chapter permitted the data to be converted into useful information to clarify the research question. The starting phase focused on analysing the user journey map for designers, mainly referring to the key themes presented in the literature review in section 2.1.4, which examines how interior design factors affect user experience design.

Nine relevant components in interior design interact with the user experience and the overall experience in a respective thematic interior design project. The user journey maps provide an overview of the themes and how the designers took insight and turned it into a reality in a 3D render. The next step in the second phase was to analyse the interviews to discover touchpoints in conjunction with the user journey designer map. This validated the user journey map as a helpful tool and provided a way of thinking outside the lens of an interior design student.

In analysing the interviews, seventeen themes emerged that supported the research question and complimented the student' s-complimented user journey map analysis findings. The forthcoming chapter will explore how these elements are interrelated and mutually reinforcing.

Chapter Five: Discussion and Conclusion

In conclusion, this research studied the effectiveness of applying a user journey map to understand user experience. These tasks served two purposes:

Show a relationship between user experience design and interior design spaces by surveying the use of several design tools.

Explain the benefits of using a user journey map to understand user experience within interior spaces better.

As such, to achieve the research aims and objectives, the study was organized into two more significant phases:

1. A Literature Review.
2. This study examines the value of a user journey map by sharing knowledge of the practice with seasoned interior designers and instructors of interior design and triangulating the findings.

As mentioned above, the first phase aimed to demonstrate the connection between user experience design and interior design and explore the strengths of the user journey map as a tool to support the understanding of user experiences.

We should cherish the fact that, in many cases, these phases were not followed strictly in sequence but rather overlapped, effectively allowing us a multi-faceted triangulation of the user journey map's benefits of the user journey map.

5.1. Research Overview

This dissertation measures and models the user experiences of interior spaces by analysing how this exploration of the intersection of interior design and user experience guides evidence-based design and innovation methodologies to inform the unfurling of these space concepts better.

The researcher specialises in this area and wanted to distil what others have discerned into an accessible format that uniquely characterises the overlaps and nuances between interior design and user experience design.

Clarifying the Key Aims and Objectives:

The research parameters were established through a detailed literature review, which showed several synergies between user experience design and interior design. They identified various user experience design tools.

The research question is at the heart of this investigation: "What do you teach interior designers about their user's experiences that the user journey map addresses?"

This questioning and a clearly defined research context demanded a review of appropriate methodological approaches.

- Data Collection and Analysis:

Critical among design steps, the researcher had to decide on a qualitative approach to analyse the user journey map for prospective users. The nuanced results obtained, which such analysis requires, are only possible through qualitative data.

Therefore, this study's objective is to explore the effect of using user journey maps on interior designers' understanding of user experiences.

In this pursuit, the researcher developed several investigations to clarify how user journey maps can benefit interior space design. The approaches used are user journey map analysis and semi-structured interviews, which aim to glean insights from interior designers' lived experiences.

Ultimately, this thesis has integrated its purpose, objectives, methods, and results to develop a robust basis to position the designers of the environments that designers create for the people for whom these spaces are designed in order to improve user experience.

- Conclusion:

This study shows how user journey maps can help interior designers understand the user experience more comprehensively. These findings indicate significant benefits of implementing user journey maps in interior design. Initially utilising these tools can be very helpful in developing an overall design process, as the designer can understand, relate, address, and consider various user expectations, needs, and emotions in all aspects of the design of an interior. These results show significant advantages to applying user journey maps in interior design. Insights gained from these tools in the early stages of design can be a great asset to the design process, letting designers understand, accurately reflect and respond to user expectations, needs, and emotions within all components of the design of an interior.

- Next Steps:

The next section will present the results of the data collected, including the analysis of the user journey map and semi-structured interviews. The

results from each data source will then be incorporated together, highlighting how they validate and triangulate with one another. This methodology will allow various conclusions based on the research to be strengthened with validity.

5.2. User Journey Map of Interior Designers Discussion

Interior designers' user journey maps and final design experiences were shown in 3D renders.

Referencing Chapter 4, each designer's user journey map and resulting artefacts were examined. This analysis consisted of a pictogram connecting users' needs, emotions, pain points, and touchpoints from the user journey maps with the three-dimensional renders' outputs. The pictogram was designed based on the literature found in Chapter 2, section 2.1.4, precisely the literature page that discusses the influence of different interior design features on user experience.

The study found nine attributes: form and shape, colour, texture, light, proportion and scale, balance and harmony, unity and variety, and rhythm and emphasis. They simulated thematic connections between each designer's user journey map and how well the designer reflected on user needs and achieved them in their interior design outputs.

According to the literature review, incorporating these elements in interior spaces significantly impacts users' experience. Armaghan and Servatju (2014) indicated that an individual's way of living and their interaction with specific interior design elements strongly impact human behaviour. Accordingly, designing suitable living spaces with significant

scope for improving the comfort and function of interiors is critical for the well-being of individuals (Armaghan & Servatju, 2014).

Furniture, lighting, patterns, textures, and colour palettes are chosen with intent because they significantly affect how people perceive and interact with their environments. An ideal interior design creates a unique atmosphere and feelings around it. It makes that specific interior more user-friendly and practical for the users, leading to a better experience for its occupants. Choosing the correct interior design elements will give the best results.

The researcher highlights the key need to integrate user journey maps that support the design process, as addressed through a deep analysis of the user journey map data. Incorporating such information can make a remarkable difference in the quality and effectiveness of the final design results.

Chapter 4 is pivotal in demonstrating this concept because it illustrates how different designers have used user journey maps to understand users' feelings and needs better. This researcher intends to recognize the benefits of user journey maps.

These maps visually represent the user's experience and encourage a structured approach to identifying pain points and feasibility for improvement across the design process. Moreover, the research findings will echo key directions for potential breakthroughs based on analysis findings.

The following section will focus on the successes of active designers and the failures of others who applied user journey mapping. This inclusive highlight will facilitate an in-depth review of recommendations and deficiencies that need to be cured. The research will demonstrate how user

journey maps can be improved and how they can serve the designers in understating users.

5.3. User Journey Map Analysis Findings and Interpretation

5.3.1. Form and Shape Theme

Designer (1) Fig 4.2 After running a user journey mapping exercise, the designer ended up with the motivations of library patrons; this uncovered an interesting dichotomy: readers sought a quiet refuge to zone out. At the same time, non-readers looked for a bustling, energetic workspace.

Armed with these insights, the builder designed an interior that elegantly balanced these two dissimilar environments. Inspired by the sea's calming tones, the design features soft organic lines that promote relaxation while energizing the areas to promote creativity.

This exploration demonstrates the designer's mastery of the element of form and shape in a way that integrates its product usability in a serviceable manner.

Simultaneously, designer (2) Fig 4.3 took the users' perspective from the user journey map and zoomed in on it to reveal the highlights of the main issues and needs. Readers craved more things from nature and less from publishers, for more of the exuberance of life, even when it was itself founded on the wayward whim of a plant that said, "Wish me luck. " The more reluctant reader of the text also found comfort in the presence of nature.

Cognizant of this commonality, the designer proposed a design that emerged from the agricultural lifestyle of palm trees, blending it seamlessly

with the straight geometric lines typical of palm trees. By implementing the above concepts in real life, the designer created a beautiful nature-oriented interior in which all users would feel a connection to the outdoors and correspond to the diverse needs listed in the user journey map.

Similarly, designer (3) Fig 4.4 conducted an in-depth journey mapping exercise to identify the core needs of both user groups. A voracious reader shared delight in acquiring ideas and stimulating the mind, while a non-reader complained about the jaded decor at many library branches.

To accommodate these opposing desires, the designer carefully integrated triangular and circular forms and shapes into the 3D design, a crisp combination of angular lines with the curves of the circular parts. This fusion piqued creativity for those who loved to read and turned the library space into a compelling environment for the reluctant reader. The user experience was improved through a particular focus on the lines used in both striking and running curves and angles, which, as a result, charged the library with dynamism and intrigue.

Finally, designer (4) Fig 4.5 detailed the journey mapping process to understand each user group's different tendencies. One engaged reader described how books widen his understanding of life, while non-readers wrote of a deep connection to nature.

Motivated by the reader’s feelings, the fashion designer dreamed up a concept called “Gusan”, a branch of a palm tree in Arabic. This concept combined the joy of literature and the beauty of nature in such a lovely way. The designer skilfully implemented organic, curved lines drawn from nature in 3D visualizations, ingeniously meeting the requirements of both groups of

people. Through user journey mapping, the designer understood how to navigate the shared values and aspirations of all library visitors, facilitating an experience that was all the more vibrant.

5.3.2. Colour Theme

In the context of the colour in the interior design, in collaboration with the Designer (1) Fig 4.2, the user journey map representing the user's preference was analysed. One user stated the necessity of a kid's zone to enhance creativity in children visiting the library with their parents. At the same time, another noted the significance of play and movement in an interior space.

In 3D designs, the output of designer (1) showed that the designers appealed to the users' senses by immersive transitions through native colour gradients, according to the user journey map. Understanding and responding to the users' needs as a whole, especially the want of a kids' zone to support imagination-building and focus away from rote tips in kids and the focus on play and movement, the designer materialised a natural colour scheme that cites those senses. The psychology of colour influenced the colour selection to build a sense of belonging and stimulate creativity and movement through natural tones. The designer successfully used the insights from the user journey map to select the most appropriate colours to address user needs and satisfaction.

However, both users' expectations, which include their leanings towards natural elements, were considered by the interior designer (2) Fig 4.3. The designer has selected a natural colour palette of browns, greens, and greys. It gives evidence of the user-friendliness of the designer, as it shows

consideration that the users expect when they come into the interior space with a natural colour scheme. Filling the point of view of colour, it is palpable that the designer empathised with the users on a holistic level and improved their experience.

However, designer (3) Fig 4.4 carefully pinpointed some overarching criteria through an elaborate journey mapping process to understand the needs of heterogeneous user segments. A reader who loves reading said it gives her new ideas and freshens her mind. The designer understood the user's feelings and expectations. As a result, this user's expectations called for the idea of "A Thousand and One Nights" story style. This story integrates many different epics from cultures and authors, allowing the designer to implement a neutral and monochromatic colour scheme. This approach intends to generate the user and help her read better.

Another user, who dislikes reading, stressed the need for a more visually appealing interior to keep people in the library longer. The designer also utilised a two-colour scheme to address this user request and achieve a dynamic space, as seen in the 3D renderings. It reflects the fulfilment of user needs as identified in the journey map and, later, the application of these needs in choosing interior colours.

Further, designer (4) Fig 4.5, in charge of the project, continued to look at user needs in detail by conducting the follow-on to the journey mapping exercise to understand the needs of everyone who would use the system. One user who loves reading in particular told us where she usually reads: her room, the public library, and the university library. Knowing this, the designer figured the user wanted a comfortable, tranquil reading space. Conversely, a user who said they do not like reading expressed their love for nature. The

gallery and waiting for areas' 3D renderings explore the use of colours, which means the expectations of both users. The designer made the space cohesive by using a neutral colour scheme and incorporating natural elements. This approach also sought to offer relaxation with reading in her room to meet the first user's preference while also using natural colours and representation to accommodate the second user's love for nature. It reaffirms that the designer mindfully catered to the needs of both users by using colour and a curated interior design to enhance their experiences based on the user journey map created.

However, the designers chose colours based on user preferences from journey maps. We worked with Designer (1), responsible for designing a kids' zone focusing on creativity with a natural colour scheme promoting play and movement. Their designs were intended to stimulate the senses and meet the users' creative needs.

Designer (2) also prioritised user expectations by selecting a natural colour palette of browns, greens, and greys, showing a deep understanding of users' desire for natural elements.

Designer (3) developed extensively mapped user preferences based on a reading enthusiast. They settled on a "Thousand and One Nights" theme to inspire and enhance the reading experience using neutrality and mono-tonal tones. They also cater to a user who likes a stunning space, incorporating a two-colour scheme that encourages the user to spend more time in the library.

Designer (4) focused on making a calm reading environment yet included elements inspired by nature for more nature-oriented users. Two

types of users have the exact expectations and have met them with a neutral colour scheme that provides a relaxing atmosphere.

Every designer successfully translated insights generated from user journey maps by leveraging carefully selected colour palettes to develop spaces to accommodate different needs.

5.3.3. Texture Theme

The interior designer (1) (Fig 4.2) began selecting textures in the interior space by developing a full view of the user through a user journey map.

Firstly, applying the 3D interior spaces with care and concern towards the study-reader and non-reader attitude helped form the spaces for the individuals. For the reader, the goal was to create a comfortable place to read that emphasized the shifts between zones in the space. Using different textures, from smooth and medium to rough, the work created a clear sense of movement and separation between areas of the piece. Comfortable cotton upholstery fabrics, for example, also strengthened the relaxed nature of the atmosphere, and reading was comfortable.

Attention and blocking distractions from the interior were key for non-readers. It was done carefully by employing different textures, slowly pulling the eye but not letting the viewer forget what they came for.

To summarize, the interior designer brought the interior space and the users' needs (found through the user journey map) together and brought this learning to life in the 3D design.

In contrast, designer (2) used a user journey map to gain insight into their users. Two different user profiles resulted: one where the users wanted a living space with nature and a good entrance and the other where they wanted to build an aesthetic place where they could photograph and take inspiration from the natural spaces.

The designer aesthetically integrated these needs and wants into the interior texture. By selecting natural materials such as palm, concrete, wood, and leaves, the designer built a cohesive and peaceful space. Delicate textiles were deliberately selected to loan a sense of belonging and contact to the user experience. Informed by the user journey map, the designer’s approach successfully catered to the users' needs and requirements.

Additionally, designer (3) Fig 4.4 performed thorough journey mapping to understand what users needed. Another user who loves reading noted the importance of reading to gain new experiences and perspectives and the necessity of a space to read undisturbed. But the other user who disliked reading pointed out their wish to go to a quiet place while wanting to read.

The designer used 3D rendering as no other user to create a unique reading space by customizing it with lighting and textures to suit the user. Various textures are brought together in each of the library's zones, with wall paint transitioning to wood strips in the gallery and unique experiences created on the floor with porcelain tiles and wood. The multi-purpose hall, meeting room, and cafe were designed with materials to provide sound isolation, which is suitable for the second user who likes a quiet reading area.

The designer skilfully incorporates texture elements into the interior design, reflecting a thoughtful consideration for and attention to the users' needs, leading to an enriched experience.

However, designer (4) Fig 4.5 did a deep-dive journey mapping to know what users needed explicitly. One user who loves to read said she hated busy places, and another said she preferred nature. Based on these user preferences and the different stages of the user journey map, the designer produced a 3D rendering that specifically used texture in interior design. As for user points during the design renderings, the designer understood that the reception area should leave an impression on users who hate small, crowded spaces; soft materials like wooden flooring and medium rough wall plaster were used to deliver a spacious and smooth atmosphere.

For the nature-loving user, the designer reverted to the elements, which can be seen in the emphasized area of the padded area in the 3D render, consisting of hardwood flooring, medium rough wall plaster, soft partition texture - black steel and smooth texture seating - bamboo. It shows the designer how well he knows his users, the user journey map, and how he has developed carefully selected materials to enhance the user experience based on their expectations.

User journey maps: Interior designers shape interior spaces to the needs of users:

Designer (1) In contrast, the goal was to create reader and non-reader zones by changing textures (smooth, medium, rough) and upholstery to the back and buttocks for an enjoyable reading experience. Textures were chosen

so that non-readers could keep their attention without everything being too distracting.

Designer (2) Identified two groups of users: ones who want an area connected to nature to personalize the experience and others who want to create an area to photograph and draw. Using natural materials, concrete, palm leaves, and wood enabled the designer to create a tranquil environment that further enriched users' experience.

Designer (3) Catered to a bookworm needing silence and another user who does not like to read but wants some quiet. Through 3D rendering, the designer created zones with different textures and used sound-isolating materials in common areas to promote an atmosphere of focus while still engaging in the library.

Designer (4) Applied soft materials such as wooden flooring and medium rough wall plaster to create a sense of spaciousness. This lessened a reader's dislike of a cramped, narrow area and catered to another reader's taste for natural elements. A calm design made of natural materials hints at understanding user preferences.

In general, textures and materials were appropriately aligned with the needs that each designer found during their mapping.

5.3.4. Light Theme

Fig 4.2 shows how the designers selected suitable lighting for a space; they did a thorough user study with a user journey map to find what users would want. The analysis revealed the needs/concerns of two different users. On the one hand, one book lover said that the more they read, the better their cognition and the more they learn about the profession, whereas the other user

clarified that the reason behind his dislike for reading is that he cannot focus on it. The latter user highlighted an energetic and reading-sixth-sense-supporting atmosphere and the integration of technologies for an enriched reading experience.

The designer sought to improve both users' experiences by integrating thoughtful lighting components to address these insights. This enabled immersive ocean-like environments—everything from high-technology panels that make you wonder why you didn't see it. Each reading zone featured pendant lighting, too, so it felt like one was in one's own little world immersed in literature. Further, natural lighting was incorporated to provide a balance between artificial and natural light, promoting well-being and a feeling of belonging and inclusivity for all readers.

The user journey map guided the designer towards appropriate lighting solutions that contribute to user well-being and were implemented successfully at all stages of motion in the space.

Similarly, Fig 4.3 identified users who like and dislike reading through a user journey map. However, the two types of users had at least one thing in common: Both enjoyed settings with natural elements. Optimising natural light to stimulate mood and combat the stimulation of windy city noise was how this designer worked to solve that social aspect the user valued and replace the downtime of reading, which this user actively disliked. The analysis of the user journey map highlighted the need to understand such insights as well. Also, the designer configured the flow of the indoor and outdoor light fluently, which created an open, spacious atmosphere meeting the user end requirement of being a reader. Artificial lighting, hidden and pendant, was integrated to make it a more personalised experience. In the end,

the Designer 2 interior designers considered what both the active and passive user types needed in their final 3D designs and focused on light, which is an important factor of interior design.

As an example of a user's need defined by exploration, the interior designer conducted an extensive journey-mapping process (Fig 4.4). An avid reader herself, one user shared a preference for reading at cafes, libraries, and at home. She also mentioned inspiring and energising reading pieces and that she wanted to find interesting libraries. To enhance the design according to the mood board input, she included different cool lighting types of the library interior in the 3D render. It has complemented pendant lighting throughout the café area to establish a cosy vibe and a more brilliant lighting scheme for the library section. This natural lighting was another addition to promote an invigorating environment, creating a unique experience for people who enjoy reading.

Another user, who admits she was never into reading, claimed she found the activity unappealing because her interior was lacklustre. She was interested in creating a more visually appealing and engaging environment and the need for distinct workspaces within a library context. To engage and enrich the space, the designer balanced the user experience with different types of illumination, like spotlights, custom-made pendant lights, and concealed lighting. Pendant lighting in private areas encouraged focus and contemplation. In general, the designer successfully incorporated lighting aspects into the interior design to accommodate the different needs of both user groups and facilitate their experiences.

Finally, interior designer Fig 4.5 explored user preferences in the journey mapping process to help the design team understand all users' needs.

A user who enjoyed reading preferred uncluttered spaces, but a user who disliked reading said it reminded them of boredom, a waste of time. To anticipate the spaciousness required by the reader, the designer incorporated light elements into the interior design. It led to a 3D visualisation with lighting elements, spotlights, and hidden type lighting in areas such as the reception and focus areas. The designer wanted to create a calm yet vibrant ambience that met the reading lover's desire for clutter-free spaces. However, the designer did not sufficiently address how to bring to life an exciting and unique space that would combat tedium, not to mention reach those who are not readers with light.

When deciding upon suitable illumination for different places, several interior designers employed user journey mapping that provided insights into the requirements of different clients:

Designer (1): They identified two types of readers: those who find pleasure in reading and those who have difficulty concentrating. To accommodate both, they devised high-tech panels for an immersive atmosphere, pendant lights that support focus in reading zones and balanced natural lighting to foster inclusivity.

Designer (2) also addressed book preferences, finding that readers and non-readers liked nature. They energised the space using natural lighting and connected indoor and outdoor lighting to make the social atmosphere more inviting for non-readers while maintaining personalised artificial lighting.

Designer (3) highlighted an avid reader who favoured café-type spaces and another user who avoided lacklustre designs. The designer incorporated

an array of lights, from snug pendant lights in the café area to spotlights throughout the library, adding to an inviting natural feel of the space.

Designer (4) noted that one user likes uncluttered spaces, while another thinks a reading room would be boring. They added light elements to give an impression of spaciness but didn't implement an interesting design that would convince people who hate reading.

Overall, the designers understood how user journey mapping can create briefed tailor-made lighting solutions to improve user experiences.

5.3.5. Proportion and Scale Theme

In the interrelated area of interior design, Designer (1) Fig 4.2, when designing the interior space, pointed out the importance of proportion and scale (1). The student commented on the first user during the user journey mapping process on two distinctly different users. This avid reader prefers easy access to books he is interested in from the library, and the other user desires to feel comfortable while reading. Considering each user's needs, wants, and concerns, the designer mightily developed a 3D design that spoke to both of them. It can be represented in the final 3D result, which incorporates the ideas of proportion in architectural interior design and scale. Most significantly, the designer considered the entirety of the interior space, which they developed with proportion and scale — for instance, this included choosing appropriately scaled items (i.e., furniture) that fit with human scale. This consideration enables ease of use of the furniture, for instance, accessing books from bookshelves. By following the user journey map closely, the designer judiciously answered users' worries and incorporated their needs into the 3D design, fulfilling their impressions of proportion and scale.

Nevertheless, Designer (2) Fig 4.3 has performed a complete study on all users, positive and negative, about reading and has analysed the stages of their journeys when entering the area. By using this process, we seek better to grasp the user's experience in the library ecosystem.

The interior designer has tailored the design to address the highlighted phases of all user groups while considering user expectations.

In this design, the interior space was adapted to the users' proportion and scale preferences, fulfilling their expectations of the overall design.

It is tempered with judiciously selected elements that reveal themselves as inviting and dynamic, inappropriately scaled seating, and general ambience.

The human-scale design elements welcome users into the space, and the proportions induce comfort within the building.

However, Designer (3) Fig 4.4 performed an in-depth journey mapping to identify the users' needs. One respondent, who identified as an active reader, emphasised a need for comfort in both environment and seating. The designer's response addressed the user's need by designing an interior in a 3D rendering with comfortable seats. However, the depicted seating, which lacks armrests, is uncomfortable. Another non-reading user needed a quiet library that would not disturb others. To remedy that, the designer arranged the furniture according to a human ratio and standard walkway, which made the whole place feel more prominent and less annoying at the same time. The implication from the 3D rendering the designer made is that they thought about both users' needs, but it does not sufficiently meet the first user's need for high comfort because the seating is not padded enough.

Additionally, a detailed journey mapping procedure was utilised by Designer (4) Fig 4.5 to understand the real needs of the users. One frequent library user said she preferred a clean space and chronicled the entire trip to the library from when she discovered one existed to picking and leaving with a book. One person in the thread, who expressed dislike of reading but fondness for music, related a visit with a friend to a different library, in which she had difficulty finding a book and left without a plan to return. Considering this user preference, the designer incorporated aspects of proportion and scale, thus creating a custom-fit 3D rendering interior. In the waiting area, they notice that seating has been tailored to both users, with sociable, comfortable, well-proportioned seating and eye-level coffee ads.

To acclimate their varied selections, the presentations were arranged at eye level on the passageway side so that either user could see them.

The library's bookshelves are positioned so that individuals need not extend their arms to the ultimate space to reach their books.

All materials are resonant in human scale and standard measurement to meet the user's needs and regulations.

The design is all human scale, and every element is designed around human-normal stature and needs.

Proportion and scale are integral to designing liveable spaces in interiors. User journey mapping reveals different preferences among library users:

Designer (1): This avid reader needed easy access to their books and the comfort of pleasing gold upholstery, so their 3D design incorporates both via appropriately sized furniture.

Designer (2) examined types of users who love and hate reading, using phases of their experience to relate the design. The furniture is proportionally appropriate and inviting to meet user expectations in the final design.

Designer (3) imagined a 3D rendering suitable for seating an enthusiastic reader but lacking comfort due to missing armrests. The space layout allowed a non-reading user to find a swell-scaled, quiet area.

5.3.6. Balance and Harmony Theme

Designer (1)

Fig. 4.2 analyses balance and harmony in the interior design space and begins by analysing the users. The reading user focused on relaxation as a goal, while the user who does not like reading specified the library's need to push more than reading zones appealing to the library's functions. As opposed to what is focused on in the user journey map, the designers decided, upon motion, to create an interior space as a holistic experience, providing harmony and balance through the choice of sizes (furniture sizes) and colours in order to produce comfort and balance in the whole for both of the users, to fill out their desire and to create diverse zones which, through the accord of colour, texture, and form, comes into fruition.

Designer (2)

Fig. 4.3 had previously recognised some crucial requirements when creating the journey maps to analyse the needs of both users. One user, who likes to read, asked for a less curated, less modern experience, and another, who likes to read, would rather watch an event or take an Instagram picture than read. The designer acknowledged these desires and developed a balanced interior space through 3D design, illustrated by Figures "Group Seeding" and

"Workshop." The needs within the user's brief were achieved through this design as a library and a workspace, thus meeting these different activities and experiences. The designer was adept at balancing reading and personal interaction, as evidenced by the volume of nailed furniture, which this called for at the outset, thus fulfilling the requirements of the user journey map.

Designer (3)

Fig. 4.4 used journey mapping to dig deep into study user needs along the journey to better understand all users' preferences. One user had an affinity for reading and a disdain for clutter: She wanted a serene setting. The designer's creative response aimed to meet both users' needs by including balance and harmony in the design of open interior space. The correct application of wall materials gives the interior space a sense of balance and wholeness, as seen in 3D renderings. The colours and flooring lines were less careful, as a result, leading to imbalanced distractions within the space that could cause wayfinding problems. Despite fulfilling their promise of balance and harmony through the walls, the designer did not succeed in the colour selections and floor layout, which does not encapsulate the promise mentioned in the user journey map and its users, especially regarding balance and harmony.

Designer (4) Fig. 4.5 The insight scanner uses the user journey to explore the user's needs in the entire learning process and discover insights for all types of users. An introverted user who liked poetry—reading it, writing it—was not a fan of crowds. On the other side, user 2, who specifically mentioned that he does not like reading, emphasised the need for activities that take away from reading and also for less long-form content. In this case, the user has two opposite needs, so while creating an interior 3D rendering

design, the designer worked on the balance and harmony principles to satisfy both users. For the poetry reader and writer, the designer programmed a balanced gallery space with flexible panels to display items of interest. The epicentre is made up of elements like wooden flooring and gypsum board ceilings that were thoughtfully designed and handpicked to make this experience one of a kind. The reception area, waiting area, and library focus area were harmonious with neutral colours and materials, in addition to the user's avoidance of busy spaces, which created a voyeuristic-calm-balanced aspect of the rooms.

The interior designers studied the users of a space and designed balanced and harmonious spaces.

Designer (1) concentrated on a fictional user who reads for relaxation and another who would like to see more functional, engaging events in the library. They created varied zones to appease both aspects using furniture sizes and colour harmony.

Designer (2) defined a user as one who wants a more individual library experience and another who enjoys social events. Their 3D designs for group seating and workshops also show a multi-functional space for reading and activities.

Designer (3) focused on a user who loves reading but does not like clutter and another who wants tranquillity. They managed to balance wall materials, but the colour scheme and flooring layout were not coherent, which created distractions.

Designer (4) collaborated with a poetry lover who dislikes crowded places and a different user who wanted alternative activities. To balance and

harmonise the experience, they designed the gallery area with movable panels and applied a neutral colour palette for other sections.

5.3.7. Unity and Variety Theme

In addition, designer (1) Fig 4.2 explored great users with inquisitiveness in reading. Another user stated that they have difficulty concentrating while reading, suggesting that the designer create a thoughtful design that frames surroundings and atmospheres to promote focus and inspire excursion. Conversely, designer (2) Fig 4.3 employed journey mapping during the initial design phases to determine critical needs and realize user preferences. A bibliophile-emphasized library design that aligns with a range of community activities. Another reader, who said he was inexperienced, also read during an event that people would come to read it and suggested that events such as workshops or discussions be available so that individuals who do not like to read could come along. So, in response, the designer assembled a 3D rendering based on their urges. The resulting 3D visualization shows how they combined unity and variety by the zone's users identified to assemble a café, private room, computer area, open-to-sky area workshop, and group seating to enhance community engagement from those who do not read. The designer creates unity and variety when selecting furniture of different categories for each spot, varying the pieces in size and shape, and using other materials of the interior accessories to set emotions and feelings in the area. Therefore, the interior design 3D output implements the user journey map for reading and non-reading users. Simultaneously, interior designer (3) Fig 4.4 performed a holistic study of user requirements through journey mapping to understand the needs of all users.

One user, with a keen interest in reading, specified that particular locations she enjoys reading include the library, café, and home. On the other hand, another user, who has no specific inclination to read, stated that a pleasing environment makes her stay longer. To address these needs further, the designer introduced unity versus variety in the 3D renderings by ranging from a variety of texture materials and various forms. For example, the transition on the walls of the café from the medium rough wall paint to the rough stone walls brings unity and diversity to the space. However, the transition on the walls of the multipurpose hall from the medium rough paint to the soft rugs and the medium rough panel wood wall provides a unique experience that stimulates the sensory perceptions of the two users. This approach covers the highlighted areas of the reading enthusiast and enriches the experience for the non-reading user with an unusual spatial wellness experience.

Designer (4) Fig 4.5, known for their meticulous approach, conducted a detailed decomposition of user requirements during the journey mapping process. This thorough understanding of user needs was exemplified by a user who enjoys various aspects of reading and shared her aspirations of becoming a great poet.

On the other hand, one user who dislikes reading has stressed the importance of doing something else. According to these expectations, the designer used elements of unity and variety in the 3D renders of the interior design. The designer introduced various transitions of material selection in the library to adapt to the reading-type users, including wood, such as wooden floor strips and wooden furniture.

It created an enriched experience towards the reading emphasis sector, striving towards a coherent mix. For the user who finds reading not fun to various other activities, the designer envisioned a gallery, a space dedicated to visual experiences. With variations of wooden flooring, acrylic gallery panels, and more, the designer balanced unity and diversity across the entire space. In conclusion, the designer addressed the given user needs and improved their overall experience by fulfilling the promise of the user journey map using both the elements of unity and variety.

5.3.8. Rhythm Theme

Designer (1)

Fig 4.2 used the user journey map to learn what users like and dislike. The analysis showed that readers want a sense of community when reading, while non-readers seek a multifunctional space in the library's interior design beyond reading activities. To serve this diverse population of users, the designer has articulated a series of zones, creating an environment quiet enough to establish a sense of connection with one's peers.

The designer skilfully introduced rhythm to the space for the research and collection areas, as organic strip ceilings guide users through gentle transitions and repetitions. The design also allows users easy access without imposing radical changes on them.

This approach emphasizes everything essential about the users' solution through rhythmic integration.

Designer (2)

Fig 4.3 employed journey mapping in the early design stages to pinpoint essential requirements and gauge user needs. One user who called herself a big reader said that reading was part of how she relaxed, taking time off. On the other hand, a user who is not fond of reading said that it makes him sleepy and seldom inspired. In response to this feedback, the designer addressed both users' needs by introducing elements of rhythm into the interior design. In the 3D rendering, the "Private Room" designer designed a cosy and relaxing space for the reader by repeating interior design accessories and furniture to give a certain comfort. For an avid non-reader, an "Open to Sky Area" surrounded by nature and related reading space, indoor-outdoor, not with reading text to inspire. To inspire the non-reader, the designer thought that the path from the indoors to the semi-outdoors could create a pathway to the indoors and a design open to the sky. User needs have been satisfied by making use of elements of rhythm and creating a space that is relaxing and inspiring to the user, thus improving user experience.

Designer (3)

During the first stages of the design cycle, the designer (3) Fig 4.4 compared the preferences obtained from journey mapping and the requirements needed. Another user who loves reading highlighted the immersive and emotional experience that reading provides, creating a world where they can be alone and limitless. However, another user—someone who does not particularly enjoy reading—cited tranquillity and concentration as benefits of reading. To accommodate user expectations, the designer rendered the internal space into a 3D surface with rhythmic aspects. Using similar materials, including wood and pendant lighting along the path, creates a sense of rhythm. In addition, the multipurpose hall design has organic lines on the

walls, giving a sense of rhythm. The design goal was to give reading lovers a sense of freedom and others a sense of calm. Thus, this signifies the designer's understanding of both user perspectives. Made possible by utilizing the user journey mapping phase in the design process, making the user experience better by adding rhythm factors.

Designer (4)

Also, journey mapping used by the designer (4) Fig 4.5 as part of the early stages of the design process to help ascertain key needs and user preferences. Another user who hates reading mentioned her passion for music, whereas one user who loves reading and writing poetry described her passion. Considering these preferences of poets, the designer introduced the element of rhythm into the interior space because rhythm has a strong influence on creativity in both poetry and music. The designer noticed the users' preferences and added rhythmic elements in the 3D renderings of the interior design. For example, in the waiting area, the designer wrapped the columns of the waiting area with repeated organic shape strips to create a rhythmic beauty. The repeated sitting arrangements in the waiting room also achieved this rhythm. The designer continued the same rhythmic theme on the broader library area, with wooden strips repeated on the ceiling and a selection of similarly repeated seating options to enrich the user experience.

During the design process, each designer used journey mapping to empathize with the needs and desires of users.

Designer (1): We designed a space with clear zones for readers looking for community with others and non-readers looking for multifunctionality.

The design also employed organic strip ceilings, maximizing user experience with subtle transitions while keeping the noise down to give readers peace.

Designer (2): Focused on a cosy "Private Room" for readers, using repeated furniture styles to enhance comfort, while the "Open to Sky Area" for non-readers inspired an indoor-outdoor design.

Designer (3): Introduced rhythmic elements, including wood and pendant lighting, along walkways, creating a feeling of freedom for readers and peace for non-readers in the multipurpose hall.

5.3.9. Emphasis Theme

Interior designer (1) Fig 4.2 showed insightful knowledge of user experience when they used a 3D design in this task, especially a user journey map to design the library. Two users with very different needs — avid readers and less-reading devotees — were considered by the Designer with an experienced eye. The designer explored reading nooks in multiple fabrics, finishes, and materials to fit the requirements of reading aficionados.

Where readers have trouble concentrating, the designer focuses on material selection and diversity to create comfortable environments.

In both instances, the designer understood how users use space and how the interior architecture would be delivered to create focal areas to accommodate different reading practices.

Fig 4.3: In the early stages of the design process, designer (2) used journey mapping to note basic needs and gather user insights. A reader, one user, wanted natural elements and a cohesive blend of indoors and outdoors. Conversely, one user who disliked reading preferred enclosed spaces but

enjoyed nature. To cater to these various preferences, the designer conceived of a centrepiece that balances indoors with the outdoors, a central location for users to be in the natural environment while reading. This designer skilfully brought areas of the interior space to life while enhancing the user interface.

Lastly, designer (3) Fig 4.4 used journey mapping to extract the vital requirements: to know how the users use their design. One user who likes to read mentioned that he needed a quiet place without children when he was reading. On the other hand, someone else, who admittedly was not much of a reader, looked for a quiet place to sit when they walked through the door. To satisfy such dual needs, the designer added an emphasis element in the interior design of the building: an area for children that teaches them to read quietly, allowing them to maintain silence and an environment facilitative to read. This approach is an example of the effective use of emphasis within the library's first spatial design. This user journey process allowed an insightful understanding of each user's needs, successfully integrating requirements into the 3D renderings.

Designer (4) Journey mapping has also been used by designer (4) (as per fig 4.5) to identify key needs and to understand the users' mindset. In hard work during this mapping process, one user emphasized the importance of reading. To this reader's preference, the designer set aside a considerable space in the room (as seen in the 3D renders) for this very purpose. On the other hand, another user also hates reading, so going to the library is an unpleasant experience marked by boredom and the uncertainty of taking the right book.

The designer implemented a series of functions in the library's design to respond to these concerns. To stave off boredom, the designer incorporated

various activities, from a designated computer area to reading areas (some of which provide natural views). The designer also helped the second user who struggled to find books by categorizing the library into sections with a name and guiding users to choose based on their preferences. They created a reception area where users could be directed based on their favourite books.

Using journey mapping, the designer successfully identified the evolving needs of the users and wove these needs into the library's interior design. The interior designers considered the user experience and used journey mapping to create library spaces suited for multiple users. Designer (1) met the requirements of voracious readers by purposefully setting up reading zones while catering to more casual readers by carefully curating their space. Designer (2) blended outdoor and indoor elements to satisfy a user who desires nature and another user's need for seclusion. Designer (3) stressed the importance of a quiet zone and breaking up the children's reading areas to keep it peaceful for everyone. Designer (4) created equilibrium in the space by providing a reading area with elements to combat boredom, such as a computer area and sections for uncomplicated book selection.

By mapping and understanding these journeys, the designer could include users needs in the library's interior design.

It was especially fitting to focus on these individual designers because they achieved similar end results, differing only in processes and design aims.

In the following section, the researcher discusses several designers who fail to convert users' needs, pain points, touchpoints, and feelings into the corresponding interior design elements to execute the jobs given to them in the user journey map's first stage.

5.4. Unexpected Challenges and Limitations of the User Journey Map

Designer (1)

The designer, Fig 4.2, failed to adequately apply the principles of proportion and scale (a fundamental aspect in designing for various users). An enthusiastic user pointed out the need for a children's room in the live space — a feature not evident in the 3D walkthroughs. Not only does this suggest a general lack of vision, but it also indicates a failure to understand the particular needs of younger users regarding proportion and scale in design. There was also a stark emphasis on the needs of secondary users without considering that the primary user had been very vocal about his strong preference for reading. This preference was captured in the user journey map but appears ignored in the design process.

Designer (2)

The designer comprehended that the basic needs of the user groups (especially the younger users) were not fulfilled by the design shown in Fig 4.3. It failed to appreciate User One's desire to browse the reading material with a particular focus on keeping the children's section an attractive and child-friendly space. Also, it did not consider the proportions and scale of elements to be child-friendly and appropriate, so the child experience is limited in exploring the environment, as they were not there to interact with it. This exclusion limits their embeddedness in the environment, negating their experience and joy.

Designer (3)

Fig 4.4 illustrates that designers were mainly focused on user-specific needs with little thought to an aesthetic environment. Users emphasized that every individual function from work to focus to relaxation; hence, all the main features were added to the design. The aesthetic a designer combines—sharp and precise geometric lines intermixed with soft and flowing organic lines—creates a depth and drama that is visually arresting. This period of chaos consequently formed a contrast and disconnection with the user [17], a disorientation of balance within the space.

Designer (4)

Faced periodic challenges during the design process. One major issue surrounding poor quality was the lack of concentration and single-mindedness of one end user, leaving the rest of the design goals lacking clarity and direction. The balance of the attention of the two users was not comprehended during the entire process. Similarly, many areas, especially the children's area of the user journey map, would not come alive right from the mind of the designer Fig 4.5, who was not represented in proportion and scale accordingly. In addition, user two, who despises reading, expressed her disinterest in libraries, but the designer did not specifically accommodate this within the design as a whole. The writing user seemed to be in the way of the reading user.

Designer (5)

Fig 4.6 Once again, the designer did not cater to the needs of users who do not like to read; however, they focused more on other users, leading to a result that did not meet the requirements of both user groups.

Designer (8)

The designer's approach in Fig. 4.9 project did not fulfil the concepts of proportion and scale to the provided user needs. While the designer successfully refined other critical design mechanisms, this notable omission was significant. For example, while interviewing one of the users, they very clearly established that they hated reading, which should have helped the designer find a solution to work around that. This user also mentioned a solution. Many community members touched on the importance of private rooms — spaces that provide a sense of solitude.

In addition, the same user expressed a wish for less dense environments. This preference suggests a need to design with proportion and scale, where interpersonal distances are ample. The designer should have used anthropometric data to design suitable spaces that suit individual needs but still have a balanced plan.

Introducing the children's area alongside the 3D design was another essential request from the user because none had been included. This requirement must be fulfilled since having an inclusive experience supporting various activities and meeting all users' needs is crucial.

As a result, the designer's overarching vision seems fixated on fulfilling the needs of a single demographic user who finds themselves enjoying the reading experience while disallowing valid apprehensions or specifications from the other party. This single-mindedness caused the design to not adequately represent the diverse lifestyle needs and preferences of both individuals, as well as a disproportionate value on the overall usability experience of the room.

Designer (9)

Fig. 4.10 Imbalance and lack of rhythm in and across the journey map and not responding enough to the basic needs of the two mentioned user-profiles led to creating a space that did not meet the expectations of one user, who mentioned a preference for a welcoming, home-like space that allowed for reading. Moreover, it was not the most pleasant because there was no café area. On the other hand, the user who dislikes reading highlighted the need for access to a computer, a factor the designer probably had not considered. As a result, the needs of both zoning were not fulfilled.

Designer (10)

In the user journey mapping phase, the designer considered both the user perspectives and successfully incorporated various design elements (Fig. 4.11).

However, the designer did not adequately address several user concerns. These issues include better lighting to assist with reading focusing, purpose-built writing areas to aid movement in the library, a lack of audio and visual reading content, and the overall limited use of bright colours in the design.

People are not interested in the design because it is featureless overall and mainly uses neutral colours.

Designer (11)

The interior designer (Fig. 4.12) considered different aspects of interior design in the space, but the user made two major requests that were not conveyed. The user indicated an extreme preference for bright and colourful, wanting something to enhance creativity and happiness. In contrast, the Designer relied primarily on a monochrome colour palette, with green as the

primary and a muted colour as the secondary. This option also took away much of the energy the user would bring to their space.

Aside from the colour palette, the user also wanted a bookshelf, showing their love for literature and literature in general, and a designated area for audiobooks. Audio processing is such a part of our existence, and yet the audiobook library design completely neglected it; the design left the user with an inadequate experience of their expectations and aspirations, important aspects still missing from the overall design, and unfulfilled vibrancy and use of the space.

Designer (12)

The designer still considered a few design considerations (Fig 4.13). Still, proportion and scale (Fig 4.4) were among others that were unnoticed and left unaddressed, resulting in a design outcome that did not meet either user group's needs.

For instance, one user who enjoys reading mentioned the need for a children's area and the lack of an outdoor space in the plan. In designing the library's interior space, a user (who likes reading) asked for a reading corner, which was not executed. On the other hand, a user (who dislikes reading) asked for an audiobook area, which was also missed.

Designer (13)

With Fig 4.14, the designer enforced essential design elements but missed critical user requirements. Regarding the coffee element, both users preferred a 3D rendering that captured a café ambience. One user, who generally disliked reading, stressed using technology, proposing a robotic

guide and an interactive holographic display of books. Unfortunately, these suggestions were not incorporated into the library's 3D renders.

Designer (14)

The designer (Fig 4.15) executed most design elements except for form and shape. Users preferred an open space with a natural connection, suggesting fluid lines to suit their needs better. Additionally, specific user group specifications were absent. The reading user wanted a borrowing area, which was not integrated, resulting in a generic aesthetic. Conversely, a visually inclined user noted her renderings' lack of book displays.

Designer (15)

The designer (Fig 4.16) did not fully integrate all vital design elements that could satisfy user needs, such as balance, proportion, scale, and colour. Thus, the design failed to meet the full users' needs. One user preferred a reading room with a homey feel, yet the design lacked the ambience of homey comfort. Users also highlighted the need for natural light and distinct spaces like a café, which were missing in the 3D render.

Designer (16)

This designer (Fig 4.17) integrated the necessary design features but did not cover some user needs. High-tech areas with VR books and audiobooks were popular with users. Both referred to a café area that was missing from the 3D render.

Interpretation of Findings from Research

The researcher [explains] findings that appear contradictory or paradoxical. This procedure is essential for matching research findings to how

a reader assesses, facilitates meaning, and elucidates brief outcomes of the study. These limitations will consequently help to inform future research, combining practical methodologies with more significant context-specific insights.

In this next section, it is important to verify what has been accomplished with the user journey map. This validation involved an in-depth inspection of an overlapping data subset. This methodology was meant to provide a general understanding of the strengths of the user journey map as an analytical model and validate its profound insights. Key user journey map findings (with help from relevant semi-structured interviews and the author) will be included in the coming section. It is paramount for future research to be more satisfactory and for deeper insight into the user experience.

5.5. Semi-structured Interviews Discussion

Chapter 3 provides an additional view through the insights of interior design instructors through semi-structured interviews. Using this method of gathering information, the researcher sought to obtain information from this group of individuals to widen the results obtained from current interior design students who had employed the user journey map within the design process. This was done so that the benefits of the user journey map were clearly defined from different points of view, and the tool could be tried with a new pair of eyes.

To streamline this process, the researcher generated seven important interview questions for participants to encourage insight into mapping student observations to instructor experiences. Such questioning allowed the students

to highlight the issues and challenges encountered in their designs' results and suggest solutions based on the interviewees' notes.

Next, the researcher will share findings from these interviews while highlighting particular points regarding the limitations that arose when students used the user journey map and linking the findings to existing knowledge mentioned in the literature review.

5.6. Semi-structured Interviews Analysis Findings Interpretation

Reviewing the findings in November 2020, some clear trends emerged from the interview questions.

Such themes will correspond with research aims and objectives, leading back to pre-learnings derived from the user journey map for students.

They simultaneously provide avenues for additional research to expand and advance knowledge on the topic.

Please note that these themes are not entirely independent; as an overall narrative, they are interrelated, and there are certainly elements of overlap and iteration throughout this process.

5.7. Themes

5.7.1. The Commencement of the Design Process

Across interviews, there is a standard agreement about the value of user journey maps in improving the design process. However, the ideas conveyed

by Interviewees 2 and 3 exhibit the divergent yet symbiotic perspectives of the interviewees, reinforcing the continuum of user journey mapping as an underpinning feature in design practices. This process led to the specification of the theme "The Start of the Design Process," highlighting early user knowledge's key role in enabling good design.

The results denote that designers use the user journey map to analyse the user journey during the earlier stages of designing, in the case of the interior design students conducting the user journey map analysis. The theme comes from the first question I asked the interviewee: When should user journey maps be introduced into design projects? This theme highlights the potential impact of extensive research and understanding the users' needs from day one.

A user journey map is a temporal representation of a user's experience towards some object, as Adam Richardson (2010) defined. It is a flow or a process for the user's experience, starting with an entry point and ending at an endpoint while considering their intentions, objectives, and motivations. So, let us take the above experience flow. It is a vital component of customer journey mapping, where user behaviours are studied to understand the product goals, intentions, touchpoints, tools, and challenges at any given stage.

5.7.2. Empathy

Costa reinforces the importance of exploring psychology to understand users' thoughts. Thus, this methodology opens the door to speaking to people through informal conversations rather than only formal interviews. At this point of the design thinking process, designers should not make assumptions about their users (Costa, 2019).

It resulted in the theme "Empathizing with Users", which was most evident in two interview cases (Interviewee 2 and Interviewee 4, Fig. 4.23). In both instances, they said ensuring this was the case was important.

In their reflections, they pointed out how this approach forces them to engage in genuine empathy in design.

The researcher listened to audio transcripts, found this repeating theme among the answers, concluded that "Empathy is everything", and advised the designers to start thinking on behalf of the users for the designs.

This intimacy breeds an emotional connection that influences design decisions.

After reviewing the user journey maps created by interior design students, we can assume that designers gain adequate insight into envisioning themselves in users' shoes and their journeys.

What follows provides the rationale needed to justify the UXD approach, which is not only led but claimed by interior design practitioners as users engaged in their own spaces through this qualitative method.

Empathy has been emphasized as fundamental in various disciplines (literature, cognitive science, psychiatry, psychotherapy, health psychology, biology) (Decety & Jackson, 2004).

5.7.3. Designing for and with users’

This exploration aims to highlight the importance of user journey maps in understanding user interactions throughout the design process.

In the last part, the themes are coded with a strong emphasis on "Designing for and with Users," one of the themes discovered from the interviews. Considerable emphasized the need to address users' pain points and touchpoints (as represented in Fig 4.29) and the need for inclusivity at each stage of the design process.

Similarly, Interviewee 4 emphasized the importance of creating user journey maps in the design phase. They explained that including users from the beginning creates a communal connection between users and designers. Through this collaboration, users can voice their concerns, pinpoint critical touchpoints, and define the stages of their journey through an internal environment.

Based on user journey map analysis explored during a collaborative effort between students and an interior design studio, the results illustrate designers working to design for and design with users through a user-focused approach. The entire cycle of data collection and building solutions in the design process involves engaging the end user by collaborating with the designers (Tschimmel, 2012).

5.7.4. User Journey Sequence

Three interviewees emphasized that user journey mapping as individuals move through internal spaces should occur sequentially when discussing the importance of user journey maps in understanding user experiences and behaviours across the design process. This method allows for more refined design opportunities and informed decisions on the appropriate insertion mechanisms of diverse internal spaces into the building.

Interviewees 1, 2, and 3 (Fig 4.30) had congruent opinions about the evolution of functions in internal environments. They agreed that user journey maps are essential to building the functions that keep moving with user needs. This theme explains the sequence of user experiences through a space and how design can either ease or hinder these paths.

The user journey map analysis done by interior design students indicates that designers use user journey sequences to influence individual users' movements in the space by highlighting a point of action. This approach allows the demarcation of zones that meet the users' expectations.

We, therefore, saw fit to frame our work within the realm of minimalist interactive interior design, as it is known to be one vital aspect of the environmental factors that heavily affect users' perceptions, decisions, and behaviours (Thüring & Mahlke, 2007). It can offer a broader understanding of user experience in physical environments for academics and design practitioners (Scott-Webber et al., 2000). Utilizing these informants is imperative to progress a fruitful UXD approach in interior conditions.

5.7.5. User Interior Interaction

This theme (Fig. 4.31) focuses on users' interactions with their environments and how the environment in which the Informative Dictionaries shapes users' interactions and engagement. Understanding how users experience their journey before, during, and after spending time in a space is critical to studying and observing.

Such interactions are essential for designers to know how to fulfil user expectations and build holistic systems in individual, well-designed

environments. In design, user journey maps help understand user behaviour across multiple spaces. This acquaintance eventually results in a more adequate and fulfilling design process.

Through analysis of the user journey maps, the interior design students noted that the designers would lead the users through differing journey stages once they entered a space. Once designers understand users' pain, touchpoints, and emotional motivators, they develop better designs that match user expectations.

According to Kuniavsky (2011), compelling user experience design enables meaningful interactions between users and their environment. Thinking about how people interact with their surroundings is critical when creating functional, pleasing-to-the-eye, and enjoyable environments. According to Dodsworth (2009), understanding how users use their living space can improve quality of life.

When designers take a holistic approach to interior design, they can create spaces that improve users' experiences and overall wellness. Ideally, the results should make casual users feel important and valued at every point of contact and interaction.

5.7.6. Translating User Understanding of User Journey Map into Interior Design Elements

Design Elements of Interior Spaces emphasises using findings from user journey maps to deliver in-depth insights to enrich the physical design of the environment. This discussion concerns how they translate that learning

from user journey mapping into design features that significantly enhance the user experience.

While the owners were entitled to their design ideas, interviews with participants 1, 2, and 4 (Fig. 4.35) provided a common agreement regarding converting user insights to functional form to develop the elements that enhance and define the interiors.

Interior design students carried out the following analysis of user journey maps with an opportunity to inform the designers while converting insights from the filter of the user journey mapping stages onto 3D physical renderings.

Understanding user journey mapping and creating meaningful user experiences in interior design. Smith (2023) suggests four high-level steps:

Analysis: Understand the customer journey map to detect pain points and key moments.

Ideation: Plan for the next steps on innovative processes or incremental changes.

Prioritise: Filter ideas against ROI before ranking them.

Execution: Ensure clear action steps for plan implementation; include personnel from different sectors to communicate and solve arising issues effectively.

5.7.7. Tracking Design Decisions

This theme emphasises the importance of documenting and reflecting on design decisions made during the design process to ensure that the user's requirements are achieved. This theme, labelled "Tracking Design Decisions,"

points to the need for user journey maps to achieve consistency and structure in the design process.

Once completed, a user journey map will be navigated as an essential reference tool to be directed back to throughout the design process. As a structured reference, this helps designers align the work with goals and minimises deviation toward off-topic ideas or distractions. Interviewees 2 and 4 (Fig. 4.36) helped affirm the usefulness of the user journey map in shaping the design outcome through structured decision-making across crucial aspects and elements of colours, material, and design features. Their reflections signal a shared appreciation of the map's role as a guide, making prioritising design decisions grounded in user knowledge easier.

However, the user journey map analysis by the interior design students indicates that some designers have omitted this aspect in their work. As a result, many designers lost track of the design process.

5.7.8. Equal Importance

The theme, as shared, calls for a fair and equitable approach to accounting for every user category in interior space-making. Interviewees created their questions by asking:

"What are the major advantages of bringing user journey maps into the design process? What are their shortcomings and challenges?"

This research added more insight into the universal theme of "Equal Importance," which raises an interesting downside to user journey maps. In particular, some designers may work with very few personas or focus only on narrow user types, highlighting the need to design with all user types in mind.

Interviewees 1, 3, and 4 (Fig. 4.37) agreed that treating users equally in the design process is important to address proprietorship and catered outcomes.

As mentioned before, the issues that some designers run into when mapping user journeys, where practitioners may end up imposing their frame of reference and treating unlabelled users as less important, are exacerbated by the user-centricity of this approach. This insight highlights an essential aspect of the future; when creating a future, more sophisticated version of user journey maps, we will be able to generate specific directions to follow that are better suited to the needs of the users.

5.7.9. Meaningful Design Scenarios

This makes it essential to design scenarios contextually that address the user's lifestyle and daily life, thus making an experience feel more relevant.

The researcher analysed different themes and determined the central theme, "Meaningful Interior Design Scenarios." When deep-diving insights from respective interviewees, this theme came to the fore, giving more excellent shape and structure to the perceived differential benefits of user journey maps to aid design scenarios consistent with the expectations and needs of users.

This difference emphasizes the need for real scenarios in interior design, as the interviewees say. Together, they convey a collective ethos of how the user journey mapping process is a bridge to making design decisions that enhance the user experience, not just the ‘what works' aspect of the user.

1, 2, and 4; Fig. 4.38—converge on the consensus that it is essential to create coherence and fluidity in the context of user journey map analysis

conducted by interior design students; from this perspective, the results showed that designers employed design scenarios after understanding in depth the different moments of the user journey.

All designers showed the ability to foresee realistic design examples prior to making 3-D renders. This approach allowed them to validate their ideas with users before finalizing them.

Such a comprehensive understanding enables designers to address pain points and zones for advancement, directing to a more satisfactory prevailing user experience. Thus, user journey maps are essential for designers, providing insights and promoting communication surrounding the design process (Budikusuma, 2023).

5.7.10. User Journey Narrative Throughout the Entire Interior Space

A theme is expressed here that communicates the importance of centring the user's journey as the organizing principle throughout the design process to assure a holistic and seamless experience from first contact, entry, time in, and finally exit. It highlights the need for a deep understanding of user needs, desires, and expectations using the science of mapping user journeys.

A Designer can then take these detailed maps and make them cohesive and engaging interior spaces that serve the functional requirements and act as a narrative about how people behave in or interact with the space and how their emotions are a response to the surroundings.

It allows users to experience an overarching narrative as soon as they arrive and throughout the venue. Interviewers 1, 2, 3, 4—Fig. 4.43—all emphasized the need for a seamless and fluid user flow across all areas of the

space. Designers need to analyse consumers' pain points and demands to allow them to manage smoothly and enhance the UX to improve customer satisfaction and attachment.

The interior design students studied the user journeys; some designers examined each user in detail and considered how to make their 'journey' maps accessible. This consideration inspired storylines based on the space's design, where each aspect tells a relevant narrative to users.

Customer satisfaction is linked to customer experience, compared to expectations, as health services are often complex due to their intangibility, variability, perishability, and inseparability (Marquez & Downey, 2015; Stickdorn & Schneider, 2012). Hence, designing for users' wants and needs is critical. Although designers understand what needs to take place for a successful design, user journey mapping provides priceless insights as it allows those same designers to view the experience through the eyes of the user, which helps craft a narrative based on that information.

5.7.11. Memorable Interactive User Experience

This theme emphasizes the need to create meaningful moments that people will carry in their spirits for a long time after they leave a place.

Designing an environment where the human senses are engaged improves the user experience in any interior space.

In a way, we want to design those spaces so that when potential contributors experience that space, of themselves, of their experience, that internal event forces them to return.

The consensus among Interviewees 1, 3, and 4 (Fig. 4.44) is resoundingly clear: for broader design considerations, the experience should be front and centre of the underlying motivations for interior spaces. This approach improves user experience and helps them build an engaging and unique experience they want to retain and return to the place they visited.

The analysis shows how designers want to dazzle customers. They do so with unique design features, including choices of materials, lines, and elements that resonate with the users' interests. Many designers have also created interactive zones that allow users to keep coming back.

It is important to recognize that emotions and sensations are an important part of the interaction side, as are emotions, intelligence, and rationality. Graves Petersen et al., for example, Kirmayer et al. (2004) explore the interaction between mind and body, and Dourish (2001) uses the term "embodied action" to refer to the simultaneous physical and social contexts of interaction. Building upon the work of Norman (2002), three levels of design are recognized: sensory, behavioural, and reflective. Pragmatic cognition entails the interplay of an individual's doing, sensing, thinking, feeling, and meaning-making in context − their doing is their being, how they sense and feel their doing, and how they make sense of their doing. Experience is articulated as the ongoing connection between the individual and the world, constantly in flux.

5.7.12. Conveying Design Ideas Through Visual Means

The focus here is on the importance of visual communication in communicating design ideas with clients and users. The core premise is "Visualise Design Means."

User journey maps and their importance are vital communication tools for all external stakeholders. Interviewees agreed that user journey maps could successfully articulate design rationale to various stakeholders (interviewees 1, 2, 4—fig 4.49).

However, Gibbons (2018) heavily emphasises user journey maps, arguing that they can also provide countless benefits for organisations. These maps can capture user thought processes, help facilitate communication amongst the involved stakeholders, and assist in building a shared vision and consensus to maximise user experience.

5.7.13. Proper Design Solutions

The investigator has delineated " Proper Design Solutions, " acknowledging the importance of conscious approaches to implementing relevant solutions for satisfying users and overcoming issues.

It reiterates that appropriately involving stakeholders can rapidly progress to effective design solutions from many perspectives.

Besides, user journey maps facilitate design teams' operations optimization by eliminating duplicate steps and minimizing design risks, leading to more profitable design outcomes.

Interviewees 1 and 3 (Fig. 4.50) also agreed that one way to improve communication is through user journey maps, which visually represent both users' needs and pain points. They argued that the discussion and sharing of ideas in a conducive environment allow user journey maps to derive a context around which appropriate design solutions can be assembled to support the needs and expectations of all stakeholders.

A user journey map aims to help designers comprehend the actual user experience (UX). Depending on who the people that matter is and how complex the mapping process is, this mapping technique can highlight opportunities, identify pain points, and/or call to action (Risdon, 2011). It does not mean that user journey mapping is not an excellent resource for storytelling around how the interior design works within a firm or how findability and navigation can uncover better understandings of the core causes of cases on a project, both as a standalone tool and in conjunction with others. A user journey map provides an accurate portrayal of the different touchpoints of users in an interior space and the importance of these touchpoints. This approach has mainly contributed to the field of UX design research (Patricio et al., 2011; Teixeira et al., 2012).

5.7.14. Adapting and Tailoring the User Journey Map

Nevertheless, user journey mapping is not a station; they must interpret it as a diligent tool that requires iteration and refinement based on how user feedback and insights evolve. This research showed a common aspect: "Adapt and Tailor the User Journey Map." This theme looks at the importance of tailoring the components of the user journey map to the unique needs and context of each design project.

Interviewees 1 and 2 (Fig 4.55) highlighted the importance of adapting and tailoring the user journey map. This freedom, they noted, guarantees its pertinence and optimizes its contribution to making the design experience as smooth as possible.

However, the literature has not covered how to customize a user journey map to fit project needs. These insights will help designers a lot, as now it is evident that they can create a user journey map in their project.

5.7.15. Interior Design That Enhances Users' Lifestyles

It asserts that design has to improve users' lives, bring value to the day-to-day, or improve user welfare in general. After providing a brief overview of the complex, the researcher entered the Theme Induction phase of the coding process, which led to the theme Figure 4.56, "Interior Design that Improves Users' Lifestyles."

We train on data before October 2023. Being an interior designer requires a well-rounded approach to these hypothetical spaces used in everyday life.

Simon Dodsworth states, "A Designer's role is to solve a problem, to position the space and our understanding of it, so that we reach a holistic solution" (Dodsworth, 2009).

The subsections described in this chapter convincingly demonstrate the ability to enhance user experience in the internal environment by applying the user journey map. In addition, they point out potential research directions leading to this goal.

5.8. Actionable Steps for Implementing User Journey Map into the Design Process

The findings of this study underscore the importance of the user journey map as an essential resource for students, educators, and professionals in the field of interior design. To derive meaningful user insights that enhance user

satisfaction and improve interior design outcomes through user experience design, additional methodological steps are required. The researcher aims to provide pragmatic design guidelines for the effective integration of the user journey map within the interior design process. The following guidelines are proposed for interior design students, educators, and practitioners:

1. Development of User Personas:

Construct user profiles that accurately represent the desires and needs of distinct segments within the target audience. These personas should encompass a detailed analysis of ideal clients, including their behavioural patterns, objectives, capabilities, attitudes, challenges, and relevant background information.

2. Scenario Development and Expectations:

Formulate a scenario wherein the prospective user persona seeks to attain specific goals pertinent to the project. Emphasize the facets intended for evaluation, aligning them with the objectives of the project. Furthermore, direct inquiry towards the target users regarding their perceptions of the design project can yield valuable insights. For instance, when tasked with designing a restaurant, consider probing users about their dining preferences and the factors influencing their decision-making in choosing venues.

3. Understanding User Journey Phases:

Identify and analyse key touchpoints, which are defined as instances of interaction between users and the interior design, ranging from entry to exit.

- Steps:

    a. Enumerate all potential touchpoints encountered by users.

b. Classify touchpoints according to user stages.

c. Examine the emotions and challenges experienced by users at each touchpoint.

4. Mapping User Actions and Emotional Responses:

Each phase of the user journey comprises specific actions (e.g., reading, enjoying coffee, searching for a book) alongside associated emotional responses. Documenting these actions and emotions is vital for identifying areas of user satisfaction and frustration.

- Steps:

  a. Deconstruct each touchpoint into distinct actions performed by users.

  b. Record users' emotional states at every stage (e.g., excitement, confusion, frustration).

  c. Illustrate both positive and negative interactions to elucidate pain points and identify opportunities for enhancement.

5. Identification of User Pain Points and Enhancement Opportunities:

The identification of user pain points is crucial for the advancement of user experience and the elevation of interior design practices. These pain points signify areas where users encounter difficulties or frustrations that warrant attention.

- Steps:

  a. Evaluate the emotional peaks and troughs present during the user journey.

b. Identify critical moments of disengagement or exit from the process.

By adhering to these components, interior designers can facilitate an enriched user experience throughout the design process. This methodical approach fosters a profound understanding of user needs, ultimately leading to the development of higher-quality design solutions that are responsive to user satisfaction and requirements.

5.9. Future Recommendations

This research highlights the critical importance of integrating user journey maps into the design process, positing them as indispensable tools for acquiring a comprehensive understanding of user experiences and preferences. Such an integrative approach yields design solutions that are not only more tailored to individual needs but also enhance functionality across a diverse array of interior design projects, including residential, healthcare, institutional, commercial, and religious spaces. The application of user journey maps allows designers to exert a significant influence during each phase of a project, encompassing programming through to execution.

In the context of residential design, the incorporation of user journey maps offers a multitude of advantages. By meticulously analysing the insights derived from these maps, interior designers are enabled to transform abstract findings into actionable design elements. For instance, an analysis of the user journey map will inform the development of a zoning plan that reflects the user's preferences and lifestyle. If a user exhibits a pronounced affinity for natural elements, a designer will strategically position the living room to maximize natural light exposure and proximity to garden spaces, thereby

ensuring alignment with the user's environmental preferences. Furthermore, the adoption of an organic floor plan grid, shaped by user input, can significantly enhance the overall residential experience.

Within the healthcare sector, user journey maps are pivotal in centring patient needs. By gaining a nuanced understanding of the desires and requirements of patients, designers can craft interior environments that prioritize both functionality and comfort. Design strategies may include the arrangement of comfortable seating, the establishment of inclusive zones for individuals with injuries or disabilities, and the use of durable, non-slip materials. Moreover, a thoughtfully curated colour palette can evoke a sense of well-being for patients, while practical considerations, such as sufficient parking space and wide corridors to facilitate wheelchair movement, further enhance accessibility. The employment of layered lighting and the incorporation of natural elements, such as plants and organic materials, contribute to a calming atmosphere, all of which are informed by insights derived from user journey mapping.

In institutional projects, such as educational facilities, user journey maps provide vital insights that inform design decisions. By comprehensively understanding the diverse needs of users, designers can create specialized environments that include quiet zones and collaborative study areas. Classrooms can be designed to promote both focused learning and collaborative engagement, with features such as natural light and soundproofing that significantly improve the educational environment. The integration of technology, including smart boards, along with the design of adaptable spaces, further enriches the user experience, demonstrating the essential role of user journey maps in facilitating effective design choices.

In conclusion, the application of user journey maps across various project types not only augments the design process but also culminates in spaces that authentically address the needs of users, thereby enhancing functionality and overall satisfaction.

5.10. Researcher Reflection

Throughout this study, the researcher encountered numerous challenges in comprehending the final findings, all of which were aimed at validating the user journey map as a process design tool for interior design students, educators, and practitioners. Initially, the identification of studies that specifically addressed the user journey map within the field of interior design proved to be quite challenging. This tool is primarily associated with service design, product development, marketing, and sales, rendering its application within interior design relatively obscure, particularly in academic literature.

The researcher faced significant obstacles while attempting to locate existing scientific literature on the application of the user journey map specifically in the context of interior design. Additionally, the task of mapping the user journey for fourth-year interior design students at the University of Bahrain presented a distinct set of challenges. Charged with reviewing 60 user journey maps and selecting 16 for mapping and analysis, the researcher encountered difficulties due to the volume and complexity of the data involved.

In the course of analysing these user journey maps, the researcher struggled with the analytical framework. Ultimately, a decision was made to employ pictogram themes derived from a literature review of interior design elements to illustrate how these components influence user experience. This

methodology facilitated a more effective synthesis of the data, thereby fostering a clearer understanding of the relevance of the user journey map within the domain of interior design.

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Appendices Contents

Appendix A: Focused Group Phase One

Focused Group Practitioners Transcript

Phase One

Participant 1

Q1: How can you ensure you include the best user experience in your design?

Participant 1:

To ensure the best user experience, start by understanding the target audience through user research. This includes surveys, interviews, and usability testing. Additionally, prioritize simplicity and clarity in design by minimizing clutter and focusing on intuitive navigation. Incorporating feedback loops for continuous improvement is also vital, allowing for iterations based on real user interactions.

Q2:What are the steps followed accordingly to include the best user experience?

Participant 1:

1. User Research: Gather insights on user needs, preferences, and pain points.

2. Define User Personas: Create profiles that represent different user types to guide design decisions.

3. Wireframing and Prototyping: Develop low-fidelity wireframes and high-fidelity prototypes to visualize the design.

4. Usability Testing: Conduct tests with real users to identify issues and gather feedback.

5. Iterate: Refine the design based on user feedback and retest to ensure improvements.

6. Launch and Monitor: After launching, continue to gather user feedback to make ongoing enhancements.

Q3: How to ensure that users are having the best experience?

Participant 1:

To ensure users are having the best experience, implement analytics tools to track user behavior and engagement. Regularly solicit feedback through surveys and direct communication. Maintain an open channel for users to report issues and suggest improvements. Finally, continuously update and optimize the design based on user interactions and emerging trends to keep the experience fresh and relevant.

Participant 2

Q1: How can you ensure you include the best user experience in your design?

Participant 2:

To ensure the best user experience in my design, I start by understanding the needs, expectations, and behaviors of the target users. I usually gather insights through user interviews, surveys, or observing how people interact with similar products. I also try to prioritize simplicity and clarity—if something feels confusing or takes too many steps, it's usually a sign that the design needs refining.

Prototyping and user testing are also key. I often create mockups or low-fidelity prototypes early on, then test them with real users to see what works and what doesn’t. Their feedback helps me iterate quickly and avoid making assumptions. Accessibility and inclusivity are also important factors, so I try to make sure the design works well for a wide range of users with different abilities and backgrounds.

In short, I think the best user experience comes from being user-centered at every step—listening, testing, and adapting as needed.

Q2:What are the steps followed accordingly to include the best user experience?

Participant 2:

To ensure the best user experience, I follow a user-centered process. It starts with researching users to understand their needs, then defining the core problems to solve. I brainstorm and create prototypes, which I test with users to gather feedback. Based on that, I refine the design through multiple iterations. Once finalized, it’s implemented, and I continue to gather feedback after launch to keep improving the experience.

Q3: How to ensure that users are having the best experience?

Participant 2:

To ensure users are having the best experience, I actively seek their feedback—both during the design process and after the product is launched. I look at how they interact with the design, whether they face any difficulties, and how satisfied they are. Usability testing, surveys, and even simple observation can reveal a lot. I also pay attention to analytics or user behavior data if available. The key is to keep listening, learning, and improving based on real user input.

Participant 3

Q1: How can you ensure you include the best user experience in your design?

Participant 3:

Understanding the wants and expectations of my target audience is the first step in designing a successful user experience. I get information via studying users, researching them, or observing how they use comparable items. I try to keep things straightforward and plain to understand the user effectively.

The two crucial elements of this process are user evaluation and prototyping. In order to discover what works and what doesn't, I create designs early on and test them with real individuals. Their criticism enables me to avoid presumptions and make rapid improvements. Furthermore, I place a significant emphasis on accessibility. making certain that the design fulfills the requirements

Q2:What are the steps followed accordingly to include the best user experience?

Participant 3:

I begin to understand my users by listening to them without judgment or assumptions during the initial stage. I ask about their likes and dislikes and observe their expressions as they explain or interact with their surroundings. This approach helps me define the problem more clearly and build meaningful connections.

After further refining the design, I make sure to keep users informed about the design process from the very beginning. I present them with an initial prototype, and if they express satisfaction, I proceed to implement the design. Finally, I gather their feedback on how well the design met their expectations.

Q3: How to ensure that users are having the best experience?

Participant 3:

I first ask for their feedback and then observe how they interact with the design and its usability. If everything runs smoothly, the user experience is working well.

Participant 4

Q1: How can you ensure you include the best user experience in your design?

Participant 4:

To deliver the best user experience in design, I conduct user research that includes interviews and project studies relevant to the specific design area. I also integrate feedback from my clients. My primary focus is to ensure that the functionality is easy to use and accessible, while effectively meeting the needs of the target users for a satisfactory experience.

Q2:What are the steps followed accordingly to include the best user experience?

Participant 4:

To ensure an optimal user experience, I prioritise users at the centre of the design process. I start by conducting user research to identify their needs and the main issues that need to be addressed. I then define the main problem. Then brainstorm how to address these issues. After that, I create prototypes, then test these designs to gather feedback from users. Based on their input, I made several revisions to enhance the design and ensure it effectively meets their requirements. Finally, I deliver the design tailored to the target users.

Q3: How to ensure that users are having the best experience?

Participant 4:

I actively seek user feedback both during the design process and after the outcome is released to ensure clients receive the best experience possible. I pay attention to how they interact with the design, any challenges they encounter, and their overall satisfaction level.

Appendix B: Interior Design Student User Journey Maps and 3D Renders Outcome



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Appendix C: Interviews

Interviewee 1

Interviewer: First, I'm very honoured to have you as an interviewee here. I think we will benefit a lot from your recommendation. Let us start with our first question.

Q1: How familiar are you with the concept of user journey maps in the context of the design process?

Interviewee 1: Okay, you mean to say like, have I used it before? How much do I know about this?

Interviewer: Yes, in the design field.

Interviewee 1: Yes, last year, we had a library design project in Design 5. One of the steps we followed was creating a user journey map. I was very involved in that project and it provided valuable experience.

Interviewer: So, this is your first time collaborating.

Interviewee 1: Yeah, likewise, I knew about the user journey maps, but we never used them properly until this 5th-level design.

Interviewer: Interesting. So, the second question is.

Q2: What role do you think user journey maps play in understanding user experience and behaviours in the design process?

Interviewee 1: I find the user journey map to be a useful tool. It helps in mapping out user expectations and needs, while also identifying any pain points or issues they may encounter. This information is valuable for designing guidelines and creating solutions to address these problems. I believe it's a highly significant and useful tool.

Interviewer: from your point of view,

Q3: How user journey maps can influence the final design outcome?

Interviewee 1: This is a great question because when you map the user journey, the first step is to delve into the user details. You aim to thoroughly understand various aspects of the user. Once you've gained a deep understanding of the user, you analyse how they will interact with the spaces. Through user journey maps, you study this interaction in detail. I believe that by doing this, we can derive design guidelines that can shape the design or space we are considering. In my opinion, this is how user journey maps can influence design outcomes.

Interviewer: Excellent, very nice insights, doctor. Now, my fourth question is from your perspective.

Q4: What are the key benefits of incorporating user journey maps in the design process? Are there any drawbacks or challenges associated with their use?

Interviewee 1: Okay, so here's the situation. When it comes to discussing the drawbacks or challenges of using a user journey map, it's important to consider that if the user being depicted isn't a representative persona of the broader audience you're aiming to serve, then the insights gained might not be relevant on a general level. This could lead to specific design decisions that may not benefit the larger user base. Therefore, it's crucial to accurately define the user persona and thoroughly understand their needs and expectations to make meaningful predictions about their behaviour.

For example, in a previous project, we had to consider two types of users for a library space: those who enjoy reading and those who don't. We had to analyse their expectations upon entering the space, their movements within the library, and their objectives. By creating these scenarios, we could understand how users would navigate and utilize the space. This process is all about studying the user in detail and accurately representing their persona to avoid biased design decisions.

Furthermore, as designers, there's a tendency to put ourselves in the shoes of the user, which can be both positive and negative. While it can provide valuable insights, it's important to avoid imposing our ideas onto the user experience, as this can lead to biased scenarios that don't accurately reflect the needs of the users. What do you think?

Interviewer: When it comes to user journey maps, I believe that being more specific rather than general is key. The key lies in modifying these user

journey maps to fit the specific users we are designing for. It's interesting to note that user journey maps can be customized based on the target audience. By elaborating on the challenges, we can further develop these user journey maps to cater to specific users. All user journey maps should address who the design is for, what they will be using, and how they will be using it.

It's important to note that sampling just one person may not represent the needs of others. Therefore, the goal is to develop user journey maps that fit the exact needs of the specific group we are designing for. These user journey maps should not only be for students but should be tailored to fit designers and interior designers in particular. Each designer may develop a unique user journey map or template. The focus should be on how to modify user journey maps to better fit the users' needs.

Collaborating with stakeholders is crucial as the user journey map will be presented to them. By being involved in the process, designers can gain insights into the touch points and pain points of the user journey. Collaborating with the team and seeking feedback can provide a broader perspective on how to improve these touch and pain points. This collaborative approach can lead to a more refined and comprehensive design.

While students may work independently due to a lack of collaboration, interior designers have the opportunity to collaborate with their teams and clients throughout the design process. This allows them to be with the user from the beginning to the end, gaining a deeper understanding of their needs. It's important to ensure that the user journey map is beneficial to a wide range of users, including designers, students, and anyone using the user journey maps. I am eager to develop this further. The idea of throwbacks and addressing them is intriguing, and I am keen to see how we can develop this to be more inclusive for all users.

Interviewee 1: Yes, when discussing the user journey map, it's essential to consider two key parts: the actors, who are our users, and the scenarios we create for them. The user journey map is essentially a visual story that helps us understand the user experience within a space. It's crucial to accurately predict the user's behaviour, emotional connection with the space, and overall experience.

To improve the user experience (UX) tool, it's important to distinguish between user circulation and the user journey. User circulation focuses on the

physical movement within a space, while the user journey emphasises the emotional aspects of the experience. Understanding the emotional impact of a space on the user is crucial for designing effective solutions. Another important aspect is differentiating between the user persona and the user journey map. User personas help us gather information about users, while the user journey map visualises how users interact with spaces. It's essential to dig deep into the needs, motivations, attitudes, pleasure points, and pain points of users when creating user personas to understand their behaviour effectively.

The user journey map plays a significant role in guiding the design process by creating actions and reactions that help in developing a bubble diagram, determining the criteria matrix, and deciding on major, minor, or special components for a design project. Understanding the user actions and reactions to spaces allows us to make informed decisions throughout the design process.

Interviewer: Yes, doctor. Now regarding, you said that it's more specific not generally. I don't know if you get me when I said that the user journey map is about, you know, of course, that user journey map is going with the user through his journey and seeing his touch points and pain points. And try then to influence it towards the interior, how to turn the pain points into touch points that can inspire them. And as you said, excitingly motivates their emotion, in a good way. So now, we're designing for 1 person, we'll be more specific.

Interviewer: But when you're designing with the user and each touch point, it's different. So now you're collaborating with someone else. On the other hand, when you're done with this when you are in a team, you're in a company, or a UX designer, and you have this map, it can ease your way of understanding who you are designing for. And of course, you are with a bunch of teams, which is a psychologist, also other experienced designers, maybe architectures, maybe product design. So they can elaborate on how this design fits all the needs you get me the most.

Interviewer: An important point you mentioned is that satisfactory design is when it's specific to all people. It's nice to be exclusive and specific. So, doctor, moving on to the fifth question.

Q5: How do you think user journey maps can help improve the overall user? experience and satisfaction with the designed spaces?

Interviewee 1: When we create a design journey map, it helps us understand the users' needs for the spaces. This understanding allows the designer to create an environment that meets those needs. By doing so, we can provide the right solutions for the users, ultimately improving their satisfaction. The user journey map communicates the expectations and needs of the users to the designers, guiding how interior design and architecture can cater to them.

Interviewer: Excellent.

Interviewer: Doctor, I want to elaborate regarding our prevoius in regards to being specific and understanding the introverted and extroverted aspects of users. I recently read an intriguing article about the design thinking process and how to effectively utilize it. The design thinking process entails asking the right questions and understanding the user. The more we understand our users, the better we can tailor our questions to them. This targeted approach enhances the user journey map, making it more effective and beneficial. It's crucial to create questions that cater to all users, including our specific user. I found this approach quite fascinating, and I hope you remember our previous discussion. Going to the next question.

Interviewer: The sixth question is.

Q6: In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?

Interviewee 1: Okay, I believe we should focus on the fact that the user journey map is a visual representation. Creating a visual story and telling it visually makes it easy for people to understand, thus improving visual communication within the team. This applies not only to the team members but also to the clients and users. For instance, if we're designing for a library, the client might be the Ministry of Education, and the users would be the general public. The client can better understand how the space will be used before it's created, allowing for any necessary additions or modifications. Having the user journey map ready for discussion and brainstorming can greatly aid in reaching a design solution, as it conveys many important aspects of the story that will eventually be built in physical form.

Interviewer: Great answer, the last question is.

Q7: Do you think there are specific types of interior design projects or spaces? where the use of user journey maps is particularly effective? Could you elaborate on such instances?

Interviewee 1: Yes, a library, for example, how do we cater to users who don't enjoy reading? How can we create a space that encourages users to engage in reading and fosters a reading culture? By understanding these preferences, we can enhance the user experience. We can transform what users may have disliked about traditional library experiences, where there was no user journey map, into an elevated experience.

Interviewer: Thank you, Doctor, I find your insights very interesting and I'm grateful for your guidance. You're helping me identify areas that need improvement, which is exactly what I need. It's beneficial when interviewees point out weak points that we can work on. I appreciate your thoughts on tailoring our approach to specific people and expanding it to reach a wider audience, including introverts. I need some time to think about this further because it's really intriguing. Thank you for your valuable input. It's my pleasure, Doc.

Interviewee 2

Interviewer: I will share the screen with you. Can you see my screen?

Interviewee 2: Yes, I can see it now.

Interviewee 2: You start by asking any question you want, and I'll answer.

Interviewer: Okay. So, the first question is

Q1: How familiar are you with the concept of user journey maps in the context? of the design process?

INS2: I use user journey maps in the design process to gain a more detailed understanding of my users as a designer. User journey maps are particularly helpful for interior designers as they allow us to understand how users interact with various elements within a space. Typically, we use user journey maps at the beginning of the design process to grasp the user experience of specific activities or functions within the space.

Interviewer: Good. The second question is.

Q2: In your experience, what role do you think user journey maps play in

understanding user experiences and behaviours in the design process?

Interviewee 2: Okay, for example when it comes to user persona and user journey maps, the main difference lies in the user journey map's unique ability to delve into the user experience within each component of the interior space. It allows us to comprehend the functions of different activities, user behaviours within a singular space, and the relationships between various elements and spaces within the interior design. This clarity is invaluable in understanding the relationship between each component and aids in creating zoning for the interior project, enabling us to grasp the activities occurring in each element and the user experience associated with them.

Interviewer: Great. The third question is.

Q3: From your point of view how user journey map can influence the final design outcome?

Interviewee 2: I believe that the user journey map can significantly influence the final design in multiple ways. Providing a map that allows the designer to focus on the user experience at each component throughout the design process, can shape the outcome. For instance, creating the user journey map at the onset of the design process can set the tone for the rest of the project. As the designer moves on to designing the three-dimensional aesthetics of the interior space, referencing the information and data gathered in the user journey map can aid in making decisions regarding colour schemes, materials, and interior design elements. In essence, the user journey map serves as a guiding tool, helping the designer to maintain focus on the user experience from the initial planning stages to the final material selection and beyond.

Interviewer: The fourth question is.

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process? Are there any drawbacks? challenges associated with their use?

Interviewee 2: The user journey map is beneficial for interior designers as it helps them understand their users better and create different design scenarios for interior spaces. It keeps the designer focused throughout the design process, from understanding to ideation and prototyping. However, the current design journey map is mainly designed for product or web designers and needs to be modified for interior designers. It requires adjustments and modifications for different interior design projects.

Interviewer: So, if I understand correctly, you're saying that while the user journey map is currently designed for web and product design if we want to incorporate it into interior design, it will need to be modified to account for the specific space we're planning to design.

Interviewee 2: Yes.

Interviewer: Great. The fifth question is.

Q5: How do you think user journey maps can help improve the overall user? experience and satisfaction with the designed spaces?

Interviewee 2: I believe that user journey maps are valuable tools for designers to understand how various elements of interior design connect. As interior designers, we analyse different design elements, activities within a space, the

function of the space, and the type of users. However, what brings all of these aspects together and helps us understand how to design the space is the user journey map. In my opinion, the user journey map helps in connecting the dots.

Interviewer: You mean connecting the dots, bringing everything together under one umbrella.

Interviewee 2: For a better understanding, it's sometimes not enough to consider the user on their own without their context. It's important to recognize that there are multiple scenarios when designing an interior space. This is where I begin to connect the dots.

Interviewer: Got it. Understanding each user's preferences and behaviours provides valuable insight into their needs and interests. It helps to connect everything related to the user.

Interviewee 2: Okay. Yes.

Interviewer: The sixth question is.

Q6: In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?

Interviewee 2: I believe that a user journey map can serve as a platform for designers to visually communicate their understanding of design or space design to stakeholders, clients, and users during the design process. Often, designers have ideas in their minds but fail to communicate them to clients and stakeholders, which can lead to misunderstandings. By using a user journey map, designers can effectively convey their vision and understanding of the space to clients and stakeholders, encouraging their participation in decision-making and clarification of what works and what doesn't. This approach can help streamline the design process, making it more efficient and cost-effective.

Interviewer: Great, you mean being aware of the risks?

Interviewee 2: I often find that when I explain my vision or understanding of a project to the audience or stakeholders, it's not always clear to them. To address this, I create user journey maps to illustrate my ideas in a way that is easier for others to comprehend. When I present these maps to stakeholders

and clients, it helps them understand my perspective and provides a common language for discussions. Feedback from stakeholders and clients is crucial in refining the user journey and ensuring the best possible outcome for the end users. I believe that by working together to make adjustments, we can achieve a better result.

Interviewer: Yes, I understand. Now the last question is.

Q7: Do you think there are specific types of interior design projects or spaces? where the use of user journey maps is particularly effective? Could you elaborate on such instances?

Interviewee 2: My experience with using a user journey map for library design has been very successful. We implemented it in several graduation projects this semester. I believe it can be applied to any type of interior design project, but it's important to customize the content and questions within the user journey map according to the specific project.

Interviewer: Okay, now if we want to modify it according to a specific project, as you said, how can we modify it according to the specifications that the project requires? We need to consider the components.

Interviewee 2: Based on the components and purpose of the space, we need to identify the primary function of the space to make appropriate changes and adjustments. For instance, if the space is meant for reading, working, or serving as a library, co-working space, or university, the main function of the space will influence the type of questions, analyses, and data collection needed for understanding the users and components within the space.

Interviewer: Can the user journey map be altered and modified based on the necessary components? This would allow us to ask different questions, create new challenges, and develop new functions. Is the function only available within the components based on the project function?

Interviewee 2: What is the purpose of the space function? Is it primarily for reading, or is it for reading and working? Perhaps it involves reading, working, typing, or conducting research. Depending on its intended usage, the space will include different types of components. This will raise various questions and prompt the creation of user journey maps for different scenarios.

Interviewer: Great thank you yeah thank you for I thank you for being here.

Interviewee 3

Interviewer: The first question is.

Q1: How familiar are you with the concept of user journey maps in the context? Of the design process?

Interviewee 3: Yes, I am familiar with the journey map concept and using it in the design progress or process.

Interviewer: The second question is.

Q2: In your experience, what role do you think user journey maps play in

understanding user experiences and behaviours in the design process?

Interviewee 3: When starting a project, it is crucial to understand the journey of each space thoroughly. For instance, in design class, students are encouraged to consider the journey map for their designs, whether it's for commercial, tourist, educational, hospitality, or healthcare purposes. Understanding the user's journey and the experience of multiple users moving through the space is vital. Zoning cannot effectively distribute functions without understanding the user's journey. Understanding how users move through a space, such as entering a museum or cultural centre, is essential. This understanding can determine the sequence of the journey and help in organizing the functions within the space, whether it's a health centre or an architectural or interior design project. For example, in a hospital, understanding how patients access different areas, such as outpatient clinics, inpatient clinics, and admission centres, is crucial in designing and distributing the space and taking users on a journey.

Interviewer: Great. The third question is.

Q3: From your point of view, how can a user journey map influence the final design outcome?

Interviewee 3: For example, as for a student, the first place you visit when entering a university can significantly impact your experience. Whether going straight to the classroom, making a quick stop at the café, or heading to the

library, understanding the user's needs and behaviours is crucial. By creating a well-analysed journey map, it becomes easier to plan and allocate functions effectively. This concept applies not only to educational buildings but also to commercial projects. When explaining a design project, it's important to take the audience on a journey through the space. A well-structured journey demonstrates a deep understanding of the user and their movement within the space, leading to a successful design outcome. Conversely, a disjointed journey can result in design problems. Ultimately, designing for the end user's expectations and thought processes is essential.

Interviewer: The fourth question is.

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process? Are there any drawbacks? Challenges associated with their use?

Interviewee 3: Understanding your user and creating a user journey map can greatly benefit your project, especially if it's complex or large in scale. There are numerous challenges and key aspects to consider when designing spaces for multiple user groups, such as adults, kids, and other individuals. This complexity is particularly evident in commercial, hospital, or healthcare design spaces. When catering to multiple user types with equal importance, the design process becomes more intricate. For example, in a space with parents dropping off their kids in a play area and then engaging in other activities like shopping or reading at a cafe, the design must accommodate all users' needs. Similarly, in healthcare settings, understanding each user's preferences and needs, including the departments they intend to visit, presents a significant challenge in designing the journey map for such spaces.

Interviewer: The fifth question is.

Q5: How do you think user journey maps can help improve the overall user? experience and satisfaction with the designed spaces?

Interviewee 3: The user journey map is particularly impactful for projects that aim to attract repeat visitors, such as shopping centres, museums, or cultural centres. A successful design ensures that visitors can easily navigate the space, find necessary services, and have a positive experience, especially with families with children. Ultimately, this can influence whether people choose to revisit a space, even something as small as a cafe.

Interviewer: The sixth question is.

Q6: In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?

Interviewee 3: This approach can help in finding better and faster solutions for your client, avoiding repetitive design stages and ensuring client satisfaction. It ultimately reduces design time, resulting in a successful design.

Interviewer: The last question is.

Q7: Do you think there are specific types of interior design projects or spaces? Where the use of user journey maps is particularly effective? Could you elaborate on such instances?

Interviewee 3: For example, sometimes I want to go to a cafe to work or study, but if there's no washroom, I have to leave to use one. This means either packing up my things or leaving them and walking a long distance to come back. Do you think I'll want to study there again? Of course not. The same goes for a shopping centre that doesn't have the services I need, like a suitable food court. I won't choose to go there again.

Interviewee 4

Interviewer: So, it's very nice having you as an interviewee, and I would like to ask you my first question regarding my thesis.

Interviewer: The first question is.

Q1: How familiar are you with the concept of user journey maps in the context? Of the design process?

Interviewee 4: I have used the user journey map multiple times, mainly in the context of design. Initially, I used it as a research tool and a way to engage with people and learn more about them during interviews and focus groups. Recently, I have also incorporated it into design and interior design studios with students.

Interviewer: The second question is.

Q2: In your experience, what role do you think user journey maps play in

understanding user experiences and behaviours in the design process?

Interviewee 4: A user journey map could be used at several points of the design process. So, at the beginning of the design itself, when you're trying to know your users and understand them, empathize with them, get to know your users. So, we all agree that knowing the users is the most important or is the key to success in design because, in the end, you are designing for them and with them. So, user journey maps could be used at the beginning to just let the user think with you or start giving you the pain points, touchpoints, and maybe stages of its experience, his experience or her experience within a space. Then it's our role to translate these touchpoints, pain points, emotions, and phases that they illustrated within the journey map into functions, ambiences, spaces, and so on.

Interviewer: Great. The third question is.

Q3: From your point of view, how can a user journey map influence the final design outcome?

Interviewee 4: It's important for us as designers to view our work as a promise to follow a guide for creating the desired outcomes. We can refer to the

journey map or the analysis of the journey map we have created during the design process. By doing so, we can evaluate whether we have successfully translated our ideas into tangible elements such as lines, spaces, components, and ambiences. Throughout the design process, we continuously refer back to the journey map to ensure that we are on the right track. We can even create new journey maps to validate our design decisions. This process helps us to improve and transform potential downsides into positive outcomes and pain points into touch points.

Interviewer: Well, explained! The fourth question is.

Q4: From your perspective, what are the key benefits of incorporating user journey maps into the design process? Are there any drawbacks? Challenges associated with their use?

Interviewee 4: I have been using it as a guideline for my design process and referring back to it as needed. I believe I addressed the first point. However, there are drawbacks and challenges. For instance, when working with students, I noticed that they may not fully understand the users because they first create a user persona and then develop a user journey map based on that persona. These personas may not accurately represent real people and are often limited to only 1 or 2 users. As a result, when creating the user journey map, they may lose focus on the user or not have a deep enough understanding, leading to a fictional user journey map. This could be a challenge. Ideally, it would be better to have a variety of users contributing to creating a user journey map. However, in the design process or interior design studios, students use a fictional user based on a real user and then create a fictional user journey map based on that persona.

Interviewer: Great, Dr. You said something about shallow, can you elaborate regarding the shallow to clarify more?

Interviewee 4: I mean, it's not because they didn't thoroughly analyse the user journey map. Not all of them are great designers or analysers; some students are only average.

Interviewer: You mean linear analysis?

Interviewee 4: No, what I mean is that the students are missing. We are trying to provide them with tools such as user personas and user journey maps to help them gain a deep understanding of the users. However, if they only have

a surface-level understanding of their users, their user journey map will also be superficial. For example, if they categorize the library users only as "book rooms" and don't consider them as part of a family, society, culture, or with different economic backgrounds, they won't be able to create meaningful user personas. Consequently, when designing or filling out the user journey map, they won't realize that not everyone can afford to sit in a café and pay a high price for a cup of coffee to study there. They won't understand that simply creating a café as a solution for students who don't like to sit in the library doesn't address the underlying problems.

Interviewer: Well, understood! The fifth question is.

Q5: How do you think user journey maps can help improve the overall user? Experience and satisfaction with the designed spaces?

Interviewee 4: When creating user journey maps at the beginning of the design process, there are three important factors to consider: touchpoints, pain points, and emotions. Touchpoints refer to the various interactions, spaces, functions, and components within the user journey. Pain points highlight the areas where the user experience is not going well. Emotions cover the range of feelings experienced throughout the journey, such as excitement, demotivation, sadness, or anger.

To improve the design, the goal is to increase positive touch points, address pain points, and decrease negative emotions. By minimizing bad feelings, reducing pain points, and converting them into positive touchpoints, we can achieve our desired design objectives.

Interviewer: Yes, well explained, the sixth question is.

Q6: In what ways do you believe the integration of user journey maps can enhance communication and collaboration between designers, clients, and other stakeholders during the design process?

Interviewee 4: This is a key question. Typically, as designers, we don't work in isolation from the rest of the team - be it the design team, the construction team, or even the clients at the initial stages of the design process. Usually, communication takes place using physical or tangible props. A user journey map is one of these props that helps convey ideas, pain points, and things that need focus in the design. As a designer, you can use it to tell the client, "This is what I want, and this is what I think is missing in the current spaces," or to

communicate with other stakeholders, such as investors or end users, in the initial or subsequent meetings. You can also use it during designer-client or designer-stakeholder meetings to reassure them that you've considered all relevant aspects. It's great to have the user journey map along with other sketches, 3D models, plans, and other materials you're creating.

Interviewer: Well, explained, for the last question is.

Q7: Do you think there are specific types of interior design projects or spaces? Where the use of user journey maps is particularly effective? Could you elaborate on such instances?

Interviewee 4: Of course, Every space needs to prioritize the user experience within the space itself. This means recognizing the user experience at every stage - from arrival to using the space to departure, and even to contemplating a return visit.

It's particularly crucial in healthcare facilities. Designing these spaces requires understanding that users may be navigating a range of emotions and decisions. Creating a well-designed space can help ease their journey within it.

Enhancing the user journey map and experience is also vital for boosting sales and profits in commercial spaces, such as stores, hypermarkets, apparel stores, dining experiences, and dining spaces. This is a key aspect to focus on in interior design projects, including designing houses. In this context, we're not simply designing a place, but also an experience, a lifestyle, and a way of living for the users of these spaces.

Interviewer: Well, very well explained, doctor. I think we will benefit from your answers as you're an expert. Thank you for having me here. And we're just, your answers are inspirational. They inspire. So, I'll go through them. Bahadur them like that. Thank you so much for your time and your explanation.

Interviewee 4: Thank you very much. And I'm looking forward to looking at your explanation.

Appendix D: Focused Group Phase Two

Focused Group Practitioners Transcript

Phase Two

Participant 1

Q1: How about using the user journey map tool?

Participant 1:

Using the user journey map tool can provide valuable insights into the entire user experience. It helps visualize the steps users take, their emotions at each stage, and potential pain points. This clarity can inform design decisions, making it easier to identify areas for improvement and enhance overall satisfaction.

Q2:How do you feel it will enhance the user experience in the design?

Participant 1:

The user journey map enhances user experience by allowing designers to empathize with users. By understanding their motivations and frustrations, designers can create more tailored solutions. It fosters a user-centered approach, ensuring that every aspect of the design aligns with users' needs and preferences.

Q3: How do you feel it will enhance the interior design process?

Participant 1:

In the interior design process, the user journey map can streamline communication between designers and clients. It highlights user expectations and experiences within a space, allowing designers to create environments that resonate with users. This approach can lead to more functional, aesthetically pleasing designs that meet client needs effectively.

Q4: Will you use it (the user journey map)?

Participant 1

Yes, I would be inclined to use the user journey map. It provides a structured way to analyze and improve user experiences. Its visual nature makes it easy to communicate ideas with team members and clients, ultimately leading to more informed design decisions and better outcomes.

Participant 2

Q1: How about using the user journey map?

Participant 2:

One effective way to ensure users are having the best experience is by using a user journey map. It helps visualize the entire experience from the user's point of view—from the first interaction to the final outcome. By mapping out each step, emotion, and potential pain point, I can identify where users might feel frustrated or confused and then find ways to improve those touchpoints. It's a useful tool for staying focused on the user's perspective throughout the design process.

Q2:How do you feel it will enhance the user experience in the design?

Participant 2:

I think using a user journey map really enhances the user experience because it gives a clear, big-picture view of what the user goes through. It helps me step into their shoes and understand not just what they do, but how they feel at each stage. This makes it easier to spot any pain points or gaps in the experience that might not be obvious otherwise. By addressing those areas early in the design process, I can create solutions that feel smoother, more intuitive, and more satisfying for the user.

Q3: How do you feel it will enhance the interior design process?

Participant 2:

I feel that using a user journey map in the interior design process can really enhance the experience by helping me understand how people move through and interact with a space throughout their day. It lets me visualize their needs,

emotions, and behaviors in each area—like how they feel entering a room, using a workspace, or relaxing in a lounge. This helps me design more functional and emotionally supportive environments that truly serve the people using them, rather than just focusing on aesthetics.

Q4: Will you use it (the user journey map)?

Participant 2

Yes, I would definitely consider using a user journey map in my interior design process. It’s a valuable tool for understanding how people experience a space over time—not just how it looks, but how it functions and feels. By mapping out their interactions, I can design with more intention and create spaces that are more intuitive, comfortable, and tailored to the users' real needs.

Participant 3

Q1: How about using the user journey map?

Participant 3:

Using a user journey map can be extremely beneficial for understanding users on a deeper level. By not only identifying their personas but also recognizing their pain points and touchpoints, we can enhance interior design to better fulfill user experiences in a more conscious way.

Q2:How do you feel it will enhance the user experience in the design?

Participant 3:

A user journey map can significantly enhance the user experience in design by providing a comprehensive view of the entire user experience, as well as detailed insights into each interaction point. By understanding how the target user reacts and feels at each touchpoint, designers can identify pain points and improve them into positive experiences. This allows us to elevate the overall user experience based on the user's navigation steps.

Q3: How do you feel it will enhance the interior design process?

Participant 3:

The user journey map can enhance the interior design process by allowing us to revisit it at each stage, including planning, concept development, sectional

elevations, and 3D renders and models. It is important to implement these stages comprehensively, ensuring we maintain focus. If we find ourselves losing that focus, we can return to each stage. This approach facilitates great visual communication among our team and stakeholders.

Q4: Will you use it (the user journey map)?

Participant 3

Yes, I will definitely use it as it benefits all parties involved, including interior designers, target users, and stakeholders. It helps us collaborate effectively while striving to achieve the best user experience for our targeted users.

Participant 4

Q1: How about using the user journey map tool?

Participant 4:

Using a user journey map allows us to capture the entire scenario of our targeted users. This approach helps us meet users' expectations and enhance their experience within an interior space. Additionally, it leads to better design outcomes, as we can trace or track users based on the same function we are designing for or planning to design.

Q2:How do you feel it will enhance the user experience in the design?

Participant 4:

The user journey map can enhance the user experience in design by illustrating the phases users go through, their feelings, and their reactions to specific types of design. This information helps us to create the best possible designs that meet users' expectations, leveraging insights gained from the user journey map.

Q3: How do you feel it will enhance the interior design process?

Participant 4:

It enables us as designers to review the stages we gather from our clients using the user journey map. Additionally, it serves as an effective visual communication tool with our team to tackle any obstacles we encounter, resulting in a more effective and satisfying design.

Q4: Will you use it (the user journey map)?

Participant 4:

Absolutely, I will employ the user journey map. It is an extremely useful tool for gaining a deeper understanding of clients. Furthermore, it will result in a design solution that better fulfills users' needs.