UNDERSTANDING OUTDOOR SOCIAL SPACES: USE OF COLLABORATIVE-SKETCHING TO CAPTURE USERS' IMAGINATION AS A RICH SOURCE OF NEEDS AND DESIRES

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Abstract

Adel Bakheet Alzahrani

The way in which environmental designers design neighborhood spaces has a role to play in the quality of outdoor spaces that shapes and directs daily outdoor social activities as well as creates a bridge between individuals and the local community. The high quality design of outdoor spaces is fundamental in fostering social cohesion among users/residents in order to produce a healthy social atmosphere, whereas a decline in the quality of outdoor spaces can contribute to antisocial behavior.

Today, In Jeddah City, Saudi Arabia, in many cases of new neighborhoods, the outdoor space has become abandoned, and empty, or is avoided. Within this setting, these spaces do not provide opportunities for families with their children to gather and play, to sit and socialize with neighbors, to gather in outdoor activities, to walk to the mosque or school, or to do their daily grocery shopping without being threatened by dangerous car traffic. Moreover, even if users and residents experience problems in their neighborhood, and have their own needs and visions to solve the problem, they do not have the experience to mentally visualize and resolve these problems.

Through this qualitative research, the researcher proposes a new approach in incorporating users' imagination in the ideation process of design in order to examine to extend the current normative theory through the development of a more "collaborative ideation process." In this new collaborative process, the representation of ideas becomes more iterative and knowledge exchange between researcher and users becomes more seamless. Through incorporating the researcher's sketching skills as a process of "collaborative-sketching," possible ideas and solutions are explored that are responsive to the needs and desires of users. Using a number of photographs of an outdoor residential space as an example, the objective of this study is to examine the use of collaborative sketching as a way of taping into users' imagination as a rich source of their needs and desires to empower the design process.

The findings showed that applying a collaborative sketching process in the early ideation stage of design can result in a rich exchange between designers and user, enabling the

designer to have a better and more realistic understanding of needs and desires from the perspective of the user. Through this collaborative-sketching process, the users were continuously, iteratively, and instantly stimulated to not only to narrate their needs and desires, but to visually provide realistic and specific details about the social activities and physical elements including their affordance, rationale of using, value of use, and how social interactions might occur within the different settings.

DEDICATION

To my mother Nadia Fouad, for all that I am, I do not think there is any word in this universe that could express my thanks to you for your endless sacrifices and patience or for bearing the burdens of life to raise me and create a responsible and reliable man to see me after these years holding this doctorate degree as you were dreaming. My mother's prayers encouraged me and kept the hope of a happy ending to this journey alive. Also, thank you to my brothers and sisters, specially also I would like to thank my youngest brother, Amro, who passed away four years ago from Hodgkin's Lymphoma. I wish him could be with me at this moment.

To my mother-in-law Khairia Alaali and my father-in-law Ibrahim Meisha, I really thank you from my heart for your endless prayers and sincere wishes for my success. This dissertation is dedicated to all of you. Also, I would like to single out my brothers-in-law Majed Meisha and Moutaz Meisha for taking care of family matters on behalf of me while I was busy with this work.

To my beloved wife Dalia Meisha, if it were at all possible, I would have added your name as a co-author of this work. Daila was the unbelievable and continuous caring, loving, and patient wife who provided me the appropriate atmosphere and environment to accomplish and finish this work. However, she was part of the work itself; she participated in all stages of the research, writing, and production of the work. She certainly deserves most, if not all of the credit. My little kids Yazeed, Youmn, and Yusuf were incredible in their understanding of their dad's commitment to his study and hopefully they see the work of this dissertation as part of their father's effort to help the world in which they are growing up to be a better and more compassionate place.

Finally, I dedicated this work to my homeland, Saudi Arabia, for giving me this opportunity with full support to make this study possible.

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Adel B. Alzahrani

Blacksburg, Virginia

June 1st, 2015

سَنُرِيهِمْ ءَايَٰتِنَا فِى ٱلْءَافَاقِ وَفِىٓ أَنفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ ٱلْحَقُّ ۗ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُۥ عَلَىٰ كُلِّ شَىْءٍ شَهِيدٌ ﴿٥٣﴾

"We will show them Our Signs in the universe, and within themselves, until it becomes manifest to them that this is the truth. Is it not sufficient in regard to your Lord that He is a Witness over all things?" ~Quran, Fussilat 53

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

The goal of this dissertation is to create an understanding of outdoor social spaces in neighborhoods from the imagination of the users. This is accomplished by examining the use of the researcher's sketching skills in a collaborative process as a way of extracting their imagination as insights that will satisfy their needs and desires. This introductory chapter guides the reader through the research investigation with a general summary of the project background and a discussion of the significance of this dissertation. Furthermore, research questions and the objective of the dissertation that are addressed in the following chapters are stated. Moreover, this chapter introduces that research scope and research prerequisite. Finally, on overview of the structure of this dissertation is provided.

1.2 Background of the Study

The role that design has to play in the quality of outdoor spaces in the neighborhood that support everyday social activities among its residents is an important topic in theory and practice of environmental design—including architecture, landscape architecture, and urban design and planning (Gehl, 1986, 2011; Whyte, 1980). Outdoor social space in the neighborhood is seen as an extension of home, which shapes and directs the daily outdoor activities as well as bridges individual to the local community (Rapoport, 1990, 2005). High quality design of outdoor spaces worldwide is critical to making social life in these neighborhoods more livable, vibrant, and healthy. Outdoor social spaces are fundamental in fostering social cohesion among users/residents and in producing a healthy social atmosphere (Dempsey, 2009; Gallacher, 2005), while a decline in the quality of outdoor spaces can contribute to antisocial behavior (Jenks & Dempsey, 2007; McMillan & Chavis, 1986).

Urban researcher, geographers and environmental psychologists debated whether the decline of social networks among residents and the development of negative social atmosphere is strongly associated with how we design neighborhood spaces that emphasize the needs of its residents (Gehl, 2001; J. Jacobs, 1961; Lofland, 1985; Marcus, 2003; Rapoport, 1978). The modern neighborhood has changed and tolerated the spatial

relationship between people and their outdoor spaces within their local neighborhood. Work has been done by theoreticians claiming that the organization of spaces in-between homes in a neighborhood have an important influence in terms of forming social ties and outdoor interaction among users and residents (Gehl, 2011). The issues of social cohesion and the decline of social networks within the neighborhoods of Jeddah, Saudi Arabia will be explored in this dissertation.

1.2.1 Issues with Neighborhood Outdoor Social Spaces in Jeddah

During the last few decades, many cities in the Middle Eastern region, and especially those are located in the Gulf region, have experienced unprecedented rapid urbanization. Unfortunately, this rapid physical growth of the existing cities as well as constructing new towns happened in a very short time and was heavily reliant on foreign experiences represented in the force of Western modern concepts of planning and building (Abu-Ghazzeh, 1998; Al-Buthie & EbenSaleh, 2002; Daghistani, 1993; Elsheshtawy, 2008). Therefore, Saudi cities failed to consider the local socio-cultural context and the rich urban value of the traditional environment in the design and planning process of many modern projects—especially the residential projects. The focus on adopting Western modern ideas while developing cities led to an entire change in the traditional urban form and morphology of the whole country (Eben-Saleh, 1998; SOM, 1978). It is seen in many cases in Saudi cities that the blind importation of "modern design concepts and principles" has led to technical, aesthetic, economic and social failures (Abu-Ghazzeh, 1994; Al-Hathloul, 1996; Alshuwaikhat, 1999; Hakim, 1986; UN-Habitat, 2004).

This dense urbanization with modern design approaches and imported urban forms associated with an urban lifestyle have led to a great loss of social cohesion that once had been the main characteristics of old neighborhoods in Jeddah, one of the major cities in Saudi Arabia. In old Jeddah, social cohesion was well preserved because of the high level of sociability among neighbors (see Figure 1.1 and 1.2), which is less in modern Jeddah. This revered sociability was facilitated by the physical characteristics of outdoor space (Abu-Ghazzeh, 1994; Adbulac, 1982; Akbar, 1999; Bianca, 2000). However, the issue of recent opposition between traditional nostalgic discourse and modernity is beyond the

scope of this current research.

Today, when looking at the neighborhood design, it is obvious that in many cases, no more than a grid design has been implemented to ease automobile traffic. New neighborhoods have become anonymous spaces where weakened neighborly relationships and a loss of sense of community have become rampant. Currently, in many cases the outdoor space became abandoned, empty, avoided, and with no interest in using them. There are no common outdoor spaces that provide opportunity for families with their children to gather and play, to sit and socialize with neighbors, for youths to gather in outdoor activities, and no sidewalks for people to walk to the mosque, to the school or to do their daily grocery shopping without being threatened by car movement. In this setting, today, many residents living in the modern neighborhoods complain about the lack of physical outdoor spaces that should invite them to be with others and create acquaintance relationship to build strong social ties and mutual trust among each other (see Figure 1.3 and 1.4).

Figure 1.1: *The pattern of the hieratical system in the vernacular neighborhoods in Old Jeddah, Saudi Arabia. The outdoor spaces are close to each other and scattered at small distance and a variety of scales (Source: Google-Earth, 2015)*

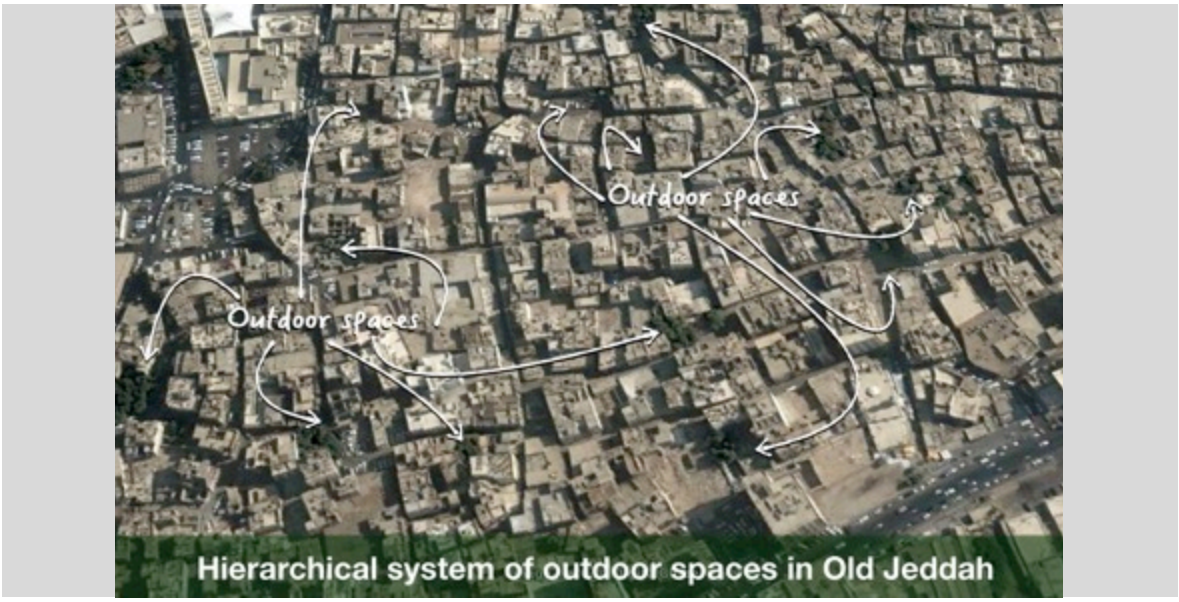


Figure 1.2: *The social cohesion among neighbors in the vernacular neighborhoods in Jeddah was well preserved because of the high level of sociability*

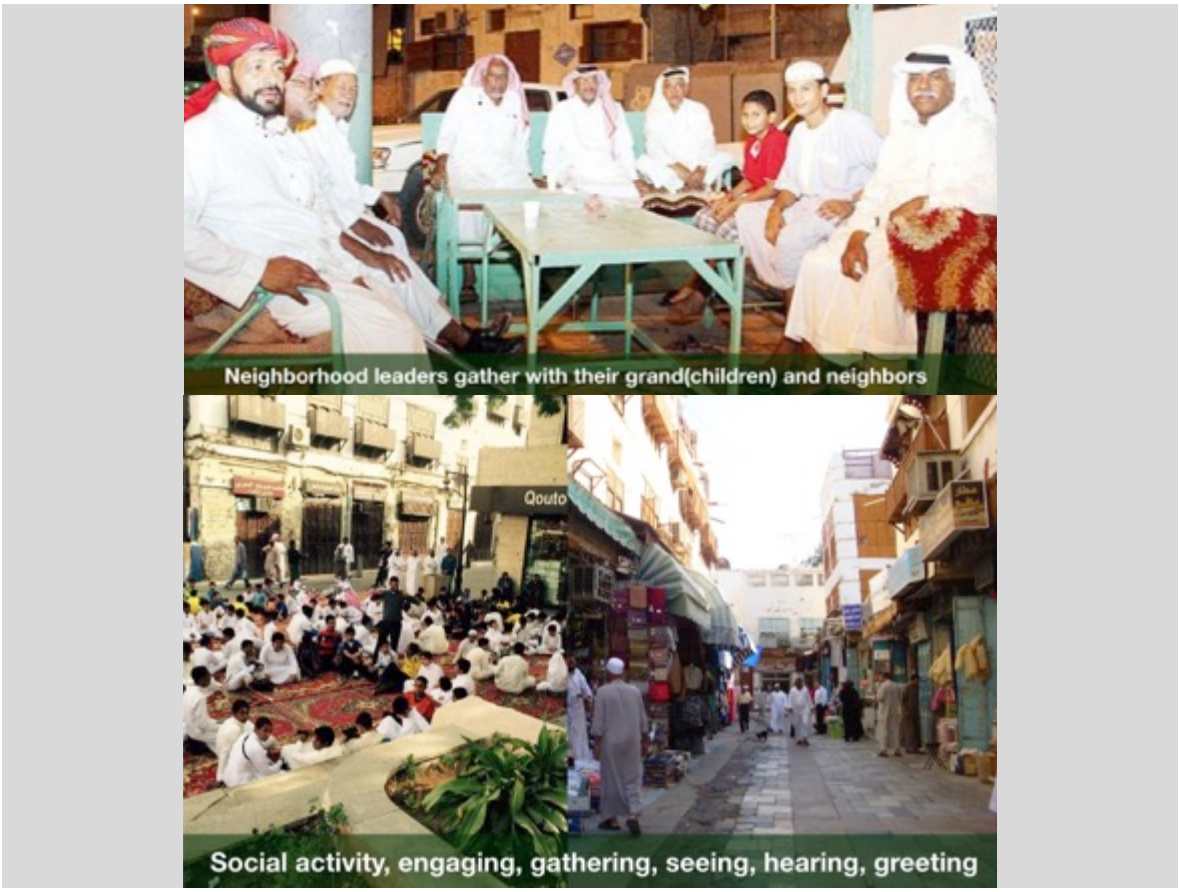
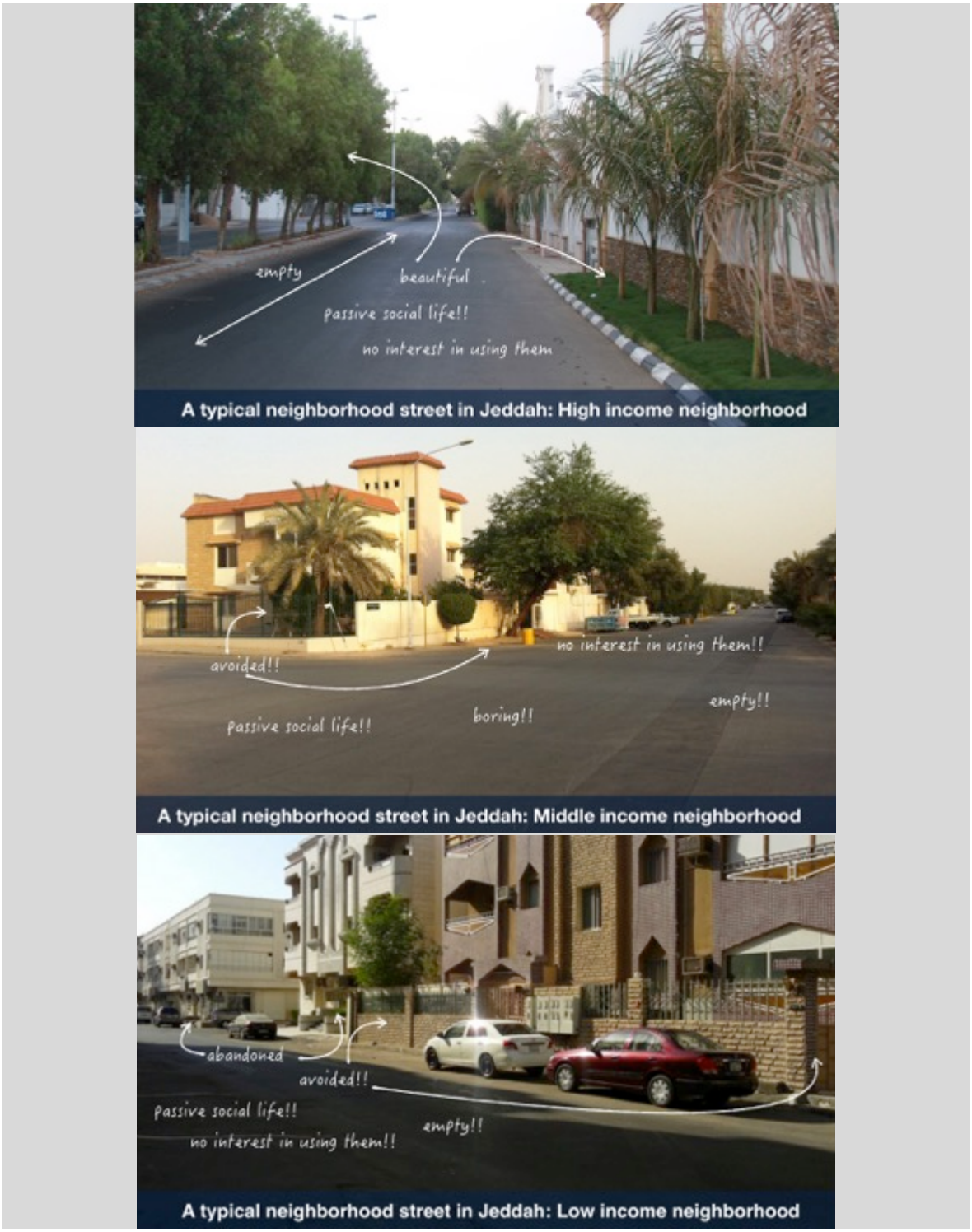


Figure 1.3: *The grid system in the new neighborhoods in Jeddah, Saudi Arabia. (Source: Google-Earth, 2015)*

Figure 1.4: *In many cases, the neighborhood outdoor spaces in the new neighborhoods in Jeddah turned out to be anonymous space, abandoned, empty, avoided, and with no interest in using them.*



Such growing awareness of the importance of outdoor social space raises the question of whether architects, landscape architects, or urban designers and planners need a fresh approach to generating ideas that represent specific needs and desires for particular users. It is a major challenge to environmental designers to link design and society users. Therefore, there is a need for more holistic collaborative approaches in design and design ideation to promote the dynamic form of social needs.

1.2.2 Issues with Collaborating with Neighborhood Users in Developing Their Neighborhood Spaces

Users usually have a sense of symbolic ownership of their neighborhood outdoor spaces based on their knowledge how to use their neighborhood spaces (Hester, 1984). The more time spend in their neighborhood and the more they involve in outdoors life, this sense of symbolic ownership increases as they perceive that these spaces have potential to meet their needs and desires (Hester, 1990). Accordingly, they can be involved together in acquiring, planning, and changing these spaces. However, when users experience a problem in their neighborhood, even if they have their own visions to deal with the problem, they may not have the experience to mentally visualize and materialize design possibilities.

Therefore, designers need to know how to accomplish those spaces according to the needs and desires of the users and residents. A good way to start is to engage the users. Of course, engaging the users within a conventional design processes to develop their community and neighborhood spaces is not new (i.e., Christensen, 2012; Hester, 1984, 1990; Hothi, Bacon, Brophy, & Mulgan, 2009; Lozano, 1990; Neilson, 2005; Riddick, 1971; Sanoff, 1999; Skidmore, Bound, & Lownsbrough, 2006). Their engagement is part of design movements such as community design and community participation. Most commonly, information that is usually obtained from the users during these participation events is in form of diagrams, pictures, maps, and checklists. This information is considered to be from the users' point of view as requirements and needs that are later accounted for in the design process. Therefore, the conventional role of the designers is to transfer the collected information into a visual and representation work that is dominated by them, not by the users. However, does this information really represent what in the

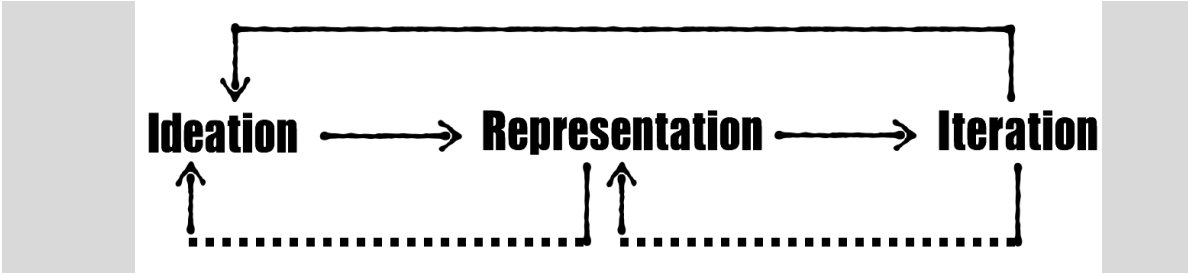
users mind in terms of needs and desires?

1.3 Significance of the Study

This dissertation presents a unique opportunity through qualitative research. The study proposes to extend the current normative theory through development and demonstration of a more visual collaborative ideation process. Normative theory in environmental design is concerned with the conventional way of how we design. Normative theory heavily focuses on employing a form of principles, codes and standards. These form in most case are important, but they are dominated by the designers' attitudes towards the built environment and how to approach the design ideas (Lang, 1988).

Normative theory includes three stages of ideation, representation and iteration (Figure 1.5). In this new proposed collaborative process, the representation of design ideas becomes more iterative and knowledge exchange between designer and user becomes more seamless. Through a process of collaborative sketching, ideas are shared and design solutions are explored that are responsive to the needs and desires of the users.

Figure 1.5: *The stages of the normative theory in design*



1.4 Research Objectives

The goal of this dissertation is to examine the use of the researcher's sketching skill as an extractor tool to tap into users' imagination as a rich source of their needs and desires to empower the design process. Therefore, to implement and understand the use of collaborative sketching as a way of gaining insight from users' imagination regarding the design conditions that will satisfy their needs and desires, the study proposes a collaborative-sketching process in a continuous, iterative, and instant way that helps

designers and users to see possibilities during the design process.

1.5 Research Questions

Based on the objective, two questions were developed to guide this research, which in turn defined the scope and the strategy of the study:

1. How can the collaborative-sketching process extract users' needs and desires by tapping their imagination?

2. How much does the collaborative sketching approach offer—in terms of users' needs and desires that enable the designer see possibilities—in comparison to the conventional interview?
    a. What level of detail and precision does the collaborative-sketching process provide in terms of activity and components?
    b. How does the imaginative storytelling told by the users enrich the ideation process?

3. How robust is the collaborative-sketching process in capturing users' imagination as a rich source of their needs and desires?
    a. What levels and stages of engagement do the users in the collaborative-sketching process show?
    b. How does their level of engagement influence their perception of the environment?
    c. How do the users experience themselves in this process?
    d. How do they express their satisfaction at the end of this process?

1.6 Research Strategy

This qualitative approach is primarily based on interpretation (Sale, Lohfeld, & Brazil, 2002; Secker, Wimbush, Watson, & Milburn, 1995). The relationship between the investigator and the research object are mutually linked, in which the findings are interactively created within the frame of the situation and forms the inquiry (Guba & Lincoln, 1994; Sale et al., 2002). Therefore, the importance of a qualitative approach is lies within the process that includes in-depth interviews and interviewee responses. For qualitative approaches, there is no need for a sample size that is meant to represent large populations. Rather, qualitative approach forces the use of small samples of articulate

interviewees who can provide important and significant information (Patton, 2001; Sale et al., 2002; J. K. Smith, 1983).

1.7 Structure of Dissertation

This dissertation is structured into five additional chapters, Chapter 2 – Literature Review, Chapter 3 – Methodology, Chapter 4 – Techniques and Reflection, Chapter 5 – Interpretation and Findings, and Chapter 6 – Discussion and Conclusion.

Chapter 2 – Literature Review – discusses and reviews the overall context of the study as it relates to relevant literature. This chapter is divided in to seven sub-sections: neighborhood and social life; the need for high quality neighborhood outdoor spaces; towards an understanding of neighborhood social cohesion; users' collaboration as a community engagement; the process of design; graphic communication in the design process; and users' imagination.

Chapter 3 – Methodology – describes the methodology and protocol used in this dissertation and is divided into seven sections. The first section describes the theoretical framework employed in this study. The second section describes the design of the study. The third section describes the protocols of the interviews. The fourth section describes the process of selecting the photographs of the settings. The fifth section describes the process of selecting the participants. The sixth section highlights the ethical consideration. Finally, the seventh section describes the procedures used to interpret the interviews, including a description of the evaluation tools used to assess the success of the collaborative-sketching process.

Chapter 4 – Techniques and Reflection – discusses the techniques used in the collaborative-sketching process methods highlighted in the methodology chapter. It also discusses the sketching tools that are implemented. It is divided into three sections. The first section discusses the preparation and equipment utilized in the process. The second section discusses the techniques of the interview, including types of probe questions and how they were used to extract knowledge. The third section explains the technique of sketching as a graphic move.

Chapter 5 – Interpretation and Findings – describes the findings from the

collaborative-sketching process. The description is divided into four sections. The first section highlights the demographic of the participants. The second section discusses the findings from the conventional interviews. The second section discusses the findings from the collaborative-sketching interview process. The fourth section discusses the findings from the use of the evaluation tool to assess the collaborative-sketching process.

Chapter 6 – Discussion and Conclusion – discusses the significant findings of the collaborative-sketching process including: lessons learned, implications, strengths, limitations, and conclusions. This chapter also recommends potential directions for future research.

CHAPTER 2: LITERATURE REVIEW

Chapter one provided an understanding of the problem regarding the quality of the physical setting of outdoor space in several new neighborhoods and its negative influence that threatens the social cohesion among the residents. This aforementioned problem is that modern design approaches and imported urban forms associated with its lifestyle has led to a great loss of social cohesion that once had been the main characteristics of old neighborhoods in Jeddah, which had a high level of sociability among neighbors more so than in modern Jeddah. This revered sociability was facilitated by the physical characteristics of outdoor space.

The goal of this study is to answer the research questions related to how a collaborative sketching approach can extract a user's needs and desires by tapping their imagination, and how much the collaborative sketching approach offers in terms of a user's needs and desires that could enable the researcher to see possibilities in comparison to the conventional way of data collection. In order to answer these questions, this chapter is divided into seven sections.

The first section of this chapter will review the basic concept of the relationship between the neighborhoods as social settings and the social life of the users. The second section focuses on building a holistic understanding of the quality of neighborhood spaces by examining the classical thoughts regarding the concept of "quality" in the outdoor spaces at the neighborhood level. The third section discusses more understanding about the nature of social life inside the neighborhood, examines the concept of social cohesion as part of users' daily social life, and extracts the categories that define social cohesion. The fourth section will discuss the importance of engaging the neighborhood's users and residents in the process of developing their community. The fifth section discusses the nature of the design process in general and the ideation process in particular. Also, this section includes a review of the existing collaborative approach of common community participation methods. The sixth section, the graphic representation includes sketching as a means of communication and whether or not there is any example that combines graphics in a collaborative process that engages the users. The seventh section discusses the imagination of the users and the reasons of why it is important in the collaborative process.

The final section summarizes a review of the pertinent literature.

2.1 Neighborhoods and Social Life

The "neighborhood" is seen as a physiological concept involved in both spatial and cognitive issues. Neighborhoods are categorized into three categories: an integral neighborhood that encourages a high level of face-to-face interaction and participation in activities; a parochial neighborhood that involve a high level of face-to-face interaction but less participation; and an anomic neighborhood that has almost no face-to-face interaction and no participation (Gifford, 1997).

Studies have demonstrated that face-to-face interaction causes a positive social atmosphere among the people who live in the neighborhood (Skjaeveland, Gilding, & Madand, 1996). However, nowadays, social interaction and community observations are varying depending on the life style, socio-cultural background, and income. Outdoor space in neighborhoods are seen as an extension of home that facilitates the outdoor activities between residents and their immediate local community (Marcus, 1988, 1992, 2003) and fosters face-to-face interaction and participation (Gifford, 1997). According to Jan Gehl (2011), outdoor spaces become meaningful due to the "social activities" that take place in them and their relationship with the physical setting. Gehl states that the outdoor activities in each of the types of neighborhoods in three categories play a very different need within the physical setting: necessary functional activities, optional recreational activities, and social activities (Gehl, 2011, p. 11).

Both necessary and optional activities have been considered and examined comprehensively over the years in various settings, but social activities and their relatedness to forming a social and communal fabric have not yet received enough scholarly attention. Gehl claims that when the outdoor spaces are of a poor quality, this means that necessary functional activities, or optional recreational activities and social activities disappear because they are primarily reliant on favorable conditions (Gehl, 2011, p. 34). Therefore, there is a need for a certain quality to invite people to be outdoors and engage them with others in outdoor activities. The next section discusses the need for high quality outdoor spaces. It is important to build a coherent understanding of the relationship between the physical quality of neighborhoods and users' well-being. Therefore, this

literature will review related studies and works related to the relationship between the quality of neighborhood spaces and their influence on social cohesion among the users.

2.2 The Need for High Quality Design for Neighborhood Outdoor Spaces

Many theoreticians and practitioners have long claimed and advocated that high quality outdoor spaces in the residential environments where people live, meet and socialize with others on a daily basis (Alexander, 1979; Forrest & Kearns, 2001; Gehl, 2010, 2011; A. Jacobs, 1993; J. Jacobs, 1961; Lynch, 1976b). During the dramatic increase of the population in the 19th century, according to Burnett, "new social trends...raised housing expectations and produced climate of opinions in which...housing evils came to be regarded as unacceptable" (Burnett, 1978, p. 3). In a similar way, Cowan claims that "there was much agonizing about the miserable quality of urban environments" as a consequence of the industrial revolution stage that affected the European cities in over one hundred years ago (Cowan, 1997, p. 11). However, the historical evolving of the ideas regarding the high quality or ideal neighborhoods' outdoor spaces would eventually focus more on urban renewal and later on being "prescriptive and utopian."

On one hand, between the 1850's and 1945, the urban renewal movement started in metro cities aiming to defeat the lack of infrastructure and renovate unhealthy places that were caused by the industrial revolution. Parallel to this movement and during the mid of 20th century, the "City Beautiful Movement" emerged in North America by the University of Chicago School to create a sense of identity to plan and design the American cities that later exported to the most of the World cities (O'Sullivan, 2000; Wilson, 1994).

On the other hand, the concepts of "utopian" communities of the late-19th and 20th centuries attempted to provide high-quality neighborhoods (O'Sullivan, 2000). For example, the "Garden City" (1898) by Ebenezer Howard focused on providing greenery, clear air and open space. The "Model Villages" of the 20th century by the Victorian philanthropists such as Titus Salt and Joseph Rowntree dedicated their design ideas to focus on providing a safe and clean living environment away from the metro cities in order to promote people's health and well-being (Cowan, 1997; Howrad, 1898; Miller, 1992). Concepts such as "Garden City" and "Model Villages" influenced the "general standard of housing" in most of the world's cities and offer minimum standards for light, air, and

living spaces (Burnett, 1978). Therefore, these influences translated into practice, and a plethora of publications and recommendations have been published in order to provide high-quality neighborhoods for residents (Alexander et al., 1977; Cullen, 1961; Howrad, 1898; J. Jacobs, 1961; Lefebvre, 1992; Miller, 1992; Rapoport, 1969). Other concepts are worth mentioning that also attempted to achieve high quality built-environment such as "Ville Radieuse" by Le Corbusier's (1929) and "Broadacre" by Frank Lloyd Wright (1945).

Accordingly, to navigate a way through examining and understanding urban design and planning theories related to neighborhood built environment, Carmona et al. (2004) defined two classical thoughts that express the conceptual process of theoretical development of urban design theory over the last decades (Carmona, Heath, Oc, & Tiesdell, 2003; Jarvis, 1980). The classical thoughts are:

1. "Social-usage": or being "concerned with the public use and experience of urban environment" (Jarvis, 1980, p. 50).
2. "Placemaking": or where "space becomes place due to the support of the built environment that offers range of activities that take place there" (Carmona et al., 2003, p. 7)

More importantly, these two classical thoughts are interconnected to each other and it will be meaningless if the review just focuses on the social-usage. However, before I examine the shift from "social-usage" theory towards an appreciation of "placemaking," I will review the prominent literature on "social-usage" in order to demonstrate its limitations.

2.2.1 Defining "Social-usage" in Classical Thoughts

In the 1960s, the school of social-usage thought came to the front and continued through the 1980s by a number of forerunners (Alexander, 1979; Alexander et al., 1977; J. Jacobs, 1961; Lynch, 1960, 1976b; Marcus, 1988; Whyte, 1980). Their works relate to satisfying the overall perceptions of the environment with a particular focus on "the way how people use and colonize space" (Carmona et al., 2003, p. 6). In 1983, Lewis Mumford, an urban planning scholar, supported the social-usage theory by stating "social

facts are primary, and the physical organization of a city, its industries and its markets, its lines of communication and traffic, must be subservient to its social needs" (Mumford, 1970, p. 482). Therefore, the theory of "social-usage" is dominated by the importance of understanding the relationship between the neighborhood as a place and the needs of people who live in that place.

Kevin Lynch, in his important work *The Image of the City*, describes the transition from the classical thought that is dominated by "visual-artistic" to the one that focuses primarily on "social-usage" through the visual content according to the user's perception. In Lynch's words, "Nothing is experienced by itself, but always in relation to its surroundings….Every citizen has had long associations with some part of his city, and his image is soaked in memories and meanings" (Lynch, 1960, p. 1). Then later, in his book, Lynch defines meanings in terms of "sense of emotional security," having the ability to move safely and easily in the city, and "a broad frame of references" to provide choices of activities for the users (Lynch, 1960, p. 4). Lynch also believes that "a good environmental image gives its possessor an important sense of emotional security" (1960, p. 4).

Similar to Lynch, other supporters of the "social-usage" classical theory have looked at the wide characteristics of the residential environment and the influential consequences on a user's behavior and needs. Jane Jacobs (1961) claims that the design of the city should consider essential aspects of everyday city life, including policing, political operations, knowledge exchange and economic development (J. Jacobs, 1961, p. 19). She claims that it is important to look at the influence of a neighborhood's physical setting on social life and vice versa. To this day, physical setting such as parks, streets corners, sidewalks and neighborhoods continue to be mentioned as significant physical settings that contribute to social contact, social interaction and feeling of safety (Fischer, 1984; Gehl, 2011; J. Jacobs, 1961; S. Keller, 1968; Rapoport, 1977).

In the late 1970s, three books important works were published in whole or part by Christopher Alexander: *The Atoms of Environmental Structure* (Alexander & Poyner, 1970), *A Pattern Language* (Alexander et al., 1977) and *The Timeless Way of Building* (Alexander, 1979). These works concentrate on supporting how users' everyday life and needs can be employed as tendencies (Alexander & Poyner, 1970) and in form of patterns

and relations to the built environment (Alexander, 1979; Alexander et al., 1977). Alexander felt that the "timelessness" of building design got lost in modern architecture that focuses rather on visual-artistic by stating, "It is not possible to make great buildings, or great towns, beautiful places, places where you feel yourself, places where you feel alive except by following this way" (Alexander, 1979, p. 7; cited in Sime, 1986). According to the scholars, the structure of the built environment can affect the "social tendencies of people's daily lives, include sleeping, working, walking, engaging with others in a particular place, or any other activity which people are trying to do whenever they get the chance" (Alexander & Poyner, 1970, p. 311). Other supporters were developing the notion that the built environment has a direct interrelationship between its physical settings and social life around the same time as Alexander (Appleyard & Lintell, 1972; Whyte, 1980). In particular, Jan Gehl claims that activities that take place in the physical setting gives meaning and supports to that setting (Gehl, 1986). He describes this claim that the quality of the neighborhood physical setting becomes poor when the social, recreational or optional activities are missing, and that, as previously mentioned, they are dependent on outdoor "favorable conditions" (Gehl, 2011, p. 11).

2.2.2 "Social-usage": Categories of High Quality in Neighborhood Outdoor Spaces

The main categories associated with high quality neighborhoods are extracted from the literature related to "social-usage" according to the classical theory and fall into three categories. Some theoreticians agree upon these categories, as they are important to support a user's social life and experience of their neighborhood and their everyday life activities. Some theoreticians consider the importance of these categories to have high quality residential environments (Sue McGlynn, Bentley, Smith, Alcock, & Murrain, 1985). These categories are strongly related to this study in term of helping to design the interview instruments and coding the interviews.

- Perceived safety
- Mixed Uses
- Comfort
- Character

2.2.2.1 Perceived Safety

It has been frequently said that people feel safe in a high quality built environment (Carmona et al., 2004; Carmona et al., 2003; Hillier, 2002; J. Jacobs, 1961; Llewelyn-Davies, 2000; Lynch, 1960; McMillan & Chavis, 1986). The literature's focus emphasizes that the relationship between the physical settings of neighborhoods and social life depends on safety (A. Jacobs, 1993; J. Jacobs, 1961; Rapoport, 1977). Jane Jacobs claims that having "eyes upon the street" (J. Jacobs, 1961, p. 35) through the physical layout of the residential areas can contribute an essential role in providing feeling of safety for the people and users who live on that street. She asserts that, "A well-used street is apt to be a safe street" (J. Jacobs, 1961, p. 34); in addition to promoting "curious eyes" (Engwicht, 1992, p. 56). Another such advocate is Oscar Newman Defensible Spaces (1996) who claims that feelings of safety and rate level of crime in the neighborhood are the product of the possible contribution of the physical settings and their layout (Newman, 1972; 1996, pp. 1, 25). His concept focuses on defensible spaces constructed to prevent crime by controlling the neighborhood and the areas between homes by its residents. An example of this can be seen in the gated communities (Carmona et al., 2003; Zelinka, Brennan, & Dean, 2000). However, there is not enough agreement in the literature to show what it is about the design of neighborhood itself that can make it safe.

2.2.2.2 Mixed Uses

Many classical theoreticians and practitioners of "social-usage" see that a neighborhood supported with a variety of uses is seen as an element of high quality. A neighborhood with mixed uses is preferred, as it provides variety of services and facilities to residents, which they need regularly in everyday life. Jane Jacobs says that a diversity of uses is essential to support "so many people…[since] among them contain so many different tastes, skills, needs, supplies, and bees in their bonnets" (J. Jacobs, 1961, p. 147). Therefore, there is a strong agreement among many scholars and practitioners of "social-usage" that diversity of uses is essential reflector of a high quality built environment (Alexander, 1979; Alexander et al., 1977; Gehl, 2010, 2011; J. Jacobs, 1961; Sue McGlynn et al., 1985).

Interestingly, there is somewhat of a disagreement about how the mixed uses ought to manifest in a neighborhood. For example, Alexander focuses on corner grocery stores, supporting street cafes instead non-street cafes, and local shops instead of franchises or chains, but he does not give details regarding what services should be provided and "arranged to form pedestrian streets" (Alexander et al., 1977, pp. 174-178, 246-251, 432-443). Conversely, McGlynn et al. claim that urban designers should be responsible for encouraging these uses by allowing for the widest range of variety of uses as possible instead of focusing on the number and type of uses (Sue McGlynn et al., 1985, pp. 27-28). McGlynn et al. focus independently on the range of uses in a neighborhood, at various extents, as an essential demand to provide affordable spaces and feed the interaction between users, for instance, a mutual support can be offered by various uses, services and activities (Sue McGlynn et al., 1985, p. 30). Therefore, in agreement with Jacobs, mutual support between social benefits and mix uses in a neighborhood increased "opportunities of social interaction" and feeling of safety as increased "eyes upon the street" (J. Jacobs, 1961).

2.2.2.3 Comfort

Comfort is another element of a high quality of the built environment mentioned in the literature. In his book *Great Streets* (1993), Allen Jacobs describes that "the best streets" are the places that are "physically comfortable" with no sense of "difficulty to walk" (A. Jacobs, 1993, pp. 8-9). However, he has no evidence of what makes built environment comfortable. Conversely, according to Carmona et al., a number of "qualities" for public space were identified, distinguishing comfortable as a place where one wanted "to spend time in" (Carmona et al., 2004, p. 19).

Whyte conducted a research of public places and found that comfortable means a boost in social interaction, and providing a variety and choices of settings such as seating in shaded and sunny place and choices for groups and single users (Whyte, 1980, p. 28). On the other hand, in *A Pattern Language*, Alexander et al. used the term "comfortable" with no clue as to its implication, saying, "the layout of paths will seem right and comfortable only when it is compatible with the process of walking" (Alexander et al.,

1977, pp. 586-588). In both of these examples, none of the authors acknowledged that the experience of walking is very different for various types of people—for example, walking for older people with dementia are different than children or handicapped individuals (Burton & Mitchell, 2006, pp. 92-102).

2.2.2.4 Character

Scholars such as Christopher Alexander and Jane Jacobs are especially interested in the character or sense of place that is perceived by users (i.e. residents and visitors). According to Alexander, character is "the quality without a name" (Alexander, 1979, p. 39) that is based on "the fact that a person is so far formed by his surroundings, that his state of harmony depends entirely on his harmony with his surroundings" (Alexander, 1979, p. 106). According to Jacobs, character is a the supported factor of social life in the neighborhood and the result of a mixture of uses (J. Jacobs, 1961).

People may have a sense of place when they also have a sense of safety and security in the street where they meet others and walk, as well as a result of strong natural surveillance of the neighborhood and knowing that "we" as its people are the legitimate users (J. Jacobs, 1961, pp. 44-45). This is supported and helped by the mixture of uses and services, accordingly offering a stronger right to people to roam on the street (J. Jacobs, 1961, pp. 70-71). For Jacobs, character is intangible thing of a place that cannot be easily described in words. Conversely, Alexander attempts to define it, claiming that character "is not completely emulated in terms such as "alive," "whole," "comfortable," "free," "exact," "egoless," and "eternal" (Alexander, 1979, pp. 29-40).

2.2.3 Shifting in the Classical Theory from "Social-usage" to "Placemaking"

The classical theory of "placemaking" is seen not only as a place provided for users (i.e. residents) and their needs, but also to achieve a sustainable place that offers quality of life for both present and future users and their need. During the 1970s, attention on the culture and environmental design as community design has been reestablished with an interest in the concept of "placemaking or "creating a place" among theoreticians and practitioners which is incorporated today to the concept of "sustainable community." According to Sime (1986), this classical concept of "placemaking" is seen as the "degree

to which a 'place' can be created in…independently of the people who eventually use it" (Sime, 1986, p. 49). The concept of "placemaking" is one among the principles of urban design that operationalized to design places for "sustainable community." Therefore, it is argued that neighborhood must be sustainable to be a high quality, as well as, high quality must be a part of sustainability (Barton, Grant, & Guise, 2010).

In this way, a sustainable community is a close concept to "livable neighborhood" that have a goal of supporting users (residents) to continue living "now and in the future" in their community (Elkin, McLaren, & Hillman, 1991; Santos, Martins, & Brito, 2007). Theoreticians and practitioners defined the design principles that involve in building neighborhoods and creating communities (i.e. Barton et al., 2010; Llewelyn-Davies, 2000, 2007; Lozano, 1990). While other defined the physical characteristics that shown in livable streets and sustainable neighborhood (Barton et al., 2010; Elkin et al., 1991).

According to Elkin, adopting the concept of sustainability as an approach in urban development "must aim to produce a [space] that is 'user-friendly' and resourceful, in terms of not only of its [physical] form and its energy efficiency, but also its function, as a 'place-of-living'" (Elkin et al., 1991, p. 12; cited in Williams, Burton, & Jenks, 2000). Three strong-related aspects have been conducted in this approach: environmental, economic, and social (Jenks, Burton, & Williams, 1996). The term sustainability is emphasized here, as the most related aspect in this study is social sustainability. However, the other aspects, environmental and economic sustainability, are also potentially important for other design projects; for example the relationship between the quality of outdoor spaces and the economic status (Crawforda et al., 2008); or the relationship between the quality of outdoor spaces and biodiversity (Fuller, Irvine, Devine-Wright, Warren, & Gaston, 2007)—but these are not considered in this study.

The concept of "social-sustainability" is ill-defined. Several discussions have focused on its dimensions of health, place safety, community safety, quality of life and user participation (Barton et al., 2010; Gehl, 2011; Pasaogullari & Doratli, 2004). However, there is a consensus that social sustainability is defined as a sustainable community that is active, inclusive, safe and fair to everyone (Carmona et al., 2004; Gehl, 2010; Lozano, 1990). Although Carmona's work does not have a thorough link between

placemaking and social-usage, the scholars' claim that sustainable built environment corresponds explicitly to theoretical and understanding the user's preference and desirable quality of place where people live in is in agreement with the concept (Hasic, 2000; Hazel & Parry, 2004). The following section presents the categories that represent high quality in neighborhood.

2.2.4 "Placemaking": Categories of High Quality Design for Neighborhood Outdoor Spaces

The main categories of high quality of outdoor spaces at the neighborhood level that emerge from the literature related to "placemaking" are listed below. These categories are frequently mentioned and discussed as strongly interrelated categories that contribute to a high quality, sustainability, and built environment literature. The elements that are marked (#) will not be discussed in detail as they were discussed in the previous sections on "social-usage."

- Mixed uses #
- Accessibility
- Perceived safety #

2.2.4.1 Mixed uses

As previously mentioned, providing a mixture of services and uses within the neighborhood that can be accessed by sidewalks increases the opportunities for walking, cycling and meeting others (Barton et al., 2010; Burton & Mitchell, 2006; Gehl, 2010, 2011; Grant, 2002). However, there are some examples in the theory that identify a number of uses that could be incorporated into livable streets, neighborhoods, and sustainable community. Further, there are considered to be four "daily" uses from the literature, which include: grocery stores, open spaces, post offices, and schools. Other local uses to which scholars argue that residents need on a daily or frequent basis include: pharmacies, cafés and restaurants (Barton et al., 2010; Burton, 1999; Burton & Mitchell, 2006; Grant, 2002); banks (Barton et al., 2010; Burton, 1999); and community centers (Aldous, Lunts, & Greenleaf, 1992).

2.2.4.2 Accessibility

According to Carmona, high quality urban design must offer good walking accessibility within and between places (Carmona, De Magalhaes, Edwards, Awuor, & Aminossehe, 2001, pp. 8-9). During the 1960s, accessibility has been emphasized as an important element of high quality urban design by Jane Jacobs and Kevin Lynch, and nowadays by new-urbanism and smart growth scholars (Carmona et al., 2001; Carmona et al., 2003).

A neighborhood is not considered accessible if it does not provide services and mixed-uses and does not have sidewalks and cycling to interconnect users (i.e. residents) to services and facilities. It has been noticed that "the likelihood of using different types of recreational facilities decreases with decreasing levels of access" (Giles-Cortia & Donovan, 2002, p. 1807). Recent scholars argue that the extent of accessibility to services within the neighborhood must be within a reasonable time and distance for users (Aldous et al., 1992; Barton et al., 2010; Burton, 1999; Burton & Mitchell, 2006; CES, 2006). However, there is no agreement on how accessible these services and facilities should be. A special focus on accessibility to outdoor open spaces as an important characteristic of high quality outdoor spaces due to the social benefits—such as outdoor places for resident to meet and socialize (Blackman et al., 2003). The purpose of focusing on accessibility in this research is to discover more about how people are using their facilities and services, their means to access them, their usage frequency, and how long it takes to reach them.

2.2.4.3 Perceived Safety

Perception of safety is an essential element to people's lives. Until recently, "social-usage" theoreticians claim that safety is seen as a contributory factor to the physical setting and social life (Aldous et al., 1992; J. Jacobs, 1961). However, for scholars and practitioners that are more interested in the concept of "placemaking," it has been argued that one of the main effects on antisocial behavior and criminal is the nature of the physical settings of the neighborhood. For example, certain physical settings have strongly relationship with criminal and antisocial behavior (Zelinka et al., 2000, p. 4). Moreover, perceiving safety might contribute to poor quality that cause a perception of discomfort,

fear and insecurity and have a negative effect on social interaction and proudness of an area (Bellair, 1997).

2.2.5 Summary

Reviewing the literature to discuss the "quality" of the neighborhood scale has presented the theoretical arguments on specific categories of high quality design of outdoor spaces in the neighborhood. The main objective of this review is to highlight the most common categories identified to build understanding of high quality as the basis for the qualitative part of this research.

This review of the literature helps to offer the basis for the next stage, or developing Stage-I (pre-sketching conventional interview) part of the research methodology. Thus, different levels of quality help the researcher to design the questions that cover the quality of the participants' neighborhood from the case study (i.e. the city of Jeddah, Saudi Arabia) and then interpret the existing quality with the "social cohesion" in their neighborhood. After this, the researcher will present the opportunity to the participants to improve the quality of their neighborhood with their imaginations. Now, the objective of the next sub-chapter is to define the domains of social cohesion as an important step for the purpose of this study.

2.3 Toward an Understanding of Neighborhood "Social Cohesion"

The purpose of this section is to define the concept of social cohesion and describe and review the related theoretical views of social cohesion while acknowledging and extracting the categories that are experienced and applied to the neighborhood scale.

> Social cohesion is the "social glue of a society..."
> ~(Forrest & Kearns, 1999, p. 7)
> Social cohesion is "the action or condition of cohering; cleaving or sticking together"
> ~(Oxford Dictionary, 2011)
> Social Cohesion is "a collectivity is structurally cohesive to the extent that the social relations of its members hold it together"
> ~(Moody & White, 2003, p. 106)

2.3.1 Introduction

Social cohesion is not a new concept. It was emerged in the works of Ibn Khaldûn during the 14th century, when he established his masterpiece "*al-Muqaddimah*"[1] to identify social, psychological, environmental, and economical forces that contribute to the human civilization (Ibn Khaldûn, 1967). Ibn Khaldûn emphasized the importance of social cohesion when he mentioned that any society cannot appear to existence through the dispersing and scattering individuals. Humans, who recognize by nature the ways of living, also recognize the need for cooperation and cohesion within a group. No individual is able to provide all the necessities of life by himself. That requires cohesion and cooperation with others. Ibn Khaldûn describes social cohesion as "no one, by himself, can obtain the share of the wheat he needs for food. But when six or ten persons, including a smith and a carpenter to make the tools, and others who are in charge of the oxen, the plowing, the harvesting, and all the other agricultural activities and each of these stages requires a cooperation and shoulder-to-shoulder efforts" (Ibn Khaldûn, 1967, p. 273; Rosenthal,

[1] Many Western theoreticians recognize Ibn Khaldoun as the founder and father of sociology and sciences of history recognize Ibn Khaldûn. He is well-known for his illustrious "*al-Muqaddimah*" (Prolegomena, or Introduction to his "*Universal History*").

1989). Thus, social cohesion is necessary; individuals cannot be isolated and the community cannot be built without it.

However, recently, the concept of social cohesion has been a topic long used by both social psychology and sociology to examine societies and their social relations in a variety of physical settings (Bruhn, 2009; Durkheim, 1982; Fischer, 1982, 1984; Kellerman, 1981). The earlier quotations in this section highlight that social cohesion is commonly used to describe social solidarity, norms and sense of social order (Forrest & Kearns, 2000, 2001; Giddens, 1993). It is discussed as a "sustainable community" or a "key aspect of social sustainability" (Burton & Mitchell, 2006, p. 12). Social cohesion has been applied on different scales such as neighborhood, community or city. This section reviews the literature related to social cohesion as experienced at the scale of the neighborhood or residential environment.

The neighborhood is discussed as a concern among theoreticians and policymakers as an essential setting for social cohesions (Bowers & Hirscheld, 1997; Forrest & Kearns, 1999, 2000, 2001; R. Smith, 1975; Stafford et al., 2003). However, there is no agreement on how the term of social cohesion is being discussed at this scale. It is predicted in much of the literature, and related terms conceptually overlap with the concept of social cohesion. For instance, concepts such as social inclusion and social capital are widely discussed in relation to social cohesion (Barliana, 2012; Bowers & Hirscheld, 1997; Forrest & Kearns, 2001). This involves defining a number of dimensions of social cohesion experienced by residents and are seen as important for social cohesions to occur. Broadly, social cohesion is seen as an integration of a social behavior of individual and group within a social setting (Jary & Jary, 1999). From this broad definition, the concept of social cohesion is developed throughout the section that follows.

2.3.2 Social Cohesion in Context of Jeddah as an Arabic City

History in brief, Jeddah is located on the Red Sea in the West of Saudi Arabia. It started as a small fishing village where the Quda'ah tribe settled in more than 2,500 years ago. This village became an important caravan station on the old trade line that linked Yemen in the south of Arabia with Syria in the north, as well as being linked to various cultures of the Mediterranean Sea and to the East. Much ethnic mixture was found in

Jeddah because of the virtue of its geographic, economic, political, and religious diversity. Accordingly, Jeddah's residents are a mixture of different bloods of Arab and non-Arab Muslim people including Yemenis, Egyptians, Syrians, Moroccans, Persians, Indians, Africans and Turks (Diab, 2003). Although, there are great differences between these cultures, they rapidly absorbed the Arabic tradition of the Arabian Peninsula, which resulted in one blended culture of traditions and customs. Blending these forms of cultural traditions and customs marked Jeddah as a distinct society in Arabia that had strong social tie among all Jeddah families regardless of their different classes and varying social systems (Al-Ansari, 1982; French, 1980).

Until the end of the last century, social cohesion had once been the main characteristic of the old neighborhoods in Jeddah, as in many of the Saudi cities as well as other old Arabic cities. In old Jeddah, social cohesion was well preserved to an extent because of the high level of sociability among neighbors, which is less in modern Jeddah. This revered sociability was facilitated by the physical characteristics of outdoor space (Abu-Ghazzeh, 1994; Adbulac, 1982; Akbar, 1999; Bianca, 2000). However, this study does not raise the issue of recent opposition between traditional nostalgic discourse and modernity. Past was known for strong social cohesion neighborhood life, but does not necessarily imply implementing from the past. Not everything worked in the past in the neighborhood means should work nowadays.

Social ties between neighbors are the key of everyday social activities, such as meeting in a mosque, gathering at the stoop, or meeting in the grocery stores and so forth. The social ties between residents in the old neighborhoods of Jeddah was influenced and developed by the spaces in-between the buildings, which created activities, which framed the public side of everyday life that involved social interaction (Abu-Ghazzeh, 1994). Therefore, the social ties between individual neighbors are seen as the cell that created the whole community (Abu-Ghazzeh, 1999; Alshuwaikhat, 1999; S. Keller, 1968; Nassef, 1993). Social ties formed the neighborliness that defined the interrelationship among individuals who lived close to each other, including mutual relations such as exchange of help, support, services, sharing dishes, personal approval and so on. Therefore, the scale of the neighborhood has been seen as an important social setting for encouraging the social

relations among people who live in the neighborhood (Abu-Ghazzeh, 1994; Hakim, 1986; Rapoport, 1977). However, using Jeddah's neighborhoods as a case study does not mean that the scale of defining the categories of social cohesion in this review can be extrapolated at a national level. The following sections examine the particular interpretations of social cohesion that are applicable primarily in the context of Arabic cities and particularly to Jeddah city.

2.3.3 The Definition Used in this Research of Social Cohesion

Defining the concept of social cohesion is important to address the categories that are contributed to a cohesive neighborhood. Below are the categories that contribute to constructing a positive social atmosphere in the neighborhood. A definition of social cohesion adopted by Forrest and Kearns (1999, 2001), Dempsey (2008) and Stafford et al. (2003) as the integration of a social behavior of individual and group within a social setting (neighborhood) that is fulfilled through five categories:

- Neighborhood social interaction
- Neighborhood sense of community
- Neighborhood social networks
- Neighborhood participation in outdoor activities
- Neighborhood feelings of safety

2.3.3.1 Social Interaction

Social interaction at the neighborhood level has been claimed as the social activities that occurs among neighbors and described as "the basic process in the formation of both human nature and of the social order" (Wirth, 1964, p. 17) and being a cohesive community means to "hang together" in a form of social interaction (Turok et al., 2004, p. 21). According to Forrest and Kearns, social cohesion is described as a form of "high level of social interaction" between and within people who live in the neighborhood, and claim that low level of social interaction might contribute lacking the given social setting (Forrest & Kearns, 2001, p. 2128). It is argued that the integration of individual behaviors can be fulfilled through the interaction that occurs between neighbors, getting to know residents,

and practicing social norms such as watching out neighbor's home while he is away (Putnam, 2001; Unger & Wandersman, 1985). Therefore, social interaction is an essential form that feeds social cohesion, and without social interaction, the people living in a given place can be described as a group of individuals living defragmented lives with no sense of community or sense of place attachment. Social interaction means giving an opportunity to residents to communicate not only in a passive form such as greeting and chatting with one another, but to actively participate in solving problems and discussing issues and ideas within the community setting that lead to more an active form of sense of community in a neighborhood (Fischer, 1984; Putnam, 2001; Turok et al., 2004).

2.3.3.2 Sense of Community

A "strong sense of community" is defined by Hirschfield and Bowers as a essential necessity for social cohesion (Hirschfeld & Bowers, 1997, p. 1276). Sense of community is being strongly related to social norms and social order and to little extent of common social values (Forrest & Kearns, 2000). Fukuyama (2000) made a point that there is a strong and direct relationship between sense of community and social norms and cultural values by stating "the deeper and more strongly held these common values are, the stronger the sense of community is" (Fukuyama, 2000, p. 15). Sense of community is also defined as a product of a mixture of "shared emotional connects" and common interests through interacting with one another, sense of membership in terms of "having the right to be belong," place attachment, and an extent of social support to which "reinforce mutual support" and needs (Talen, 2000, p. 1730). This sense of community arguably leads to a potential variety of social networks through increasing "community participation" (McMillan & Chavis, 1986, p. 12) and engagement, as well as increasing "trust and reciprocity between people" (Forrest & Kearns, 2001, p. 2137) that facilitate and enhance social cohesion.

2.3.3.3 Social Networks

The question whether social interaction takes a place in social networks or social networks produces social interaction illustrate the extent of the relationship between them. Forrest and Kearns claim that a cohesive neighborhood depends on how people know each

other (Forrest & Kearns, 1999). According to Fukuyama, the dimension of social networks is defined "a group of individual agents who share informal values and norms" (Fukuyama, 2000, p. 199). Social networks can range from strong ties such as family and close friends, to weak ties such as recognizing somebody by sight. Some scholars claim that weak networks or social ties can be as important as strong ones (Forrest & Kearns, 2001; Granovetter, 1973; Skjaeveland et al., 1996). Accordingly, it is clear that a variety of different types of social networks, such as mutual social trust, are able to contribute to social cohesion, rather than saying people must know each other. There is a strong argument in urban sociological literature which supports that the successful neighborhood is "a social arena which continues to perform an important role…in the routines of everyday life [that] are the basic building block of social cohesion" (Forrest & Kearns, 2001, pp. 2130,2133). Also, Fischer's argument that state social networks are "discovered to be social support systems indicating that the people we know and feel we can depend on can influence other aspects of life such as feelings of safety and sense of well-being" (Fischer, 1982). Based on that, a variety of types of social networks, depending on the nature of social ties.

2.3.3.4 Participation in Outdoor Activities

Participation in social activities is referred to as an essential category of social cohesion because it is a manner in which the life of the neighborhood is represented by an active individual or group behaviors in organized activities – such as attending a sport activities and attending an organized religious study group. Moreover, participation in a neighborhood's activities relates to sense of community since it is influenced by both the culture the influence the type of activities and the strength of the social networks between people living in the neighborhood (Etzioni, 1993; Hothi et al., 2009). According to Forrest and Kearns, these "participation in activities" are a way in which people take a role in "social and community activities; local events and occasions occur and are well attended" (Forrest & Kearns, 2001, p. 2140). It is clear that a strong relationship between having many types of social networks and various types of participation in organized activities is considered an essential contributor to social cohesion (Skidmore et al., 2006).

2.3.3.5 Sense of Safety

Safety has often been associated with knowledge of social life at the neighborhood level (Bellair, 1997; Newman, 1972; Unger & Wandersman, 1985; Zelinka et al., 2000). There is an agreement among many scholars that a sense of safety in a neighborhood plays a fundamental role in prompting social cohesion because of its involving in various aspects of social life (Cantle, 2001; Chinchilla, 2010; Flint & Robinson, 2008; Walker & Coulthard, 2004). Therefore, sense of safety is considered as a prerequisite for building social activity in a neighborhood (Burton & Mitchell, 2006; Talen, 1999). A neighborhood without crime can make residents have a feeling of security in their participation in activities and social interaction with one another. Nash and Christie (2003) made a claim that residents "hate to feel unsafe or to live in an unsafe place" and the feeling they want not is to not be afraid of anyone who lives in their neighborhood (Nash & Christie, 2003, p. 15; Shaftoe, 2000). This type of sense of safety arguably increases social interaction in a form of mutual trust among neighbors and is involved in creating a sense of community in a neighborhood. Briefly, the existence of safety in a neighborhood builds a sense of safety and contributes to the all categories that define the concept of social cohesion.

2.3.4 Summary

Social cohesion is a sophisticated concept, explained and discussed by many theoreticians. This chapter has reviewed of the literature from several fields to define the concept of social cohesion and contribute to a theoretical debate of social cohesion at the scale of the neighborhood. This review covered the social categories related to the everyday life that were felt and sensed by neighborhood residents. These interrelated categories enabled the design of the method of Stage-I by creating the questions that helped the researcher to reveal the information from the participants. This information was related to the extent of the social cohesion among the neighbors in the participants' neighborhood and what physical setting quality would produce positive social activities if present, as well as which physical settings when absent will produce negative atmosphere.

The body of the literature defined the concept of social cohesion and quality of outdoor space at the neighborhood level. The concept was also used later in developing the

methodology using codes to categorize the interviews. The categories used to code the interviews are:

- Availability of mixed services
- Availability of sidewalks
- Availability of outdoor spaces
- Sense of safety
- Extent of social networks and interaction
- Participation of outdoor activities

According to Rowley (1994), designing quality neighborhood spaces is “the art” and a “the process” of creating, making, and managing spaces and places for people, as well as, contributing to either lacking or strengthening the “cohesion” and “consistency” among the community members concerns. Therefore, to understand and implement a high quality design of outdoor social space in the neighborhood, a collaborative process is proposed as a way of gaining insight into the design process that will satisfy the users’ needs and desires, and foster their social cohesion. The next section will highlight the definition of community engagement and discuss the design process and the role of the users as a community engagement in the design process, followed by describing the communication in the design process including the role graphic communication in the design process.

2.4 Users' Collaboration as a Community Engagement

A user is a representative of the community (i.e. a resident) that is referred to a place where people share common and geographical place such as neighborhood, share common interests, share common concerns, share common faith and ethnic background (H. Russell, 2008). At the neighborhood scale, and according the social and everyday life, residents share common interests and concerns related to the quality of their local neighborhood setting "whether they feel safe from crime and anti-social behavior, whether the streets and green spaces are clean" (Hester, 1990; H. Russell, 2008, p. 22). The scale of the neighborhood is the existing social setting in which the social interaction and networks are realized. According to Appadurai (1996), the neighborhood as a social setting is the community that is characterized by its spatial, virtual, and its possibility to social reproduction.

Defining the terms of "users participation" and "community engagement" is broadly used in current landscape architecture, urban design, and planning. Community engagement is a process to bring "community views and the channels for undertaking engagement… in order to build capacity amongst community groups" (H. Russell, 2008, p. 10). The term community cohesion (as discussed earlier under social cohesion) is found in some literature related to community engagement. Community cohesion is an engagement process that realize "sharing a common vision related to sense of belonging for all communities…and where strong and positive relationships are being developed between people from different backgrounds" (H. Russell, 2008, p. 11).

Different areas in the literature have recognized the elements of "social cohesion", as discussed earlier in the previous section, used in the community engagement and referred to concepts of "mutual trust," "shared values," and "social networks" that can enable supportive action in sharing important inputs (Rowley, 1994; H. Russell, 2008). According to H. Russell (2008) and Forrest and Kearns (1999), social cohesion can be carried out in the community engagement and reveal three scales:

Scale 1) How to bond with social cohesion and make strong ties between individuals for those in the same neighborhood (Forrest & Kearns, 1999);

Scale 2) How to bridge social cohesion that is weak, reduce social ties and share values

between individuals (Forrest & Kearns, 1999);

Scale 3) How to connect social cohesion referring to vertical" rather than "horizontal" connections, such as connecting less powerful people with powerful people, connecting the public with the public elite, connecting social classes together, and connecting community formal institution and governance structure (H. Russell, 2008).

This dissertation explores how the proposed method (collaborative ideation process) helps the users to see the nature of the social cohesion in their neighborhood and if they were given the opportunity to accomplish (scale 1) and (scale 2), what would they would imagine to see as a possibility that would foster their social cushion.

2.4.1 The Nature of Users' Collaboration in the Community Design Process

Alan Rowley (1998) argued that environmental designers have difficulty in agreeing what constitutes a high quality design that satisfies users' needs and desires. In a similar direction, Hester (1984) points out that each neighborhood has unique social factors that should be taken seriously in the design process. Thus, he argues that "frequently designers do not know all what the users need, and the users do not know what the designers know. Although designers give careful attention to the cost of construction, the definition of space, and the construction methods, these are almost never considered by users" (Hester, 1984, p. 75). Accordingly, by knowing that, designer's own values and convictions may be different from those of the users in the design process (Churchman, 1987; Hester, 1984). The next sub-sections discuss how the process of the environmental design shapes the outcome and produce the built environment.

2.4.2 Values of Users' Engagement

The values of users' collaboration found in the literature under "public participation." Hixson and Lach (1996) acknowledge a number of values: opening the process to community members, understanding diversity of visions, integrating community concerns, information exchange, saving time and avoiding costs for a conflict solution after implementation, and enhancing design satisfactoriness, enhancing mutual learning

and mutual respect.

In a similar view, Sanoff (1999) make a point that collaborative/participation "reduces the feeling of anonymity and communicates to the individual a greater degree of concern on the part of the management or administration" (p. 9). He also argued that when "residents are actively involved in the development process, there will be a better-maintained physical environment, greater public spirit, more user satisfaction, and significant financial savings" (pp. 9-10). He acknowledged three main purposes that show the value of participation:

1) Involving people in design decision-making processes and increasing their trust and confidence in organizations, making it more likely that they will accept decisions and plans and work within the established systems when seeking solutions to problems;
2) Providing people with a voice in design and decision making in order to improve plans, decisions, and service delivery; and
3) Promoting a sense of community by bringing people together to share common goals (Sanoff, 1999, pp. 9-10).

2.4.3 Summary

As mentioned previously, there are many qualities that have been defined and agreed upon by many scholars and are considered as high quality criteria that should be accomplished through design and lead to active social cohesion among the users (i.e. residents). According to Hester (1984), "designing and planning neighborhood spaces must be user oriented, and that the design of neighborhood space must relate to the behavior patterns and values of the people for whom that space is designed, not the values and beliefs of the designers" (Hester, 1984, p. 27). However, in this dissertation, it is important to expose to what extent these mentioned values exist in the proposed method – collaborative-sketching process. The next section reviews studies related to the design process and the role of incorporating users as a community engagement in the design process, follows by describing the communication in the design process including the role of graphic communication in the design process.

2.5 The Process of Design

Some of the major types of theory in environmental design include positive theory and normative theory. Both have an effect on design decisions, as well as the design outcome (Lang, 1987, 1988). Positive theory has been described as, "In the design professions one of the functions of positive theory is to raise consciousness behaviors in the built environment that are important to people and that therefore should have impact on design decisions (Lang, 1987, p. 14). In comparison, normative theory is concerned with how we design and includes a form of principles, codes and standards. These forms are concerned with the descriptions and explanations of how to approach the design and have a good design and how the architecture or urban design should be (Lang, 1988). Normative theory explains also the designers' attitudes towards the built environment. In this sense, normative theory includes three activities: ideation, representation, and iteration.

2.5.1 Ideation

This dissertation is about incorporating the users in a high level of collaboration to share their vision in the ideation activity design the design process. Therefore, what is "ideation" and what role does it have to play in a collaborative process? According to Dorta et al. (2008), ideation is a process of "coming up" with an idea at the beginning of the conception of design solution. Specifically, ideation is the activity by which "designers exteriorize their mental images, engaging in a conversation with themselves" (Dorta et al., 2008, p. 123). While Briggs and Reinig (2007) define ideation as a trail process to enhance and generate creative ideas that plays an essential role in creating a sense of design solutions, proposing potentials and implementing the choices they have been proposed. Many ideation methods have been developed to support the designer's mental activity to generate effective and practical alternatives (Shah, Kulkarni, & Vargas-Hernández, 2000; Shah & Vargas-Hernandez, 2003). These methods involve stages in the design process.

It is important to emphasize that there is a difference between solving problems and showing possibilities (Lawson, 2005). According to Shah et al. (2000), ideation is to suggest and propose solutions to solve a problem through relying on the designer's cognitive activity during the design process. There are two types of ideation: logical and

intuitive. In regards to logical ideation, Shah and Vargas-Hernandez (2003) suggest that a logical method depends on either a historical-based tool or analytical-based tool. Logical ideation is defined as a systematic analysis of solving problems or phenomenon by relying heavily on:

- Catalogues of solutions,
- Precedent studies and projects,
- Standards and codes; and
- Engineering principles (Shah & Vargas-Hernandez, 2003).

Intuitive ideation is an mechanism of creative thinking and pioneering design forms that "break what are believed to be mental blocks" (Shah & Vargas-Hernandez, 2003, p. 112). In the intuitive ideation, different scholars (i.e., de Bono, 1990; Fogler, LeBlanc, & Rizzo, 2013; Osborn, 1963; Shah & Vargas-Hernandez, 2003; Zwicky, 1969) defined a number of major ways that have been developed to support designers' way of generating ideas during the design process to solve problems and produces alternatives to reach to better decision-making:

- A checklist technique to modify and change existing ideas (Osborn, 1963);
- A brainstorming technique to create ideas from scratch (Osborn, 1963);
- A storyboarding technique to record number of generated ideas and organize them on board (Shah & Vargas-Hernandez, 2003; VanGundy, 1988); and
- Hybrid ideation to use a mix of the mentioned techniques at different stages of during the design process

In this dissertation, the objective is not to solve an existing design problem; rather it is to introduce possibilities. Besides, the proposed ideation method in this research involves neither logical nor intuitive; as it is not a uni-mental ideation activity (Vargas-Hernández, Summers, & Shah, 2001) that is reliant on the designers' team cognitive activities and what entails of prejudgment (see subsection 2.5.4). The next section discusses the stages of the most common design processes.

2.5.2 Types of Environmental Design Process

Generally environmental design process in the literature has developed a number of rational processes that comprise stages, which are normally intersected and iterative. The most common environmental design processes in the literature are seen as four types of processes. This section will highlight briefly the four most common ones in order to show the normative approach that is concerned with how we design. Kevin Lynch (1976a) provides a conception of design process in four liner stages: 1) diagnosis (analyzing the sense of the place, including patterns of use and the meanings attached to the place); 2) policy (developing principles of quality development and management); 3) regulation (codes and standard to execute policy and their negotiation); and 4) design (the development of a specific form). These stages represent the sequence of the process of environmental design that starts by analyzing the setting of the place, followed by developing and electing codes and standards of design, negotiating the regulation with stakeholders, and implementing the design.

Jones (2001) suggests additional stages for the environmental design process as a cyclic process, including analysis-composition-evaluation. A brief description of the process of these stages is as follows: 1) analyzing and defining the problem, 2) developing logic ideas, and 3) conceptualizing options and evaluating the options (Jones, 2001). In his proposed design process, Jones tries to reconcile and balance between three factors include factors related to users' need, factors related to circumstances of the site, and factors related to policy and local government regulations.

Carmona et al. (2003) differentiate environmental design processes between knowing design and unknowing design. He defined his differentiation as "knowing design is the process by which different concerns are intentionally shaped, balanced and controlled through development and design proposals, plans and policies." While this is true, the scholars continue by saying that the

> Unknowing design is the ongoing accumulation of relatively small-scale, often trial-and error, decisions and interventions. It also worked because the step of change was relatively slow and the increments of change relatively small. For better or worse, many contemporary urban environments also happen in this ad hoc and piecemeal fashion without express planning or design. (Carmona et al., 2003, p. 55)

Accordingly, they proposed four stages of knowing design, including: 1) brief setting, 2) design, 3) implementation, and 4) reviewing the implementation. Moreover, under each of these stages there is a sequence of thoughts including: forming the goals, analysis, visioning, synthesis, prediction, decisions making, and assessment. These thoughts are in a closed cycle form.

Finally, Boyko et al. (2006) propose four stages of the environmental design processes including: 1) creating teams, assessing the condition and forming the goals; 2) generating ideas, designing, and developing; 3) evaluating, selecting and creating a plan; and 4) implementing, monitoring, and following up. They suggested that the actors are able to redefine the goals of the previous stage and move forward. The scholars point out that there is a significant overlapping among each stage of the environmental design process. Throughout all the mentioned design process, generating ideas and development are taken care of and carried out by the designers and regulators who shape the built environment.

As seen in the literature on environmental design process, a variety of decision makers that are mainly designers, authorizers, and developers control the outcome of the process as each has different goals and motivations to involve that, which will affect the eventual users. These processes can be seen as related to the way we have been taught or practiced in the past, and do not consider the eventual users as a dominated source of information. However, designing and planning neighborhood spaces is different than any other built environments and accordingly, the role of the designers and planner should act and respond to users' needs and desires as each neighborhood is a unique social setting (Hester, 1990).

2.5.3 Collaborative Approach Involving Community Participation

The potential of the process of designing neighborhood spaces as a collaborative approach among diverse decision makers is encouraged by the debatable nature of the contemporary environmental design process. In the vision of the environmental designers as a collaborative approach, their role has significant influence and broad involvement, but is still limited. According to S. McGlynn and Murrain (1994), "the close congruence of interest between urban designers and everyday users which each must exploit to increase

their influence in the decision making and design process" (S. McGlynn & Murrain, 1994, p. 322). Thus, their role demands the role of involving the users.

Lang (1994) claims that a high-collaboration process is when the society engages in shaping their future. He stated, "Designing has to be a glass box process. To be successful glass box process, design must be based on clearly transparent bodies of substantive and procedural knowledge" (Lang, 1994, p. 464). In this way, Lang underlines that design is a social responsibility; and as a collaborative art, designers need to take the principles and recognize the rights and the freedom action for each user.

A number of scholars have frequently described the designer's priorities as a "misplaced certainty" that could not be congruent with user's priorities (Carmona, Gallent, & Sarkar, 2010; Carmona et al., 2003; Vischer, 1985). This discussion shows the gap between designer and user. Vischer (1985) makes a comparison between two models, or "preference and needs" and "adaptation and control." He reaches the conclusion that there is a conceptual shift from users being passive expressers of their "preferences and needs" to users being active agents to do the change. After this, he refers to the "adaptation" to users' ability being capable to change themselves and their behavior responding to different environmental physical settings; then he referred "control" to users' ability being capable to change and modify the physical settings of their environment without motivation to adapt. Consequently, Vischer concludes that giving users some "control" over their environment may be more effective than trying to design a direct response to their needs and they express them orally. He states, "Users are not passive and inert entities…they take an active role in their environments, interacting with it and adjusting it to suit changing situations" (Vischer, 1985, pp. 293-294). Accordingly, this dissertation is about incorporating the users' visions in a high level of collaboration and giving them the opportunity to see how they control their environment to satisfy their needs and desires and produce a high quality built environment.

2.5.4 Ideation as a Uni-Mental Iteration by the Design Team in the Design Process

In the design process, mental iteration in ideation is a thinking process that occurs in the designer's head as a repetition of cognitive activities (Fink, Ward, & Smith, 1996; McKoy, Vargas-Hernández, Summers, & Shah, 2001). In regards to designing and

developing social settings such as neighborhood spaces, it has been said that "if there are three designers we will have three ideas according to each vision" (Hester, 1984). Cogitative iteration is often carried out by a single designer's mind during the design process when the designer brainstorms the ideas, performs the task and delivers them to the team members (Jin & Chusilp, 2006). Bucciarelli (1996) suggests that the cognitive iteration is a behavior that is observed as a natural feature of design capability. This can be noticed in the process of design students both in terms of performance and behavior between the time they are freshman and senior students in their design assignments, and between their information process and decision-making (Adams, Turns, & Atman, 2003).

Jin and Chusilp (2006) define the designer's mental iteration as a process to transform the ideas that are brainstormed from an existential process into a pragmatic measurable world. For example, according to Schön (1984), mental iteration in solving design problems can be seen in cyclic model of "seeing-moving-seeing" (p. 3). The scholar sees iteration as a matter of perception and responses to the problem that occur in the brain of the designer. However, mental iteration in most cases is not preferred because it can be an exhaustive and hostile to the individual designer as often it leads to constraints that take a longer time to design and consume a higher cost—although sometime it is essentially appreciated (Costa & Sobek, 2003; Jin & Chusilp, 2006).

2.5.5 Ideation as a Community Participation Method in the Design Process

There are four active common participatory processes to engage participants in a dialogue to share ideas in order to solve problem in their community, such as "Community Charrette," "Planning for Real Exercises," "Design Assistance Teams," and "Focus Group" (Carmona et al., 2003; Riddick, 1971; Sanoff, 1999; Wates, 2013).

- "Community Charrette" is a community event that brings residents or part of the local community to work together with a variety of disciplines and expertise under the pursuer of limited time to produce proposals. The charrette is a process that involves several stages including input from stakeholders, analysis of the environmental context; followed by brainstorming sessions, synthesizing the proposals, then spreading of results. This process is usually phased over several days or weeks (Riddick, 1971).

- "Planning for Real Exercises" is a community exercise that encourage participants individually to come up with suggestions and write them down on cards, or "suggestions cards," and attach them over the map to be followed up in details by group meeting (Wates, 2013).

- "Urban Design Assistance Teams" are "a variation on action planning where multi-disciplinary teams from outside the area 'parachute in' to facilitate an event and, with the local community, 'brainstorm' and approach to a problem and thereby help the local community devise recommendations for actions" (Carmona et al., 2003, p. 337).

- A "Focus Group" is an open-ended interview that includes number of individuals and discusses ideas (Sanoff, 1999).

These four methods of carrying out the ideation process are more about generating ideas and exposing common interests and concerns from the people or users in order to understand their needs (H. Russell, 2008). However, in these participation sessions, when considering the users' needs as important design criteria, these needs always conflict with the designers, authorities and regulators visions; and accordingly this cause obscure in the design process. An example of this brought by Hester (1984) is that

> The user-needs criteria may suggest that closing a street would solve a particular neighborhood recreational problem; the designer discovers that the city manager thinks an additional policeman would solve the problem, and the traffic engineer opposes closing any streets. The designer himself would like to design a park to solve the problem. He will face a personal dilemma as well as the responsibility of resolving the conflict. (Hester, 1984, p. 76)

In this context, conflict can be related to the vision of the users that might be unrealistic and noticed as the dilemma that affects the design decision-making.

2.5.6 Summary

As seen in the literature, ideation related to community design and developing can be seen as an iterative activity in a form of cyclic stages in the design process focusing on proposing design solutions instead of proposing design possibilities. Also, most of the

influence and design outcome is from relying on the designers' cognitive activities and what results from their prejudgment. However, as previously mentioned, the objective of this dissertation is not to solve an existing design problem; rather it is to visualize possibilities. More importantly, the proposed ideation method in this research involves neither logical nor intuitive techniques.

Moreover, the process of environmental design in a collaborative process also needs to consider their imagination as a source of information and experience in order to minimize or make community participation input unrealistic and may reproduce unsatisfactory in the practice of collaborative sketching process. This dissertation proposes a new collaborative process that focus on extracting the information from the user's imagination and using the researcher's sketching skill as a tool to enable the users see possibility continuously, iteratively, and instantly during the meeting session. The next section discusses the communication during the design process and review studies related to the role of graphic communication in the design process.

2.6 Graphic Communication in the Design Process

Carmona et al. (2003) discuss the type of communication that occurs during the process between the users and designers, including "informative" and "persuasive" communication. They emphasized that in most of the design process and in the ideation stages, effective communication is seen as two-way feedback: "speaking" and "hearing" (Carmona et al., 2003). They claim that the significance of the communication is in the credibility according to "trust" and "respect" between the users and design team. At this point, the communication between all the actors is a sensitive process as it is between professionals and layperson.

However, there is a component of visual communication, which is the graphic representation that represents the ideas and thoughts. Graphics in general are a unique means that can be a valuable vehicle for communicating (Buxton, 2007; Hanks & Belliston, 1992; Rodgers, Green, & MacGown, 2000). It is claimed that 75% of our daily time is spent in various forms of communications, and 90% of all the communication forms goes through eyes (Hanks & Belliston, 1992). According to some design-research theoreticians, a good use of graphical representation in designing and developing physical environments means having the right communication tools that prevents designers from miscuing and misunderstanding (Suwa & Tversky, 1997).

Graphic representations, such as freehand sketches, diagrams, graphs and even hand-written notations and memos, serve not only to support mental activity, but also important to facilitate interpretation and understand problems (Suwa & Tversky, 1997). These types of representation called "external representations" are the most important basis of communication among team members and between a user and designer in representing the design effort (Goldschmidt, 2004). Similar to Suwa and Tversky (1997), Marian Peter (1995) argues that good graphical communication always means coupling perceptual clues to crucial and important information. As this dissertation will use "sketching" as a communication tool in a collaborative approach, the next sections focuses on the characteristics of the use of sketching skills and why this particular method is used as part of the research. There are two different types of sketching as a means of communicating: notation and the act of sketching itself.

2.6.1 The Importance of Sketching Notation as a Communication Means

Based on the discussion of Hanks and Belliston (1992), sketching is rapid communication that usually involves four things: a "sender," "receiver," "message" and "feedback." The sender of communicated elements is the means by which the message is transmitted. The receiver is the one who receives the message from the sender. The message is the expressions that are accepted from the sender. Sketching is unique in communicating information that is seen always by the sender. Most of the ideation activity initiated visually to communicate to the viewers' eyes and mind (Buxton, 2007).

Also according to Hanks and Belliston (1992), notation as a communication tool is a "great teacher that discusses the concept of a person talking to himself visually through sketching" (Hanks & Belliston, 1992, pp. 136,139). Baskinger and Baradel (2013) claim that notation is the means that enables the sketcher to understand and learn what the sketcher is sketching in order to convey how the concept works. Another view by Buxton (2007) is that notation helps the viewer to "understand the specific ideas that are not readily apparent in the sketch itself" (Buxton, 2007, p. 174). Another account of notation is that it can be used as a supportive tool to the sketch and can be seen as the voice of the sketcher that conveys the concept in a dynamic performance (not passive) and acts on behalf of the sketch itself (Hanks & Belliston, 1992). Therefore, notation aims to convey the concept behind the anatomy of the drawing to be learned, understood and remembered (Hanks & Belliston, 1992). An example brought by Hanks and Belliston (1992) explains how notation supports the act of the sketch by using only arrows to show how to start a fire by friction (Figure 2.1). Another example by Randolph Hester (1984) uses texts supported by arrows to explain his observation of a community activity (Figure 2.2).

Figure 2.1: *"How can we start the fire?"... A sketch by Hanks and Belliston shows the mission of the notation using only arrows to visualize (Hanks & Belliston, 1992, p. 163)*

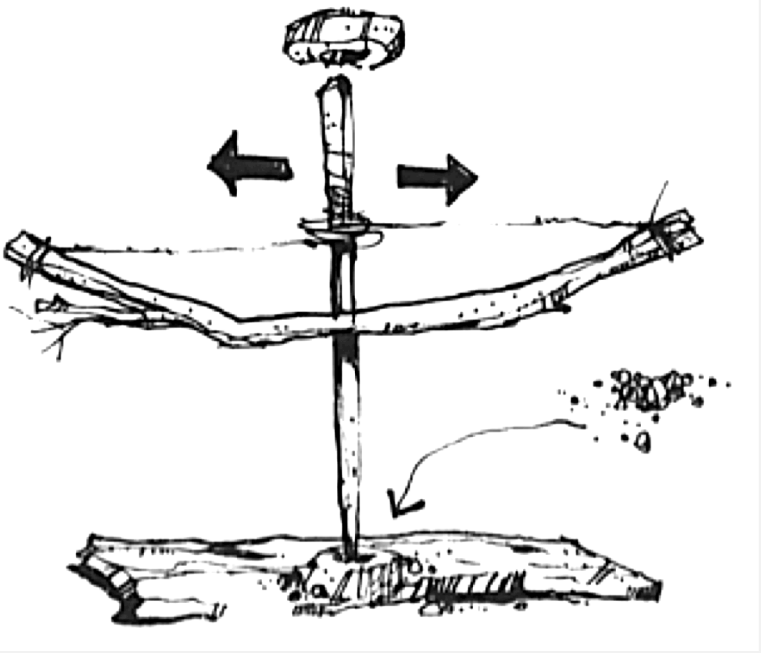
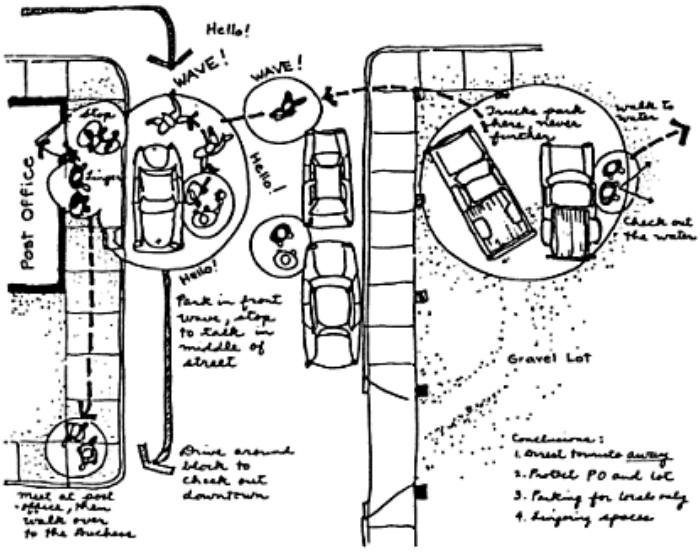


Figure 2.2: *"Newsing at the Post Office"... A sketch by Randolph Hester shows the mission of the notation using arrows supported by texts to reveal his observation about community activity (Hester, 1984, p. 151).*



2.6.2 The Importance Sketching as a Communication Means

Designers during the design process develop different types of representations for each stage (Goel, 1995). For each stage, a certain kind of representation is utilized for specific purposes. During the early stage of ideation, many designers, individually or synchronously within a team, use freehand sketching or physical models to exteriorize and visualize their mental intention and communicate them with themselves (Dorta et al., 2008; Goldschmidt, 1991, 1994). They call this "ideas-sketches" (Goldschmidt, 1992). An idea-sketch is the essential tool in the early stage of the process to produce rough ideas. Then, later in the process, designers utilize a second type of representation and called "presentation-sketches," or 3D proposal drawings and rough details to better asynchronously communicate with the design team and users (Goldschmidt, 1992; Shah, Vargas-Hernández, Summers, & Kulkarni, 2001). Reaching the end of the process, the third type of representation engages a software process to produce technical and detailed digital drawings and prototyping models to communicate the possible exact information to build the artifacts (Dorta, 2009; Dorta et al., 2008). The last two types of representation are a passive design tasks that are the outcomes of a preferable way to communicate (Marshall, 1992).

However, this dissertation, as part of constructing and extending the normative theory, focuses on the first types of representation that occur in the early stage of ideation in the design process where ideas are born and emerge. The focus is on freehand sketching as an external representation and the first representational tool used during the early stages of the process to create initial ideas, research development, concept generation, control tests and prototyping (Woolley, 2004). The importance of sketching has become part of facilitating productivity because, as an important skill in the designer possess, it helps to continuously flow the required information (Goldschmidt, 1991). The importance can be seen in its moving seamlessly from conceptual ideas, alternatives, prototypes into construction (Woolley, 2004).

2.6.2.1 Sketching Act in Ideation

Ideation activity conveys conceptual thoughts through manipulating sketches in rich ways that need skills of mentally visualizing and understanding how knowledge is gained and conceptualized (Fish, 2004; Lane, Seery, & Gordon, 2010; OECD, 2002). Sketching is used not only to communicate new ideas and thoughts, but also to support cognitive processes of exploring possibilities (Fish, 2004). Accordingly, freehand sketching is the most direct tool that enables us to amplify and enhance our mental imagery (Fish & Scrivener, 1990). Goldschmidt (1991) describes a similar view of the relationship between sketching and mental imagery, or that the cognitive process enables the sketcher to generate images from his mind onto the paper—what he called "interactive imagery" (Goldschmidt, 1991, p. 131).

Ideation is the creative stage that comes up, communicates and develops creative ideas by using the rapidity of using the sketch (Goldschmidt, 1992). According to Goldschmidt et al., (1998) Creative ideas focus on discovering rapid alternatives, creating possibilities and grasping constraints. These explorative and learning aspects of design are essential parts of the ideation stage. This is because designing is a gradual process, from the first half thought to a fully shaped idea (Goldschmidt, Hennessey, et al., 1998). Because of cognitive limitations, such as mental imagery and memory, this process necessarily requires using sketching as a continuous and rapid activity that keeps the cognitive activity active (Goldschmidt, Verstijnen, et al., 1998). During early ideation in the process, freehand sketching is an essential means to externalizing visual ideas continuously, iteratively, and instantly.

Designers use their own mental images to generate new thoughts and ideas (Ferguson, 1977) and use sketching to visualize their mental images (Goldschmidt, 1992). An experienced sketcher uses the move of sketching to externalize ideas from examination to perceive new associations and generate more new ideas (Bailey, Konstan, & Carlis, 2001; Bellamy et al., 2011). According to Buxton (2007), "we can gain insights about design by way of cultivating a better understanding of sketching" (p. 106). So, sketching is not only a cognitive activity, rather good sketchers see their move of sketching as an experiential and visceral destination (Bellamy et al., 2011). However, this dissertation

examines the use of the researcher's sketching skill and bringing the users' mental images to the ideation stage in a collaboration-ideation process.

2.6.2.2 Sketching Technique in Ideation

In this dissertation, it is important to highlight the importance of sketching techniques in order to develop the proposed collaborative-sketching method according to two characteristics: no high resolution needed and efficiency (Baskinger & Baradel, 2013; Buxton, 2007, p. 136; Faruque, 1984; Hanks & Belliston, 1992).

- "No high resolution needed" prevents wasting time and effort in preparing high resolution and confirming. This can be achieved through a combination of seven criteria: clear vocabulary, distinct gesture, minimal detail, ambiguity, appropriate refinement, suggestion and exploration rather than confirmation. As a thinking artifact, for example, the lack of refinement enables the designer to keep the design space free and open to modify and alteration as needed. Also, the designer wants to let the viewer to know that the idea is developing or the design is not yet done to maintain the impression of "in process."
- "Efficiency" includes four criteria "quick, timely, plentiful and disposable." These criteria allow the designer to "stay in the flow" (Csikszentmihalyi, 1990, p. 212). The concern here is seen in keeping the "flow" of the idea during the ideation continuous with no distractions.

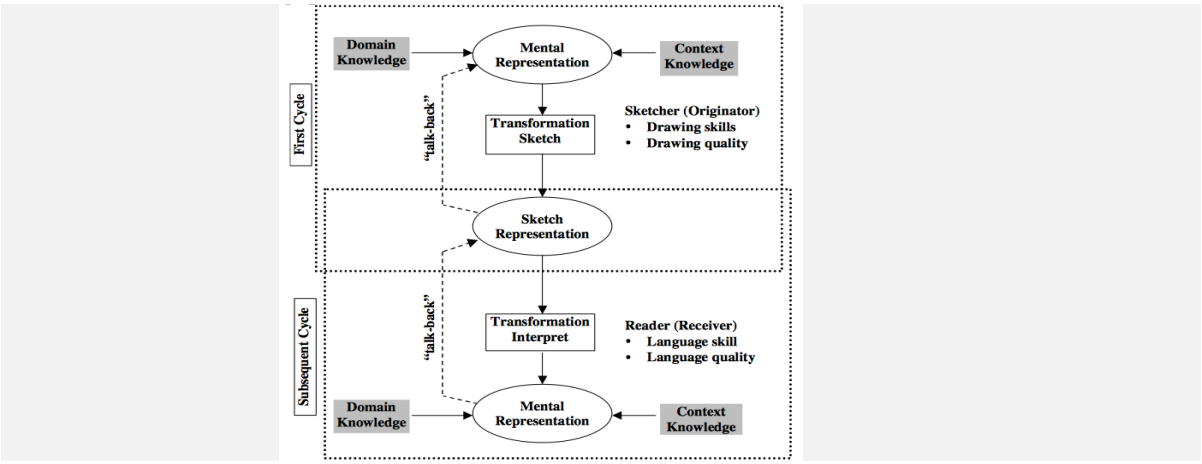
2.6.2.3 Sketching as a Cyclic Feedback in the Ideation

An experienced sketcher is able to automatically make a constant feedback cycle from dot-and-line to conceptualization (Schön, 1984). During the move of sketching, designers can sense and think about potential ideas and possibilities (Goldschmidt, 1991). By externalizing ideas and thoughts, sketching allows collaboration through communicating ideas when multiple collaborators such as clients and decision-makers are involved (Shah et al., 2001). Bellamy et al. (2011) emphasize that sketching grounds the dialogues and discussions that occur between the designer and collaborators. In this way, sketching helps collaborators to establish shared meaning, interests and collaborative trial

and error (Heiser, Tversky, & Silverman, 2004). Goldschmidt (1992) claims in her study "Serial Sketching" that sketching is a process of shaping unexpected relationships that emerge outside the intention. Accordingly, her study implies that sketching offers a feedback "talk-back" to the designer's mind through a cyclic loop of "sketching-inspecting-revising," like the designer is having a conversation with himself (Suwa & Tversky, 1996, 1997). However, this self-conversation is heavily influenced by the individual's ability of using mental images and involving its richness of information.

Shah et al. (2001) propose a model of the "Design Thought Sketching" Process (Figure 2.3). In their model, generating initial ideas by the designer's mind is called an "originator." The mental activity of the designer drives both through a "domain" knowledge base and through a "context" base related to specific problem. The internal mental representation is altering this drive and later is gradually transforming it into an external visual representation. This changing and transformation of the ideas into some graphical solution "sketches" depends on the preference and quality of the language sketching skill of the sketcher—as well as, the quality of the textual solution "sentence." The cyclic feedback of sketching, or "talk-back," enables the designer to mentally generate internal images while seeing and representing his ideas physically, and realizing the changes and transformations to the original ideas (Shah et al., 2001). The cyclic feedback process is mentally iterative until the "originator" is satisfied with the outcome design solution.

Figure 2.3: *A model proposed by Shah et al., shows the System for generating and externalizing the ideas visually (Shah et al., 2001)*



Similarly, Hanks and Belliston (1992) also suggest a model that our brain, eyes, hands and images cycle during sketching. The authors find that Shah's model of generating ideas is the model closest to his work. However, the missing gap in his model is the absence of incorporating the eventual-users. This model is only shows how the designers himself feedback cycle between his understanding and his visual sketch.

2.6.2.4 Summary

This section discussed the sketching skills not only as a vehicle for communicating visual information, but also as a mental process that helps in visualizing and understanding how the information is obtained in order to explore possibilities (Fish, 2004; Lane et al., 2010). Therefore, using the notation method is the essential "spokesman" that conveys clear and unambiguous key information to the sketcher and to the viewer. Also, using sketching amplifies the mental images of the sketcher and the viewer for the sake of generating new thoughts and ideas (Fish & Scrivener, 1990). However, while the designer in the ideation activity uses their own mental imagery, in this dissertation, the researcher examines how to involve the mental images of the users themselves in the ideation stage and how he can be a facilitator to help convey their mental images to explore and see possibilities. Moreover, in this dissertation, it was important to highlight the important techniques of sketching that show efficiency that is related to the flow of generating ideas.

2.6.3 Graphic Representation and Community Participation Method

As mentioned in section 2.5.5, there are a number of collaborative methods to engage users in community design and development such as "Community Charrette," "Planning for Real Exercises," "Design Assistance Teams," and "Focus Group." Involving communities in these events is increasingly popular and has much value (as previously discussed in section 2.4.2). The community participation development involves the users who share concerns and experience problems in their community. These community participation events seek to bring consensus to quickly develop an approved development program that help speed up the design process and gain faster approvals (Christensen, 2012). They then work together with a team of experts to carry out this program, including: project sponsors, community development corporation, city planning authority, and developers (Christensen, 2012; Lennertz & Lutzenhiser, 2003).

The outcome from the process of these events aims to allow thoughts and ideas to be shared between the design professionals and the stakeholders, including users (Neilson, 2005). The events include several stages to accomplish the objectives, which are staged over several days or weeks and the participation level of the community is more about a matter of community opinion than decision-making (Christensen, 2012; Riddick, 1971). According to Christensen (2012), the most common umbrella can be summarized into three main stages including: listening, brainstorming, and drawing. Listening is divided into number of activities: presenting the policies and regulations, discussing the project restrictions, engaging the community members, and then exploring community problems and issues. Brainstorming is the stage that includes recording and developing ideas, summarizing community needs, marking and noting ideas on board or maps, and then builds alliances and consensus among the community members.

Moreover, Keller et al. (2009) argue that using drawing, other graphics, and texts in community participation provides help to illustrate the functionality of proposed solutions" (P. Keller et al., 2009, p. 2). Similarly, Lennertz and Lutzenhiser (2003) explain that creating graphics "throughout the event, participants generate a multitude of diagrams, pictures, maps, and checklists for designers to use in building plans" (Lennertz & Lutzenhiser, 2003, p. 7).

This dissertation is about proposing a collaborative-sketching process that involves bringing forward the mental images of users and graphically facilitating and visualizing their mental images through the designer's sketching skills and revealing it as design possibilities. The current graphic action in the community participation involving the users is based on the stage after collecting the information (i.e. diagrams, pictures, maps, and checklists) in the event from the participants, the hired design team works to synthesize the information and use digital graphic programs such as Photoshop and sketch (Lennertz & Lutzenhiser, 2003). For example, the City and County of Honolulu developed a program for Honolulu's Development called "The 21st Century Vision Program." This program involves the residents bringing their vision to develop sustainable neighborhoods. Figure 2.4 shows the meeting of the residents at different times over a period of six years, sharing their ideas and interests.

Figure 2.4: *Honolulu's residents in the 21st Century Vision Program sharing their visions and ideas (Harris, 2004, p. 194)*

After collecting data over a period of six years, the program hired a design team to provide visions. However, the design team used existing digital photographs from the city neighborhoods and used digital programs like Photoshop to produce illustration of what could be when they manipulate the photographs. Their objective was to transform the setting in the photograph from an automobile-oriented to a people-oriented community in the residential environments. In this study, Figure 2.5 and 2.6 show two examples that illustrate the transformation and modification that happened to the settings using Photoshop in Figure 2.5 and freehand sketching in Figure 2.6.

Figure 2.5: *An illustration using Photoshop to show the concept of revitalizing neighborhoods by transforming a vacant intersection into a commercial and residential district (Harris, 2004, p. 205)*

Figure 2.6: *An illustration using freehand sketching to show the concept of developing the waterfront to make a place for cultural events (Harris, 2004, p. 215)*

2.6.4 Summary

These graphics added to the photographs could have also been done using sketches, but the key is not what medium is used, but how this can approximate what is in the user's head by bringing their imagination to the photograph—which is what this research is about. The next section will discusses the use of user's imagination as a source of their needs and desires to reform and modify the physical setting in a photographs into as they imagine it.

As seen in Figure 2.6, the use of freehand sketching is not a new tool for modifying a space, but the key innovation is to do so in a collaborative way involving users' mental images. These modifications were not collaborated with the residents and nor did they bring their imagination to the photographs. The users in such events just provided the information that includes figures, diagrams, pictures, maps, written notes and checklists to the hired designers. These final graphics that were presented to the community were accomplished in the studio of the design team and not during a meeting with community participation to incorporate their vision in theses graphics. In sum, using sketching in a rapid collaborative way is not found in the literature. Therefore, this dissertation is proposing a collaborative ideation process using a collaborative-sketching method by stimulating the user's imagination as a source of their needs and desires, and visualize their imagination by using certain sketching techniques over photographs of a setting to help the users to explore possibilities. The next section discusses the importance of user's imagination as a source of information to be an essential source for ideation.

2.7 User's Imagination

In community design and development projects, there is a lack in fully understanding the user's needs that enables the design team to produce specific design solutions for specific users. When users/residents experience problems in their neighborhood, even if they may have their own visions to solve the problem, they often do not have the experience to mentally visualize and materialize a design solution. In addition, if they communicate their needs using their "hearing" and "speaking," or if credibility such as "trust" and "respect" is available (Carmona et al., 2003), in most cases their materialized ideas and visions might not be as clear as they seemed in their head. However, even when considering the users' needs, their needs in many cases may conflict with the designers, authorities and regulators visions. Accordingly, there is a gap in terms of community involvement during the early stage of the design process.

According to environmental psychologist Canter (1977) in his book *The Psychology of Place*, he raises the point that the experience of the physical setting is stored in the head of the users who experiences it (Canter, 1977, p. 158). Similarly, E. Hall (1990) perceives that "if one wants to understand the impact of the environmental settings on human beings, it is necessary to know a great deal about the senses and how sensory inputs are handled in the brain" (1990, p. III). Edward Relph (1976) in his important book, *Place and Placelessness*, defines how each user sees a certain place in slightly different ways based on the needs and experiences. He states that "within one user, the mixing of experience, emotion, memory, imagination, present situation, and intention can be so variable that he can see a particular place in several quite distinct ways. In fact, for one user a place can have many different identities" (Relph, 1976, p. 56). Another advocate who shows the significance of the user's mental images or imagination is Boulding (1956), who claims that "the mental images of the people is the product of experiences, attitude, memories, and immediate sensation. Mental images are intentional interpretations of what is or what is believed to be" (Boulding, 1956; cited in Relph, 1976, p. 57). Therefore, according to Damasio (2000), the brain is the vehicle that pictures possible scenarios of the future and events through operating cognitive process that enables people to make a mental representations of the world around them (Damasio, 2000).

2.7.1 The Importance of User's Imagination

Many scholars see imagination as an important mental process that functions as a catalyst for creative actions to develop individual's cultural life (Dart, 2001; Eckhoff & Urbach, 2008; Harman & Rheingold, 1984; D. Russell, 1998). Eisner (1991) describes imagination as a catalyst for creative process and an essential part of person's consciousness that functions as the "engine of cultural and social progress" (p. 15). The imagination process is the vehicle that transforms everyday experiences from raw intellectual materials into actions and evidences for belief (D. Russell, 1998).

Alex Osborn (1949) claims in his work "Your Creative Power: How to Use Imagination" that, "Our thinking mind is mainly two-fold: a judicial mind which analyzes, compares and chooses; and a creative imagination, which visualizes, foresees, and generates ideas. These two minds work best together. Imagination not only opens ways to action, but also can enlighten judgment. Judgment keeps imagination on the track" (Osborn, 1949, p. 3). In the same chapter, he concludes that "each human does have an Aladdin's lamp, and if we rub it hard enough, it can light our way to better living – just as that same lamp lit up the march of civilization" (Osborn, 1949, p. 8).

According to Dawney (2011), each human being needs to picture the future in order to decide not only what to do, but also how can we handle our life. Dee Russell argued that imagination plays a central role in bridging the understanding of what-is to what-could-be which empower the individual activity to "go from direct activity to representative knowledge" (D. Russell, 1998, p. 209). With imagination, individual can construct "images or visions of things different than the ordinary reality" (Harman & Rheingold, 1984, p. 82).

Lisa Dart (2001) argues that through imagination, each individual person has the ability to connect everyday experience with the surroundings through the designer via creating a holistic approach of extracting one's understanding of how they experience things within their world around. Imaginative thinking is a process to picture new ideas to enhance one's knowledge and understanding of seeing possibilities (Heath, 2008; Ogilvie, 1998; Osborn, 1963). Therefore, this dissertation incorporates users' imagination as a unique source of information that enable users, designers, and decision makers "to see

events and understand problems in different ways, to hypothesize, and produce what was never present, and what is not available" (Arieti, 1976, p. 50). The importance of incorporating the imagination of the users is because the imaginative process possesses a transformative quality that empowers people by enhancing the capacity of their mind to picture new experiences and produce possibilities that might position and orient them towards the future (Heath, 2008; Vygotsky, 2004).

2.7.2 User's Imagination as an Extension of Experiences

According to Pelaprat and Cole (2011), imagination is a "gap-filling process" that can be defined as "the process of resolving and connecting the fragmented, poorly coordinated experience of the world so as to bring about a stable image of the world" (p. 399). Moreover, imagination is an essential activity to human and cultural life that can be potentially extended to what can be possible in a given situation of socio-culture and socio-history (Pelaprat & Cole, 2011). In a similar view, imagination is seen as "an extension of human experience that is inherently fragmented because of specific physiological, cultural and developmental properties" (Zittoun & Cerchia, 2013, p. 306). One example of this, as described by Zittoun and Cerchia (2013), is that although "comic books present us with a series of apparently disconnected frames and situations, we can understand the story line because we 'fill the gap' between two pictured frame. Hence, filling the gap is a necessary completion of our permanent incomplete apprehension of the world" (Zittoun & Cerchia, 2013, p. 307). This extension is an imaginative process of what gives people "a feeling of oneself in relation to the world" (Pelaprat & Cole, 2011, p. 399)

Zittoun et al. (2013) claim that because of "human limitations (biological, social, developmental, etc.), our modes of understanding and acting in the world have deficits and that imagination can offer some reparation or completion" (p. 202). The researcher sees this proposition as a powerful claim that is worth investigating in this research in order to understand how incorporating a user's imagination can help us as designers to complete our incomplete understanding of actual needs and desires of the users.

2.7.3 Summary

As mentioned previously, the researcher sees that incorporating the "imagination" of the users in the ideation stage can shift the way in how we design community development as it is a vehicle for picturing the future and possible events, sources of emotion and feelings that represent their needs and desires, and an extension of experience that is associated with everyday actions. Therefore, incorporating a user's imagination in the early stages of the design process as a collaborative ideation can be a vital step for generating new types of information and delve deeply into their needs and desire. Using freehand sketching to stimulate their eyes can be creative way of extracting information from their mind and shift the normative process in design. Always in design research, imagination in the ideation stage is described as a cognitive process dominated only by the designer in generating ideas. Although the designer's cognitive process for ideation is unique and makes designers professional career competitive based on the quality of the ideas and the power of presenting the thoughts, the researcher beliefs drive him to ignore the imagination of the users and public community members—a gap that needs to be considered to enrich the ideation process.

2.8 Conclusion of Literature Review

The literature review covers a wide range of topics in order to provide a coherent understanding regarding the proposed collaborative ideation process that involves the users in the ideation stage as a community member and the use of the researcher's sketching skill as an extractor-tool to reveal information from the user's imagination. The first section discusses the basic concept of the relationship between the neighborhoods as social settings and the social life of the users. The second section focuses on building a holistic understanding of the quality of neighborhood spaces by examining two classical thoughts that express the conceptual process of theoretical development of urban design theory, including social-usage and placemaking. This section reviews the conceptual theories that represent how the concept of the neighborhood as part of the built environment was developed and evolved over the last decades.

Based on reviewing the urban design theories in designing neighborhoods, the third section discusses more about the nature of the social life inside the neighborhood as a social setting by examining the concept of social cohesion and reviewing the relevant theories to extract categories that are experienced and applied to the neighborhood scale. The fourth section discusses the importance of engaging the neighborhood's users and residents in the process of developing their community as Hester insists that "the design of neighborhood space must relate to the behavior patterns and values of the people for whom that space is designed, not the values and beliefs of the designers" (Hester, 1984, p. 27). The fifth section discusses the nature of the design process in general, and the ideation process in particular. This section includes reviewing the existing studies and works related to the collaborative approach in ideation and highlighting the most common community participation approaches—such as the charrette.

The sixth section discusses graphic representation, includes sketching as a means of communication. This section revealed that drawing is a tool that is used in community participation, but it is not a part of the collaborative process. Rather, it is a part of examining and translating the information (figures, diagrams, picture, maps, written notes and checklists) that were collected from the community members during the community participation meetings and used in ideating and presenting the conceptual thoughts.

Although the concept of using drawing over a photograph is not a new method, a collaborative method of using sketching and photograph combines with collaborative process that engages the user's visions in the ideation stage was not found in the literature.

The seventh section discusses the imagination of the users and how incorporating it in the ideation stage could shift the normative way of generating ideas and influencing the decision-making. The next chapter on Methodology will discuss in detail the protocol used for engaging the users in the proposed collaborative process in this study.

CHAPTER 3: METHODOLOGY

The objective of this study is to examine the use of proposed collaborative sketching approach as a way of taping into users' imagination as a rich source of their needs and desire to empower the design process. In order to fulfill the objective and respond to the problem discussed in Chapter one, a collaborative sketching interview process was designed and conducted as the main vehicle to gain insight and possibilities from participant's imagination. The discussion of this chapter is structured into eight main sections. The first section discusses the theoretical framework. The second section describes the design of the study. The third section presents the protocol and procedures for designing the interview instruments. The fourth section describes the selection of the participants. The fifth section discusses the ethical considerations. The sixth section presents the selection of the settings and their criteria. The seventh section discusses the interpretation and coding procedures to interpret the findings includes describing the evaluation tools used to assess the success of the collaborative-sketching process. The final section summarizes this chapter.

3.1 Theoretical Framework

The normative process in design is concerned with how we design, and includes the stages of ideation, representation and iteration. Through this qualitative research, the researcher proposes to extend the current normative process through the development and demonstration of a more collaborative ideation process. In this proposed collaborative process, the representation of design ideas becomes more iterative and knowledge exchange occurs between the researcher (designer) and participants (users). Through a process of collaborative-sketching, ideas are shared and possibilities are visualized that are responsive to the needs and desires of the participants.

The researcher illustrates a theoretical model of the collaborative ideation process in which the interaction between three major types of activities used in this research: 1) collaborative-sketching interview, 2) user's imagination, and 3) designer's sketching skill. The theoretical model is presented in Figure 3.1. The theoretical model shows the collaborative ideation process to generate ideas and see possibilities during the early stage

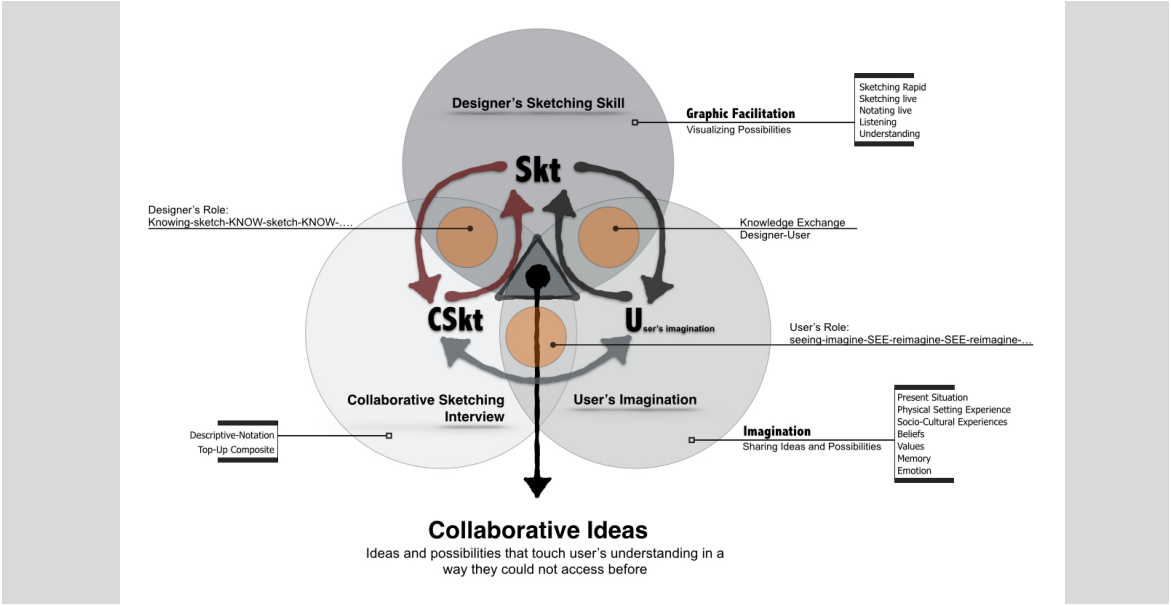
in the design process because the early design stage is the conceptual stage where ideas and thoughts are being generated and developed.

First, the **collaborative-sketching interview** is the actual collaboration and the visual communication tool that occurs between the designer and the user and is divided into two stages: descriptive-notation and top-up composite. The questions of both stages were designed to be more engaging and collaboration between the researcher and participants. The purpose of this type of activity is to reveal and capture the complex and interconnected ideas what could possibly be seen to satisfy participants' needs and desires. A further description of how the collaborative-sketching interview was designed and what was the rationale behind it in sub-section 3.3.2.2 below.

Second type of the model's activity is the **user's imagination**, when the participant builds mental images that are seen as the driving force that communicates their needs and desires.

The third activity is the **designer sketching skill**, or the rapid visualization ability that enables the designer to help the users to visualize their shared ideas and possibilities that touch their understanding in a visual way they could not access before. The researcher argues that engaging his knowledge of design cannot fulfill this mode except via his drawing skill. The researcher finds that to achieve this type of activity, he must deny his knowledge of design. Therefore, the researcher plays a role of a graphic-facilitator in the collaborative-sketching interview. A further description of the role of the researcher and sketching skills is described in sub-section 4.2.3 below.

Figure 3.1: *A theoretical model of the collaborative ideation process helps the researcher and participants to see possibilities during the design process (proposed by the researcher)*



3.1.1 Interview Stages: Rationale and Tools to Evaluate

The goal of the thesis is to contrast the conventional interview style versus a collaborative one. The research interview protocol included three stages: pre-sketching interview, collaborative-sketching interview, and post-sketching interview.

Pre-Sketching Interview is the conventional interview portion and is divided into two main objectives. First, it includes interview questions that were designed to identify the problem(s) the participants experience in their neighborhoods and if the participants were given the opportunity to deal with the problems in order to enhance outdoor social activities. Second, it evaluates the nature of findings and level of details obtained from the participants and compares them with findings and the level of details obtained by the collaborative-sketching interview. A further description of how the pre-sketching interview protocol was designed in sub-section 3.3.2.1 below.

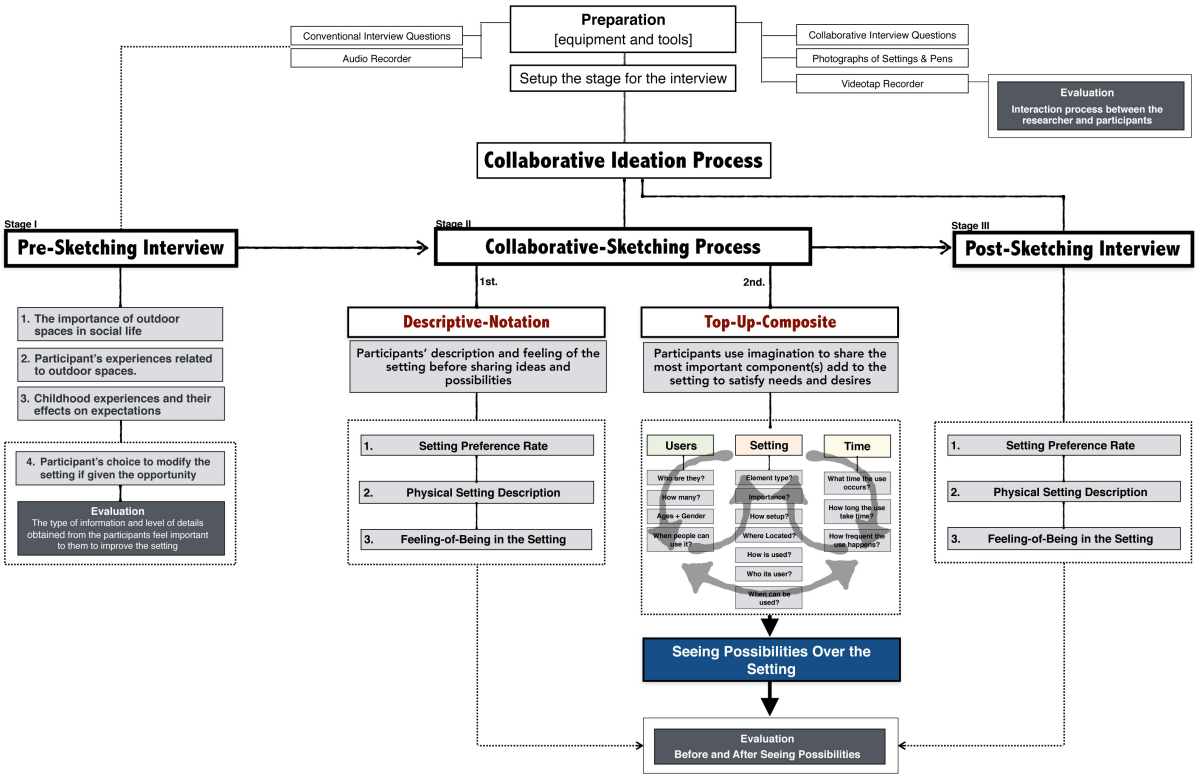
Stage II: Collaborative-Sketching Interview was designed to drive the participants to share their ideas visually in order to see possibilities that touch their understanding in a way they could not access before with the conventional interview in the

first stage. The collaborative-sketching protocol focuses on examining the use of the researcher's sketching skill as an extractor-tool to reveal users' needs and desires from their imaginations. There are two tactics to achieve this purpose of this stage: descriptive-notation and top-up-composite. A further description of how the collaborative-sketching interview protocol was designed in sub-section 3.3.2.2 below. This stage was videotaped to evaluate the interactions that occurred between the researcher and participants during this process.

Stage III: The purpose of the Post-Sketching Interview is to evaluate the process after the collaborative-sketching through the information gained from the participants, such as whether they believe this collaborative process helped them to see possibilities; to which extent the visual possibilities captured what they had in mind; how they felt about the process (i.e., interesting, enjoyable and boring); and what caused or changed their feeling before and after seeing the possibilities. A further description of how the post-sketching interview protocol was designed in sub-section 3.3.2.3 below.

The researcher has illustrated in Figure 3.2 an interactive schematic diagram that shows the interactive activities between these stages: *pre-sketching, collaborative-sketching interview, and post sketching*. In this diagram, the researcher introduces the framework of how the interview should be conducted and at which point the sketching mode should take place. Also, the diagram shows the equipment and tools needed to conduct the collaborative interview. In the diagram, the evaluation tools that indicate the accomplishment of the proposed collaborative-sketching process can be observed. The evaluation tools are divided into three parts: 1) evaluating the type of information and level of details comparison between the conventional interview and the collaborative interview; 2) evaluating the information before and after the collaborative process gained from the participants about whether they believe it worked and how it changed their feelings about the setting; and 3) using the videotape to evaluate the interaction between the researcher the participants.

Figure 3.2: *This interactive schematic diagram illustrates the main interview stages, the content, the relationship, and hierarchy of the stages (Proposed by the author)*



3.2 Study Design

In this qualitative research, an in-depth interview was designed to examine the relationship between quality of outdoor space and daily outdoor social activities that influence neighborhood social cohesion. The interview and sketching protocol included three main stages: pre-sketching, collaborative-sketching and post sketching interview. The protocol of each stage described in section 3.3 below. To answer the research questions, ten participants were recruited to participate in this study. More details about how the participants were selected is in section 3.5 below. Three outdoor residential settings were selected as the case study because of their relation to the daily outdoor social life of the community. A further description of how the settings were selected in section 3.4 below.

The language used in the interview was in Arabic, the native language of the participants. The participants' responses were transcribed into Arabic and then translated into English. The reason of using Arabic-English is to find the right and close meaning of

the Arabic terms that express and are an example of the right feeling of the participant's meaning. The collected qualitative data were analyzed, interpreted, and coded in English.

The sketches were decoded and categorized. The English and Arabic versions and the interview instruments are included in Appendix A—Instruments. The research approach included the documentation of interactions between the researcher and participants, and interview of participants during the collaborative-sketching process. The interviews were recorded using videotape and audiotape to have a detailed transcript to analyze. It was important to use videotape to not only to document and analyze, but also to evaluate the interactions between the researcher and participants during the collaborative-sketching process.

3.3 Interview Protocols

For all interview questions, the participants had the freedom to answer as long as they wanted or to withdraw at anytime during the interview. The participation in this study was voluntary and took approximately 35 to 50 minutes. The interview took place at the researcher's office at the landscape department after mutually agreeing upon this place. The reason of holding the interviews in the researcher's office was because this interview needed enough space to setup the videotape device to record the interview process and a videotape to record the sketching required special preparations that could not be portable. The answers of the interviews were recorded using both audiotaping and videotaping with the participant's permission. Each interview was audio and video recorded and later transcribed by the researcher. In the case where identifiable images of the participants are used in this study, this was also done with their permission. The results as sketches were potentially used in proposing a new way of designing, teaching design and making decisions through incorporating participant's imagination in order to provide a new way of better understanding their needs and desires. All of the participants' names used in the descriptions will be randomly generated anonymously in order to protect identities (See Appendix C and Appendix D for IRB approval).

As previously mentioned in sections 3.1 and 3.2, the collaborative ideation protocol included three main stages: pre-sketching interview, collaborative-sketching interview, and

post-sketching interview. The final stage using interview protocol was finalized after the pilot testing interview.

3.3.1 Pilot Testing Interview

Pilot testing interview was conducted to assess the flaws and weaknesses within the interview and sketching process and, based on the results, to refine the protocol prior to instigation of the study. Two participants were recruited for pilot interviews that met the study inclusion criteria. After reviewing the findings of the pilot test interview, three major weaknesses needed to be addressed: length of interview, the way of prompting engagement between the participants and the researcher, minimizing the possibility of the researcher bias in the interview, and adding evaluation rating. A decision was made to employ videotape to record the collaborative process to evaluate the interaction that occurs between the researcher and participants.

First, the time that the pilot testing interview took was on average three hours. Based on that, the interview questions were reviewed for relevance and some questions were omitted with the objective of having the interview time not to exceed 1.5 hours. Second, reviewing the way of prompting the engagement so that it could be delivered in the right way at the right time. For example, the participants narrated their preferred activities in the setting at one time in a passive dialogue. The revised interview protocol focused on stimulating the participants in an interactive dialogue to imagine a small mental image and tell a story, and reimagine it in multiple short stories in order to form the whole visual possibility in the setting. Third, after reviewing the role of the researcher, the pilot test sensitized the researcher to the importance of denying his designer's background and to focus solely on being a graphic facilitator to avoid biasing the participants' imagination. Fourth, rating questions were added as an evaluation tool to assess the usability of the proposed collaborative-sketching process. This evaluation rating was divided into two interview sections, before and after conducting the collaborative-sketching process. Employing video recording in the collaborative process was employed in order to evaluate the interaction that occurred between the researcher and participants. The revised interview protocol is highlighted in Appendix-A as follows: bold font will be for the additional questions added, and the crossed-out for the omitted questions.

3.3.2 Collaborative-Ideation Process

The collaborative ideation interview included the documentation of interactions between researcher and participants, and the interview of participants during the collaborative sketching process was video recorded. Outdoor residential settings were selected as the case study because of their relation to the residential community. The interview was designed to examine the influence of outdoor space characteristics and quality on daily outdoor social activities. The sketching and interview protocol included three stages: pre-sketching, intra-sketching, and post-sketching.

3.3.2.1 Pre-Sketching Interview

Pre-sketching interview was designed to explore the experience of daily outdoor space and outdoor social activities that the participants experience and what they consider to be important. This stage is divided into four main parts: 1) the importance of neighboring and social relationship with people in the neighborhood; 2) participants' outdoor social activities related to outdoor spaces; 3) childhood experiences and their effects on expectations; and 4) the participant's choice to modify his or her neighborhood outdoor space if given the opportunity. The rationale for starting with this conventional interview is to reveal the maximum information that could be obtained from the participants conventionally and to contrast this later with the responses obtained by the collaborative-sketching stage. The four parts were selected to cover the possible aspects related to how to engage the participants in re-designing outdoor spaces (i.e., as in charrette). The pre-sketching interview served as part of the evaluation to assess the collaborative sketching process. Comparing responses obtained from the participants in this conventional interview with the responses obtained by the collaborative-sketching stage performed the evaluation.

Part 1: Questions about the neighboring and social relationship in the neighborhood:

Q1. How would you describe the people who live in your neighborhood and their social relationships with each other?

Question 1 was asked to determine the nature of social cohesion among the people who live in the neighborhood. Probes and follow-up questions were used to understand the causes and whether there is a strong or weak social cohesion.

Part 2: Questions about outdoor social activities and neighborhood outdoor spaces:

This part included three main questions and each question includes a number of probes and follow-up questions based on the nature of responses.

Q2. What type of outdoors activities occurs in your neighborhood?

Question 2 was asked to orient the participants to understand what "outdoor activities" means and the nature of the activities in terms of and how the space handles the activities. Also, probes of question 2 were asked to describe type of activities, users' characteristics, time of activities and length and frequent of activity. The outdoor activities that were focused on in this study included walking, taking and watching children to play, sitting with neighbors, having tea, getting together with neighbors, greetings, chatting, and holding funeral or engagement party events.

Q3. What type of outdoor space are these activities that are most important and meaningful to you held in?

Question 3 was asked in order to understand the physical type of outdoor setting in which the outdoor social activities are held that were mentioned in question 2. The outdoor settings that were focused on in this study were any residential outdoor setting, such as sidewalks, stoops, mosque courtyard, street corners and any landscape settings. The probe and follow-up questions delved deeply to understand the physical attributes that facilitate holding the social activities and the way of interaction. Also, to describe what makes this place a good place for such activity and to what extent the participant believes this place is important to the people who live the neighborhood and why.

Q4. Do you walk in your neighborhood on a regular basis?

Question 4 was asked to focus on how much the participants interested in walking in daily trips and how they people perceive walking generally in their neighborhood and whether or not they facilitate and increase their interaction with their neighbors. Also,

probes were used to explain what prevents them from walking and what was would most likely encourage them to walk.

Part 3: Questions about childhood experiences and their effect and expectations:

Q5. When you think about your childhood, are there outdoor activities that come to mind?

Question 5 was asked to determine if neighborhood outdoor activities were an issue in their childhood, and what impact any outdoor social activities may have had on them and their feelings about their current neighborhood. Probes were asked to determine whether there is a connection between feelings towards the residential outdoor spaces and activities of childhood by comparing responses with questions 2 and 3.

Part 4: the participant's choice to modify their neighborhood if given the opportunity:

Q6. If you were given the opportunity to do one thing to develop your neighborhood to make it a better place for daily outdoor social activities, what would be that thing?

Question 6 was asked to shed light on how the participants would like to be connected socially to their outdoor spaces. Also, follow-up questions were asked to determine the most important component they perceived to be meaningful to them to modify and recreate the space to draw people from their home and engage outdoors in social activities. This question was used as an evaluation by comparing responses with questions responses of the collaborative-sketching. At the end of this stage, the mind of the participants became ready to enter the collaborative-sketching stage since the participants became familiar with types of outdoor spaces and outdoor social activities. From this stage, key issues and problems of concern for the participant in his neighborhood as related to outdoor spaces have been revealed.

3.3.2.2 Collaborative-Sketching Interview

The collaborative sketching protocol was designed to examine the use of the designer's sketching skills as an extractor tool to help the layperson to share ideas and visualize what is possible to satisfy their needs and desires and encourage them to

experience the outdoor setting as a part of daily outdoor social activity in their neighborhood. In the collaborative-sketching stage, the participants were asked to build an imaginative storytelling of outdoor social activities that takes place in the physical settings presented in the chosen photographic images. Videotape was used to record the process in order to assess the interaction occurring between the researcher and the participant.

Three photographic images of outdoor residential settings were selected as the case study. The photographic images contained only residential outdoor settings that included the most common outdoor spaces in the local residential built environment of the participants. Each participant was asked to choose at least two settings that the participant prefers to see in their neighborhood. This stage is divided into two phases: descriptive-notation and top-up composite.

3.3.2.2.1 Descriptive-Notation Phase

The descriptive-notation phase served as part of the evaluation to assess the collaborative-sketching process by comparing responses obtained from the participants in this phase before seeing possibilities with the responses obtained from the post-sketching stage after seeing possibilities. The "notation" phase allowed the researcher to comment on the elements of the chosen setting to capture and understand what about the setting influences the participants' description and feelings. According to Buxton, "The use of arrows is potentially a really powerful notation to reveal important information" (Buxton, 2007, p. 295). Thus, the notation of this study uses arrows supported by texts to describe the participant's view of the setting characters, the feeling, and what caused certain feeling.

This phase helped the participants to express their preference rating, feeling of being in the chosen setting and to understand how they perceive the setting's characteristics and quality that influence their feeling. This phase included four main questions, probes, and follow-ups varied based on the individual responses:

Q1. How would you rate this place in this photograph? Why this rate?

Question 1 was asked to see what is the preference rate and what influenced the rating. In this question, the setting preference rating was measured using a five-point Likert scale, where 1 = not preferred, 2 = preferred little, 3 = preferred somewhat, 4 = preferred 5

= preferred very much. The responses of this question will be compared with the responses of questions 10, 11, 12.

Q2. How would you [describe] this place?

Question 2 was asked to understand how the participants perceive the setting and its component. The responses of question 2 were compared to the responses of question 13 in the stage of post-sketching interview.

Q3. How do you think you would [feel] if you are in this place? What is it about this place that makes you feel [this feeling]?

Question 3 was asked to see how the participants perceive their feeling of being the setting before engaging in. Also, it was important to recognize the components that caused specific feelings. The responses of question 3 were compared to the responses of question 14 in the stage of post-sketching interview.

Q4. Would you [like to be with others or alone] in this place? And how?

Question 4 was asked to reveal how the participant prefers to be in setting. This question was asked also to be as the introduction to the next phase –top-up composite. While the participant was describing, the research was notating over the photograph to document what about the setting influences the participant's description and feelings.

3.3.2.2.2 Top-Up Composite Phase

Top-up-composite is where the researcher uses sketching to help the participants to imagine outdoor activities through storytelling that shows which are the necessary outdoor characteristics that encourage people to engage with each other outdoors. The rationale is to stimulate the participants' cognitive activity to build mental images in order to help them to see what is possible to modify in the setting to fit needs and desires. The researcher played the role of a "graphic-facilitator" by denying his design knowledge to avoid guiding participants' imagination.

The main question revolved around identifying the most important components that could make this place a good place for outdoor social interaction and draw people from their home to engage outdoors. This main question was customized to each participant

based on the problems the participant raised from the pre-sketching interview. After each main question in this phase, there were probes and follow-up questions that were used specifically to enable the researcher not only to sketch (i.e., physical elements) what the participant suggested, but also to enrich each small sketch in the setting by stimulating the participants to provide and describe their affordance, including the rationale of using, value of use, and how social interaction might occur within the different settings, and any specific details about other social activities might associate with the suggested physical element.

Q5. What would be the most important component that makes this place a good place for outdoor social activities and draw people from their home and engage outdoors?

The rationale of question 5 was asked to determine the major component that the participants saw important to their daily outdoor social interaction. Based on the literature, there are three major components that build active outdoor social activities: 1) physical elements or properties, 2) people who engage using the properties and cause action, and 3) the time of when, how long, and how frequent. The researcher then took the participant from the journey of a "suggestion" into a journey of an "imagination" by stimulating them to build the component. For example, if the participant suggests a physical property, the researcher encourages active participation and breaks the fear to help the participant give more details about its characteristics, its place in the setting, its usage, its users, number of users and its importance.

Q6. What type of activity do you have in mind to be involved in this place?

Q7. Who will be involved with you in this activity?

The rationale of question 6 and 7 were interrelated, although each question includes specific probes and follow-ups. Question 6 was asked to stimulate the participant's imagination towards the possible type of outdoor activities that could take place in the chosen setting that makes him or her feel engaged. Different probes were used in question 6 to help the participant to describe the scenario of the activities. The purpose of encouraging the participant is to provide details of the activities that enable the researcher

to sketch as precisely as possible. The information that the researcher needs is the scenario of the activities that takes place in the setting. For example, if the participant suggests a children's play activity, the researcher encourages him or her to describe how they would like to modify the space to accommodate the activity. At this activity, in order to sketch specifically, the researcher needs to know the answers to 5 probes: 1) the reason of choosing this place in the setting to hold this activity; 2) description of physical elements to facilitate and make this activity possible; 3) the importance of this activity in this place to the people; 4) number of children engaged in this activity; and 5) other social interactions might occur and emerge within this activity.

After answering these probes and the reason behind each, the researcher became familiar with the nature of the activity and ready to sketch. However, the moment before sketching, the researcher uses question 7 to determine the characteristics of the users and their age, and which of their actions are done as groups and as individuals. In question 7, the probes were asked to know more about the users' age and gender. While sketching the scenario of a children's play activity, the researcher uses question 7 as cyclic feedback in a form of a crosschecking dialogue to make sure that each part of the sketch matches what is in the participant's mind. Figure 3.3 illustrates the process of this phase.

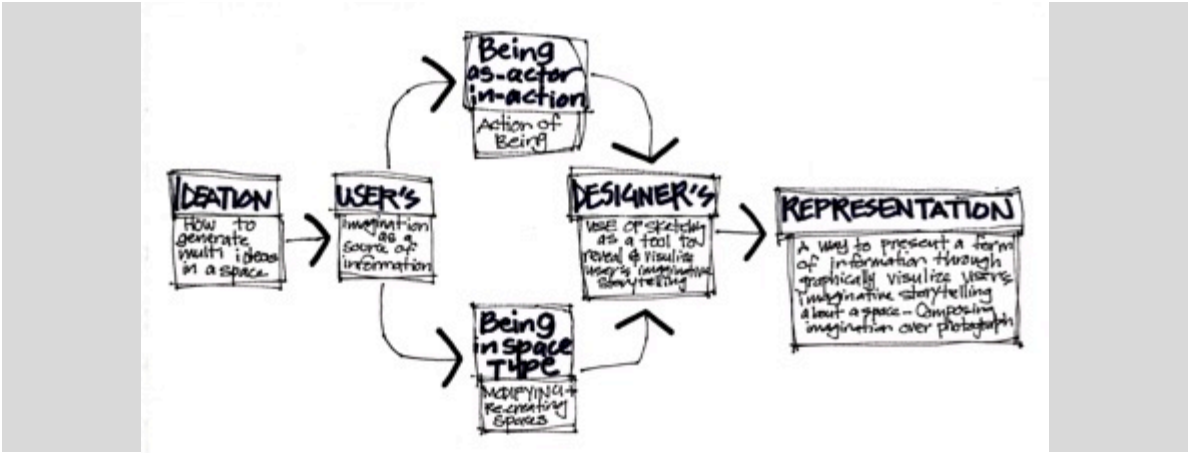
The probes and follow-ups were used to crosscheck four sketching moves: 1) Sketch showing children's movement in the setting, and crosschecking their movement. 2) Sketch showing the number of children, and confirming their number. 3) Sketch showing the physical element(s) suggested to be added to setting, and crosschecking the description and position of the element. 4) Sketch showing any other activity associated with this major activity such as a parent(s) watching, and crosschecking the associated activity. Crosschecking is an essential part because it answers the question of how the designer knows that whether or not what he sketched matches what is in the user's mind. During the sketching move, there was a crosschecking action after every completed part of the sketch. A further description of how the crosschecking technique used is in section 4.2.3 in Chapter 4: Technique and Reflections.

Q8. What time could this activity happen?

The rationale for question 8 was to determine the convenient timeframe that the

participant feels comfortable to use the sitting at specific time. Probes and follow-ups were asked to know more about the length and frequency of the activity occurs. Also, probes were used to know the reason for choosing this time range, length and frequency.

Figure 3.3: *This schematic sketch illustrates the cyclic feedback during the process of the top-up composite phase*



After finishing sketching the activity as one small possible story in the setting, the researcher goes back again to ask the participant if there is anything else that needs to be changed or added. After that, the researcher goes back to ask the participant if there is another component that he would like to see in the setting. Then, the researcher repeats questions 6, 7, and 8 to collaborate another sketch for another small possible story in the setting. Question numbers 6, 7 and 8 are interactive questions and interrelated. They play back-and-forth in an active participation. They are complementary in order to create a full, albeit small, possible story by connecting physical elements with the setting and activity, with people and time – and the other way around. Each small possible story should provide and describe the details of the suggested physical elements, and their affordance including the rationale of using, value of use, and how social interaction might occur within the different settings.

As mentioned before, this process includes videotape to recorder the process interaction as an earlier observation. Videotape recording provides evaluation of the process performance and specific lessons learned as a basis for future process implication. The use of the videotape recorder enables the researcher to evaluate the way in which the participant generates ideas, reacts, takes a new direction in thinking, and types of emotions respond to reaction. Also, the use of videotape is to promote improvement and generate change or confirmation of the participation being studied. After ending this phase with nothing to add and nothing more to be done, the participant then goes to the next stage, post-sketching interview.

3.3.2.3 Post-Sketching Interview

The purpose of the post-sketching stage is to verify and confirm the extent to which the sketches captured what the participant has in mind. After ending the top-up composite by sketching what is possible, it is important to compare certain information before and after seeing possibilities to assess the collaborative process and how it changed the level of satisfaction drastically, or at least enough be to noticeable.

After sketching and seeing possibilities, this stage uses the same tool used in the descriptive-notation that include: asking the participants to express their preference rating; their feeling to be in the setting and whether or not the collaborative-sketching changed their feeling and why; and their perception of the quality of setting. Probes and follow-ups varied based on the individual responses. This stage served as part of the evaluation to assess the collaborative-sketching process by comparing responses obtained from the participants in this stage after seeing possibilities with the responses obtained from the descriptive notation phase before seeing possibilities.

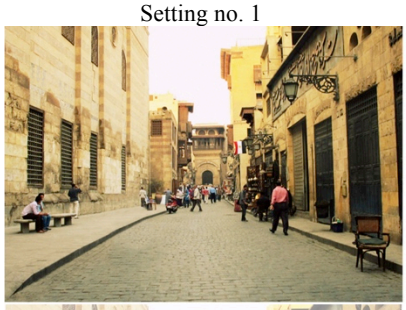
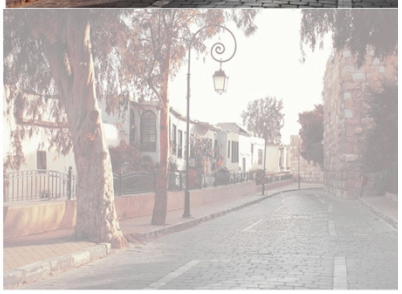
The findings as collaborative-sketches are potentially used in proposing a new way of designing, teaching design and making decisions through incorporating participant's imagination in order to provide a new way of better understanding of the users' needs and desires. Designing outdoor social spaces within a neighborhood is critical in terms of increasing social cohesion. Accordingly, it is important to understand that every community in its neighborhood has different and fundamental visions for increasing opportunities of everyday outdoor social interaction based on their lived experiences.

3.4 Settings Selection Process

Three photographic images of the residential outdoor settings were selected according to their components, scale and quality. The characteristics of the photographs contain different residential settings that include only outdoor spaces settings such as sidewalks, street corners, parks, and stoops. The settings were limited to three to avoid introducing variability in the settings that could affect the collaborative-sketching process. The photographs were carefully selected and prepared to sketch over them. There were five characteristics that were used when selecting the paper for printing the photographs for use in this study: high-quality paper, inexpensive, smooth, supple and thick. Therefore, the photographs were printed on a paper that has a very good weight (28 lb.), high-quality bright color (100 Brightness), a size of 11x17 inches and acid free. Further details about the reasons for choosing this type of paper is included in section 4.1.2.2 in Chapter 4, Techniques and Reflection.

Each photograph of the setting had two copies: actual resolution and 50% faded resolution. After choosing the settings, the participant was handed the full resolution copy in his hands, as it shows the actual view of the setting. The faded copy was then used by the researcher to sketch over, which allows the sketch and notation to pop-up (see Table 3.1). Sketching on the full resolution did not give a strong representation as the weak contrast between the sketch and the image itself.

Table 3.1: *This table show the three settings and the type of copies. The images above are the actual and below are 50% faded resolution (permission setting 2 and 3 see Appendix H and I)* [2]

Setting no. 1	Setting no. 2	Setting no. 3
		
		

The settings were chosen based on the following criteria:

1. Similar spatial configuration with different components
2. Close-up view of the setting: eye level or walking view
3. Human eye view angle as much as possible to provide an opportune spot to sketch on the photograph comfortably
4. The settings have to be in daylight
5. No cars at all: To control the content and avoid distracting the participants
6. No people as mush as possible: To avoid distracting the participants
7. No human activities: To avoid biasing the participants' imagination

3.5 Participants Selection

As previously mentioned in the introduction, residents of Jeddah living in the modern neighborhoods complain about the lack of the outdoor social spaces in

[2] Setting 2 is "old town in Dubai downtown" and has a permission by GNU Free Documentation License, (see Appendix H)
Setting 3 is "street in old Damascus with tree" and has a permission to be used in this research by the artist Dudarev Mikhail, and bought through shutterstock.com (see Appendix I)

neighborhoods that are supposed to enhance the social cohesion among them. Their complaints are primarily about how there are no common outdoor places that invite neighbors and their children to gather and play, no outdoor places for youth activities, and no sidewalks for people to use for their daily grocery shopping.

The participants in this study were ten residents from Jeddah City, Saudi Arabia. The participants are the representative vision of the Jeddah residents who share the same issues. The inclusion criteria of selecting the participants depended on their consent and having the five following criteria:

1. All participants must be living in the city for at least 10 years.
2. All participants must be living in their current neighborhood for at least 2 years
3. All participants must be adults (18 years or older).
4. All participants must be from the same socio-cultural background (i.e. must be Saudi)
5. All participants must be not from the design profession

The selected participants ranged from those who have been a resident for at least ten years in the city and at least two years in the neighborhood. Accordingly, experiences of the long-term residents are taken into consideration. An adult participant is a reliable person that has the ability to understand their needs and desires. Using participants from the same socio-cultural background refers to including participants who share the same social and cultural norms in order to reveal a level of details those participants are familiar with issue they face—in this case, ethnic Saudis. Therefore, if the study does not have a group from same culture, the study will not represent the main issues of the city (instead focusing on issues specific to special groups only, like immigrants or tourists). Finally, it is important to avoid participants who have design knowledge background, which could affect the collaborative ideation process.

3.6 Ethical Considerations

3.6.1 Confidentiality

In compliance with the HIPAA rules and regulations and to minimize the potential loss of confidentiality, several measures were employed: no identifiable information was collected on the data collection form; study participants were assigned random anonymous

names in order to protect participants' identity (Appendix D: IRB approval).

3.6.2 Informed Consent Process

The participants signed a consent form and a photographic release that indicates they are willing to participate, to be audio recorded and videotaped.

3.6.3 Human Subjects Approval (IRB)

The Office of the Institutional Review Board (IRB) of Virginia Tech approved the research protocol for this study as "expedited" on September 13, 2013, approval number IRB-13-812 (Appendix C: IRB approval letter) with an amendment approved on January 31, 2014 (Appendix D: IRB amendment approval letter).

3.6.4 Interviewee Recruitment

A convenience sample through personal communication was recruited. The researcher directly contacted the participants either face-to-face or by phone to schedule a meeting time at the participants convince. After meeting and describing the purpose of the study, the participants willing to participant in the interview were asked to consent.

3.7 Interview Interpretations

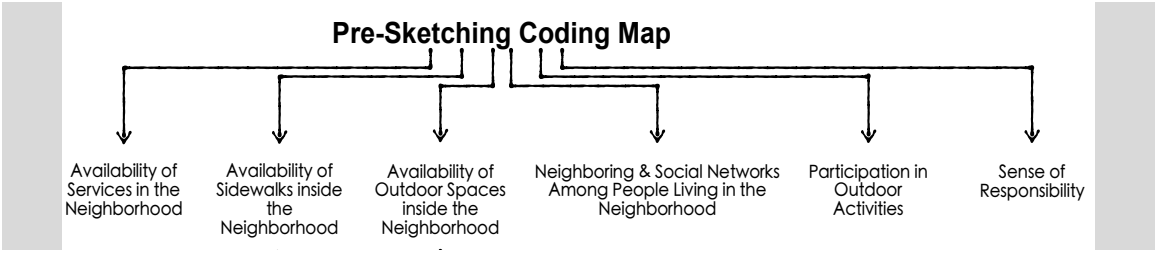
The qualitative interpretation implemented in this study represents case studies collectively. The data interpretation required a back-and-forth process of a systematic and constant comparison data analysis and memo writings, from which the conceptual patterns were extracted (Charmaz, 2010). In the pre-sketching interview, the audiotapes of each interviewee was transcribed, coded and categorized according to the types of knowledge exchanges and topic of questions. In the collaborative-sketching process, sketches were decoded and interpreted consistently with the videotapes that were watched, transcribed and reflected. The researcher pinned up the sketches on the wall and reflected on each case contemporaneously with watching the videos. The interpretation was divided into three major parts: pre-sketching interview, collaborative-sketching process, and evaluation of the collaborative-sketching process.

3.7.1 Pre-Sketching Interview Coding and Categorizing

The audiotape of pre-sketching interview was transcribed. In the transcribed statements, the following phase of interpretation required eliminating the vague passages and repetitive descriptions. In order to analyze and interpret the data about the facts and attitudes of the participants, Silverman (1993) suggests that the most clarified way is to tabulate the data from standard questions. In this study, the statements were dealt with as standard data needed to be tabulated into questions by the interviewer. Using a tabulation format enabled the researcher to provide comparisons of data to determine the distinctions and commonalities among all participants.

Each participant's transcript was done qualitatively by coding the transcript into six categories developed for the purpose of this study, including: availability of services, availability of sidewalk and its role on social interaction, availability of outdoor space and its role of in social networks, neighboring and social networks among neighbors, participation in outdoor activities, and sense of responsibility (Figure 3.4). Representative quotes were included in the discussion as the participants' insightful and thoughtful articulation of the subject matter was the best way to convey the overall sense of the interviews and the categories that emerged. The researcher decided to identify the relationship between these six categories based on their associations (Morse & Field, 1995).

Figure 3.4: *Conceptual map of coded categories.*



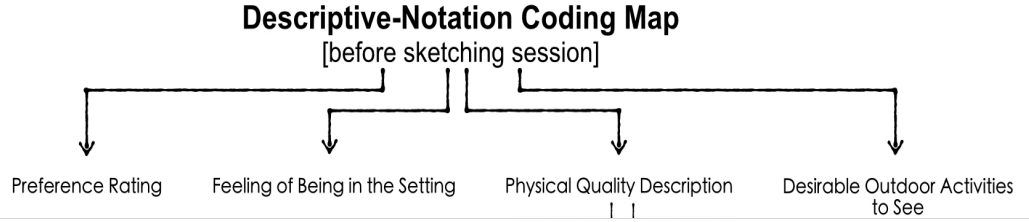
3.7.2 Collaborative-Sketching Process Decoding and Categorizing

To interpret the collaborative-sketches, content analysis of transcribed statements and sketches was used. Content analysis was used to decode the sketch and code its transcript. The researcher decided to reflect on sketches related to the three parts:

descriptive-notation (before the sketching session), top-up composite (the sketching session), and evaluating the collaborative-sketching process (after the sketching session).

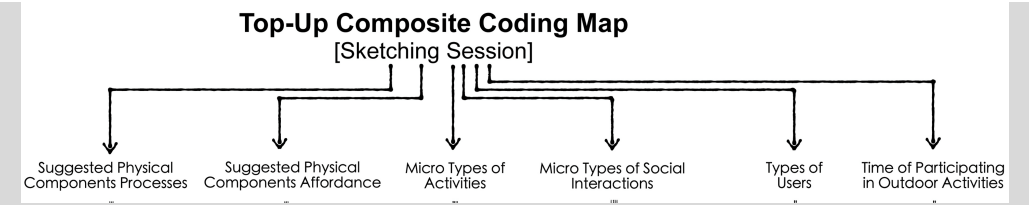
In the descriptive-notation phase, the codes categorized in the data are represented in Figure 3.5 below. Bringing the representative quotes in the discussion as evidence for the participants' insights and thoughts to convey the overall sense of the interviews and the codes that emerged. The interpretation codes are divided into six categories developed for this study, including: preference rating, feeling of being in the setting, physical quality description, and desirable outdoor activities.

Figure 3.5: *Conceptual map of coded categories used in interpreting the descriptive-notation.*



In the top-up composite phase, however, the interpretation and its codes were implemented collectively; major codes categorized in the data are represented in Figure 3.6 below. Bringing the representative quotes was done in order to discuss the participants' insights and thoughts as a way to convey the overall sense of the interviews. The codes that emerged are divided into six major categories developed for this study, including: suggested physical components processes, suggested physical components affordance, major types of outdoor activities, micro types of social interaction, type of users, and time of participating in activities. Further details of the top-up composite coding map are elaborated in Figure 5.6 in Chapter Five.

Figure 3.6: *Conceptual map of coded categories used in interpreting the top-up composite.*



In order to evaluate the process, the researcher focused on reflecting on both the videotapes of the interview and the sketches to answer the following two major questions: what types of information details does the process provide compared to the pre-sketching (conventional) interview? How do the participants cognitively react in the process? The interpretation of the evaluation was divided into four parts and each part was decoded and categorized. The four parts include: first, a comparison between the findings that were obtained from both the pre-sketching interview and the collaborative-sketching process; which was further divided into five codes including: broadness vs. specification, unrealism vs. realism, visual representation vs. texts and numbers, and unique commonalities. Second, comparing the findings that were obtained from both descriptive-notation (before the sketching session) and the findings obtained from the post-sketching (after the sketching session). The codes were divided into four types, including: preference rating after sketching, feeling of being in the setting after sketching, physical quality descriptions, and desirable outdoor activities.

Third, participants' level of engagement in the process adopted engagement indicators to evaluate the engagement level of the participant from the study published in *Educating Children and Young People with Fetal Alcohol Spectrum Disorders* (Blackburn, Carpenter, & Egerton, 2012) and includes seven indicators: "anticipation," "contemplation," "initiation," "intervention," "persistence," "curiosity," "responsiveness," and "confirmation." Anticipation occurs when the participants showed expectancy and prediction as a result of his or her belief. Contemplation occurs when the participants acted by considering and thinking with attention. Initiation occurs when the participants initiated and directed an idea, which can be considered as expressing a want and need. Intervention occurs when the participants interrupted to emphasize an important part of an idea. Curiosity occurs when the participants expressed a desire to explore how to fit a mental image of a component in the setting. Confirmation occurs when the participants expressed approval and acknowledged that no more needed to be added. Responsiveness occurs when the participants showed consciousness and acknowledgement.

Each indicator was coded and described according to three dimensions including: reaction, flow, and presence. First, reaction is represented by describing a participant's

body language and facial expressions. Second, flow is represented by the verbal excerpt that represented each indicator. Third, presence is represented by participant's feeling of being in the setting. In addition, each indicator was assessed using elapsed time and duration to show the average time each participant spent to respond and build a mental image of each component. The screenshots from the video were used back-and-forth while focusing on the evaluation of the process as the whole interaction between the researcher and participants rather than on the performance of individuals or single concept. This evaluation process was done because "seeing with a camera" (Monadada, 2006) has been recommended as a tool that can "capture unforeseen yet observable information" (Bessette & Tighe, 1988). The interpretation seeks to extract the common patterns of engagement that includes number of indicators. The reason for finding patterns of engagement is to answer the question of how the participants cognitively reacted to the questions in the process and how long each spent in order to build a mental image of a suggest component.

3.8 Summary of Methodology

Ten participants were recruited to participate in the collaborative process. The research approach included the documentation of interactions between the researcher and participants, and an interview of participants during the collaborative sketching process. An outdoor residential space was selected as the case study because of its relation to the community. The interview was designed to examine the influence of outdoor space characteristics on daily outdoor social activities. The sketching and interview protocol included three stages: pre-sketching, intra-sketching, and post-sketching. Pre-sketching focused on four main parts: 1) the importance of outdoor spaces in social life; 2) users' experiences related to outdoor spaces; 3) childhood experiences and their effects on expectations; and 4) the participant's choice to modify his/her neighborhood if given the opportunity. The second stage included a collaborative sketching protocol that focused on examining the use of the researcher's sketching skill as an extractor-tool. The participants were asked to choose at least two photographs of different outdoor settings. This stage is divided into two tactics: descriptive-notation and top-up-composite. The "notation" tactic is one that enables the researcher to comment on the photograph to capture and understand what about the setting that influences the participants' description and feelings. Top-up-

composite, is where the researcher uses sketching to help the participants to tell a story about the outdoor activities with the necessary characteristics to best support those activities. The rationale is to stimulate the participants' cognitive activity to build their mental images while helping them to see what is possible. Finally, post-sketching focused on the extent to which the sketches captured what the participants were thinking.

The research methods and processes used in this chapter have addressed how research questions posed in this introduction can be answered. Section 3.1 describes the theoretical framework of the collaborative ideation process and the interactive schematic diagram that illustrates the main interview stages, their contents, their relationship, and their hierarchy; including the evaluation tool used in the process to assess the accomplishment of the collaborative-sketching process. Section 3.2 highlights the approach of the study. Section 3.3 describes the interview stages and their protocols; pre-sketching, collaborative-sketching, and post-sketching; including how the proposed each stage was conducted. Components for each of these stages are also discussed with exemplifying how the question were used and tolerated. Section 3.4 describes the selection process of the setting; including their photographic images and the characteristics of the photographic paper used in the sketching process. Section 3.5 explains the participants' selection process and contains that inclusion criteria and the reason for each criterion. Section 3.6 highlights the ethical considerations include: confidentiality, informed consent process, human subject approval (IRB), and interviewee recruitment. Finally, Section 3.7 describes the qualitative interpretation used in this study and the rationale of using them. These include two interpretations: pre-sketching coding and categorizing and collaborative-sketching decoding and categorizing. Videotape reflection to evaluate the process is discussed with sample tables. Chapter 4 will cover the collaborative-sketching techniques and reflections. Chapter 5 will cover the findings of interpreting each case study.

CHAPTER 4: TECHNIQUES AND REFLECTION

After discussing the research methodology, this chapter reflects on the techniques used in the collaborative-sketching process methods highlighted in Chapter 3. To provide an understanding of how the technique of the sketching process and sketching tools were implemented, the first section discusses the preparation and equipment served in the process. The second section discusses the techniques of the interview including types of probe question and how they were used to extract knowledge. The third section explains the technique of sketching as a graphic move. The fourth section discusses the researcher's reflection on the sketching technique, including the role of the participant and researcher.

4.1 Preparations

It is important to prepare the place for the collaborative-sketching interview to make the atmosphere of the meeting comfortable and to successfully encourage the participant to engage in the process. Also, it is important to acquire the tools and equipment that make the process smooth and practical.

4.1.1 Interview Setup of Place Meeting

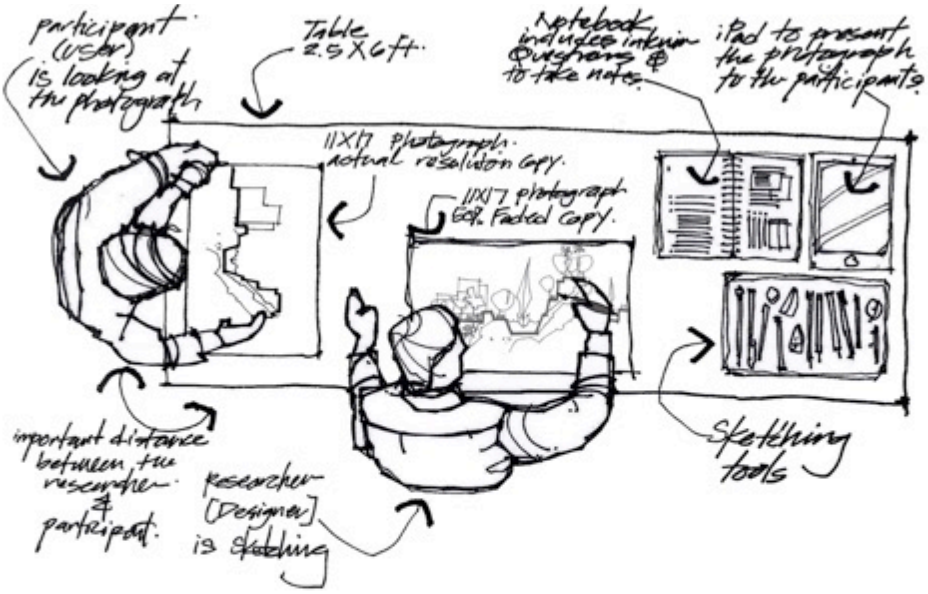
The interviews took place in the landscape architecture department at the researcher's office. The place was designed and arranged in a way to be more effective. The place contains a table with dimension of 6ftx2.5ft. The participant was seated at the short edge (2.5ft) and the researcher sat at the long edge (6ft). The rationale of the researcher being seated on the long edge is to be able to access the sketching tools. The participant was handed the actual photographs, placed on front of him or her to look at it and to use for building mental images (Figure 4.1).

The rationale of allowing the participant hold a photograph in his hand was to allow the participants to have a close distance view in order to allow them to get intimate with the setting and to get the scale that would encourage them to tell their story. The photograph should remain in their hands at all times during the interview.

Another rationale for the participants and the researcher being close to each other is to make the crosschecking back-and-forth practical (i.e. saving time) and to make the

interaction active and prompt. The other faded copy was in front of the researcher to sketch over it. So, while the researcher was sketching, no one can interrupt him until he reaches the proper moment to crosscheck with the participant.

Figure 4.1: *Graphic showing the arrangement and component of the interview place*



4.1.2 Interview Equipment

The researcher provided the required equipment and tools to accomplish the collaborative-sketching interview process. The equipment needed to accomplish the interview was prepared in advanced to make the meeting more efficient and productive.

4.1.2.1 Documentation

Before starting and after finishing the collaborative-sketching interview, the researcher made a file with divisions for each interview to be filed with the following hardcopy documents:

- The informed consent agreement
- The interview questions
- A notebook to take notes during the interview
- One 11 x 17 inch colored photograph actual resolution for each setting

- Four 11 x 17 inch colored photographs faded resolution for each setting
  - One for descriptive-notation and one for backup
  - Two for top-on-composite and one for backup
- An iPad to present the photograph of the setting to the participant to choose and then print the photograph
- After the collaborative-sketching interview, the sketches and photographs were stored in an 11x17 inch binder Itoya Art Portfolio. All the sketches were scanned and stored electronically.
- Each interviewee has a separate electronic folder that includes audio recordings, videotapes, scanned sketches and interview transcription.

4.1.2.2 Quality of Paper of Photograph

It is important to choose a high-quality paper that is inexpensive, smooth, supple and thick to both present the content intimately and to sketch on easily. The rationale for using specific quality of paper includes four major reasons to present the setting on this paper: 1) a high-quality whiteness color 100 brightness and smoothness, 2) 11x17 inch size, 3) weight 28 lb., and 4) acid free.

Why Whiteness and smoothness?

- It is significantly bright to make the settings sharp and pop off the page.
- It gives a nice feeling to the participant's eyes when holding it in his hands and looking at it.
- It provides a smooth surface that does not damage the tips of the pens during a rapid move while sketching, especially for Sharpie paint pens used in sketching.
- It produces high-resolution photographs for both the actual and the faded versions.
- It brings out the colors of the photographs with glossiness, so the setting and its details presented in the photograph is comfortable to the eyes.

Why 11x17 inch size?

- It is a perfect maximum size for the participants to hold in their hands comfortably.

- It is a perfect maximum size to give the opportunity to the participant's eyes to track sketching and what happens to the setting.
- It is not an odd size. It is familiar, equal to the size of a newspaper.
- It is a perfect minimum size to present enough details to the participant's eyes to understand.
- It is a perfect maximum surface for the researcher not only to sketch, but also to notate, text and draw small details.
- It is a great size for special documents.

Why 28 lb.?

- It provides tear resistance; if it gets handled from hand to hand during the process, accordingly, it is not easily torn.
- This weigh is reliable to be archived for long time without easily being torn, bent or damaged along the edges.
- It is efficient, which means does not absorb a huge amount of ink and does not allow the paint-sketching pen to spread all over or bleed.
- Because the researcher uses a Sharpie paint-pen and uses a lot of ink during sketching, the researcher would need to use an extra sheet behind the top sheet if it is less than 28lb. In using this weight, then, the ink bleeds through in very few spots with 28lb. (especially when the researcher does several layers of marking).

Why Acid-free?

- The inks of the sketch and photograph as chemical materials, they might eventually break down and cause yellowing and deterioration over time. So, it is important to work on a paper that is acid-free in order to store and preserve documents.

4.1.2.3 Types of Sketching Pens

The pens used in sketching went through many attempts until reaching the best type of pens that exactly fulfilled the need of the study. The pens that were used were Fine and Extra-Fine Sharpie paint (oil-based) for major sketches and two pencils 9H and F for testing or reading the proportion before sketching. Low-tack tape was used to tape the

photograph on the table to prevent it from moving during sketching. The reason for using the Sharpie paint pen was because of its ease of movement over the smooth surface and because oil-based ink is harder to be absorbed. Another reason was to have the sketch be highly recognizable and differentiated from the colors of the photograph. The ideal color used in sketching was only black to make the sketch a different entity from the photograph itself. Also, the researcher was looking for pens that draw with a lot of ink and dry quickly. However, these final reasons were preferred by the researcher to demonstrate his sketching skills (Figure 4.2).

Figure 4.2: *Types of pens used in sketching*

4.1.3 Videotape to Record Interview Process

The interview was recorded using a Canon EOS 7D camera with tripod stand. The importance of using EOS 7D was because it is a high-definition video format that can capture not only the dialogue, but also to capture the details that help to evaluate the process such as facial expressions, reactions and body language of the participants. Using video recording helped the researcher to write about the level of engagement of the participants, and about how the process evolved from one participant to another.

4.1.4 Videotape to Record Sketching Move

The sketching move was recorded on videotape to evaluate the sketching technique and performance that can be explained to academicians and practitioners. Recording the sketching move was done using iPad with a table mount holder to hold the iPad over the meeting desk and over the photograph. It is indispensable in this study to present the methodology not only as a process and findings, but also as techniques and tips.

4.2 Interview Technique

The interview was conducted in a way to be more of an active collaboration. This section discusses interview techniques that include: types of probe questions, crosschecking and confirming from start-to-finish sketching, and the role of the researcher as a graphic facilitator.

4.2.1 Types of Probe Questions

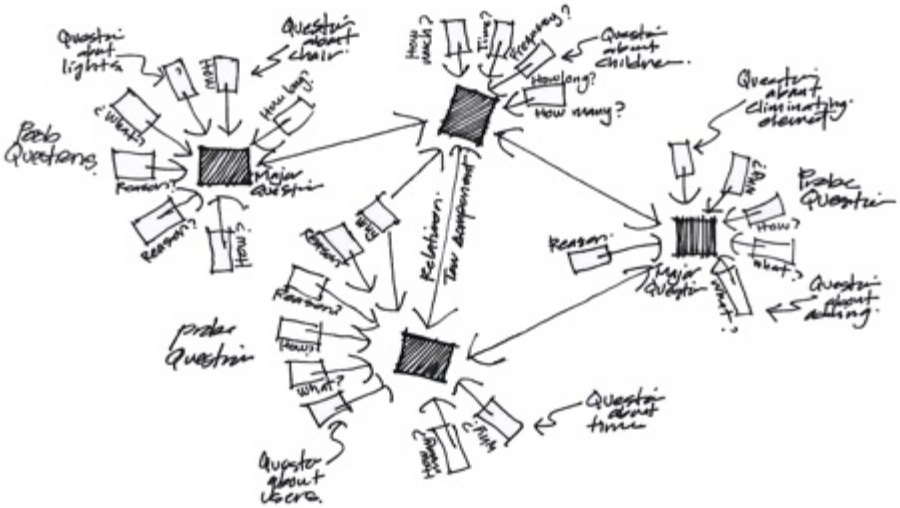
The way of questioning served a number of purposes depending on the nature of responses and the reaction of the participant. For the main question, the researcher must be careful not to force the participant or direct him or her to a certain story or specific direction (Snowden, 1999). The researcher used the probe and follow-up questions in different ways to pull from the participant's "tool box in the head" when there was a need to delve deeply. The way of asking can help the researcher to come up with an interactive storytelling to enrich the topic as well as enriching the complex level of the sketch (Andrews, Hull, & Donahue, 2009).

Due to the importance of time, the researcher had to keep the time frame of the interview around one hour and less. Opening the participants' mind and prompting their focus was difficult, but it was important to prompt their attention. The researcher was careful not to restrict and direct their focus into a specific direction. Prompting their focus was achieved by listening to the participants and carefully interrupting them if they started to go off on a tangent. The role of the researcher was to prompt, stimulate and keep their focus by linking their stories to the spatial aspect of the setting.

Each major interview question was used in the interview as general categories. Each major question was used to open the dialogue, but was not used as script or series of questions as the entirety of major question were complementary to each other. Therefore, each major interview question had a number of probe questions, but the researcher did not use the order of the probes as a script and series of probes. Figure 4.3 shows that each major question has a number of probes; some of the probes were used to support other major questions in addition to their original major question. For example, there are four major questions: type of activities, users involved in the activities, physical element to support the activity, time of activities. This is the order as presented on the interview questions sheet. However, these questions did not have to be asked in a certain order because it depended on the answers for other umbrella question that includes: what would be the most important component that would make this place a good place for outdoor social activities and draw people from their home and engage outdoors?

Each participant had a different starting questions. Some participant started with type activities; some started with physical elements such as sidewalk or benches; and other started with the best time to use the space. Therefore, if a participant started with a bench, the researcher could ask why the user wanted a bench and who would the users be. Then, the research could direct the participant to go back to how many people use the bench to determine the size of the bench. At this moment, the researcher did not ask if the bench is big or small, rather he asked how many are using the bench and whether the capacity of the bench accommodate certain number of users. There were back-and-forth questions to make a story, rather than giving exact answers. Looking for a story gave a richer rationale of the placing the bench in a certain place in the setting.

Figure 4.3: *This diagram shows probe small questions feed the major questions and the major question are interconnected to each other*



Again, the probe questions were not used as a set script or series of question, but as possible types of probes as needed. The types can be summarized as follows:

Starting question: It can be the major interview question or a major probe that prepares the participant to be situated and ready to respond, *e.g., Imagine that… Think about… What would be like if you are in this place…*

Indirect probe: More explanation to clarify, especially when the participant was less confident to what was said or not clear, *e.g., Is this…what you wanted to say!*

Direct probe: *When the researcher was not sure of what was side is clear or needs more information, e.g., Why is that…? Does that means…?*

Playback probe: *Giving assurance and indication to the participant that indicates researcher understood the story or the point, e.g., So, it sounds that what you meant is… Is that right?*

Leading Probe: The researcher helps the interviewee transition to other topic

questions about other ideas, especially when in the space of back-and-forth between two main questions, *e.g., Are there things that contribute to…?*

Tag probe: It keeps the participant alert to narrate and focus on synthesizing the story or the narrative, *e.g., You see that's important! Isn't it? How?*

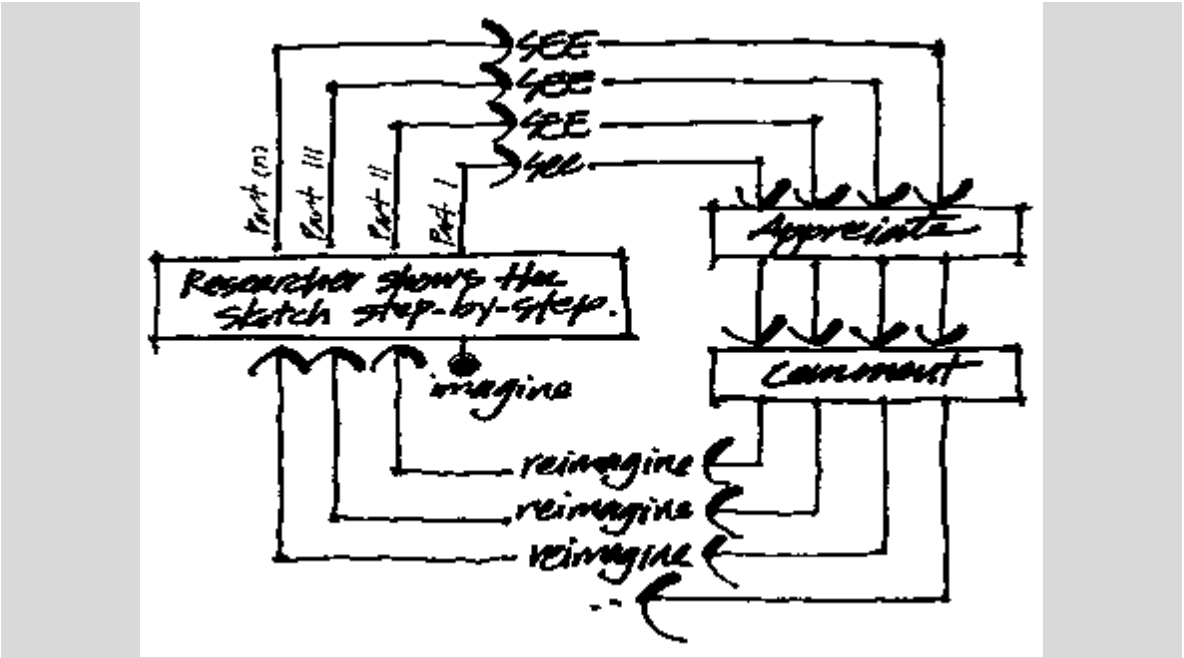
Prompt probe: The researcher needs more prompting, *e.g., What else? Anything thing need to be added?*

Floating probe: Needs more ideas to be clarified and continued if overlooked, *e.g., What do you mean by…? What are the interesting things here…?*

4.2.2 Crosschecking, Confirming and Reviewing from Start-to-Finish Sketching

The crosschecking technique was a visual literal judgment when the researcher sketched over the photograph a part of the story that the participants were tell and literally showing it to the participant to see, appreciate, comment on, and imagine (Figure 4.4). Crosschecking occurs multiple times during one case of one setting in a form of a cyclic feedback, when the participants saw the sketch back-and-forth what the researcher has sketched according their description as visual idea or possibility. Then, the participants responded to the researcher with one of the following keys: "to add," "to change," "to eliminate," or "to adjust." The crosschecking back-and-forth was essential during the whole session of sketching to verify each part of the story being sketched. The only judgment used during the session is the judgment of the participants. The crosschecking allows the researcher to understand and know more details about how the participant was imagining the physical element and how it is being used and functions in specific spot in the setting.

Figure 4.4: *A diagram shows the cyclic loop of crosschecking. Each crosschecking starts after the completion of each part of the sketch, the researcher shows the sketch to the participant step-by-step to verify this part of the sketch "so far." Then, the participant sees the sketch. The participant appreciates and assesses the sketch in order to comment. After that, the participant reimagines his ideas to keep building the mental image to be sketched.*



The crosschecking technique is divided into two interactive tasks: task of the researcher and task of the participant. The researcher has illustrated a sketch in Figure 4.5, which shows a diagram of the task with the role of the researcher in learning to sketch in more detail. The task of the researcher was a self-iteration process to help him to sketch the participant's mental images and understand what these images were like—described as "*knowing-sketch-KNOW-sketch-KNOW*." The researcher's self-iteration enables him to be more accurate and explicit in expressing the details in the sketching. These details refer not only the physical details, but also the important details of the people's social activities.

Conversely, Figure 4.6 shows the task of the participants as a self-iteration process that progressed from seeing how the sketch takes place in the setting to whether it meets what he had in mind and how to continue building their mental images—described as "*see-*

imagine-SEE-reimagine-SEE-reimagine". The participant's self-iteration enables the participants to track what is being sketched and encourage the participant to build more mental images to enrich the sketch. In the end, these two self-iterations work together as an active knowledge exchange. The two cyclic loops of the two iterations are open loops and not closed. The cycle ends at the discretion of the participant, as both loops stop together if the participants expresses "that's it!" or "that's enough!"

Figure 4.5 The task of the researcher, as a graphic facilitator is a self-iteration as: knowing-sketch-KNOW-sketch-KNOW

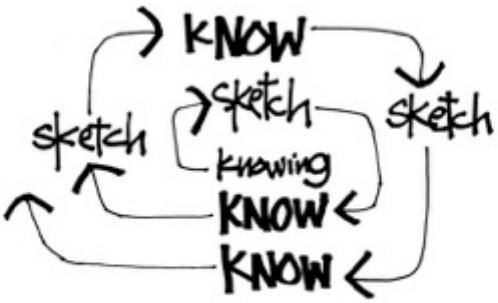
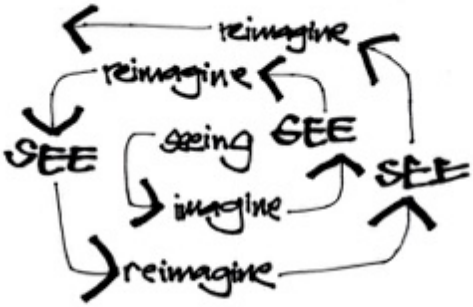


Figure 4.6 The task of the participant, as a self-iteration as: Seeing-imagine-SEE-reimagine-SEE-reimagine

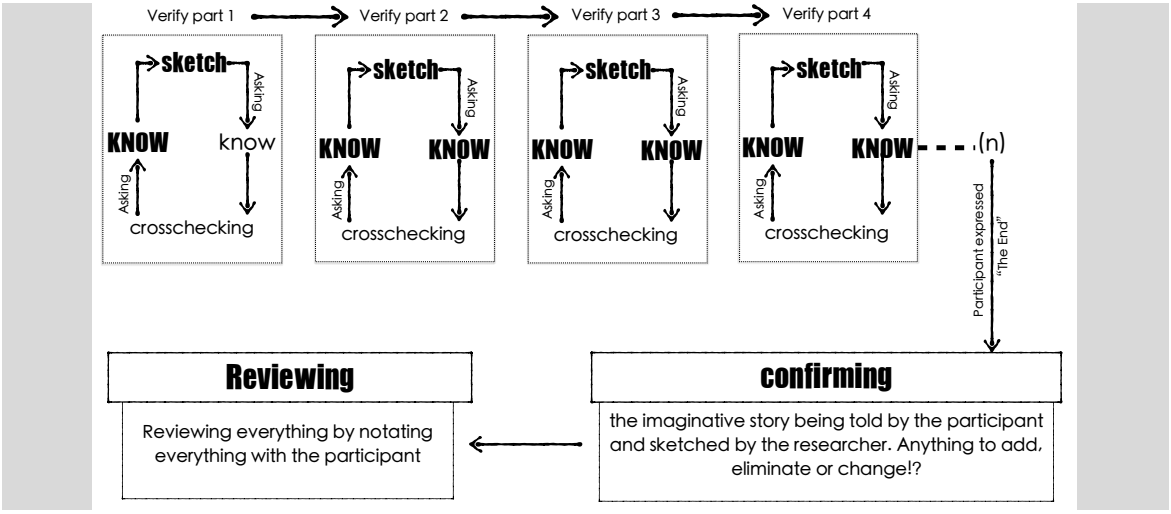


Confirmation was an essential part of the process, coming at the end of the session. It answers the question that determine how the researcher knows whether or not the sketch matched the story being told by the participant and captured the participants' mental images. For example, the participant may ask the researcher to add or adjust an element that is located in a certain spot in the setting. The researcher sketched the addition or adjustment to that element. After this part was done, the researcher crosschecked with the participant if this sketch captured what was in their mind or not. If the participant verified the sketch, the researcher goes back to finish sketching the whole part of the sketch and then move on to the next part of the story. If the response was not verified, the researcher asks the participant how he/she needs to modify or adjust it. At the end of the session, when the participants expresses "the end" of their story, the researcher had to confirm the whole story being visualized on the setting by number of question mentioned previously in section 3.3.2.3 Post-Sketching Interview.

The end of the session, when getting closer to finishing the sketch, depends on the participants, who signal they are ready to stop and have nothing more to describe or express by saying "that's enough!" or "that's it!" Then, the researcher starts to finalize the sketch by crosschecking with the participant, asking them to hold the sketch in their hands and look at it to see if there is anything missing or that needs to be changed, added or adjusted. After that, the participant confirmed that this sketch is acceptable by saying "that's it!" Then, the researcher reviews with the participant the components of the sketch by notating everything in the sketch. Further details about how to notate everything are described in section 4.3.5 below.

The crosschecking cycle was repeated on an average six to ten times, depending on three factors: 1) the amount of required additions or changes the participants would like to see, 2) the size of the setting, and 3) the level of complexity of details of the story being told. The simple cycle of crosschecking goes through several iterations during the session, followed by confirming and reviewing (Figure 4.7).

Figure 4.7: *This diagram shows the number of crosschecking that occur several times during the sketching session from start-to-finish the sketch, then confirming and reviewing.*



4.2.3 Being a Graphic Facilitator

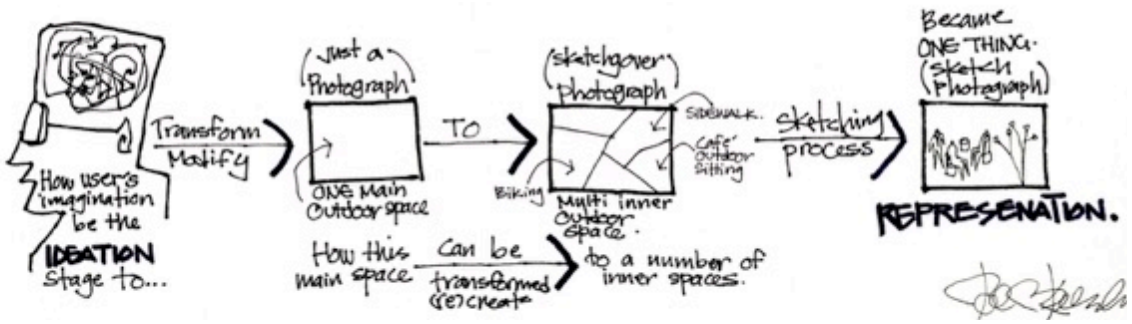
The researcher had a special training to sketch using freehand skill. The researcher believes that by employing his sketching skills in open-ended interviews and by denying his own knowledge as a designer throughout the interview enables him to be neutral in not influencing the participant's way of thinking. Immersing the researcher himself in the participant imagination facilitated the collaborative dialogue to stimulate the imagination as a new ways of seeing. Being a graphic-facilitator depended on each individual participant who is not only the expert in their internal experience, but also the only fluid source of information throughout their imagination. The researcher was the main instrument as a transformational device that helped the participants to transform their mental images into a visual representation of possibilities (see Figure 4.8).

The researcher as a graphic-facilitator considered himself being in the process only to facilitate visualizing the participant's imagination and not about the researcher's own opinions or experiences. Therefore, it is important that the graphic facilitator understands that this process is not about him. The use of the researcher's skills is to create a sketch that facilitates turning the imaginations of the participants into possibilities. Therefore, this process is about the participant and their needs and desires. As a graphic-facilitator, the researcher found five suggested principles to navigate and facilitate the collaborative-sketch: 1) listen with focus on details not surface, 2) sketch as a part of a whole, 3) approach the sketch confidently, 4) think and sketch with synthesis, and 5) sketch rapidly.

First, listing to the participant's story should be related to space rather than simply representing a superficial story. The story should be stimulated to describe details about the component, such as the location of component in the setting, description of the component, rationales of the importance of the component, who are using the component and any other details to help to build a comprehensive image of importance of the component. Second, when sketching a component in the photograph, the facilitator should keep in mind that this component is a part of a whole story being narrated to be finished later with other components. Third, the facilitator should be confident from where to approach the sketch. For example, for a bench with six people sitting on it, the facilitator could start with sketching the gesture of the six people sitting then sketch the bench after

them. In other words, in reference to the first and second principle, the facilitator should know the whole story that involves the bench as a social component, including the story of the bench with its users as a part of a whole story that unravels during the process of the dialogue. Fourth, one should think and sketch with synthesis, meaning the facilitator should think about how to synthesize the story properly. So, thinking and sketching work together to end the story properly. Finally, the sketch should be done in a quick manner. Further detail about sketching technique is in section 4.3 below.

Figure 4.8: *An abstracted diagram shows (from left to right) the participants building mental images through stimulating their imagination. Then, how the researcher as a graphic-facilitator facilitates their thinking to transform their mental images into a sketch added to the setting.*



4.3 Sketching Technique

Sketching technique is the art of representing what is possible, depending on the level of details and skills the graphic-facilitator possesses and it is different from graphic facilitator to another. The sketching technique itself is more closely related to sketching over a digital photograph, which is a great time-saving tool for exploring possibilities. This section is divided into threes sub-sections: understanding of the eye-level of the photograph, the move of sketching, sketch components, and notating everything.

4.3.1 Understanding the Eye-Level Photograph

Using a digital photograph is a great tool to save time and for exploring possibilities through sketching over it, as creating perspective from scratch is more difficult than sketching over a photograph. Therefore, a sketching technique on and over a digital photograph requires knowing the basics of perspective and avoids the time-consuming process of making a perspective from scratch.

As mentioned previously in section 3.4, one of the setting criterion is the angle of the photograph that should include a close-up view at human eye-level. The researcher has to understand the 3D composition of the setting by defining the horizon-line, vanishing-point, and the existing layout and condition of the setting. This understanding enables the researcher to place the participants into the three dimensions of the setting and help them in imagining and reimagining. Figure 4.9 shows the steps in understanding the 3D composition.

The skills of the researcher should be balanced between his eyes and hands and should consider the suggested five principles of graphic-facilitation. His eyes should be able to determine the horizon line and vanishing point without sketching them over the photograph and his hands should respond to the eyes. If this skill is missing, the sketch will have a distorted proportion that could irritate the participant's eyes. Therefore, training should be taken to master these skills. Producing the right proportion should seriously be taken care of by this ability.

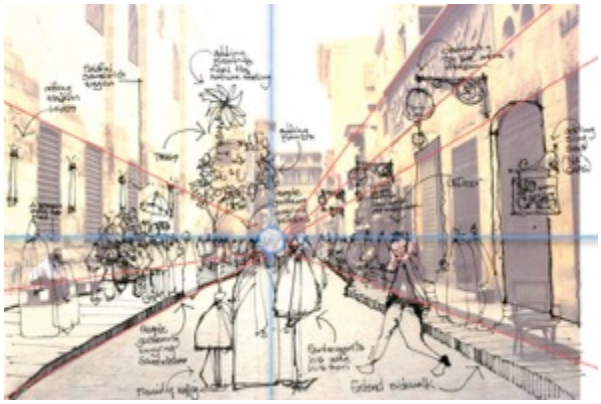
Figure 4.9: *The steps show how understanding the 3D composition of the photograph.*

Step 1) Using a human eye-level photograph for understanding the setting's component.

Step 2) Defining where the eye-level (horizon-line) should be placed based on an ~5 to 6 ft. height of the heads of the people. Finding the center of the setting is not usually perfect, but finding it as closely as possible.

Step 3) Now, the edges of space and the buildings are parallel to the eye-level view to enable the sketcher to place the vanishing-point.

Step 4) Faded photograph prepared to serve in sketching over it.



Step 5) Start a series of quickly sketched overlays that composite the imaginative storytelling in perspective to show what is possible to be in this setting.

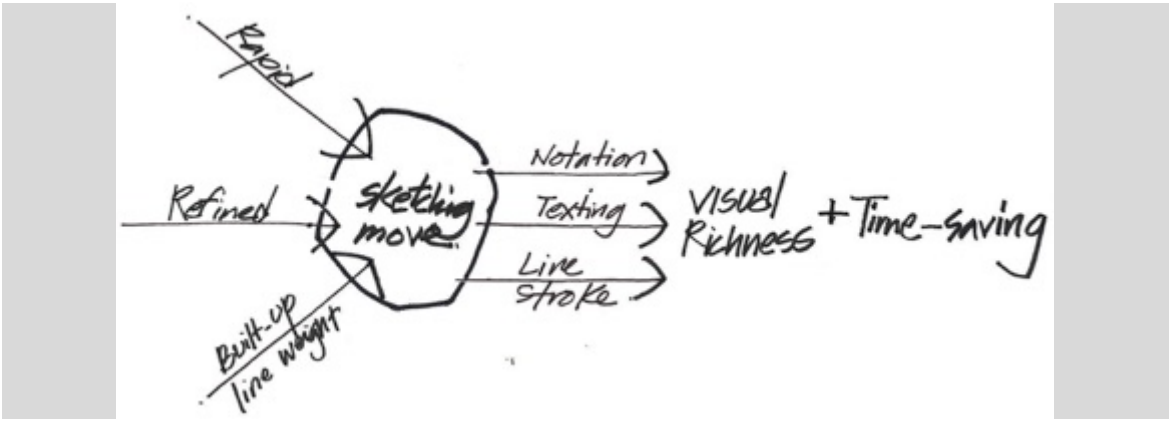
Step 6) Now, after finishing the sketch, start to notate every part of the story by using arrows and texts to define each element. This sketch shows the possibility.

4.3.2 The Move of Sketching

The nature of the sketching move in this type of the study should be rapid to keep the participants in the mode of continuous imagining and describing. If the move of sketching is slow, this could slow down their mental process in imagining and inhibit their ideas. It is so critical to capture the important details within a certain moment of time to feed the details of the sketch. The researcher has to focus the sketching component on the type of details that are seen to be most important to the participant.

When starting the move with rapid line stroke, the entire composition of the sketch should be brought together. Each sketching move should be characterized by three qualities: rapid sketch, refined, and built-up line weight. Therefore, the researcher had to free his mind and just focus both on what level of details come from the mind of the participant and how he can master the sketch. Mastering the sketch should include the three aforementioned qualities to provide a great deal of visual richness and save time (Figure 4.10).

Figure 4.10: *Three qualities of sketching should be together move*



4.3.3 Sketch Components

The researcher had a systematic approach in the move of sketching to have the best possible chance to grasp the participant's needs about the usage of space, components in that space (i.e. furniture), moments of people's motion and re-organizations of physical settings. The depictions of the setting are seen often as an artfully arranged composition of

individual component such as people, trees, and furniture. These elements animate the setting that the participant sees. These components are the most important part in this study as they represent the needs, desires and life story of the participant. It is very effective and helpful that the graphic facilitator possesses the skills to know how to sketch these components. The technique of sketching these components is not a "formula," but as previously mentioned, it is a collaborative process.

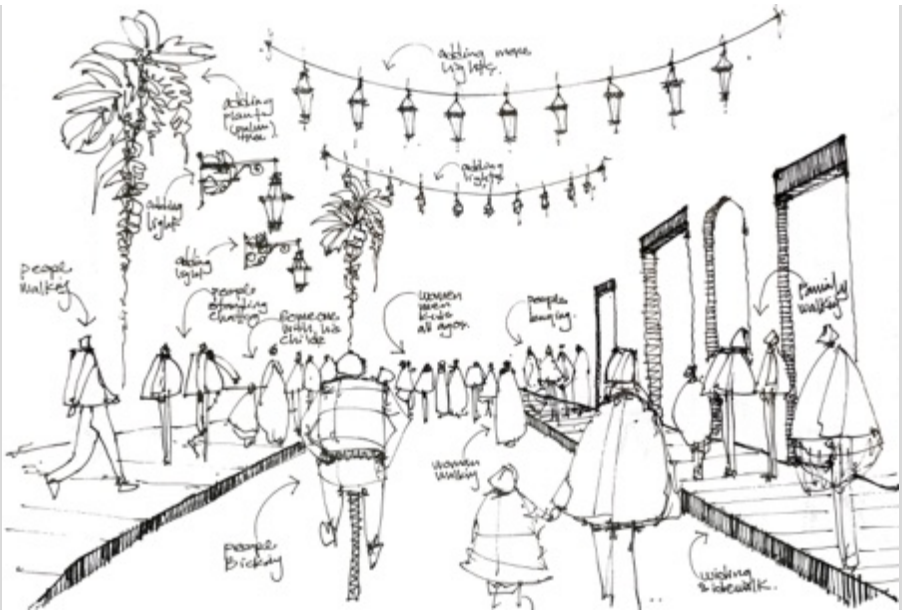
Sketching components should be active and live. The technique used in this study is different than other studies that use arranging and adding these components in a passive way that is more time-consuming, typically involving digital programs such as Adobe Photoshop. What makes this approach in this study different than other studies is being "active and live" and not "passive." Most designers draw the components in a form of symbols such as light, people and trees, but in this method the components are drawn in an active way to show the purpose of each sketch line and why it was drawn in a certain way. For example, sketching people in this study in not used as symbol, rather people are drawn in a form of how they are using and engaging the setting. The following sub-sections discuss specific techniques for sketching these components convincingly.

4.3.3.1 People in Motion

Sketching people in motion means to sketch the human figures in a form of walking, running, standing, jumping, sitting, etc. in an active position or in motion. Sketching people in motion and action is not easy and it is one of the most difficult and challenging types of sketching. However, it is also the most important and indispensable sketching type that gives an active atmosphere that can animate and shape the setting. It is very helpful and important to add the human figures in a way that suggests motion as it brings life and energy to the scene, as well as making the viewer more convinced and deeply involved in the story that was sketched. Without the motion, the sketch will be unrealistic, with little meaning and a stiff appearance. When sketching how people are using the setting, the researcher sketches the motion of people as they are in front of him. Sketching people rapidly should be done in an abstracted way with no personal details with respect to the time. Figure 4.11 shows an example of the researcher's technique in

sketching people in motion and how they are supported by the physical components, light and trees.

Figure 4.11: *This sketch shows the people in motion and interacting in a space. This sketch was separated from the setting using Photoshop just to show the reader how the atmosphere of the setting will be if the people are drawn in motion.*



4.3.4 Simplifying the Sketch

Another technique that must be considered for the sake of saving time is to avoid the temptation of putting too many details, which could overwork the sketch. For example, sketching people or outdoor furniture with details can waste time and effort (two elements that are considered critical in this process). Ineffective usage of time can affect the concept of the whole process, as well as affect the valuable personal time of the participant. Sketched component should be abstract, simple, clear, displaying distinct motion, and with a certain degree of refinement. Because the sketch needs to be quick, the figures have to be abstracted and, therefore, the physical elements only have to include a certain amount of details. The first example (as discussed in section 4.2.1) is of a bench, where the researcher may first determine how it will be used before drawing the bench itself. As another example, when sketching a "CAFÉ," a graphic artist may concern himself with the design

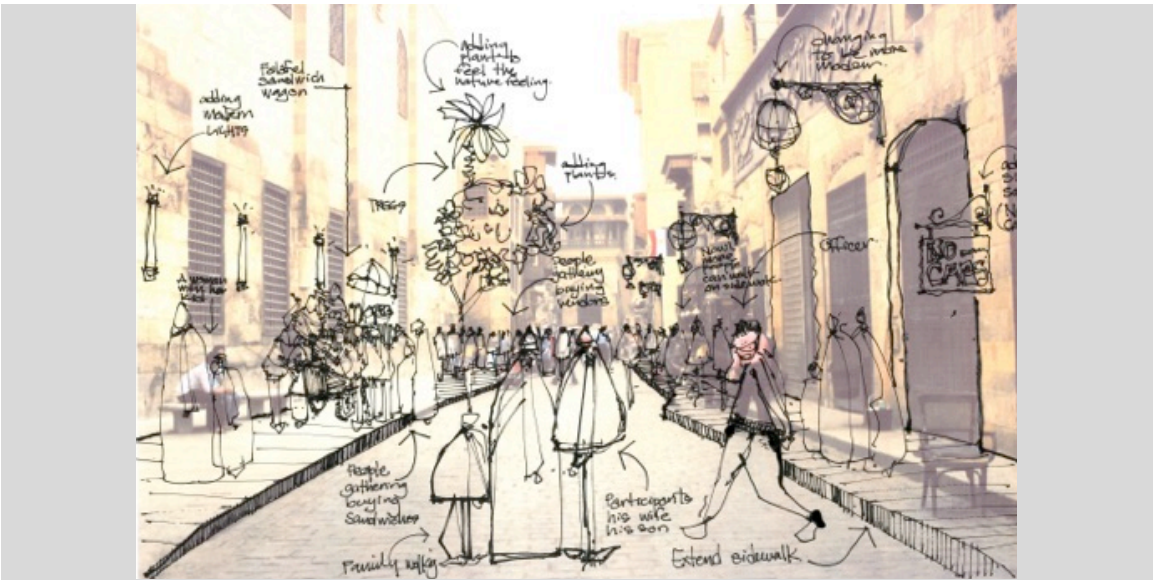
elements of the sign (i.e. font shape, size, styles, etc.). However, as the sign of the CAFÉ is a physical element of the story telling process here, the researcher should focus more on the physical elements rather than the design (i.e. shape and size of the sign itself). This requires a bit more time in sketching because the space is defined by its physical limitations.

In the end, the sketching technique should be more in a mode of suggestion and exploration rather than confirmation. The researcher possesses the skills that enable him to quickly sketch at one time with a certain degree of refinement, rather going through a number of iterations to produce a high-resolution sketch that is not necessary at this stage.

4.3.5 Notating Everything

The researcher uses handwriting and arrow notation techniques to comment on and depict each component sketched in the photograph. Notation is indispensable for the collaborative sketch. It helps the researcher to illustrate the participant's view, capture and understand elements' names, and influence and associated feelings. Notation is part of the communication that fosters conversation and feedback during the story. Notation in this method is used after finishing the session to review the story with participants from the beginning and confirm each component and its rationale of use and of being in a certain location in the setting, and what the participant called it. Annotating after finishing the sketch allows enough room for the story to take place in the photograph during the collaborative process, because if the researcher sketches and annotates at the same time for each component, it may lead to difficulty in finding a place to sketch another component (Figure 4.12). By visualizing and making notes, the setting components were able to better understood by the participants.

***Figure 4.12**: Notating the elements of the setting to emphasize what about this setting that influences his feeling and description.*



4.4 Summary of Techniques

The techniques used in this chapter have addressed how the techniques and skills can be implemented. Section 4.1 discussed the preparation of the interview for both preparing the place and the required equipment and tools, including the rationale of using certain tools such as type of paper and pens. Section 4.2 described the techniques of the interview and the way of approaching the participant, including the types of probe questions and the way of prompting their focus. Section 4.3 discussed the practicality of using sketching skills that includes different techniques of sketching the components, notating and the quality of sketching. Chapter 5 will cover the findings for the settings collectively.

CHAPTER 5: INTREPRETATION AND FINDINGS

This chapter reports the findings from the collaborative-sketching interview process conducted in order to answer the research questions posed in Chapter One. The structure of this chapter is organized into three main sections. To provide an underlying understanding of the study findings, the first section deals with describing the characteristics of the participants' background, followed by discussing the main research findings. There were five main findings identified in the interpretation. The second section examines the first finding that is concerned with the suggested physical components and describes their affordance including the rationale of location, rationale of using, and value of use. The third section discusses the second finding that is concerned with the social interaction that might occur within the different physical components including the micro types of social activities, micro types of social interactions, types of users and the rationale of times of the activities. The fourth section discusses the third finding concerning the level of engagement in the process between the researcher and participants. The fifth section explains the attitude of the participants towards the process and the level of their satisfaction. The sixth section summarizes the findings. The final section discusses the lessons learned.

5.1 Participants' Background and Demographics

This section offers a brief description of the characteristics of the participant's background. The study was accomplished by conducting an interview with eight participants from Jeddah, Saudi Arabia. The vision of the selected participants was to create a representative vision of Jeddah residents who share the same issues. In this study, it is considered that residence status and type, household status, age, gender, educational background, and level of occupation are important characteristics that must be considered in understanding the nature of the responses and the differentiation between each individual participant. It is acknowledged that the participants do reflect the views and the knowledge of the residents of Jeddah relative to the neighborhood's social cohesion and outdoor social activities.

The interview participants consisted of seven males and one female. The youngest

participant was 19-years old whereas the oldest participant was 60-years old. There were six participants that were between 20s to late 30s. The educational background and occupation ranges from an illiterate person to a university faculty member. These characteristics helped the research to understand the background behind each story told by each individual participant. Table 5.1 shows the characteristics of the eight participants. All names used in this table and throughout this study were randomly generated and anonymous in order to protect participants' identity (See Appendix B and Appendix C for IRB approval). Second, collaborative-sketching was done when the participants were asked to choose at least two photograph cases from different outdoor spaces in residential settings. Third, post-sketching focused on the extent to which the sketches captured what the participants were imagining and their level of satisfaction.

Table 5.1: *This table represents the characteristics of the participants.*

Case	Residence Status			Demographics			
	Residence Type	Residence Status	Household Status	Gender	Age	Education Level	Occupation Level
Moz	Villa	Own	Father – Husband	Male	65	College	Retired
Knk	Villa	Own	Father – Husband	Male	50	College	Retired
Shm	Apartment	Rent	Father – Husband	Male	30	Master	Engineer
Zhn	Villa	Own	Father – Husband	Male	35	Ph.D.	Educator
Mtsh	Apartment	Rent	Husband–Grandfather	Male	60	Illiterate	Retired
Zbg	Apartment	Own	Son – Husband	Male	26	Master	Educator
Mhn	Villa	Own	Father – Husband	Male	28	College	Aviator
Rhm	Villa	Own	Son	Male	19	College	Student
Rbo	Apartment	Rent	Father – Husband	Male	26	Technical	Engineer
Kmz	Villa	Own	Mother	Female	30	Master	Housewife

A total of 3 settings were use, each one selected by a number of participants as illustrated in Figure 5.1. Three participants chose setting number 1, five participants chose setting number 2, and six participants chose setting number 3. As described in the methodology chapter, each case will be reported in terms of three major stages: pre-sketching interview, collaborative-sketching process, and post-sketching interview. To validate the collaborative-sketching method, each setting was evaluated using three types of evaluation: video observation to evaluate the level of engagement between the

researcher and participants; comparison between the nature and details of information obtained from the participant by pre-sketching interview and collaborative-sketching process; and the participants' output and satisfaction before and after the sketching session.

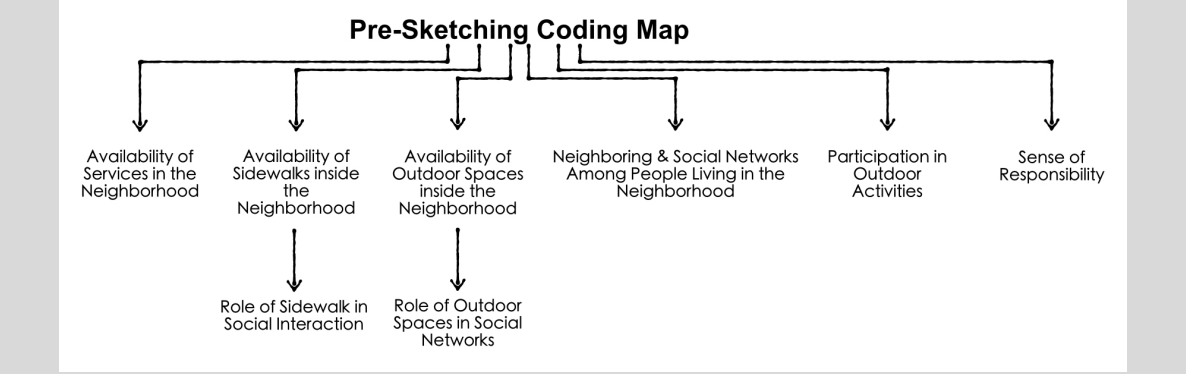
Figure 5.1: *This figure shows the three settings and number of participants for each.*

5.2 Pre-Sketching Interview Findings

First, the pre-sketching stage is a classic interview that focused on four main parts: 1) the importance of outdoor spaces in social life; 2) users' experiences related to outdoor spaces; 3) childhood experiences and their effects on expectations; and 4) the participant's choice to modify his/her neighborhood if given the opportunity.

The codes categorized in the data were represented below. Representative quotes were included in the discussion as the participants' insightful and thoughtful articulation of the subject matter was the best way to convey the overall sense of the interviews and the codes that emerged. Consequently, the six categories developed included: availability of services, availability of sidewalk and its role on social interaction, availability of outdoor space and its role of in social networks, neighboring and social networks among neighbors, participation in outdoor activities, and sense of responsibility (see Figure 5.2).

Figure 5.2: *Conceptual map of coded categories.*



5.2.1 Availability of Services in the Neighborhood?

Many of the participants perceived their current neighborhood as a place poor in daily services. Many of them expressed services as an important motivation to like or dislike the idea of staying in the neighborhood. The majority of the participants saw the availability of services as a support to their everyday life needs such as grocery stores, cafés, restaurants, parks or sidewalks. Some of their comments described this deficiency of service:

> Mtsh: Listen to me my son! Unfortunately, there are no services or amenities that encourage you to stay. The neighborhood has nothing at all, no services at all. You see! For example, the look of the street is bad! Bad! Bad! There're no sidewalks to walk; the streets are not clean at all; litter is everywhere; and even the look of the trashcans is bad and disgusting… [Sighs] The streets' width is something like 6 meters with no sidewalk or sometimes with really narrow sidewalks… So... [Sighs] you need to walk in the middle of street like cars. No! No! No! Really! Really bad place and we're complaining. No services!
>
> Zhn: the problem is we don't have a grocery store, barbershop, and laundry. If you need to buy something, we need to drive out of the complex. Also, the mosque, sometimes you drive five times a day out of the complex to pray. They are really far from the complex. So, we are looking for grocery store and mosque inside the complex. If they were nearby, I think we would walk a few times a day everyday.
>
> Mhn: It is a big neighborhood, elegant and so quiet…and so clean. The big problem is we really don't like it, as it is hectic—if you need to buy a bag of bread, you need to drive like about half an hour to go to an old neighborhood close to us. You have to pass by 6 traffics lights. I really wish for at least a small convenience story inside the neighborhood [Frowns]. We need to walk inside this "elegant" neighborhood [Smiles].

As a result, it becomes clear that most of the participants were aware of the role of services located nearby to be an incentive to encourage them to walk inside the neighborhood.

5.2.2 Availability of Sidewalks inside the Neighborhood?

The majority of the participants had a disappointed feeling that, since the streets do not have sidewalks (or sometimes do have them, but in bad condition), this condition had created a lack of social relations among the people who live in the neighborhood. The lack can be seen in their discouragement to walk and see others:

> Rob: I don't even think to walk in my neighborhood because the streets are not clean and litter is everywhere. Also, the available sidewalks are so narrow enough for only half of a person [Chuckles]. Really! I'm serious. But most cases there are no sidewalks… And you said open spaces! We don't have this kind of privilege [Chuckles]. Our neighborhood as you know like any other neighborhood I mean the grid system streets and building that's it... Nothing called park or outdoor spaces although our neighborhood is new.

> Rhm: You know most of the villas' neighborhoods don't have parks. I don't remember if I walked that much in the neighborhood because the streets don't look like streets for walking and are broken and not convenient for walking too.

> Mtsh: What I hate in our neighborhood is the disorganization of the streets… Our streets are junk, which means no one likes to walk in streets. There are no open spaces to meet your neighbors and to know them. And what I hate also is the absence of the important services and amenities that make us feel convenient and happy… Let me tell you something, the sidewalks, we don't have sidewalks and if we have, it's going to be narrow and broken even a person cannot be comfortable to walk. A planned neighborhood like this, it has to have wide nice sidewalks, surrounded by trees.

5.2.3 Role of Sidewalks in Social Interactions?

As the interviews progressed, however, it was clear that many of the participants expressed that if walking were available inside their neighborhood that this experience would facilitate social interaction with their neighbors and build social networks among each other. The majority of the participants believe that sidewalks play an important role not only being outdoors, but also in the social life inside the neighborhood. When they were asked if they see a walking experience as facilitating or increasing their interaction with the people in their neighborhood, these were their following insights:

> Zhn: I would strongly say yes! And I will tell you why! Walking is not just to waive and say hi and leave. No! You have to stand and greet them and ask them how is everything

that's going on? And what is going on? And start sharing stories with them and planning things with them to do tomorrow or so…You cannot imagine how much time you spend outside doing that. We don't even think about it. It takes a long time.

Mhn: Walking is the only way that lets you meet people meet—your neighbors. It is fun when you meet your neighbors and have some conversation. This lets you get to know them. Usually when I go to the mosque, I see some of my friends. I would say about 15 friends. So some times when I drive to the mosque, I pick them up on my way and continue driving to the mosque…The time we spend chatting is from home to the mosque, but after praying we stand on the street and chat for a longer time. But you know, I really wish to have a sidewalk inside the neighborhood really! Really! I feel happy and when I see my neighbor in the street going to the mosque and chatting with each other. It's like a delightful feeling.

Zbg: Of course man!!! It increases the social interaction…. It builds acquaintance among the people and accordingly it builds strong social ties not only between the walkers, but also between their families. Listen man! Walking helps you to make 100% friendships.

5.2.4 Availability of Outdoor Spaces inside the Neighborhood?

The majority of the participants saw that common outdoor space available in their neighborhood could include the street or undeveloped unoccupied land inside the neighborhood, or more rarely the outdoor spaces around the mosques. Also, they interpret streets as where they see their neighbors and socialize if the condition of the street allow.

Moz: Unfortunately, as I mentioned there is no outdoor space… There is some undeveloped land and it was possible to invest in this raw land to make it an open space and a breather for the neighborhood… This space can be a place for gathering during Ramadan and Eid, and can be a place where we can hold the funeral, or do any activities for children… I would say no, no, no… nothing at all…

Knk: There is nothing except streets, asphalt, and narrow sidewalks… And the streets in the front of the houses... I made a tiny garden in front of my home to give a beautiful look and for my kids to use. There is only the tiny open space around the mosque… the kids go and play there because it is the only thing available.

5.2.5 Role of Outdoor Spaces in Neighboring and Social Networks?

As the interviews proceeded, most of the participants perceived that the unavailability of "labeled" outdoor spaces contributed most to the loss of the vitality of the social life in the neighborhood. The majority of the participants found that that outdoor spaces inside the neighborhood are communication hubs that increase the opportunity for people to meet and socialize. A number of participants were aware that providing

designated outdoor spaces inside the neighborhood would help them to build acquaintance relationships with everyone.

> Mtsh: In the neighborhood, there is nothing called "assembly space" where all of us can meet and talk and you know we can take care of each other if we know each other. Yes! There is nothing! Oh my son, it's truly a disaster [Sighs] when you don't have an "assembly space" to gather with people and know them. I love to invite people for having a cup of tea outdoors if there is a place a neutral outdoor space. It's truly a disaster when the government planned a neighborhood without this "assembly space" or maybe the developer ate it! I don't know!! Nothing! Nothing!

> Mhn: See, if we can have a room or something like…! It can be outdoors or indoors to gather and play dominos or chess with my friends' neighbors. That would be great because sometimes our homes are not that big to invite everyone. You see!

5.2.6 Neighboring and Social Networks Among People Living in the Neighborhood?

About half of the participants—especially those who live in apartments—complained about the lack of social relationships among residents. However, they blamed this lack on the unavailability of gathering places inside the neighborhood where people can meet and socialize. Some of their comments described these neighboring and social networks:

> Zbg: In general, social relationships between residents in the neighborhood are not strong at all…. but the strong relations you see only happen in the mosque… because it is the place where people meet five times a day… The communication between residents is weak in terms of visiting and knowing each other... Umm! We need to find a way to strengthen the networks between us… There are few who know each other, but based on my knowledge it is weak. And the worse is even inside the buildings the neighboring communication among us is really weak in terms of visiting and knowing each other.

> Mtsh: The people there are careless of both the neighborhood and neighboring relationships. You don't know even who lives next door to you. You just open your door and close it, and then leave—No one cares or knows who you are! If you meet anyone on the stairs, you say "Salam Alaikum." He replied "Salam Alaikum" fake greeting!! I'm telling you, the social relationship here is so difficult.

> Mhn: What [Sarcastically smiles]! The social relationship in the whole neighborhood is dead…There is no social relation at all. The only social relation is when you meet someone in the mosque. Other than that, there is no personal or family social relation. No one knows the others. This is what I hate in our neighborhood. It is not like the old neighborhood when you see people are sitting outdoors, walking on the street are greeting each other—real greetings not fake.

Moreover, one of the participants mentioned that the absence of outdoor spaces in his neighborhood caused not only a lack of knowing people, but also caused a negative behavior and lack of mutual trust among neighbors.

> Mtsh: The people in our neighborhood do not have patience and do not respect one another. For example, if you park somewhere on the street, someone will knock on your door and say: "Hey! Why did you park here in front of my door? Listen!! Move your car immediately and quickly or I swear I will tow it right now or pop your tires. Hurry up!" [Frowns]—So, can you imagine such a behavior! Sometimes when we go to our village for a vacation for a month or more, you can't find anyone in the neighborhood who you can trust to watch your car and your home. We just put trust in Allah (God).

5.2.7 Participation in Outdoor Activities?

Almost all of the participants indicated that there is no organized outdoor activities present in their neighborhoods to participate in. And, if there are, it usually takes place randomly and in not in an appropriate place. The majority indicated that there is no interest in being outdoors and holding activities, blaming it on the condition of the street, the weather or safety. More than half of the participants compared their present situations to their childhood:

> Zhn: When we were kids, we gathered with our "wall neighbors" in front of our home then we would go to play soccer. Not always, like late afternoon is for soccer at the playground out of the neighborhood like 20 min driving. Then before 7pm we would go play games at home.

> Rob: We don't gather and do any outdoor activities. The only gathering is when we gather at a café on the other side of the street. Sometimes during the summer or weekend, we schedule times to gather at the café and play billiard or Ping-Pong. But of course, if there is a soccer game for our favorite team, we gather at the café to watch… I remember when we were kids, we used to gather on the side of the street with a mat and play cards. I don't know why we are not interested be outdoors anymore!

> Mhn: When I was child, we used to play soccer in the street and also we climbed trees. There is some children playing soccer in street, but I don't see it as safe because the cars are so fast. But for us the youth, unfortunately because we don't have a specific outdoor place to gather, we meet sometimes at cafés or sometimes at the gym. Or as I told you, I meet people only on the street when I walk to the mosque… The only outdoor activity I remember is when we have a funeral or engagement. See! Sometimes we try to setup a gathering time to meet regularly, but we cannot commit due to the unviable space to gather inside the neighborhood.

> Mtsh: There are children almost every day playing soccer. You know where? In the street [Ugh]! In the middle of the street! And I feel really sad and sorry for them. Our street is not a safe place for children to play. There are a lot of accidents happening because of that.

> The automobiles run fast. One of the neighbors, I don't know him. We went to give our condolences two months ago because a car accident hit his 8-year-old son. And, the reason for that!! Listen carefully! Because we don't have a playground for children and not because only of the fast cars… I'm telling you.

5.2.8 Sense of Responsibility?

At the end of the pre-sketching interviews, all the participants were asked if they were given the opportunity and the choice to modify their neighborhood to enhance outdoor social activities and draw people from their home to socialize outdoors, and asked what it would be like. The researcher found that more than half of the participants knew their needs to achieve their desires. Some of their insights included:

> Zbg: I will go to the empty land behind our home and make four things to encourage families to gather: First, I will make part of it to be grass for sitting on the ground. Second, I'll make part of it a playground for children under 12 to play. Third, I'll put in part of it chairs and a table for barbecuing. And absolutely, I'll make bathrooms. That's it! This is what we lack.

> Kmz: I would do a park to encourage people to come. I'll also put seats and tables to gather them together. You know, I'm thinking to build outdoor centers including billiards and Ping-Pong.

> Zhn: I would make exactly a big place or platform and a park for children and families. This really helps people to gather and create busy life in the neighborhood. Also, I would build a mosque close inside the neighborhood and a minimarket store inside the complex so people don't need to go outside the neighborhood. Only the minimarket by itself can let people see each other and walk.

5.2.9 Summary of the Pre-Sketching Interview

After reviewing and interpreting the pre-sketching interview responses, the participants had suggested ideas about "what" components they want to see in their neighborhood to foster their social cohesion between them and their neighbors. Although they do know "what" could foster their social cohesion, they do not yet know "how" to fit their suggested components and whether their suggested components are applicable or not to be placed in their neighborhood.

The participants were rational in their suggestions and ideas that indicated their knowledge of what they need and what they are looking for. The researcher claims that although these important components suggested by each individual participant are essential in their vision to increase the outdoor engagements among residents, further specific

details are required to enable the designer to better understand the details of the suggested components.

For example, because one of the participants was influenced by his life experience, he listed the three most important suggested components that would demonstrate his needs and desires: a café, sitting place and park. According to each component suggested by the participant, the researcher proposed a number of vital questions to delve deeper in order to better understand the participant's vision: 1) what do a café, sitting place and park mean to the participant; 2) what do the mental images of the café, sitting place, and park look like in the participant's head; 3) what is the rationale affordance of their each component; 4) what are the values of their use and presence; and 5) how does social interaction occur between these components. Answering these vital questions, the collaborative-sketching process helped the participants to understand their suggested components better and help them to visualize if they can possibly fit and if so, how. The researcher helped the participant to see not only what is possible, but also how it is possible.

5.3 Collaborative-Sketching Process

The collaborative-sketching process focused on stimulating the participants to tell a story about the outdoor activities with the necessary characteristics to best support those activities. However, as mentioned in the methodology chapter, there are two phases necessary to achieve the collaborative-sketching process including descriptive-notation and top-up composite.

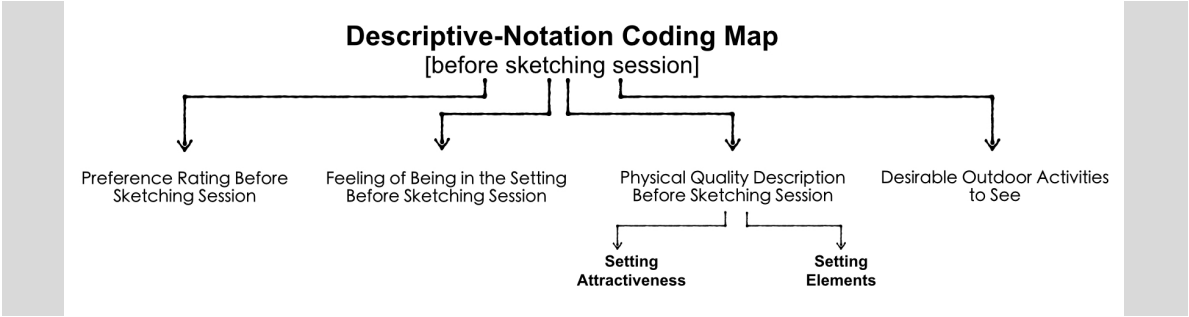
5.3.1 Descriptive-Notation Findings [Before Sketching Session]

This section is divided into four sub sections: participants' preference rating, physical quality of the setting, feeling of being in the setting, and desirable activities. The findings of this phase were compared with the responses found in the post-sketching stage in order to evaluate how many details are the participants' input in the top-up composite process generating before and after the sketching session.

For the descriptive-notation, the codes categorized in the data are represented below. Representative quotes were included in the discussion as the participants' insightful and thoughtful articulation was the best way to convey the overall sense of the interviews

and the codes that emerged. Consequently, the six categories developed included: preference rating, feeling of being in the setting, physical quality description, and desirable outdoor activities to see, and setting attractiveness and setting elements (Figure 5.3).

Figure 5.3: *Conceptual map of coded categories to interpret the descriptive-notation phase. Note that the essential categories that were identified as common among all participants are shown in bold.*



5.3.1.1 Preference Rating Before the Sketching Session

All the participants were asked to rate their preference of their chosen setting. After they rated their preference, a number of direct questions were asked to the participants in order to understand what affected their ratings. The majority of the participants rated each setting as (3 Preferred somewhat) as the maximum rating. Three main questions were asked to reveal what affected their preference rating: feeling of being in the setting, description of the physical quality of the setting, and desirable activities to see in the setting.

5.3.1.2 Feeling of Being in the Setting

Feeling of being the setting was found the most important aspect that influenced their rating. Most of the participants justified that their ratings were directed by their feeling of being in the setting. Some of their feeling descriptions:

> Zhn: I give 3. I feel It's Ok! But! Nothing Wow!
>
> Rhm: I would say 2! May be 3… Between 2 and 3… I don't know! I feel this place is kind of like gloomy… I feel nothing encouraging people here to walk… I feel I don't want to be in this street.

> Mtsh: Umm! See! I give it 3 because it looks like a beautiful, clean, organized, magnificent, and excellent place… But! Kind of like you are in a "desert"! No people! [Displeased facial expression] My feeling is like I'm in a beautiful place, but there is something wrong here! I'm not happy…

> Mhn: I feel safe. So I give it 3 to 4... Lets say 3. I can let my kids play with no worries…. I feel happy to live with my family… Here, I can feel like walking in a neighborhood.

As a result, after that, most of the participants related their feelings to the quality of the physical elements of the setting. Although, more than half of the participants were attracted by the appearance and beauty, for example, they did not have a positive feeling. One of the participants had a clear statement to represent this type of feeling:

> Mtsh:It looks beautiful but kind of like you are in a "desert"! No people! [Displeased facial expression] My feeling is like I'm in a beautiful place, but there is something wrong in here! Yeah! I think because there are no services like a café or a cafeteria… and basically you don't see people. Yeah! Right? I became not happy, because there are no services, no cafeteria, and accordingly there are no people? I think so!

5.3.1.3 Physical Quality Description

The most common qualities found that have influenced the participants' feelings were categorized under two qualities in the order of importance: setting attractiveness and setting elements.

1) Setting Attractiveness

The majority of the participants related their feelings to quality of the setting. The findings revealed that most of the participants were able to recognize and aknoweldge the quality of the setting that caused their feelings and was important for each individual. However, in their view, this knoweldge enabled their mood to be oriented towards understanding the setting and its components that prepared their thinking for the top-up composite. Most of the participants related their feeling to the architectural and landscape elements as what attracted them. Their description of the setting's attractiveness focused on the aesthetics:

> Mhn: I feel safe. I can let my kids play with no worries. The width is great for my boys to play in here. I feel happy to live with my family because it's a quiet and pleasant place… I would say! Here, I can feel like walking in a neighborhood. See the width of the sidewalk and the floors materials. Do you see the palm tree here? I like it and I like the look of the

houses. I don’t like the light –small and I think don't give enough light during evening time.

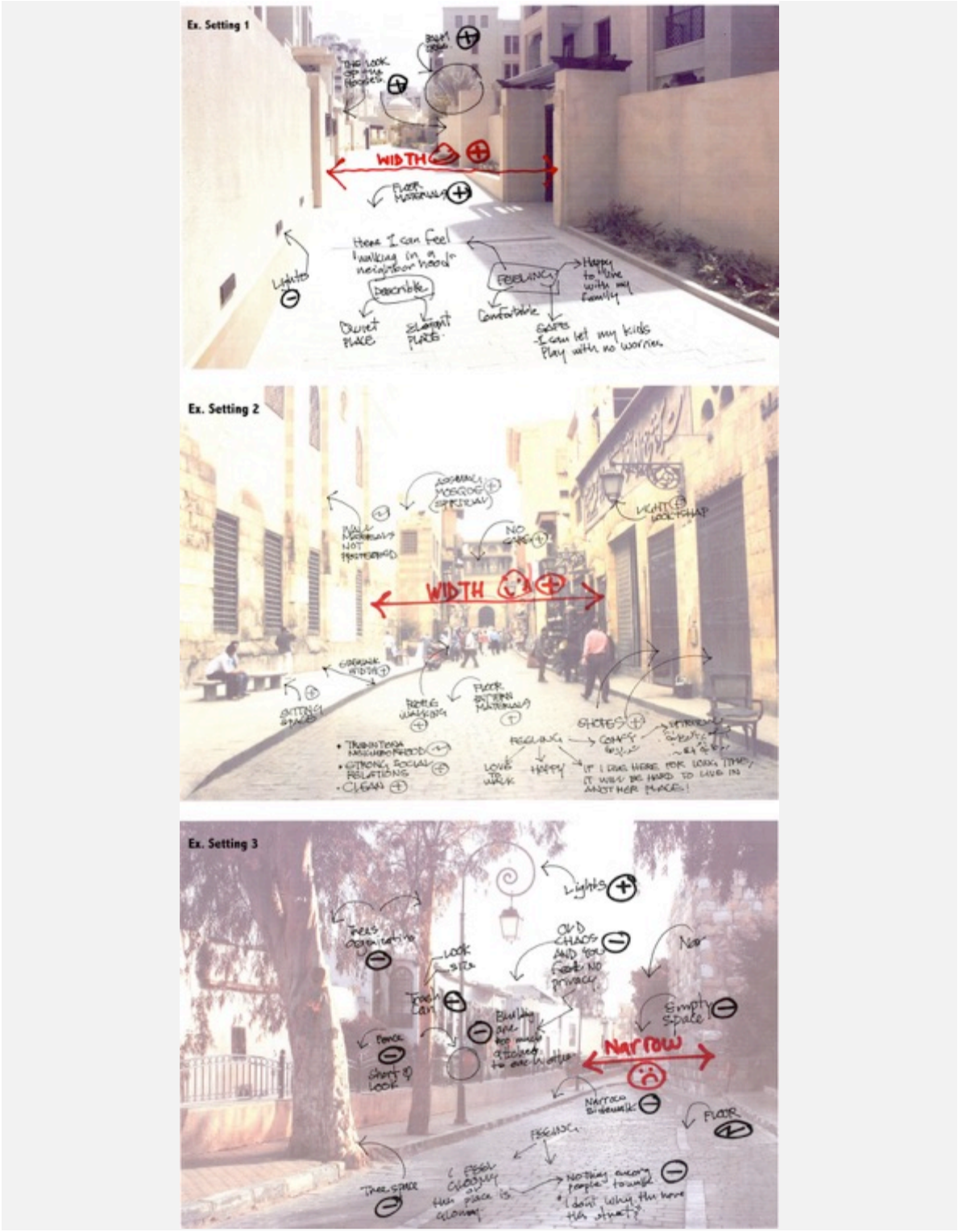
Zhn: It’s very organized in terms of sidewalks. It is beautiful in terms of modern look…I like the entrances of each house. I like the look of the sidewalk it gives enough space to walk and I like the breaks on the ground to walk on. I like also the height of the balcony because it gives privacy no one is able to see me but I am able to see—I like also the windows because it gives enough light to the houses. I like the shade. So, if you have a chair to sit here and look at the people around.

2) Setting Elements

The physical elements of the setting had an influence on the majority of the participants’ preference and feeling. In their minds, the setting materials were associated with a how they want to be in the setting. Examples of the feelings and associated physical quality description were annotated over the setting in Figure 5.4. For example, one of the participants associated the floor materials with his desired activity, which was walking.

Mtsh: I like the floor materials. This stone or whatever you call it. It is good for walking. Look at the wall materials and its color… See… I don’t know why the plants in my neighborhood doesn’t live long like this here... [Laughs loudly]. I like this shaded area here with this planting area.

Figure 5.4: *This figure shows how the researcher notated the participants' feeling and what caused their feeling over the setting. The notations expressed the setting's characteristics and quality that influence three participants for three setting.*



5.3.1.4 Desirable Outdoor Activities to See

When the participants were asked about the their desired activities that they would like to see in the setting, most of the participants indicated "walking" as one of these activities. A few of the participants also desired to see children at play. Some of these opinions:

> Mtsh: Umm! This is a good place for walking. See even the width is excellent…. You don't think it's beautiful? This is great!
>
> Zhn: I would like to walk at night and I see the sunset going down, my feeling is really comfortable, peaceful, cool air—but if I walk in the middle of the day or noon time. I think walking at night; I will enjoy the lighting and scenery.
>
> Mhn: This place is for walking everyday and for my kids to play with no worries.

5.3.1.5 Summary of the Descriptive-Notation Phase

Descriptive-notation showed how the preference rate of setting was influenced by the desired activities of the participants. Then it introduced the participants' justification of what influenced their rating. As a result, the participants described their feeling as the mechanism that influenced their rating, followed by what caused that certain feeling. The participants explained these causes by describing the physical quality of the setting and how the qualities produced their feelings. After that, the participants were mentally prepared to become involved in the top-up composite phase of the sketching session. The findings of descriptive-notation [before the sketching session] were compared to the findings obtained from the post-sketching stage [after the sketching session] to evaluate the level of detail generated by the participants' input before and after the sketching session.

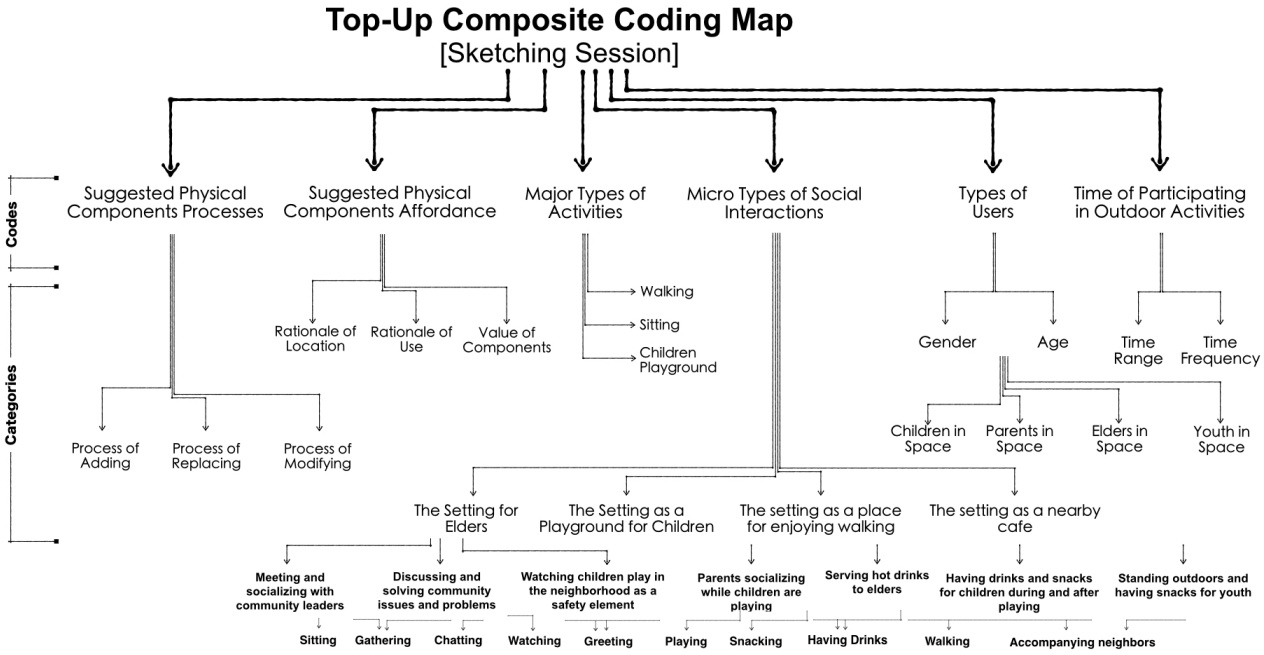
5.3.2 Top-Up Composite [Sketching Session]

Top-up composite was the tool that helped the participants to see what is possible in order modify and recreate the settings to be an everyday environment for people and encourage them to gather and socialize outdoors. In other words, this sketching session sought to meet the needs and desires of the community of the participants themselves and translate them into visual possibilities. The findings of each session were completely

different as the participants were individually unique in their imagination and their storytelling. Looking at each sketch, the findings suggest that the sketching sessions helped the participants not only to narrate their needs and desires in the form of stories, but they provided specific details that cannot be obtained from the classic way of interviewing. The participants suggested imaginative physical components and described their affordance including the rationale of using, value of use, and how social activities and interaction occur within the presence of the suggested physical components in different settings.

However, to analyze the findings collectively, major codes were categorized in the data and are represented below. Representative quotes were included in the discussion as they were the participants' insightful and thoughtful articulation of the best way to convey the overall sense of the interviews and the codes that emerged. Consequently, three major codes and their categories developed including: suggested physical components processes, suggested physical components affordance, major types of outdoor activities, micro types of social interaction, type of users, and time of participating in activities (Figure 5.5).

Figure 5.5: *Conceptual map of coded categories used in interpreting the top-up composite.*



5.3.2.1 Problem Recognition Case

To start the sketching session, the researcher recognized the present situation as a problem that influenced most of the participants as a negative experience in their neighborhood –found in the pre-sketching stage. The main question asked to each individual participant was customized to orient the default question to the individual problem related to the concept of social cohesion and outdoor spaces. The default question to launch the session: *"What is the most important component that makes this place a good place for outdoor social interaction and draws you and your neighbors from your homes and engage outdoors?"*

A problem of one of the participants was recognized into two major parts: disrespect among neighbors and lack of trust among them. After recognizing the participants' problem, the researcher customized the default question to fit the present situation. Therefore, the customized question asked was: *"What is the most important thing in this place that enables you to build mutual trust and a strong social relationship between you and your neighbors in this place?"*

5.3.2.2 Moving from Broad Suggestion to Specific Imagination

Before sketching, the majority of the participants expressed their stories and ideas broadly. They initiated their stories with locating a suggested activity as the most important thing they believe would encourage outdoor socialization. The participants' contribution was limited to what can be called "*locating-activity*," which means suggesting inserting an activity in the setting without giving specifics. Some of the "locating-activities" excerpts (highlighted in bold) include:

> Mths: See, again my son! The very important thing to build social relations among those who live here is to provide, focus…! Is to provide a very good service like **a place for sitting and resting**.
>
> Mhn: Umm! I think in my opinion, **to sit and watch my kids play in front of me**... Umm! I don't even think we can put a bench here. I don't know! I think we need a big bench here.
>
> Rob: I don't know, I can say **sitting with my neighbors and playing domino**.

As a result, the majority of the participants started their vision via a personal story and not getting into the design itself. This personal story is tailored based on their personal needs and desires. Later, however, the cognitive activities of the participants were stimulated, which helped them to go beyond broad suggestions and construct specific mental images that helped them to see possibilities. The findings suggest that the majority of the participants not only narrated their needs and desires, but they were stimulated to provide specific details about the social activities. The participants suggested physical components, and described their affordance including the rationale of component's location, rationale of using, value of use, and how social interaction could occur within the different settings.

5.3.2.3 Suggested Physical Components Process

Most of the participants suggested their physical components in many ways, depending on individual focus of concern. In most cases, the suggested physical components were found to be important in transforming the settings into social gathering places within a community. The majority of the suggested physical components went through three processes: 1) adding a new physical component, 2) modifying the existing physical components, and 3) replacing the existing physical component. Figure 5.6 shows three cases that represent the majority of the participants' suggested physical components.

5.3.2.3.1 Process of Adding Physical Components

Most of the participants suggested adding preferred physical components as an essential part to encourage them to socialize outdoor with others. The added physical components including: furniture (i.e. benches, tables, lights, and trashcans), soft landscape elements (i.e. shrubs, trees, bushes, and climbers), and services (i.e. mosque, café, cafeteria, kiosk). Each component has a rationale of location, rationale of use and value of use that the participants believe in their addition (see Figure 5.6). An example of one of the participants' dialogue below shows the process of adding one of these physical components. The statements that display the adding process are shown in bold:

Rob: …See, first we need to extend this sidewalk and make a place for sitting. **I want to see tables and chairs** as I told you to gather with my neighbors or friends and play domino or chess… And instead of going to watch the soccer game in outside café, we **can bring a TV monitor screen**, a big one, and we can watch here. You see! I think we can make it happen.

Adel: How do you want to gather with your neighbors here? Can you give me more details?

Rob: I don't know!! if it possible to make this side bigger I mean wider and put tables and chairs!

Adel: So, you want first to widen the sidewalk then after that bring chairs and tables... Then what will happen?

Rob: Yes, **add now many tables and chairs.** Many.. And many people sitting here. Kind of like crowded... You know… you sit with your neighbors and sometimes friends outside the neighborhood will be visiting you here and gather.

5.3.2.3.2 Process of Replacing the Existed Physical Component

The majority of the participants suggested replacing their preferred physical components with existing components as essential components encouraging them to socialize with others outdoors. The replacement process can be described as taking off or out a component and replacing it with a preferred one (Figure 5.6). An example of one of the participants' dialogue below shows the process of replacing one of the physical components. The statements are shown in bold:

Zbg: If it's possible, **there will be tables and chairs** because this what gather people. But we need to widen the sidewalk to have enough space for that table and chairs.

Adel: How much you want to widen the sidewalk?

Zbg: Make it like the one here in front of it.

Adel: This is enough? [After sketching widening the sidewalk]

Zbg: Umm! Make in this side a café because the café encourage people to gather, especially neighbors.

Adel: So, you want to place a café here?

Zbg: Yes, **these are stores. Am I right? Yeah! Combine them in one space and make one big café.** Then add chairs and tables.

5.3.2.3.3 Process of Modifying the Existed Physical Component

Most of the participants also suggested modifying the existing physical components to fit their needs and desires as they saw essential to encourage them to be outdoors and socialize with others. Most of the modifications included widening sidewalk, eliminating plants, and moving elements from side to other. An example of one of the participants' dialogue below presents the process of modifying one of the physical components. The statements are shown in bold:

> Mhn: I would like to have the bench over the grass. Ok. See! I know it is grass and nice to have it here, but I think in my opinion, this place is better for having a bench than in the grass. And I will tell you why because if we put the bench down here in front of the grass this will make this path narrow and irritating. So, I suggest…if it's possible…**Take the grass off from here** and make this something like a high stoop and place the Mirkaz over it..

Figure 5.6: *This figure shows the different three processes of constructing the physical components adding, replacing, and modifying.*

5.3.2.4 Affordance of the Suggested Physical Components

Most of the participants' stories connected the presence of the suggested physical components with their affordance in terms of not how they wanted to use the setting, but how they wanted to be with others in that setting. Many of the participants' imagination was expressed in a narrated storytelling form that did not have anything to do with the design itself. Rather, most of the storytelling provided specific details that conveyed the best affordance of the suggested physical components offered up by the participants in their vision. The affordance of the suggested physical components include: rationale of location, rationale of use and value of component.

5.3.2.4.1 Rationale of Location

According to most of the participants, the selective locations of the suggested physical components did express a necessity; and the selective locations were a matter of preference. Most of the locations were considered important for most of the participants to facilitate their imaginable social activities. The majority of the suggested physical components were decided to be permanent in their location. Two dialogues below for two participants as shown in Figure 5.7 and 5.8 represent the majority of how the rationale of the location emerged (shown in bold):

Dialogue One:

- Locating the Bench:

  Adel: …So where do you want to locate this sitting area?

  Mtsh: I don't know where to place it! You figure it out… Umm! Let me see! Aha! Do you see this wall? Why we don't place it over here! I think this is a good place for it. Yeah! Go ahead and place it here…

  Adel: But tell me, why did you decide to put the bench in this location?

  Mtsh: Look! **Do you see the shadow**! It is good place to sit and also I think it is cold here. You agree! Aha! **It's an excellent space nice shaded area. You know! It looks like cool during hot weather.** Sometimes hot weather is a big problem to sit outside. It's burning.

- Locating the Café:

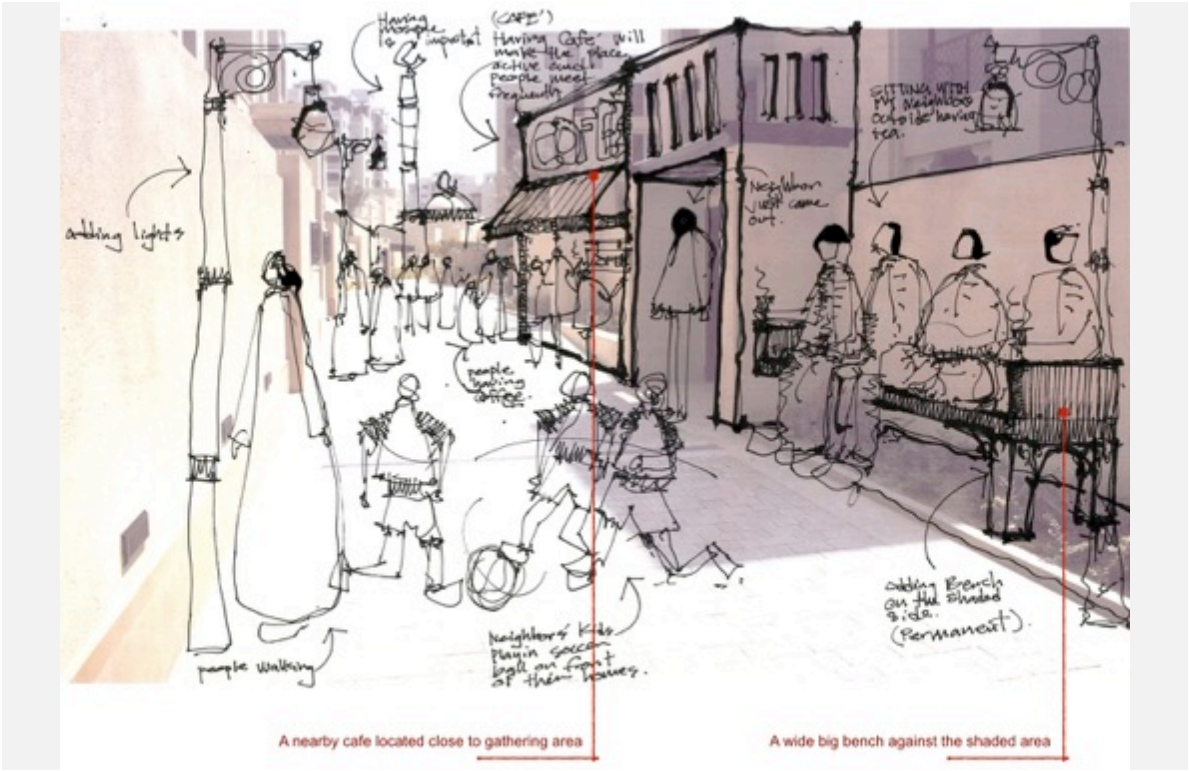
  Adel: Alright..! What else you would like to have in this place to make it for outdoor social interaction?

Mtsh: Again! Again! I told you. We forgot that **it's important** to provide good services like… **We need** to have a small café or cafeteria for tea or coffee or small sandwiches. See! I don't think there is a possibility to open one here. What do you think?

Adel: Let's try! If I ask you, take your time, and imagine if you were given the opportunity to make it, where would you like to place the small café in here?

Mtsh: Umm! Oh my son [Pauses]…. See! If it's possible… I don't know! I would say 'IF' it were possible! If this were my home, **I would think to open a café or a small cafeteria nearby to make this place,** a place for "feet" and close to the gathering area. What do you think? I think that would be a good idea…. Does this place allow for a café here?

Figure 5.7: *This figure shows the locations of two physical components in this case including: a bench and a café.*



Dialogue Two:

- Locating Benches for Reading:

Adel: Ok, help me to understand your suggestion. You said sitting area that encourages everybody to gather as group, sit and read. How you are imagining the reading or sitting area takes place here?

Kmz: Umm! As I said I don't like the look of the fence totally. **We need benches facing this side** [face the left side] area in front because this **[right side] will be for children to play and parent to sit on ground or grass**; then in the middle will be for biking and people to walk; then here we will have number of benches.

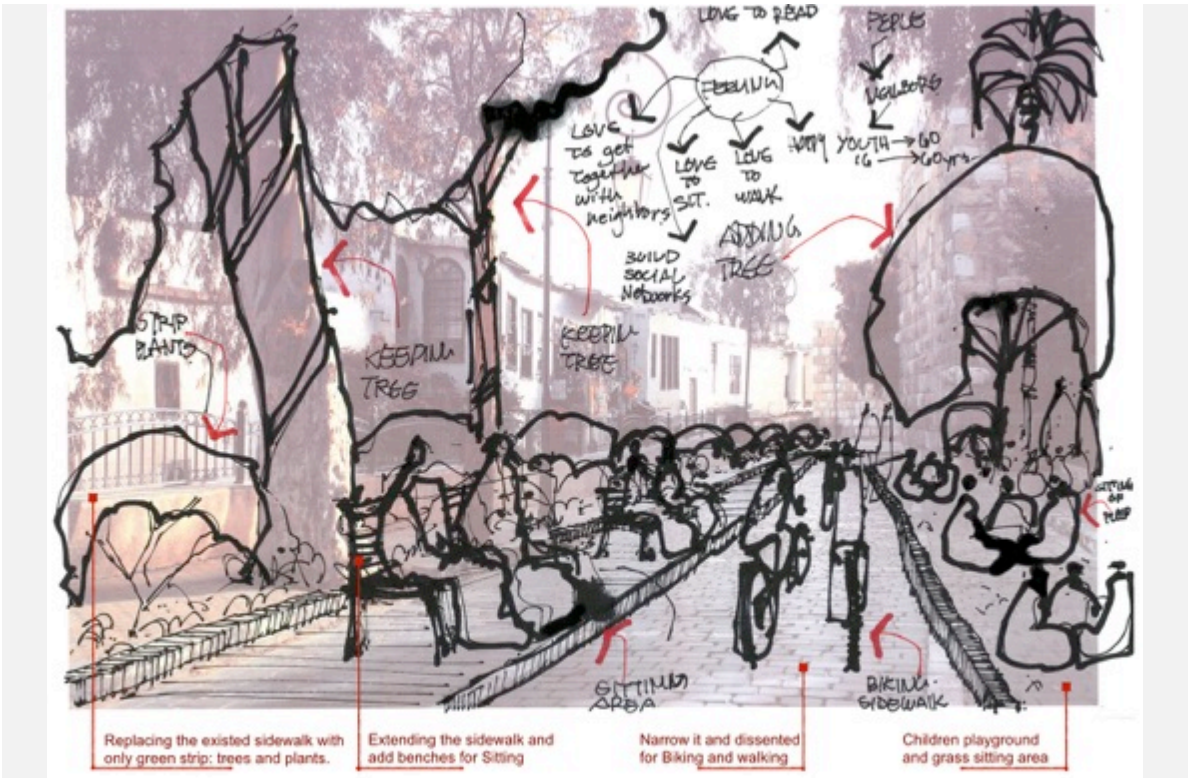
Adel: So, the benches will be on ground here or…

Kmz: No! No!.. See! We need to extend this sidewalk. I mean I want to see this sidewalk only green buffer like small trees and shrubs. Then extend the sidewalk more and this extension will be for sitting benches. Do you understand what I said?

Adel: So, you want to keep these trees on this side [left side] and make the whole sidewalk green and plants? Then extend the sidewalk more and designated for sitting?

Kmz: Yes! Exactly! **This area will be only buffer** or what you call it... between the houses and the sitting area. And the children will be tat side and the sitting will be on the on the ground I mean on the grass. So… **After that the benches will be here**….

Figure 5.8: *This figure shows the location of a sitting area for reading with group in this case.*



As a result, however, in the first dialogue, the participant in this case described the rationale of the locations of both the bench and the café as separate entities not related to each other. While, in the second dialogue, the participant described her rationale of locating the suggested physical component as one entity in one story.

5.3.2.4.2 Rationale of Use

Most of the participants were found to be conscious and aware of the way they wanted to use their suggested physical component in order to facilitate their social gathering within a community. The majority of them brought up their past social life experiences as part of the rationale of use. Although all the participants did not know each other, there were some similarities among their suggested physical components. However, the rationale of use among the similar physical components was completely different depending on the age, educational background and socio-cultural experiences. The rationale of use for two different dialogues (as also shown in Figure 5.9 and 5.10) demonstrate these similarities and differences regarding the inclusion of a sitting place:

Dialogue One:

- The bench and its rationale of use for a participant 60 years old, illiterate

  Mtsh: We! I mean the elders. You know! The retired don't have things to do at home [Chuckles] … I would say 4 to 5 people.

  Adel: So, could you describe more why having seating or resting area is important?

  Mtsh: See my son!…We elders must have a role in taking care of what happens in the neighborhood. I remember that we are almost 5 elders in the neighborhood and I wish there was a place to sit and discuss issues relating to…. You know when they say elders mean leaders…

Dialogue Two:

- The bench and its rationale of use for participant 28 years old, aviator

  Adel: What is the most important thing in your mind that you see important in this place to draw people from their homes and encourage them to gather and socialize?

  Mhn: It is good place to sit with your neighbors like in my age and watch our kids play in front of us... Umm! I don't even think we can put a bench here… I think we need a big bench here. A big one bench that we the youth of the neighborhood can sit on and gather around like evening gathering…

  Adel: So, where do you want to place the Mirkaz?

  Mhn: I would like to have it over the grass. Ok. See! I know it is grass and nice to have it here… So, I suggest…if it's possible…Take the grass off from here and make this something like a high stoop and place the Mirkaz over it…

  Adel: So we take the grass off from here and make it something like a stoop and then place the bench over it. Ok! How many one will use this Mirkaz?

Mhn: Uh! I would think something like 3 people? I would say we are 2 to 3 young parents. Three. Yes.

Figure 5.9: *This figure shows one component, the bench, and what is the rationale for the participant who is 60 years old.*

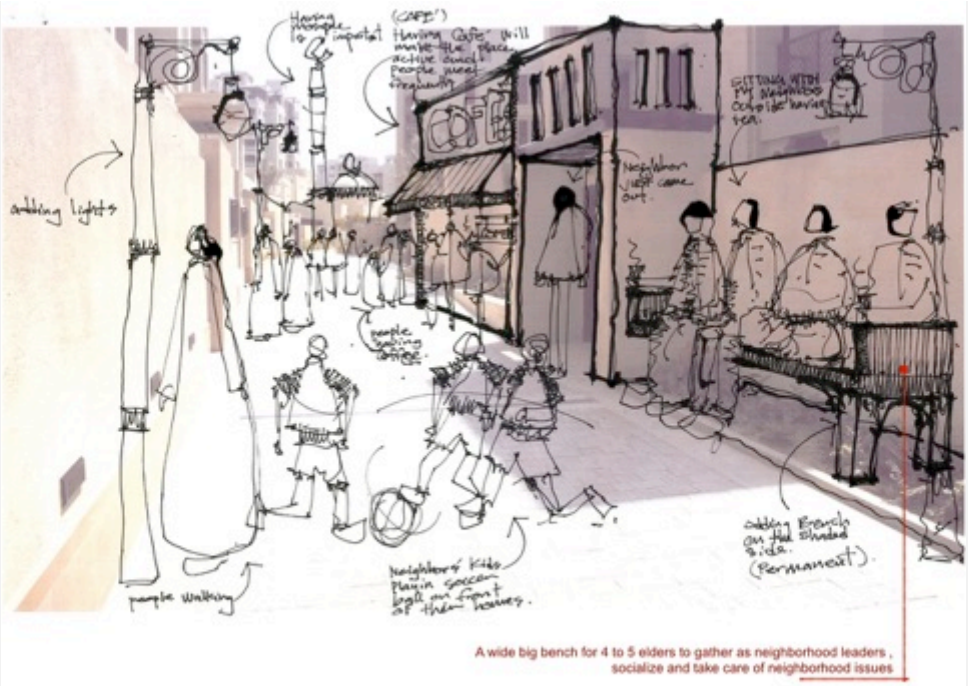
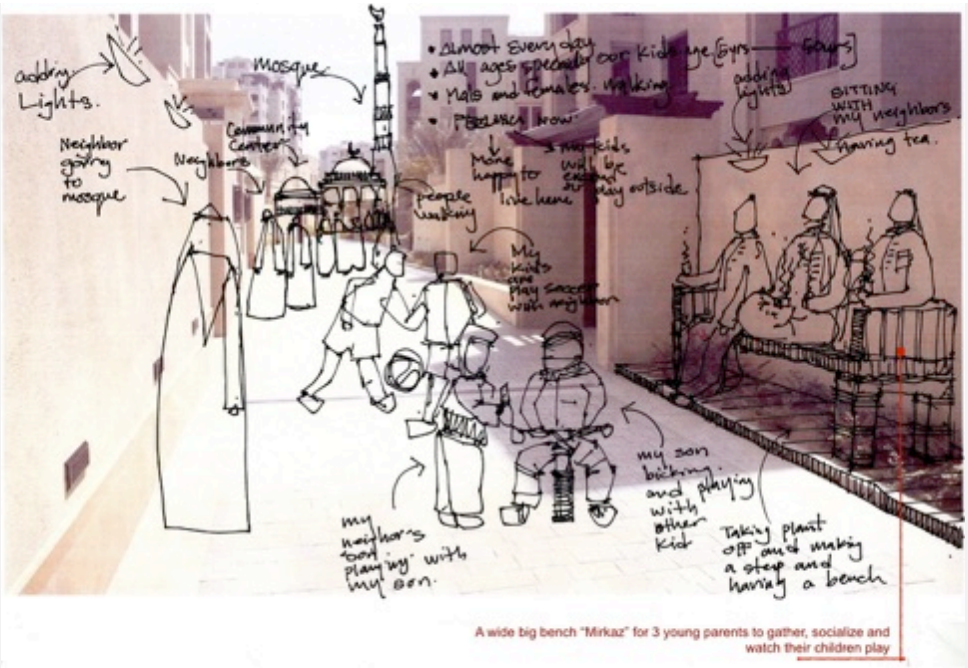


Figure 5.10: *This figure shows one component, the bench, and what is the rationale for the participant who is 28 years old.*



As a result, however, although there were similarities in the suggested physical components among the majority of the participants, the rationale of the use for them was rigorous and only made sense to the individual participant. Other different cases that share these similarities in the suggested physical components are shown in Figure 5.11.

Figure 5.11: *This figure shows the cases that present the similarities in the suggested physical component among different participants*

5.3.2.4.3 Value of Components

The value of the suggested physical component that was found in most of the cases related to opportunities contributing to social cohesion. The majority of the participants became aware and sensitized about the value of the suggested component. For example, a café as a suggested component is discussed below in terms of how this component created a number of opportunities:

Value of the café as one component in Mtsh case:

- Opportunity to bond and create social networks

  Mtsh: Perfect! See now this café can serve us when we sit outside here and even we feel encouraged to gather, come and sit here…

- Opportunity to foster acquaintance with community members

  Mtsh: I think yes, this is a small café so I'm assuming the place inside the café won't be enough to let everyone inside. Yes…like any other small café, the young men stand outside to talk and have drinks and snacks [Chuckles] and create acquaintance among them.

- Opportunity to act as a source of entertainment

  Mtsh: Perfect! See now this café can serve us when we sit outside here and even we feel encouraged to gather, come and sit here. This place will be a joyful place to those who come from other neighborhoods… You see! A place like this attracts people even from outside to enjoy, eat, drink, sit and meet others…What a beautiful and excellent place [Smiles]. In this place, you can get cake, sandwiches, cold drinks, hot drinks, meet neighbors, sometimes relatives, your kids can make new friends—Good stuff there.

- Opportunity to foster sense of safety

> Mtsh: Oh! One more thing! Also, having a café or a cafeteria in here does mean a kind of safety because everyone is watching everyone! Am I right? And no one can misbehave or bully our kids. Do you understand me? Yes! This is very important… Also, the kids, when they play they can go buy soda or water or a snack or anything. They can feel safe in their neighborhood. Great! Great!

As a result, the participant was looking for a sense of 'we-ness' that shows the involvement of the neighbors according to their social role based on a daily meeting to discuss different aspects, issues and problems of the community between individuals and families.

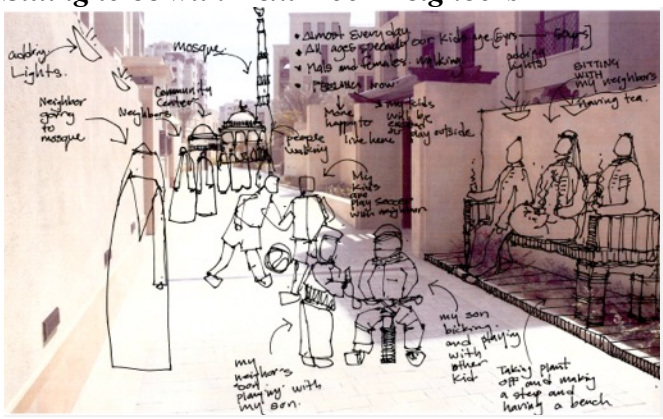
5.3.2.5 Major Outdoor Activities

Most of the participants were aware of the type of activities they wanted to participate in and see in their neighborhood. There were three major types of common outdoors activities: sitting, walking and children playing. Each major outdoor activity is different in each participant's story in terms of importance.

5.3.2.5.1 The Setting as a Sitting Area

The most common sitting activities were divided into three sitting scenarios and depended on how the participants wanted to be in the setting and with whom he or she wanted to be with. First sitting scenario is to be with next-door neighbors. The second sitting scenario is to be with neighbors and invited friends from outside the neighborhood. The third sitting scenario is to spend quality time outdoor with family members.

Sitting to be with Next-Door Neighbors

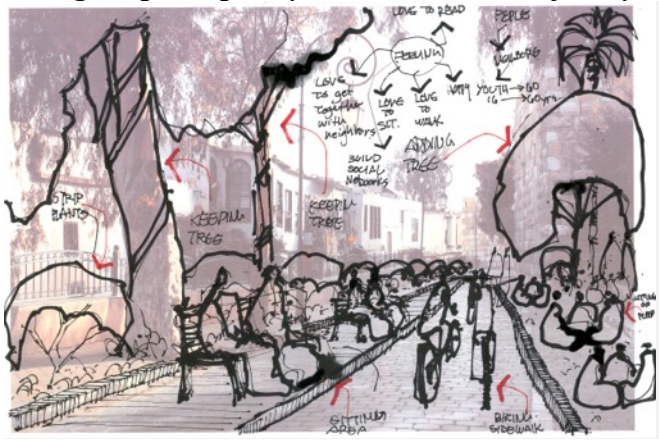


Mhn: It is a good place to sit with your neighbors like in my age and watch our kids play in front of us… A big one bench that we the youth of the neighborhood can sit on and gather around like evening gathering.

Sitting to be with neighbors and friends from outside the neighborhood

Rob: I have a lot of friends and neighbors inside and outside my neighborhood, and my home doesn't accommodate. This is why we gather in a café 15min driving from my home. See, first we need to extend this sidewalk and make a place for sitting. I want to see tables and chairs as I told you to gather with my neighbors or friends and play dominos or chess… And instead of going to watch the soccer game in outside café, we can bring a TV monitor screen, a big one, and we can watch here. You see!

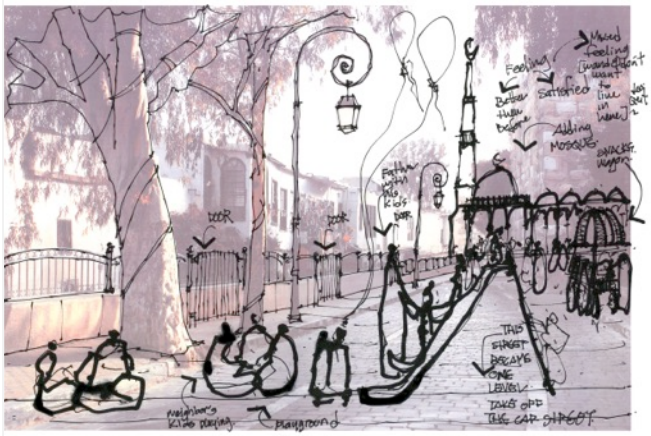
Sitting to spend quality time outdoor with family members



Kmz: …sit with my oldest brother here to spend some time with my youngest brother biking here. We love to read. Maybe with papa we can come and read as we do usually my father and me we go to seashore and spend sometime I read a story and papa brings with three or four newspapers… in here my youngest brother can come with me riding his bike and we can sit and read… I like it!

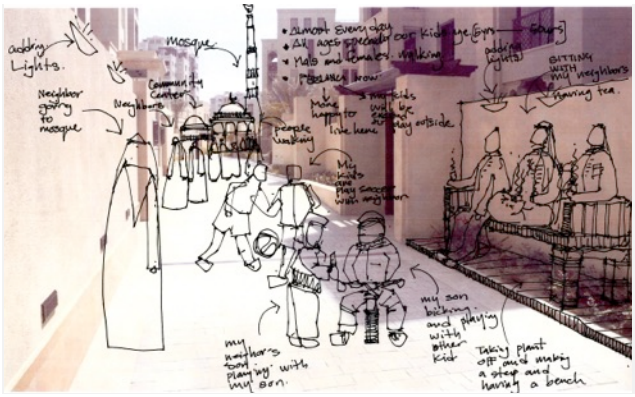
5.3.2.5.2 The Setting as a Children's Playground

Most of the participants who were parents were very conscious of bringing their children with them in the story. Also, those parents did their best to provide as fun and as safe of an atmosphere as could be. The majority of them imagined to be with their children in the place and to socialize with other parents. Also, they imagined to not only bringing their children to the place, but also they brought their neighbors' children to play with their children. Some of these insights include:



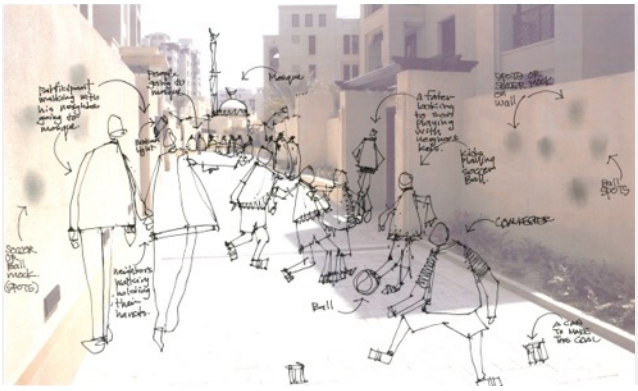
Rob: You see! This is the place my wife will like it! We can set a play date with our neighbors and gather here. We don't need chairs or tables; we just bring mats with us to sit on ground I mean grass and let our children to play here. You sit and you are close to the mosque.

I can bring my daughter to play here almost everyday; I think this place with little bit more lightly, it would be great to gather with friends and neighbors.



Mhn: …draw boys in front of us playing soccer and on a tricycle. Every one of us brings his boys to play in front of him and in the same time socialize with his friends. Here you feel your boys are 100% safe if God wills. No cars and no worries.

…I have Abdullah and Faisal. One is 5 and the second is 3 years old. They play here in front of us. My neighbors bring their boys with them to play too while we are chatting.



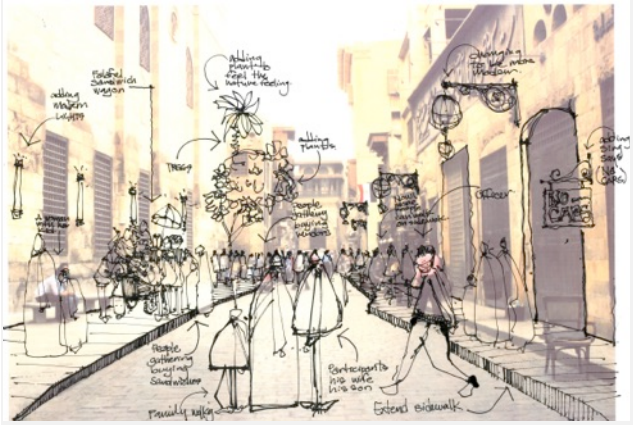
Zhn: Um! Nothing particularly! Except! You know those kids are under 12 years old and I am assuming they have to have someone adult like a father or a big brother to watch them.

…Yes. This is very important. I can't let my boy play outside and have no idea with whom he is playing or…You see?

5.3.2.5.3 The Setting as a Walking Place

Most of the cases started with walking as a desirable activity to see in the setting. However, more than half of the participants saw walking not just as "walking by," but the saw walking as a social activity to meet, greet, and accompany people. Most of them in the beginning complained about the lack of this activity in their neighborhood in terms of

providing space for walking. Accordingly, they believed that walking demands space designated for walking; it was seen as necessary to walk freely without being disturbed or without being inconvenienced. Some of their visions visualized in the settings are as follows:

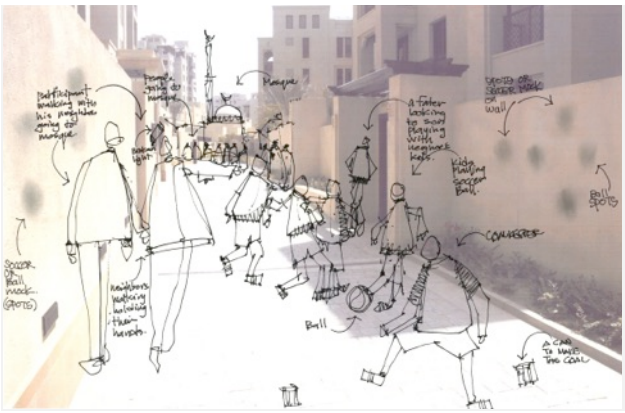


Zhn: See, I am walking here with my wife and my son. I wish to widen the sidewalk and give people priority to walk. This place is really for walking… Not only walking! I think for walking and seeing people. I'm sure, if my wife were here, she would say like what I just said. This place is for walking. Basically!

When my wife and I walk in here and talk, I think that spending time walking here is worthy…

Mtsh: …see my son! If we are both walking and sitting in one place, the people will feel happy. I don't know! But if I'm walking here and see my close neighbors gathered and sitting here, I will feel happy to join them or they'll join me walking. I will force them to walk with me [chuckles]…

I can't imagine having done this drawing with you, giving me this opportunity, and not suggest walking…



Basically! When we walk and talk, we're checking in about how life is going. So most of the conversation is about: how is the family, how is your mother, how is your father. So it's enjoyable to take the journey to mosque and engage in conversation with neighbors while walking to mosque. I think this journey is important to let you know more about how everything is going well in your neighbor's life and I think it's enjoyable and important to see new neighbors, but we're not noticing it!

5.3.2.6 The Micro Types of Social Interaction

Social interaction and how people wanted to make contact with each other is seen as very important for most of the participants. After discussing the process of constructing the physical components and the major types of outdoor activities, this sub-section discusses the micro types of social interaction that were generated from the presence of the suggested components and the major activities as imagined and narrated by the participants. Micro social interactions were the hidden activities that the participants had to be stimulated to more delve deeply into their imaginations. After decoding the cases and interpreting their excerpts, two cases are presented below as an example of this.

5.3.2.6.1 Example: Case One Micro Types of Social Interaction

In this case, there are three decoded sketches that represent the story imagined and narrated by one participant. These decoded sketches include: a setting for elders to gather and socialize, a setting of a nearby café, and making the setting a playground for children to play soccer (see Figure 5.12). Each of these decoded sketches comprises a number of micro interactions in which the participant believed.

I. The Setting for Elders to Gather and Socialize:

The participant was looking for a sense of 'we-ness' that shows the involvement of the neighbors according to their social role based on a daily meeting to discuss different aspects, issues and problems of the community between individuals and families. When he experienced the consequences of the absence of outdoor spaces that led to disrespect among neighbors and a number of car accidents hitting kids in the street, he believed that if there were a daily sitting place for elders to meet regularly, then respect would emerge and issues could be solved. He stated his experience:

> Mtsh: …**we elders must have a** role in taking care of what happens in the neighborhood. I remember that we are almost five elders in the neighborhood and I wish there was a place to sit and **discuss issues relating to….** For example, the kid who got hit while he was playing soccer in the street, believe me! If we knew each other, we could solve finding a safe place for those kids to play or even to stop them from playing in the street. Do you understand! [Pauses] This is just one example! Retired? Yes! Why we don't take care of

> solving problems and so forth. This is why it's very…very important to have a seating area in here. If you want you can name it **"operating room"**…

Therefore, he has a sense of responsibility that made him see that the importance of outdoor space as not only for sitting outdoors and meeting others, but also he saw it as an "operating room" where issues and problems of the community can be discussed and solved.

II. The Setting as a Nearby Café:

He also saw that providing café, as a service, was not just to serve a commercial function in the space, but rather to encourage people to be around and energize social interaction. Therefore, the participant thought that this vibrant social interaction would not only occur among the residents themselves, but also between the residents and café workers in order to create a strong neighborhood cohesion.

> Mtsh: I think yes, this is a small café so I'm assuming the place inside the café won't be enough to let everyone inside. Yes…like any other small café, the young men stand outside to talk and have drinks [Chuckles] and create acquaintance among them. Then, we call the tea-boy to serve us because he knows the preferred drink of each one of us. So you just call his name, and immediately he will be here [Smiles] and we ask him for tea with mint [Chuckles] and [Claps] Great! Great... Also, the kids, when they play they can go buy soda or water or a snack or anything. Great! Great!

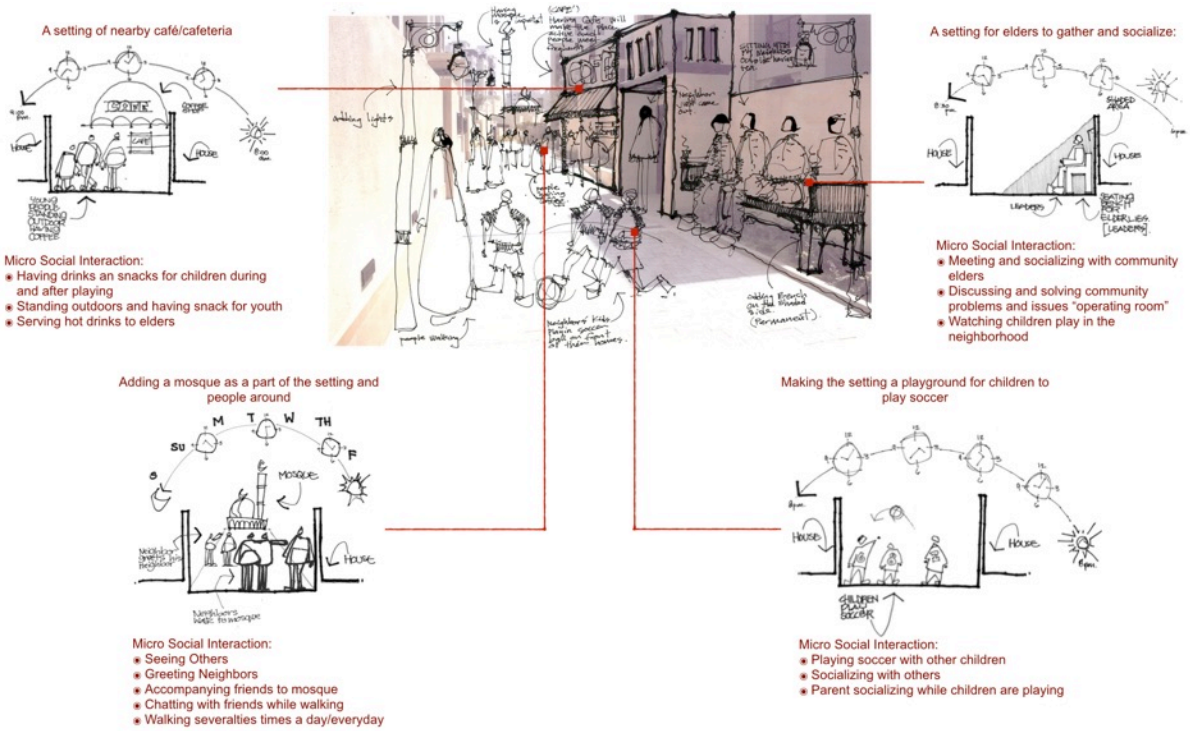
As a result, he saw the importance of providing a small café or a cafeteria in the neighborhood as not just supporting their daily needs, but also vibrating social relations.

III. The Setting as a Playground for Children to Play Soccer:

The participant mentioned that children being outdoors is not only for enjoyment but also for releasing their energy. As he stated:

> Mtsh: Any game that releases their energy. By the way, children have high energy and if they don't release it outdoors maybe they will release it somehow inside the home…Fighting with a brother or sister or breaking stuff…I have a grandson 4 years old…Oh! He is a troublemaker…Sometimes my son takes him away for shopping or any trip just to keep him away from fighting with his brothers and sister… I think that would be a good idea. People walk and our kids are able to play instead of spending their time with electronic devices and games—these devices that burned their brains. They must go out and see other kids. I think also it's healthy for them…

Figure 5.12: This *figure shows the decoding of the sketch and the micro social interaction that occur with the presence of the suggested components.*



5.3.2.6.2 Example: Case Two Micro Types of Social Interaction

In this case there are two decoded sketches that represent the story imagined and narrated by one participant. These decoded sketches include: the setting as a place for enjoying walking with neighbors to socialize outdoors on a daily basis and the setting is for children playing soccer with the presence of their parent(s) to watch them as part of safety concerns (Figure 5.13). Each of these decoded sketches comprises a number of micro interactions in which the participant believed.

I. The Setting as a Place for Enjoying Walking with Neighbors to Socialize Outdoors on a Daily Basis

The participant had a vision that walking with neighbors is very important in building strong social ties among the people who live in the neighborhood. He stated the importance of walking with neighbor to mosque or to anywhere in general as:

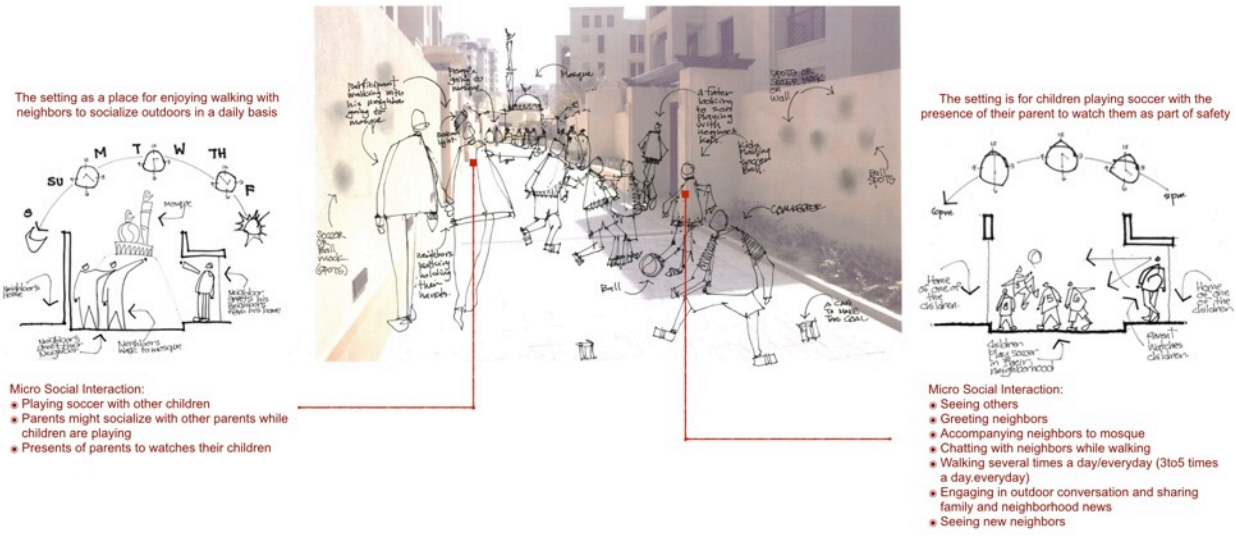
> Zhn: … Let's say chitchat, talking with neighbors and take in their news. Like!! For example, I'm walking here to mosque seeing my neighbors walking to the mosque too, Umm! Seeing another neighbor leaving his house going also to the mosque. You greet him and he greets you… And then my neighbor leaves the house and then says hi! We start talking together holding our hands and chitchat. We walk together to the mosque. We are walking and starting kind of engaging in some conversations.

II. The Setting as a Playground for Children and Parents for Watching and Playing

The participant gave details of how the soccer game could take place in this setting. The participant was stimulated to describe who the children are, how many teams there are, and how many children on each team. He imagined a "small soccer playground" in this setting and described what he meant by soccer playground. He narrated his imagination of the soccer playground in a storytelling manner:

> Zhn: I'm assuming the kids of my neighbors…like the families who live in these houses, their kids are playing on the front of their houses… You know those kids are under 12 years old and I am assuming they have to have someone adult like a father or a big brother to watch them… I'm assuming to have one here! Or there is a father who is standing outside watching the entrance of his home here.

Figure 5.13: *This figure shows the decoding of the sketch and the micro social interaction that occur with the presence of the suggested components*



5.3.2.7 Type of Users

Users who were suggested by the participants were varied. Moreover, participants gave many details about who these imaginary users were and their relationship to the participants. Imagining certain users gave more meaning to the participants' process and enabled the research to have insights regarding more specific categories such as age and gender. In addition, the participants provided details about how the suggested users would behave in the setting.

5.3.2.7.1 Age

Most of the participants did not imagine the users in a generic term, but they determined the specific ages and how their related activities take place in the setting. Most of the feedback featured children-related activity as the priority followed by adults. Some of their feedback is as follows (in bold):

> Zhn: I'm assuming **the kids of my neighbors**…like the families who live in these houses …their kids are playing on the front of their houses…. Ok! Late afternoon and before sunset let's say from 5pm to 6pm I will be walking here with my neighbor **and five kids are playing soccer.** They can have two items on the floor. May be two bottles or something that look like a goal, representing the goal, because you cannot bring a real goal to this place…I can tell this space is safe for our children to gather here. I feel safe here… They're under… **Under 12! Basically under 12!** Umm! Lets say two teams and **4 to 6 kids**. Because they need one goalkeeper and each team is 3 and 3, so, **5 or 7 kids**.
>
> Rob: Here I can bring my youngest brother to play here with other children… Those children are **my brother's kids and can be our neighbor's too**. They will be here based on arranging a play date for them to play… I would say they **are between 3 to 6 years old**.
>
> Rhm: It will be awesome to gather inside our neighborhood and meet every other day with my friends**… we are on average 20s years old.** I wish to see this in my neighborhood.
>
> Zbg: I would say **all the ages, 20 to 60 years old**…

5.3.2.7.2 Gender

Gender differences were taken into account in the outdoor social activities. According to the socio-cultural norms, women were more involved in the walking activity followed by sitting as a companion to the activities of children (such as in a mother or

sister). For men, most of their activities were for social gatherings followed by walking. Some of their feedback was:

> Zbg: I would say all the ages, 20 to 60 years old for both men and woman, but more men.
>
> Zhn: Walk here with my wife daughter…the place looks great if my wife and I bring our daughter to play here and watch her.
>
> Rob: …now I think this place is cool for both men and women. I mean women for walking.

5.3.2.8 Time of Participating in Outdoor Activities

Social interaction and the imagined outdoor social spaces reciprocally inspired the participants to provide the time that they wanted to be with people. When the participants were able to put a context to the space, they were able to give more detailed insight. The context included time range and frequency.

5.3.2.8.1 Time Range

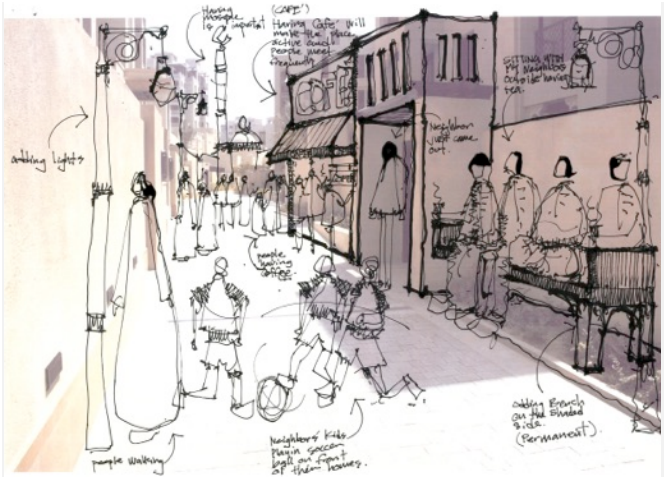
The participants were specific about what is the preferred time for outdoor activities. The majority of them provided a justification about the rationale for their preferred time. Most of the participants were determined and preferred a starting time for being outdoors before late morning and after late afternoon due to the hot conditions of the weather. Some of these insights below and the highlighted part are shown in bold:

Rob: Umm! We gather lets say **from 5pm to 11pm** almost everyday… we gather her like neighbors and friends could be from outside the neighborhood. The stage! It will be **from 5pm to 8pm** for kid performance… In Ramadan the stage will start **from 9:30 to 11pm** and the sitting area I would think to make from **7:30pm to around 12:30 or 1:00 am**… Walking will be all the day but to see many people will be after 3:30pm after Asr prayer.

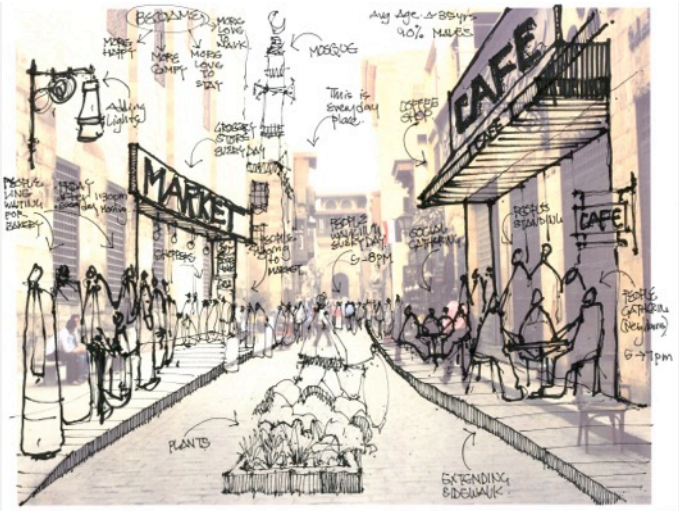
Rhm: I mean **from 4pm to 10pm** we sit at the café kind like everyday of course depends on how heavy school homework I have and family commitments…Maybe I will meet them **late around 6pm or 7pm**…of course **not before 4pm** because the heat and my face becomes greasy and irritates me.

5.3.2.8.2 Frequency

The majority of the participants wanted to frequently see neighbors and friends socially in the space. The majority of the participants wanted to be outdoors with others on a daily basis and during the weekends. For most of the participants, the frequency of participating and with others is encouraged by suggested physical components and how they are arranged in the setting. Some of these insights include:



Mtsh: For sitting it can be from 6pm to 8:30. We go to Isha prayer then from the mosque, everyone goes to his home. **This is everyday and on the weekend** it could be additionally in the early morning from 5:30 am to 7:30am. **See! If this site is exactly what I'm looking at, I would be happy to be here to spend more time not necessarily just 5am to 7am**. Have the morning tea and anything for small breakfast. For **the kids, I think maybe every other day** from 5pm to 6:30 and they can play **on the weekend any time**.



Zbg: Now! See my friend! Extending this sidewalk and putting tables and chairs outside the café brought something to my mind. If one of my students has a problem in a subject, I can invite him to this place and have coffee together and discuss a subject…you got it I said! We can meet **here occasionally like once every week or every two-weeks**. For me. I think the wide elevation of the café with this deep step will bring people to spend a long time let's say from 4pm. Yeah! 4pm to 11pm maybe. I would say here **once every two days** with my dad, friends or my students…

As result, the time dimension shows the necessity to understanding life in the space and what everyday life looks like. Individual imagination concerns how long and how frequent it takes to stay and contribute in the outdoor activities. In addition, the time shows how much the participants were excited to be outdoor from the worth point of view.

5.4 Evaluation of the Collaborative-Sketching Process

Collaborative-sketching process was evaluated by four tools including: comparison between the pre-sketching interview and the collaborative-sketching, the post-sketching interview, participants' support of the process, and participants' level of engagement in the Process. Evaluating the collaborative-sketching process can help to improve the performance of the process and its outcome.

5.4.1 Comparison Between Pre-sketching and Collaborative-Sketching Process

The focus of this evaluation tool is to answer what types of information details the process provides compared to the pre-sketching (classic) interview. The comparison is between the findings that represent the participants' needs and visions that obtained from both the pre-sketching interview and the collaborative-sketching process. This sub-section is divided into five parts to compare the level of details and information: broadness, realism, and visual representation, unique commonalities, and nature of interaction.

5.4.1.1 Broadness vs. Specific

In the pre-sketching, the participants were asked, if given the opportunity to improve their neighborhood to make it a place for daily outdoor social activities, what would it be? Most of the participants had suggested elements that they would like to see in their neighborhoods. They had a strong belief about their suggested elements that could help them, in their point of views, to form outdoor social interaction and, accordingly to build social cohesion among them and their neighbors. Later, when they were asked again about the importance of their suggestions, they replied with a strong belief that their suggestions are important in terms of the condition of their neighborhood and nascent social relationships. However, the suggested ideas and elements were still generic and too broad to help in generating ideas for design. Ultimately, these would go as checklists, bullets and categories that needed filtration and testing to see what is applicable. Some of these broad visions were:

> Zhn: I would do exactly a big place or platform and a park for children and families. This really helps people to gather and make busy life in the neighborhood. Also, I would build a mosque close inside the neighborhood and a minimarket store inside the complex so people don't need to go outside the neighborhood. Only the minimarket by itself can let people see each other and walk.
>
> Mtsh: I would do the following if I find some people who can help me. I'll make a café that gives life to the neighborhood. You know the sound of people and the smell of the coffee give a beautiful feeling; I'll make a sitting area to encourage people to sit and rest, and a small park so the kids can play soccer and families can spend time and cook outdoors.
>
> Mhn: I'll maybe do a community place, as I said outdoors or indoors, for every 30 to 50 homes and I will provide outdoor activities such as sports, daily social gathering, soccer for youths, and bicycling for boys. I would call it something similar to a community center. Something like this… Also, believe it or not, the stoop of my friend's home is little bit higher that the street level. You just give me [Chuckles] the authority and you will see what I'm going to do.

On the other side, the collaborative-sketching process had invested in the participants' imagination and in the way of using sketching as a collaborative process to visually stimulate their mental images. Sketching over the photograph of a setting helped them to see what is possible specifically to each setting. Therefore, when the participants were asked about the most important thing that makes the outdoor spaces socially active, the process of sketching stimulated them to imagine mentally in order not only to describe their suggested components in a broad manner, but more specifically than the pre-sketching.

Mental images of the suggested components—such as sidewalks, cafés, benches or trees—were described in detail in order to reveal the affordance including: the position of the component and its rationale, the fittingness of the components in the setting, the use and the rationale, the value of use, the users (relationship, ages and gender), and the time of being and staying outdoor with others (time range, frequency and duration).

Moreover, the participants during their narration and description subconsciously provided micro levels of detail related to social interaction. For example, take walking as an activity. During the collaborative process, most of the participants did not describe walking as only a physical movement, but also they described what happens during the walk such as: greeting neighbors, opening a conversation, sharing stories, accompanying neighbors and others. Figure 5.14 (a) and (b) show three cases and represents the amount

of specific and narrowed information special to this setting. In Figure 5.14 (a) and (b), the participants were stimulated during the process to build mental images that the researcher visualized over the photographs as visual information, which included details specific to these settings and how the settings handled the social activities and interaction. Everything imagined and told by the participants and sketched by the researcher was detailed using notation techniques and sticky notes.

Figure 5.14a: *This figure shows a case of mental images layered over the settings photographs. Every detail was documented using sticky notes beside the notation as the participants had many things to describe.*

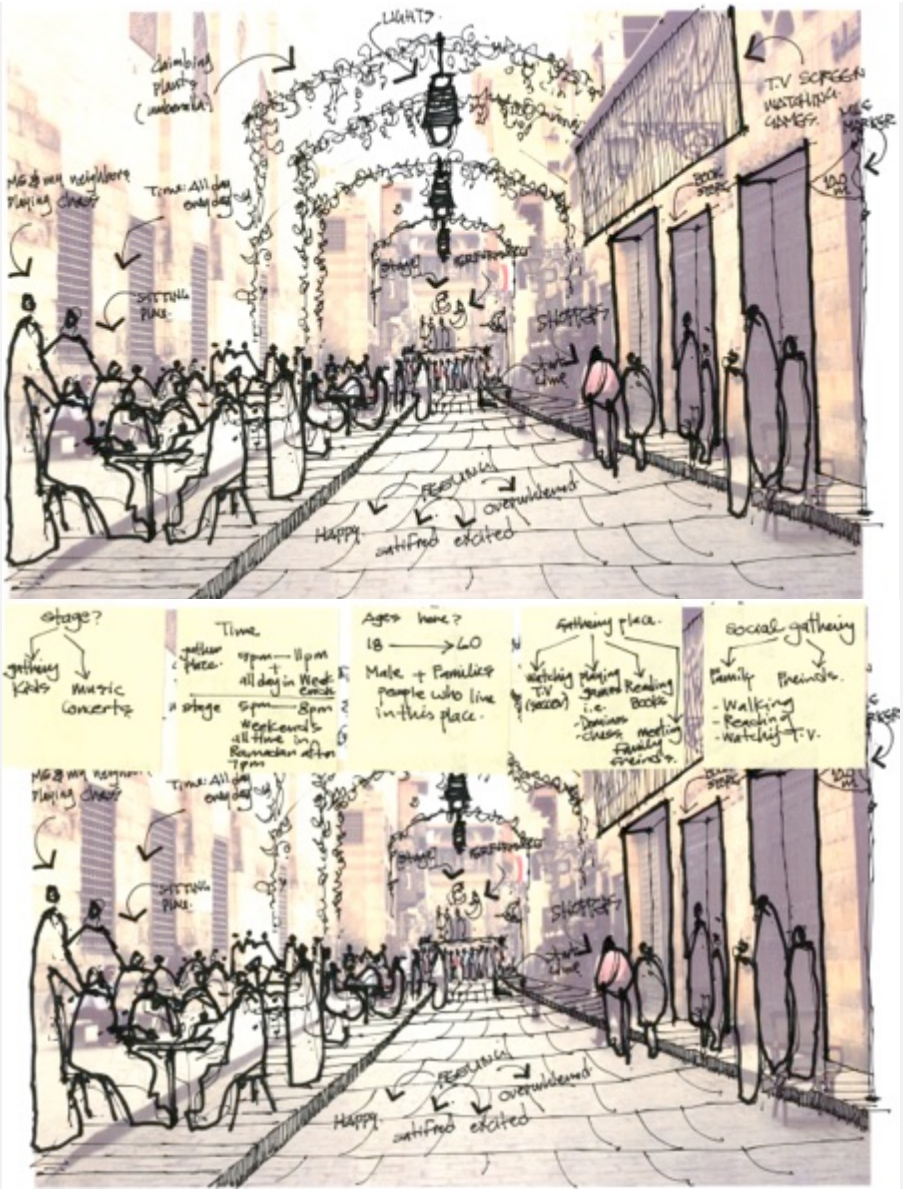
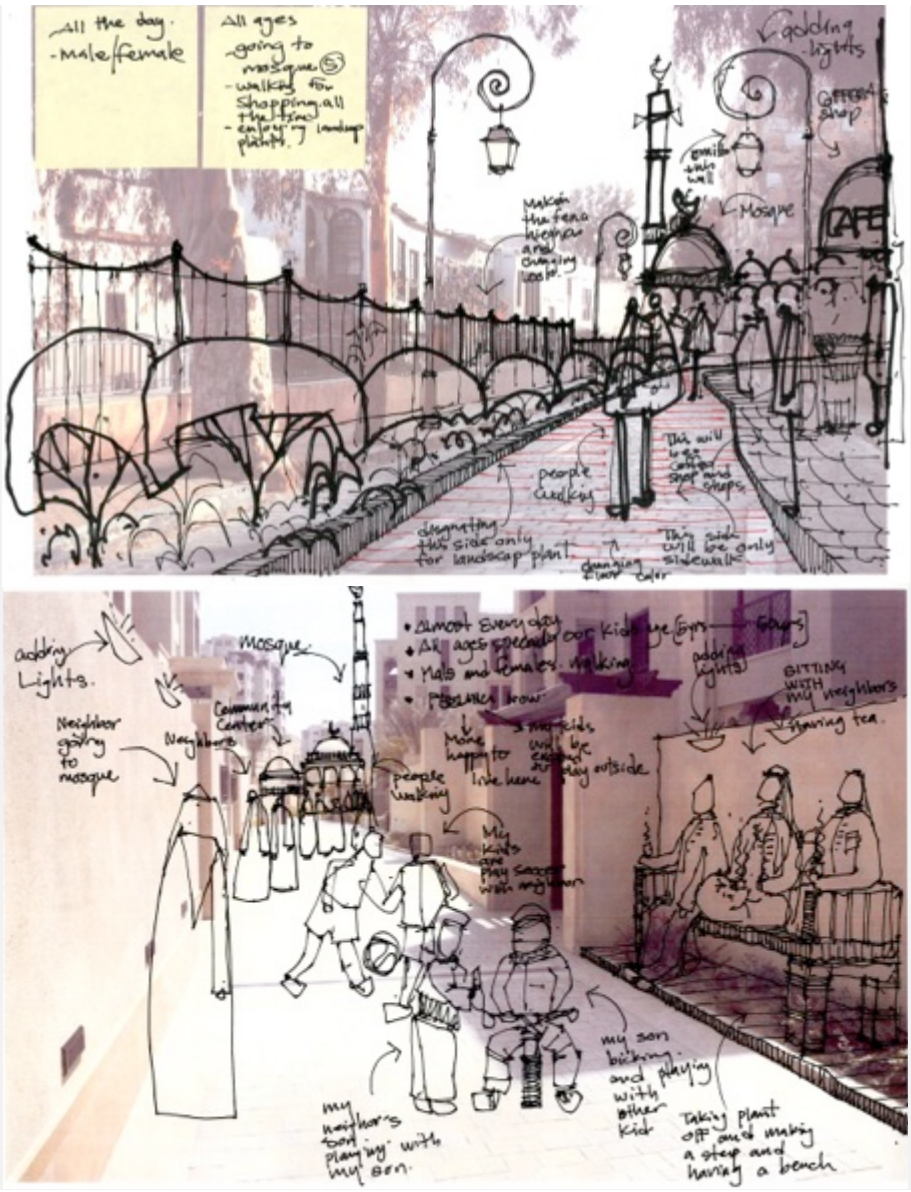


Figure 5.14b: *This figure shows two cases of mental images layered over the settings photographs. Every detail was documented using notation texts and arrows.*



5.4.1.2 Unrealism vs. Realism

In the pre-sketching interview, around half of the participants suggested sort of unrealistic and big scale ideas that could be considered as on the level of transforming the neighborhood entirely or involving making policies and decisions. However, some of the suggestions and ideas did make sense, could be interesting and could be important to the

situation of their neighborhoods. Therefore, the information obtained from the pre-sketching was not as beneficial in helping the researcher/designer to understand more about the participants' needs and desires in order to generate ideas for design. These types of suggestions were revealed as an indication that people in some way know how to deal with the issues facing them in their neighborhood, but they do not know how to be focused and realistic. Some of these visions include:

> Knk: First thing I will do is to make a parking garage under the neighborhood I mean the street and close the street not allow cars to get in. And make the closed street only a big plaza for sitting and walking nice landscape. I would say parking garage under the ground for the all residents and each parking spot would have a number for the apartment or the villa. Parking garage under the ground! Parking garage under the ground! Parking garage under the ground!
>
> Shm: If I got the opportunity, I think I will transform the whole neighborhood from 3 stories heights to 7-story or 10-story buildings. I have a point of view and every time I tell my friends about it that increasing the number of residents will make the neighborhood really have a busy life. People will be forced to meet each other and make relationships.
>
> Rhm: I have three things in my mind: a mall to gather in and walk because it is near for shopping…also I think gym is important and restaurant or a café…I think if these became available in any neighborhood, people could have a chance to know each other and can meet for example in the mall.

Conversely, the collaborative-sketching process situated the participants in the setting and visually stimulated their mental images. Sketching in front of the participants influenced their eyes to see and their brain to focus their imagination and, therefore, they were enabled to be more realistic and their mental images of the suggested components made more sense. The researcher would argue that being realistic in the collaborative-sketching process encouraged most of the participants to be patient and excited when describing and imaging with no limits before they reached to a moment of "that's it!" Being realistic, the majority of the participants became subconsciously enthusiastic and provocative. In Figure 5.15, some of the realistic visions were compared below between the participants' responses in the pre-sketching and collaborative process:

Figure 5.15: *This figure shows the difference between inputs when the participants were asked using pre-sketching interview (left) and collaborative-sketching process (right).*

	Pre-Sketching Interview	**Collaborative-sketching process**
Rhm's Case	"I have three things in my mind: a mall to gather in and walk because it is near for shopping…also I think gym is important and restaurant or a café…I think if these became available in any neighborhood, people could have a chance to know each other and can meet for example in the mall."	
Shm's Case	"If I got the opportunity, I think I will transform the whole neighborhood from 3 stories to 7-story or 10-story buildings. I have a point of view and every time I tell my friends about it that increasing the number of residents will make the neighborhood really have a busy life. People will be forced to meet each other and make relationships."	
Mtsh's Case	"I would do the following if I find some people who can help me. I'll make a café that gives life to the neighborhood. You know the sound of people and the smell of the coffee give a beautiful feeling; I'll make a sitting area to encourage people to sit and rest, and a small park so the kids can play soccer and families can spend time and cook outdoors."	

As a result, in the pre-sketching (classic) interview there was a limit in the horizon when the participants suggested their ideas. However, in the collaborative-sketching process, being realistic meant that the participants did not yet know what the possibility

was until the process began to unfold gradually and they were stimulated to build their mental images. This will be discussed in more detail later in sub-section 5.4.3 in terms of the participants' level of engagement.

5.4.1.3 Visual Possibilities vs. Texts and Numbers

As shown previously, the pre-sketching findings presented the information in a form of texts that were interpreted into codes and categories to understand the participants' point of views. However, the findings of the collaborative-sketching process did support what the researcher was suggesting in terms of the visual information that went beyond descriptive texts and analytical numbers, and provided the visual information as storytelling that was drawn from the complexity of the participants' imagination. Another value found in using this approach was as an effective form of visual communication when presenting findings to stakeholders, practitioners, and academics. The sketches played-back in the viewer's mind, and brought forth further elaboration and explanation, which can be viewed as unique form of interview communication. Figure 5.16 shows a number of visual possibilities for one setting.

Figure 5.16: *This figure shows four possibilities for one setting.*

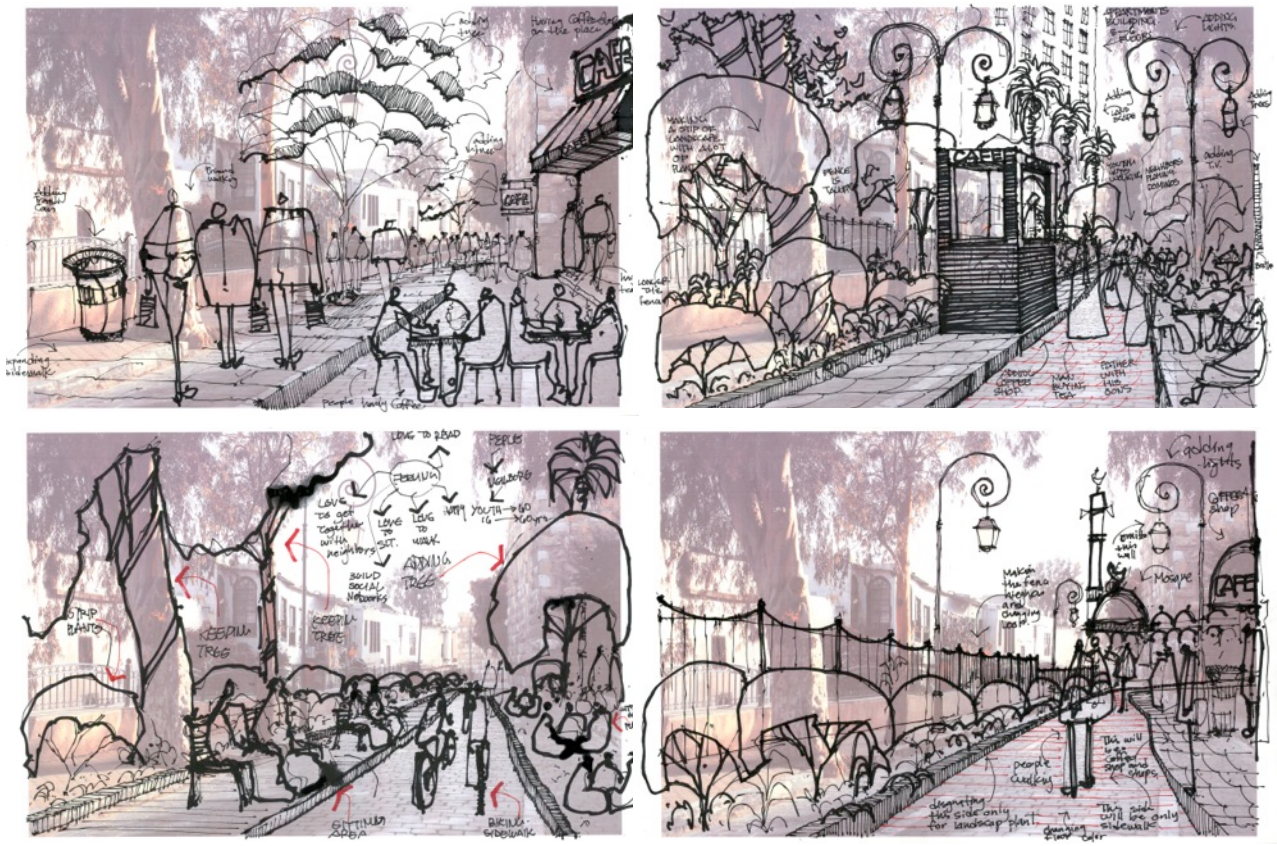
5.4.1.4 Unique Commonalities

Pre-sketching interviews did not provide deep ideas that were found to be common held among all the majority of the participants that might help designers in the ideation stage. The reason of that found were interpreted to be due to one or more of the following three aspects: (1) every individual participant perceived the problem in their neighborhood from his or her personal point of view; (2) there was no visual spatial perception of a setting to be mentally situated in that could unify the participants—such as a photograph of outdoor space; and (3) the motivation and ambition to imagine and suggest was without limitation and without a stimulation guide. These three aspects indicated that it was hard to put all or most of the participants on common ground.

However, in the collaborative-sketching process, the researcher found that there were strongly shared commonalities across most of the participants' possibilities. The researcher believes that using the visual spatial of a setting in a photograph helped those participants who were from the same culture and same city to ground their thoughts somehow in more commonalities or similar components. These shared commonalities can be seen in how the participants arranged the suggested physical component within a setting. For example, in setting 3, the commonalities were: extending of the sidewalk and the location of the landscape elements. Another shared commonality was the types of activities, such as sitting and walking. However, there were dramatic differences between these general commonalities, which could not be seen visually as they were embedded in the rationale of the component and the activities. For example, in the walking activity, each

individual imagined completely different meanings of how the walking would generate micro social interaction such as: the way of greeting neighbors, the way of opening conversation related to taking care of the neighborhood issues, and the characteristics of the users. Figure 5.17 shows four possibilities suggested in setting three and it is obvious to see the commonalities.

Figure 5.17: *This figure shows four possibilities and it can be seen what is common among them.*



Getting closer to specifically understanding the needs and desires of people that inhabit the neighborhood is the primary concern for designers. The researcher found that the collaborative-sketching process helped each individual participant to bring a "*quality without a name*" to the setting that he and she had been looking for when they were given the opportunity to be stimulated visually as an active Ping-Pong communication between them and the researcher.

5.4.1.5 Beyond-Being-Static

Being a dynamic and active visual story is one of the main characteristics of this collaborative-sketching process that made this process different than other methods of data collection. The participants were subconsciously able not only to personalize the setting, but also to connect the pieces of the setting together to make it a holistic place for the community as elaborated in Figure 5.18 (a) and (b). The collaborative sketch is a story told by the participants. The storytelling was not just static or passive information; rather it was a dynamic and active life story of being in the setting. Looking at the storytelling sketch and how the participants or the storytellers narrated that story, it showed their story-in-motion. The participants were exposed to the magic of using their own imagination to create characters and components that were narrated in order and by priority. For example, in Figure 5.18 a, the participant started talking about the importance of providing a place for elders to sit and gather. Then, after an iterative and knowledge exchange, the sketch of the bench was added to the setting by the researcher, and the participant subconsciously connected the sitting area to having a neighbor walking in front of him, greeting him, and inviting him to sit with him. After another iterative and knowledge exchange a sketch of a walker was included by the researcher in front of the sitting area. Another component was connected to the sitting area was the presence of children at play on front of them as part of a safe place for children to play as they watch them. Therefore, most of the components in the storytelling sketch Figure 5.18 (a) and in Figure 5.18 (b) were connected and in the same vein.

The connectivity was not necessarily just a physical connection, but also there were visual and activity connections. What the researcher would like to say is that when looking at the setting after sketching, the setting with all activities and details were connected as one entity, and the importance of this findings proves that the users should be an essential part of the ideation stage to provide a holistic portrait. Therefore, creating this portrait inside the setting facilitates and fosters positive social interaction as seen in the participants' eyes. This enables the designer to create comprehensive settings for daily outdoor social activities. In brief, each component and activity that is possible are connected together as a dynamic entity and are beyond being static or passive—in

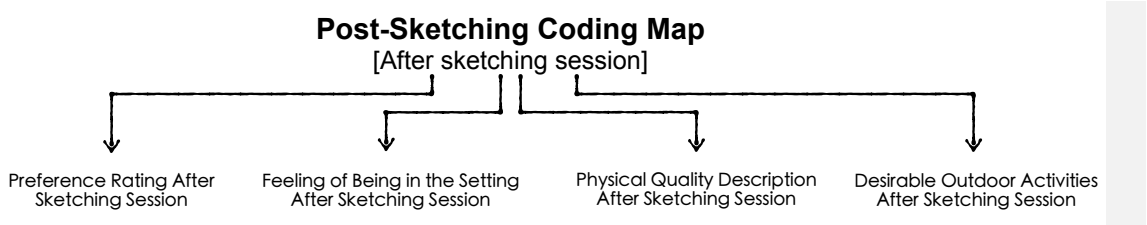
comparison to most of the current neighborhoods that tend to be more socially isolated. Most importantly, the researcher enabled the participants to embrace their specialness, interact joyfully, and gain knowledge through stimulation and imagining.

Figure 5.18: *(a) The top figure shows how the participants were able to not only suggest an activity or phsycial component, but also able to create a dynamic portrait by connecting each piece produced as comprehensive information, as well as in (b) below*

5.4.2 Post-Sketching Interview [After Sketching Session]

After finishing the collaborative-sketching stage, the participants were asked a number of questions that would reveal their descriptions, feelings and reactions after the sketching session. The following findings present how the participants perceived the setting after sketching and whether sketching added to the setting and influenced a change in their feelings and descriptions. For the post-sketching stage, the codes categorized in the data are represented below. Representative quotes are included in the discussion, as they represent the participants' insightful and thoughtful articulation of the best way to convey the overall sense of the interviews and the codes that emerged. Consequently, the six categories developed included: rating after sketching, feeling of being in the setting after sketching, physical quality description after sketching, and desirable outdoor activities after sketching (Figure 5.19). The responses obtained from the post-sketching interview were compared with the responses obtained by the descriptive-notation–before sketching session

Figure 5.19: *Conceptual map of coded categories to interpret the participants' responses in the post-sketching interview.*



5.4.2.1 Preference Rating After the Sketching Session

After finishing the sketching session, the majority of the participants had switched from low-level rating (2 preferred a little and 3 preferred somewhat) to the highest-level rate (5 preferred very much). After we collaborated together to translate the needs and desires using a form of storytelling that added to the setting as a sketch layer, they indicated that the possibilities they imagined and visualized made them feel excited to be a part of the story and rated it 5. This shows a significant change from a low level of

satisfaction to high level of satisfaction. Their reasoning for giving a rating of 5 after sketching was:

> Adel: So, now you give this place 3 in beginning. How would you rate it after sketching?
>
> Mtsh: I would say 6. It deserves more that 5 [Chuckles]…Excellent site. Even the architecture looks like the buildings got more beautiful with these additions than before. To be honest [Smiles], I want to live here.

> Adel: Ok! Now! Tell me! In the beginning you give this place 3 which means preferred somewhat. What rate would you give this setting now after the drawing?
>
> Zhn: [Smiles] What do you think!! Five!! I think yeah! I liked it… I like the look of it and how it represents my thoughts! Also, I can feel this place is a busy place for kids.

> Adel: Ok sister! You gave this place 3 (preferred somewhat), how would you rate this place after adding the drawing?
>
> Kmz: Five! Preferred very much… because I love to sit in this place now even if I sit by myself. Instead of being dead I became alive.

> Adel: You said you gave this place between 3 (preferred somewhat) and 4 (preferred). What rate would you give it now after the drawing?
>
> Mhn: Oh! No hesitation! Five! After this drawing it won't stay at 4. I would really now like to sit with my friends and play with children. I feel happy because I can watch children play with my friends' children in front of our eyes while we're sitting and chatting friends.

5.4.2.2 Feeling of Being in the Setting After the Sketching Session

Most of the participants also became more emotional and conscious of their feelings. When they were asked if their feelings had changed after sketching, compared to before sketching, the majority of them responded with certainty that the setting after sketching had changed their feelings. Some of these responses include:

> Mtsh: My feeling!!? I am telling you. Now! I would never leave this neighborhood…It's a joyful place… I wish to see these drawings real. It is a joyful place. It is ready for kids, for people to sit. It serves for every moment and every day.

> Zhn: Yes! I am happy. I can say now in this drawing I feel happy when I see the kids are playing and enjoying the place. I feel that I developed my happiness in this drawing. When I look at it I feel I have a happy emotion. Yes! I am happy. I can say now in this drawing I feel happy when I see the kids are playing and enjoying the place. I feel that I developed my happiness in this drawing. When I look at it I feel I have a happy emotion.

Zbg: Yes! I feel I did something that deserves to be seen. I like the changes I added.

5.4.2.3 Physical Quality Description After the Sketching Session

Most of the participants' description of the physical quality of the setting after sketching caught the attention of the researcher. The participants, when they were asked to describe the setting after adding the sketch, described the setting not in terms of physical components, rather more in terms of the social life added to the setting by the sketch. Some of these insights were:

Rhm: Umm! How to describe it! See people will come to here and meet each other and I think we described how they meet each other is about this space. I don't know! You understand me?

Adel: Can describe more?

Rhm: Ok! Umm! See. If you ask me in the beginning with including these drawing, I would describe the life. Yes… The souls, lives… Like the café now here made it an awesome place. I think this is what made the deference between when you asked me in the beginning and now. Did I explain it well?

Rob: I would say the sitting area and the outdoor stage theater are the description of this place [Chuckles]… These are enough if you ask me to describe the space.

Adel: Can you explain more to me?

Rob: See, this place has a lot of ideas to make the people… How can I say it! Umm! This place is for its people... [Chuckles]... The drawing is saying something about or telling us about life in the space.

5.4.2.4 Desirable Outdoor Social Activities to See

The outdoor activities before the sketching session were limited to a maximum two generic types of outdoor activities. After the sketching session, the findings showed that there are a variety of outdoor social activities that are possible activities which could be held in the setting according to the imaginations of three participants. The collaborative sketch helped the participants to provide details of these outdoor social activities. In Table 5.2 (a), (b), and (c), there are three comparisons that summarized, including the desirable outdoor activities that the participants suggested before and after the sketching session. The comparison before and after the sketching session includes: the rating, feeling of being, setting description and desirable outdoor social activities.

Table 5.2a: *Comparison before and after collaborative-sketching– Mtsh case*

Mtsh Case	Before Sketching	After Sketching
Rating preference: 1 Not preferred 2 Preferred a little **3 Preferred somewhat** 4 Preferred **5 Preferred very much**	**3 Preferred somewhat** "It is beautiful, but something's wrong!"	**5 Preferred very much** "Excellent site. Even the architecture looks like the buildings got more beautiful with these additions than before."
Place description	"I don't like it much. Doesn't have a cafeteria. It is just a beautiful, clean and organized place"	"It is ready for kids, for people to sit. It serves for every moment and every day. I love to have like this bench. Also, The café here is enough, enough, enough. Long time ago I had like these idea in mind."
Feeling of being in place	"I'm not happy and feel like I'm in a desert."	"My feeling! I'm telling you. Now! I would never leave this neighborhood… It's a joyful place… I wish to see these drawing real. It is a joyful place."
Desirable outdoor social activity	1. Walking	1. Gathering and socializing outdoor for community with elders 2. Outdoor place for children to play soccer 3. Engaging in outdoor discussion of solving community problems and issues 4. Café/Cafeteria for supporting outdoor activities 5. Walking

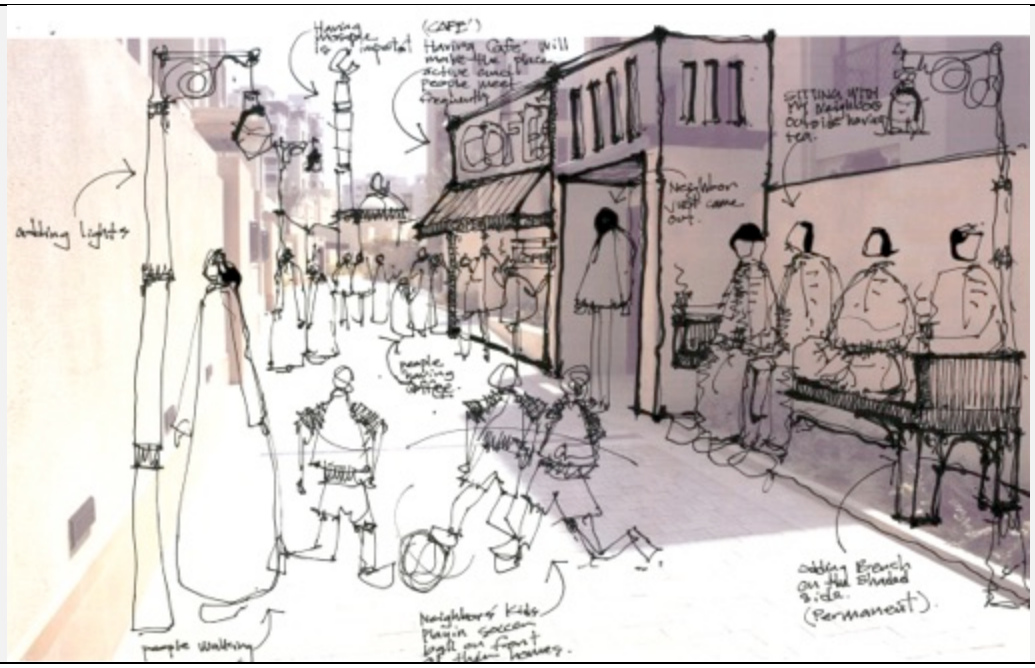


Table 5.2b: *Comparison before and after collaborative-sketching – Zhn case*

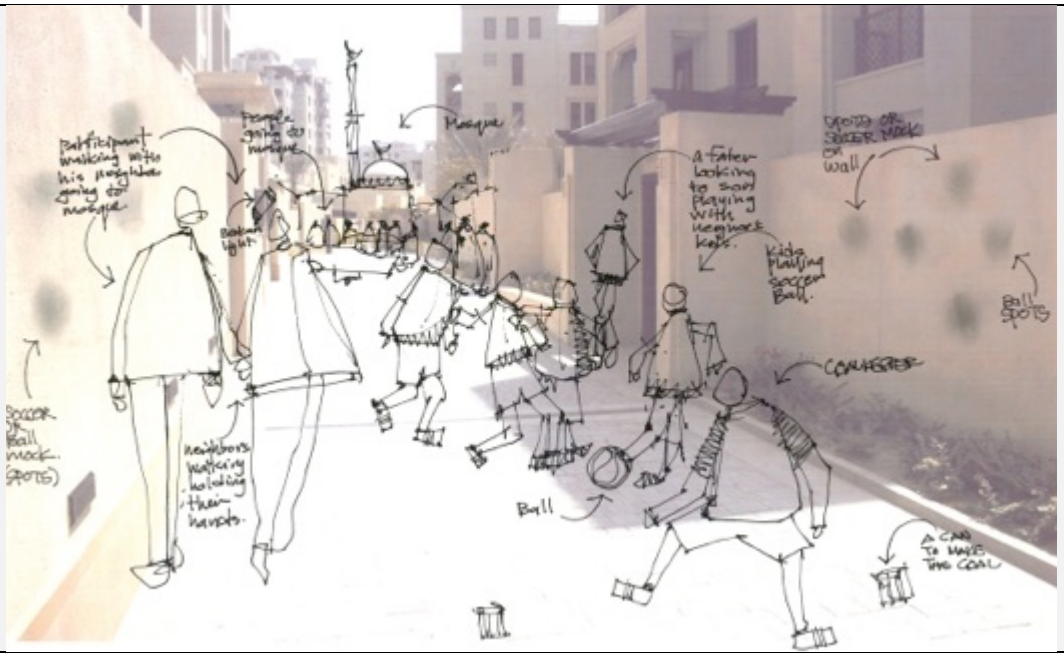
Zhn Case	Before Sketching	After Sketching
Rating preference: 1 Not preferred 2 Preferred a little **3 Preferred somewhat** 4 Preferred **5 Preferred very much**	**3 Preferred somewhat** "It's Ok! Nothing special!"	**5 Preferred very much** "I liked the look of it and how it represents my thoughts! Also, I can feel this place is a busy place for kids."
Place description	"Very organized in terms of sidewalks and beautiful buildings. I like the proportion here."	"I was looking at it as a happy place, but when you started asking me, I started to be exited in really seeing."
Feeling of being in place	"You can say it's a happy place but something missing."	"Yes! I am happy. I can say now in this drawing I feel happy when I see the kids are playing and enjoying the place. I feel that I developed my happiness in this drawing. When I look at it I feel I have a happy emotion."
Desirable outdoor social activity	1. Walking 2. Children play	1. Neighbors walk together 2. Neighborhood's children play soccer outdoors in front if their homes 3. Parents interact outdoors while watching children and greeting walkers. 4. Greeting and seeing neighbors 5. Engaging in outdoor conversation
		

Table 5.2c Comparison before and after collaborative-sketching – Rhm case

Rhm Case	Before Sketching	After Sketching
Rating preference: 1 Not preferred 2 **Preferred a little** **3** Preferred somewhat 4 Preferred **5** **Preferred very much**	**2 Preferred** "Because I feel the space is gloomy!"	**Between 4 and 5** "Yes! Yes! Yes… I loved it. That's enough. What we put here is enough. No comparison before and after"
Place description	"It is an old chaos not old beautiful. The tree is in the middle of the sidewalk and the sidewalk is narrow. The only think I like is the light"	"Umm! How to describe it! See people will come to here and meet each other and I think we described how they meet each other is about this space. I don't know! You understand me?... Ok! If you ask me in the beginning with including these drawing, I would describe the life. Yes… The souls, lives… Like the café now here made it an awesome place. I think this is what made the deference between when you asked me in the beginning and now. Did I explain it well?"
Feeling of being in place	"Feeling gloomy! I feel Nothing encourages people to walk or actually don't like to walk here."	"My feeling has changed completely because of the renovations and these renovations we added will make people more social and spend time outside. People will have strong social relationship."
Desirable outdoor social activity	"I don't think this place can have any activity. May be just to pass through. That's it. Yeah!"	1. Walking place for all ages 2. Walking for shopping and grocery all the time. 3. Walking just to enjoy the landscape and seeing people. 4. Buying a cup of coffee and standing with friends opening conversations.
		

5.4.3 Participants' Level of Engagement in the Collaborative-Sketching Process

Engagement indicators used in this project were adopted from *Educating Children and Young People with Fetal Alcohol Spectrum Disorders* (Blackburn et al., 2012) and include seven indicators: "anticipation," "contemplation," "initiation," "intervention,", "persistence," "curiosity," "responsiveness," and "confirmation." *Anticipation* was when the participants showed expectancy and prediction as a result of his or her belief. *Contemplation* was when the participants were considering and thinking with attention. *Initiation* was when the participants initiated and directed an idea, which can be considered and expressing a want and need. *Intervention* was when the participants interrupted to emphasize an important part of an idea. *Curiosity* was when the participants expressed a desire to explore how to fit a mental image of a component in the setting. *Confirmation* was when the participants expressed approval and gave up to add more. *Responsiveness* was when the participants showed consciousness and acknowledgement.

These seven indicators showed the mental process that the participants went through describing his or her mental images to the researcher in order to enable the researcher to sketch the component. These seven indicators were all not applicable to each participant and each suggested component. The applicable indicators were around five indicators as found in the majority of the cases. The applicable created an engagement pattern. Each pattern was related to an individual suggested component (i.e., physical or activity). The aim of the Engagement Pattern was to provide a snapshot of how the participants expressed their engagement took into account when the participants highly engaged in the process.

In the analysis that follows, each indicator is described according to three dimensions—including reaction, flow, and presence. First, reaction is represented by describing a participant's body language and facial expressions. Second, flow was the verbal excerpt that represented each indicator. Third, presence represented a participant's feeling of being in the setting. In addition, each indicator was assessed using elapsed time and duration to show the average time each participant spent to respond and build a mental image of each suggested component.

The observations indicated that most of the participants showed a positive level of engagement, which was increasing proportionally. There were three common patterns found that represented the majority of the participants' engagement. These common three patterns answered the question of how the participants cognitively reacted to the questions in the process and how long each spent in order to build a mental image of a suggest component.

- **Pattern One:** *Responsiveness–anticipation–contemplation–curiosity–initiation*
- **Pattern Two:** *Curiosity–contemplation–initiation–anticipation–confirmation*
- **Pattern Three:** *Initiation–anticipation–contemplation–intervention–confirmation*

5.4.3.1 Pattern One: Responsiveness–anticipation–contemplation–curiosity–initiation

This pattern can be described as the departure step in which the participants struggle to start building their mental images. This pattern was found as a commonality among most of the participants' starting point when they were trying and struggling to initiate an idea at the beginning of the process. The participants started with responsiveness that showed the consciousness of the participant that related to conviction and belief. The average time that participants spent in the responsiveness action was 15 seconds. After that, the participants became more involved in the anticipation action that showed what the participants expected to see as a result of their experience. Anticipation average time was around 30 seconds. Then, the participants started to look at the photograph and contemplate about the setting with a sort of wonderment. Contemplation average time was 25 seconds. The participants became more curious as to whether or not the suggested component in their head fit in his or her preference target area in the setting. The average time spent in the curious action was 40 seconds. Finally, the participants described his or her vision about the suggested component and where it took place or fit in the setting. This pattern took on average between 1.5 minutes to 2 minutes to prepare their mental process and situate themselves in the setting. Usually in this earliest pattern, the researcher did not yet start to sketch; rather he gave time to the participant to prepare his or her mental process. Two cases that represented pattern one are included in the tables below (Tables 5.3 a and b).

Table 5.3 a: *Pattern one shows participants struggle to start building their mental images – Mtsh case.*

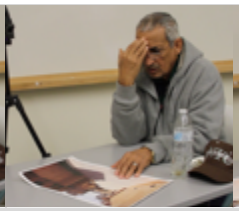
Screenshot Video					
Pattern	***Responsiveness***	***Anticipation***	***Contemplation***	***Curiosity***	***Initiation***
Reaction	Mtsh chopped down his hands with showing disappointed face to show consciousness.	Mtsh opened his hands pointing towards the photograph with expectation by sustaining his attention to find a target area for sitting and resting for elders.	Mtsh scratched his forehead and contemplated thinking about where to place the sitting and resting area.	Actively, Mtsh held the photograph fixing his glasses trying to find out more about where his preference target area in the setting to place a permanent sitting area.	Using his hands with focus starting to locate his target area for sitting in the photograph.
Sketching	Not yet!	Not yet!	Not yet!	Not yet!	Not yet!
Flow	*"See, again my son! The very important thing to build social relations among those who live here is to provide a very good service like a place for sitting and resting."*	*"We elders must have a role in taking care of what happens inside the neighborhood…I wish there was…a permanent outdoor place to meet and discuss daily issues relating to the community"*	*"I don't know where to place it!"*	*"Umm! Let me see! Aha! Do you see this wall? Why we don't place it over here!"*	*"Look! Do you see the shadow! It is good place to sit and also I think it is cold here."*
Elapse Time	0:33 . . . . . .1:01	1:11 . . . . . 1:33	3:11 . . . . . .3:44	3:52 . . . . . .4:34	4:35 . . . . . .4:52
Duration	~ 40 sec.	~30 sec.	~ 30 sec.	~ 30 sec.	~ 15 sec.
Presence	Not yet situated himself in the setting!	Not yet situated himself in the setting!	Not yet situated himself in the setting!	Trying to situate himself in the setting!	He started situating himself in the setting
Target area	Researcher does not yet start sketching. The researcher stimulated the participant and gave him time to think and prepare his mental process.				

Table 5.3b: *Pattern one shows participants struggle to start building their mental images – Zbg case.*

Screenshot Video					
Pattern	***Responsiveness***	***Anticipation***	***Contemplation***	***Curiosity***	***Initiation***
Reaction	Zbg put his left hand in his pocket and pointed with the other hand towards the photograph showing consciousness and awareness of providing sitting and gathering places.	Zbg tilted his head slightly to the side and got his hand out of his pocket expecting that chairs and tables could vitalize social gathering.	Zbg put his hand to his cheek and contemplates thinking about where to place chairs and tables to gather people.	Calmly, Zbg put both of his hand in his pocket and fixed his eyes to the photograph trying to think where to locate the chairs and tables.	Using his hands pointing towards the right side of the setting suggesting to locate the table and chairs on that side.
Sketching	Not yet!	Not yet!	Not yet!	Not yet!	Not yet!
Flow	*"To make this place a great place for outdoor gathering… is I think how we can bring people to here! Am I right! Umm! I think bringing people to sit and gather…"*	*"I think putting tables and chairs for sitting…"*	*"I told you tables and chairs, but where to put it!!"*	*"I'm wondering…I like this side!! But…Umm! It's too narrow to put it in here…Umm!"*	*"Can we extend this sidewalk and put tables and chairs on this side?"*
Elapse Time	1:05 . . . . . .1:17	1:19 . . . . . 1:25	1:27 . . . . . .1:37	1:44 . . . . . .2:12	2:16 . . . . . .2:21
Duration	~ 10 sec.	~10 sec.	~ 10 sec.	~ 30 sec.	~ 5 sec.
Presence	Not yet situated himself in the setting!	Not yet situated himself in the setting!	Not yet situated himself in the setting!	Not yet situated himself in the setting!	He started situating himself in the setting
Target area	Researcher does not yet start sketching. The researcher stimulate the participant and gave him time to think and prepare his mental process.				

5.4.3.2 Pattern Two: Contemplation–curiosity–initiation–anticipation–confirmation

This pattern came after the first pattern when focusing on the first suggested component. This second pattern was found to be a commonality in a bit more than half of the participants that represented their attempt to build the first suggested component. The participants started with contemplation about how their suggested component would fit in the setting and where it would fit. The average contemplation time was around 20 seconds depending on how much the participant understood their suggested component. After that, they became curious about exploring when they wanted to see their preferred suggested component in the setting. The average time that all the participants spent in the curiosity action was 10 seconds. Then, the participants initiated describing their ideas and suggestions. The average time the participants spent in initiating depended on how rich the description of the suggested component was. After that, they participants became more involved in the anticipation action, showing how they expected to see their suggested components as a result of their experience. Anticipation average time among the participants was around 35 seconds. During the anticipation action, the researcher was sketching to stimulate them to help keep building their mental images. Finally, the researcher showed the participants the sketch to appreciate and approve in an action of confirmation. Overall, pattern two did not have an average time. Instead. the duration time for each component was varied based on whether the suggested component was complex or simple—for example, a complex component could be a bench with users or a café with tables and chairs, while a simple component could be lighting, tree or walking people. However, in this pattern, the range of times of the participants was between 1.5 minutes and 3.5 minutes since confirming the sketch of the suggested component depended on the level of the complexity. Two cases that represented this pattern are in the tables below (see Table 5.4 a and b).

Table 5.4a: *Pattern two when participants starting imagining first suggested component- Mhn case.*

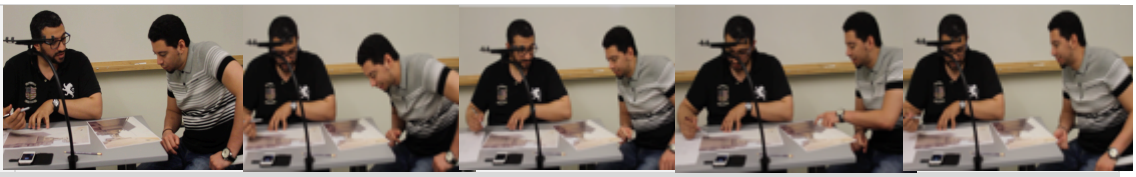
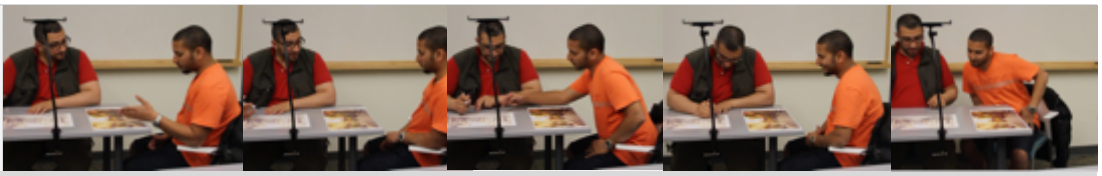
Screenshot Video					
Pattern	***Contemplation***	***Curiosity***	***Initiation***	***Anticipation***	***Confirmation***
Reaction	Mhn contemplated about whether a bench could be part of the setting or not. He was wondering how to start the story.	Mhn leaned his body and got closer to the front looking carefully at the setting where he wants to locate the bench.	Mhn points with his finger towards the place he where he needs to place the bench. Here, Mhn became more precise.	He looked calm and he was expecting to see the same "mirkaz" he was imagining in his mind and similar to the old one downtown.	Mhn looks at the sketch with smiling that shows his approval. Mhn approved the sketch with a smile.
Sketching	Not yet!	Not yet!	Starts sketching	Sketching	Confirming
Flow	*"I think we need a big bench here…"*	*"Umm! I don't even think we can put a bench here. I don't know!"*	*"Ok! It means if we put a big bench here look like "Mirkaz" the old one used in old Jeddah that would be great"*	*"I would think something like 3 people? I would say we are 2 to 3 young parents. Three…*	*"Uhaaa! Uhaaa! Yes!"*
Elapse Time	1:46 . . . . . 2:13	2:14 . . . . . 2:22	2:31 . . . . . 3:13	4:55 . . . . . .5:32	5:38 . . . . . .5:44
Duration	~ 25 sec.	~10 sec.	~ 40 sec.	~40sec.	~10sec.
Presence	Trying to situate himself in the setting!	Situated himself in the setting!	He is inside the setting	He is inside the setting	He is inside the setting
Target area description	The target area 1 is located on the right side along the wall and under the shadow. The target area includes a sitting place for young parents. Replacing the grass with a "stoop" and placing the bench "Mirkaz" over it.				
Target area # 1 *Total Time of target 1: ~2 min*					

Table 5.4b: *Pattern two when participants starting imagining first suggested component- Rob case.*

Screenshot Video					
Pattern	***Contemplation***	***Curiosity***	***Initiation***	***Anticipation***	***Confirmation***
Reaction	Rob contemplated about the attractiveness that chairs and tables create to encourage people to spend time outdoors.	Rob was interested in having tables and chairs on the left side of the setting and wondering if we can widen the sidewalk…	Rob used his hand to initiation the story by deciding the length of the sidewalks he wanted to see. Then he marked with his hand where to stop the width of the sidewalk.	Rob smiled while he was describing and watching the sketch. He sustained his eyes with amusement of the sketch while it's being built. He described the gathering of the neighbors.	Rob smiled while looking at the sketch and shaking his head up and down approving the sketch.
Sketching	Not yet!	Not yet!	Starts sketching	Sketching	Confirming
Flow	*"Umm! Look at this place… tables and chairs means neighbors can be attracted to outdoor"*	*"I don't know if we have authority to widen this sidewalk!"*	*"Ok! First, we need to extend this side. Let's say until Umm! Until here."*	*"Then after that here there will be many tables and chairs and... Umm! A lot of people. Crowded is nice…Oh! Looks cool…"*	*"Excellent! Really it is…"*
Elapse Time	0:11 . . . . . 0:33	0:36 . . . . . 0:40	1:21 . . . . . 1:35	2:22 . . . . . .4:42	4:58 . . . . . .5:23
Duration	~ 25 sec.	~10 sec.	~ 10 sec.	~2.5 min.	~30 sec.
Presence	Trying to situate himself in the setting!	He is inside the setting	He is inside the setting	He is inside the setting	He is inside the setting
Target area description	Target area 1 was located on the left side along the wall. The target area included extending the sidewalk and functioned for tables and chairs for neighbors and friends to gather and socialize inside the neighrbhood.				
Target area # 1 *Total Time of target 1: ~4 min*					

5.4.3.3 Pattern Three: Initiation–anticipation–contemplation–intervention–confirmation

This third pattern came in the middle of the process. It is evident that in the middle the participant understood the approach and, accordingly, they started to initiate ideas and suggest components. The average time the participants spent in the initiation action was around 17 seconds less than during the initiation action of the previous two patterns, as it became easier to bring up their ideas and imagine it in the setting. After that, the participants became more engaged in the anticipation action that showed how they expected to see their suggested components visualize in the photograph. Anticipation average time among the participants was around 20 seconds less than before. During the anticipation action, the researcher started to sketch and stimulate the participants to help them build their mental images. The engagement in this pattern became more active than before and communication became more reciprocal as seen in the tables 5.5 (a) and (b) below. Finally, the researcher showed the participants the sketch to appreciate and approve it in an action of confirmation. However, in this pattern, the average time in the middle of the process took only 1 minute or less total in some cases. Two cases that represented this pattern are in the tables below.

Table 5.5a: *Pattern three show the middle of the process when the participant understood the approach and, accordingly, they started to initiate ideas and suggest components – Zhn case.*

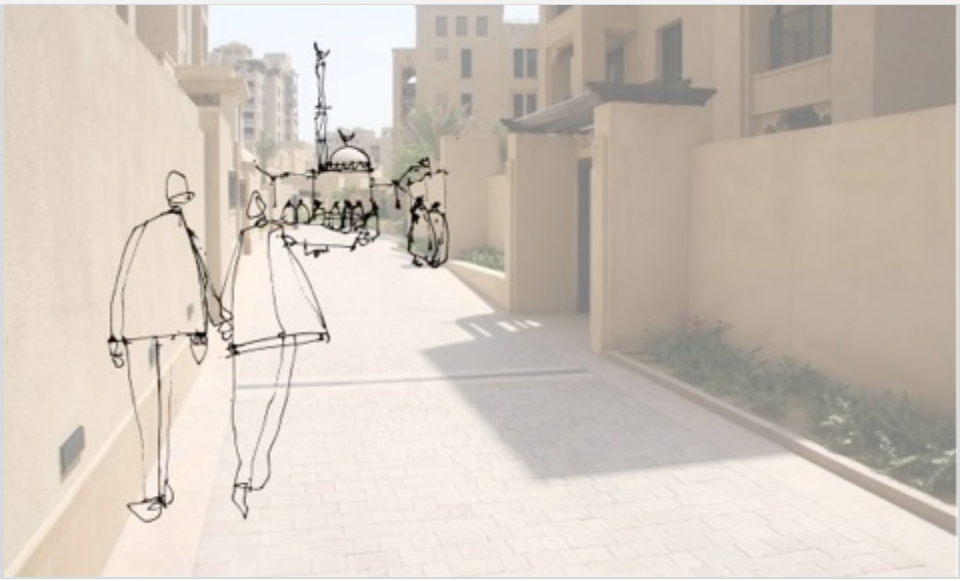
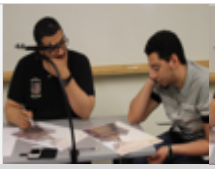
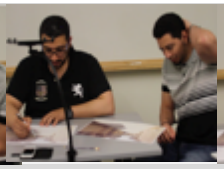
Screenshot Video					
Pattern	***Initiation***	***Anticipation***	***Contemplation***	***Intervention***	***Confirmation***
Reaction	Zhn started the story by situating himself in the setting by the walk using his hand to show from where he imagines starts walking.	Actively, Zhn used his hand pointing to the specific place in the setting showing his expectation of seeing another neighbor around while he is walking.	Zhn was silent while fixing his eyes on the photograph while the researcher was sketching. He was contemplating about what happens during walking.	During the sketch, Zhn suddenly interrupted using his hand to narrate more details about his story and about what would happen during their walking.	Zhn crossed his hand and laid back looking at the sketch. His face expresses pleasure and at the same time he links this walking activity with children playing outdoor.
Sketching	Not yet!	Start sketching	Sketching	Sketching	Confirming
Flow	*"I'm walking here to mosque seeing my neighbors walking to the mosque too. Umm!"*	*"Seeing another neighbor leaving his house going also to the mosque…"*	Watching!	*"I'm walking towards the mosque. And then my neighbor got off from his house and then says hi! We start talk together"*	*"Yes! This is enough. And could there be also kids playing while we are walking, one or two."*
Elapse Time	2:55 . . . . . 3:08	3:20 . . . . . 3:48	4:11 . . . . . 4:22	4:44 . . . . . 5:11	5:13 . . . . . 5:24
Duration	~ 15 sec.	~ 25 sec.	~ 10 sec.	~30 sec.	~10 sec.
Presence	Situating himself inside the setting	Inside the setting	Inside the setting	Inside the setting	Inside the setting
Target area description	The target area 2 was located on the middle-left side of the setting. Target area 2 included a mosque as the distination of the walkers and Zhn with his neighbor walk togather to the mosque while chatting.				
Target area # 2 *Total Time of target 2: ~1.5 min*					

Table 5.5b: *Pattern three show the middle of the process when the participant understood the approach and, accordingly, they started to initiate ideas and suggest components – Mhn case.*

Screenshot Video					
Pattern	***Initiation***	***Anticipation***	***Contemplation***	***Intervention***	***Confirmation***
Reaction	He starts showing his unhappiness about the existing light in the setting, as he needs more lights with a nice look.	He assumed that the light does not give enough light to the place and he is expecting to see more lights as part of being in the setting.	Mhn stayed silent for a while contemplating.	Mhn grabs a pin and imitates drawing to describe his preference for light he would like to see in the setting.	Mhn smiled while looking at the sketch. He described to himself how the place could be used according to his imagination. He approved the sketch with high satisfaction. It's obvious with his smiles.
Sketching	Not yet!	Start sketching	Sketching	Sketching	Confirming
Flow	*"I have a problem with these lights"*	*"I think we need to install lights that can be on the wall up there…"*	Watching!	*"See! The shape of them something like!! It looks like a half circle. Something like this. It gives a simple look"*	*"You know! After Maghreb time 6pm, it's important to provide lights. Two are in front of us and two are over our heads…. Umm! That's it! That's Excellent!"*
Elapse Time	12:05 . . . . . 12:11	12:42 . . . . . 12:58	13:03 . . . . . 13:15	15:07 . . . . . .15:33	5:13 . . . . . 5:24
Duration	~ 10sec.	~15sec.	~10sec.	~10sec.	~10 sec.
Presence	Inside the setting	Inside the setting	Inside the setting	Inside the setting	Inside the setting
Target area description	The target area 4 was located on the edges of the two walls on right and left. Target area 4 included four lights that provide artificial light during evening time.				
Target area # 4 *Total Time of target 4: ~1 min*					

To conclude, as a result, it is important to realize that the purpose of using engagement patterns to evaluate the process was not to show what was happening, but to highlight that there was in most cases an increase in the engagement that was shown in their body language and facial expressions. Also, their engagement can be perceived in the time that they spent on each indicator to build part of their mental image, and the total time of the mental image's completion that was manifested as a sketch over the photograph. Also, the interpretation of the participants' reactions showed that there was an increase proportionally that occurred; the more the participant got further inside the process, the more engagement was seen in their behavior. Moreover, the participants showed a sort of difficulty and spent a longer time in the beginning of the process to build a mental image, but later in the process the participants became comfortable and confident when they suggested a component. Moreover, the following sub-section 5.4.4 below presents the participants' opinions and support towards the process, and also represents their experiences as they went through the process.

5.4.4 Participants' Support of the Collaborative Process

The participants showed a support of the collaborative-sketching process after they engaged in it and shared their experience during the process. The participants expressed their positive vision about this process. They enjoyed the experience of being able to express their needs and desires while visualizing them. The participants expressed their confidence in being able to present what was exactly in their mind. They expressed that at the end of the process, their feelings had changed dramatically from "not so interested" to becoming very excited to see their suggestions being implemented in virtual neighborhood. Some examples of these supporting quotes include:

> Zhn: I want to say something. When you do sketching and you give the control of what I want to have and what I don't want to have that gives me a sense of assurance. So, you know like Umm! It is a painting that you! You as an architect you take off what you don't like and add what you like [Smiles]. So basically here you are respecting me by giving me control over it and that gives me a better feeling than the first time I saw this place. So, I like it after sketching. I wish life was like that, giving you freedom to adjust the place or wherever you live in. So, I like it very much more than the first time I saw it [Smiles]. Sketching is a great deal to give me freedom to tell…you know! By having me the option of sketching it adds more to it by letting me what's called imagine, exactly. For me, both I

preferred them after sketching than before, it was boring place at first time always. Now, Uh! Yes sir! It captured my thoughts.

Mhn: You know!! I wish my neighbors were here with me to show them what we have done. I am sure 100%! Not 100% but 1000% sure that they would agree with me in most of those ideas because every time, we get into the discussion about where we can meet inside the neighborhood [Smiles]. For me, I was wondering why the government does not design such a neighborhood. Someone listens like you and the resident like me explains what he wants to have like next to his door, or make suggestions… because I'm the one who is going to live in the neighborhood not the mayor.

Rob: I like the drawing! I would like to say that you have read to what was exactly in my mind. I wish there were a machine like a hat to wear it and to read my future house that I would like to live in or to build [Chuckles]. In an hour and I can see what I was thinking?... This is by itself an achievement. Really! Thank you man for giving me the opportunity to come here and do this exercise!

Mtsh: Oh Allah (God)! Oh Allah (God)! Oh Allah (God)! It is great! It is really great! As I told you, if this drawing could be transformed into reality, I'll never leave this neighborhood [Smiles and applauds].

5.5 Summary of the Collaborative-Sketching Process Findings

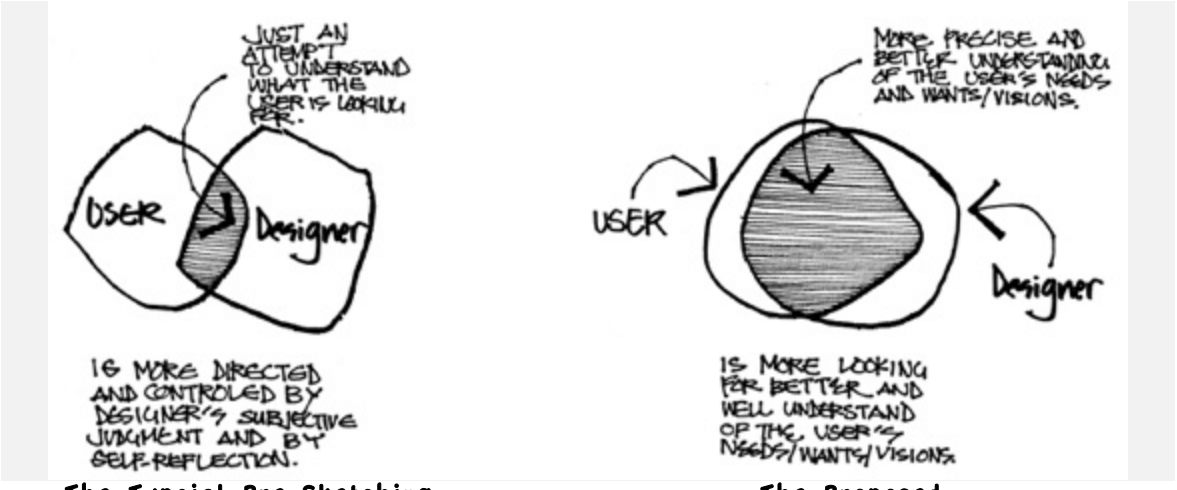
This section summarizes the findings obtained from the interpretation of the collaborative-sketching process. The findings suggested that the classic interview did not provide actual information that was beneficial for the design process to develop and upgrade the present situation of a neighborhood. Pre-sketching findings showed that the information obtained from the participants were more to investigate and diagnose the problem and to know their demands. The information obtained from the pre-sketching interview did not provide specific and realistic visions of the participants' needs and desires. Also, the participants in the classic interview may not remember everything about their needs and desires in terms of value of outdoor social activities that build cohesion.

While the findings of the collaborative-sketching process suggested that employing researcher's sketching skill and collaborating the laypersons (users') imagination helped the them not only to narrate their needs and desires, but also extracted their imagination and provided specific and rich details about the contexts of the outdoor social activities. The participants not only suggested physical elements, but also they described their affordance including the rationale of using, value of use, and how social interaction might occur within different settings. Even when the participants viewed the same settings, they

had different mental images and visions that enabled both the researcher and the participants to see different possibilities. In addition, the findings showed that the context of the time was an essential detail that could provide beneficial information at the policy level to prioritize improvements in the neighborhood. Not only was the time an important context, but also the amount of the micro social interactions that emerged because of the presence of a suggested component and major social activities.

The participants expressed that, at the end of the process their feelings had changed dramatically from being "not so interested" to becoming very excited to see their suggestions being implemented in the photograph of a neighborhood. Moreover, the researcher was amazed by the participants' richness of details and interests in upgrading the existing neighborhood. The findings of the process provide opportunities for practitioners, academics, and stakeholders to reveal not only the information but also the delve deeply in the micro detail of what scenario of life the users believe can help the setting match their cultural habits, social norms, and daily life priorities. Figure 5.25 show an overlapping diagram that represent the ultimate goals of the collaborative process that provides a better and more rigorous understanding of users' needs and desires that can be effective in the ideation stage during the design process.

Figure 5.20: *This figure shows that there is a little bit overlap in understanding between the designer and the users in the typical ideation. Conversely, the collaborative-sketching process shows there is more overlap that represents better understanding of the users' needs.*



The Typcial Pre-Sketching [classical approach]

The Proposed Collaborative-Sketching Process

In fact, the findings from this collaborative sketching process showed that there were specific and actual possibilities as preliminarily design ideas that could be used to help those who are interested in community design and socio-physical quality of residential environments have as a major breakthrough in the ideation stage during the design process. The knowledge exchange between researcher and the participants as users becomes more seamless through the process of this collaborative sketching, where ideas were shared and design possibilities were explored that were responsive to the needs and desires of the users. This shows that there is an agreement with Sime (1986) that "it is impossible to create a place for building users solely by manipulating the physical environment on 'their' behalf" (Sime, 1986, p. 49). The findings concluded that in creating a daily outdoor socio-physical place, we should collaborate with users' mental images and visualize their ideas and possibilities that represent their needs and desires, which include personality, memories, emotion, and intention.

CHAPTER 6: DISCUSSION AND CONCLUSION

This chapter addresses the importance findings of the proposed process in this dissertation and examines its implications for future design process for academicians, practitioners, and decision makers. In order to provide a coherent summary and conclusion of this dissertation, this chapter is divided into six main sections. The first section gives a summary of the study. The second section discusses the lessons learned from the process. The third section discusses the implication for future study including four directions: academic, practice, decision-making for authorities, and research. The fourth section highlights the strengths of using the collaborative-sketching process in the design process followed by outlining the limitations of the study. The last section provides a conclusion of the study.

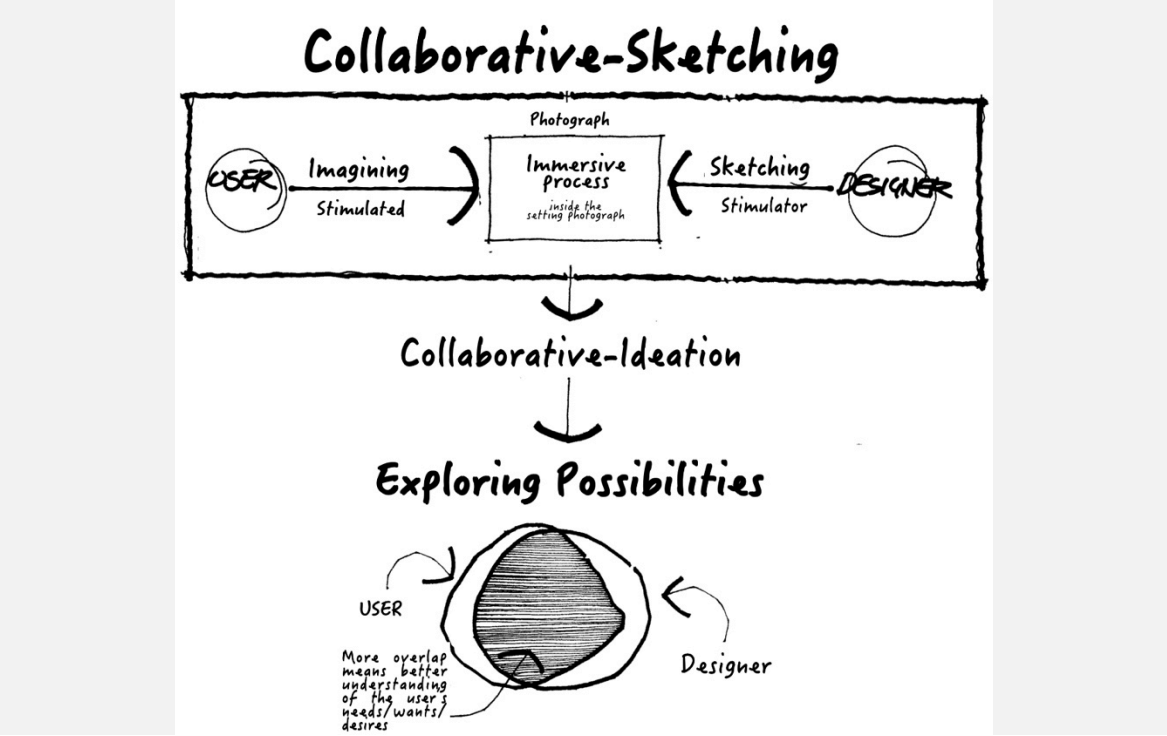
6.1 Summary of the Study

The primary objective of this study was to examine the use of collaborative sketching as a way of taping into users' imagination as a rich source of their needs and desires to empower the design process. This study is concerned with normative theory of how we design, and includes the stages of ideation, representation and iteration. In this dissertation, the researcher proposed to extend the typical ideation process through the development and demonstration of a more collaborative ideation process, and the representation of design ideas becomes more iterative and knowledge exchange between researcher and the participants.

The purpose of this study was to implement and understand the use of collaborative-sketching, as a way of gaining insight into the design conditions that will satisfy participants' (i.e. users') needs and desires. The study proposed a collaborative-ideation process that helps researcher and participants to see possibilities during the early stage of the design process. The researcher extracted the imagination of the participants using a sketching technique as a continuous, iterative, and instant stimulator tool to understand the micro details of social interaction that were hidden in how people imagined themselves in an outdoor social situation being with others. Each individually extracted imagination was sketched over a setting photographed, and enabled the researcher to have

the opportunity to know and learn from the elicited vision of the participants related to their experience stored in their brain. Figure 6.1 introduces a diagram that shows a summary of the collaborative-sketching process.

Figure 6.1: *Summary of the collaborative sketching process*



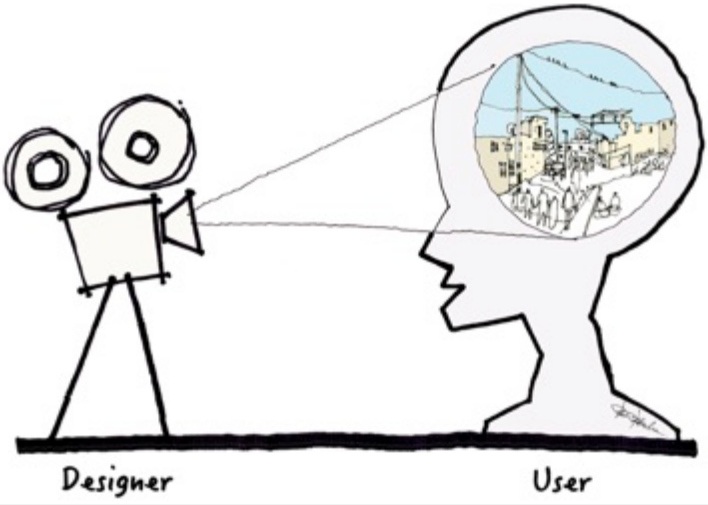
For the purpose of the discussion, the summary of findings responds to the research questions including: how can a collaborative-sketching approach extract a user's needs and desires by tapping their imagination? And how much does the collaborative-sketching approach offer compared to the conventional interview?

The importance of users' imagination was obvious in the collaborative-sketching process. The researcher's sketching skill served in this study as an iterative and instant stimulator tool that visualized participants' imagination over the setting in the photographs as a visual storytelling. This iterative and instant stimulator tool enabled the researcher to see possibilities through revealing how specific the participants were in choosing what to include or exclude based on their needs and desires. This was supported by Hall (1990), who perceives that "if one wants to understand the impact of the environmental settings on human beings, it is necessary to know a great deal about the senses and how sensory inputs

are handled in people's brain" (1990, p. III).

Therefore, there is consensus with a number of environmental psychologists who emphasize the importance that each individual user experiences the surroundings and stores the experiences differently in the mind (i.e., Canter, 1977; Hall, 1990; Relph, 1976; Sime, 1986). Sime claimed, "the physical environment is firmly locked in the head of the user experiencing it" (Sime, 1986, p. 55) and in order to identify how the social activities associated with the physical surroundings, we must know "the description, or conception, which people [i.e. users] hold in mind and [accordingly] behave in that physical settings" (Canter, 1977, p. 159). Moreover, Relph claims, "within one user the mixing of experience, emotion, memory, imagination, present situation, and intention can be so variable from one to another that he can see a particular place in several quite distinct ways" (Relph, 1976, p. 56). These quotes support the importance, as the researcher believes, of incorporating the mental images of the participants much like a movie that includes experience, emotion, memory, intention, and personality. The user's imagination is like the film that records a lot of images. However, this film will need a projector to enable the researcher to see what is inside. The use of sketching was the projector that showed the film in an iterative and instant way (Figure 6.2).

Figure 6.2: *This figure is an abstract elaboration that shows the concept of mental images as cinema film and research's sketching skill as a projector to read what is inside the user's head*.



This is evidence that shows there is an agreement with Relph (1976), who made a point that

> people's mental image is the product of experiences, attitudes, memories, and immediate sensations. The mental image is used to interpret information and to guide behavior, for it offers a relatively stable ordering of relationships between the meaningful object and its ideas. Mental images are not selective abstractions of an objective reality but are intentional interpretation of what is important or what is believed to be. (p. 56)

Similar to Relph, there is an agreement with Boulding (1956) who argued that "the mental images consisted of all the elements associated with the experiences of individual users or groups and their intentions towards a place" (p. 77). Investing from the participants' mental images showed how they prioritize, the specific relationship that exists between the important physical components, and their rationale and value in the social interaction.

In this study, the storytelling revealed the experiential aspects of the participants that suggest what Christopher Alexander (1979) called a "quality-without-a-name," which is an area that needs more research. The major findings showed that the concept of "placemaking" for one setting was created in several alternatives when several participants' mental images imagined physical properties and situated themselves within a "time" and "action" in the "setting." Moreover, their storytelling created "quality" believably and confidently. Each participant reformed the settings into a possibility that represented the needs and desires of the individual and one's community. Each possibility included "quality," which was grasped by the researcher when the participants at the end of the sketching session (after they had seen the virtual sketch) expressed common sentiments that agreed with the terms that Alexander (1979) describes as "comfortable," "alive," "happy," and "exact" (Alexander, 1979, pp. 28-35). However, again, this area needs more future research to truly grasp the intangible quality and feelings of the participants.

The different possibilities, the researcher believes, show the "quality" that everyone believes in and is fitting to their needs and desires encourages them to express what they want to live or be in this place. Thus, incorporating users' imaginations in the early

ideation process might enable the designer to unintentionally create specific place quality that can be targeted to its specific users in order to bridge their social needs into their physical place.

There is an agreement in the literature that physical components are seen as an important factor that defines the boundary of the space that creates the places (Alexander & Poyner, 1970; Appleyard & Lintell, 1972; Canter, 1977, 1983; Harries, 1998; Heidegger, 1997; Perdikogianni, 2007; Seamon, 2000). This agreement supports the findings that presented the three processes of constructing the suggested physical components that included: adding, replacing, or modifying the setting to handle their needs and desires. Also, there is an agreement with scholars who claim that the physical components of a setting engender to a certain extent the satisfactory experience that "allow users to use the 'space' in a way 'to be' actually 'liked'" (i.e., Alexander, 1979; Perdikogianni, 2007; Sime, 1986, p. 58).

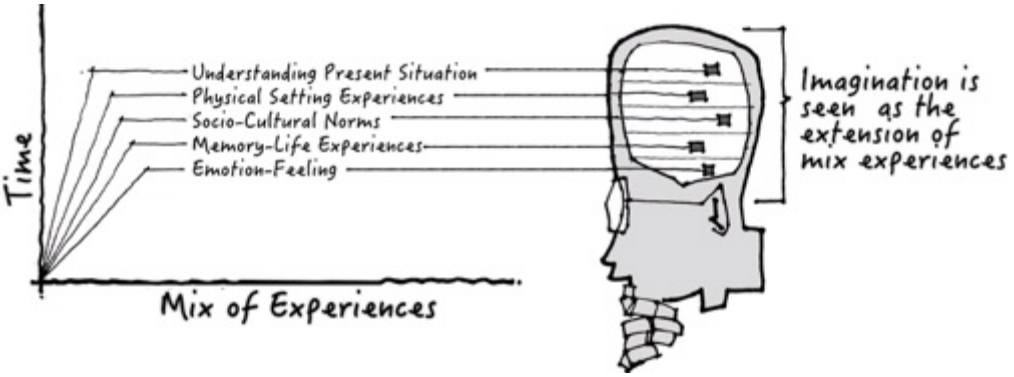
6.2 Lessons Learned

Lessons learned from the study of the collaborative-sketching process as a collaborative-ideation model helped the designers and users to see design possibilities during the design process if the process were implemented in the early stage or ideation.

In the first lesson, as an important source of information in the design process, the users' imagination is seen as an extension mix of continuous experiences of the world that precisely offers visions and ideas—which offers images of what could be (see Figure 6.3). When users' imagination suggests physical components, it does not mean that the brain has a physical world in it, rather it just gives and produces ideas and information. These ideas and information are stimulated by sketching continuously, iteratively, and instantly. Sketching converts the ideas and information by stimulating their mental images to help them imagine, describe, consider-reconsider, and evaluate-reevaluate to successfully visualize mental images. The sketching technique captured their mental images in an abstracted way that can be seen in visual components, such as people, trees, balls, benches, bicycles, and bird's nests. Therefore, transforming and stimulating ideas by using sketching is a way to bridge the mental world of ideas into psychical reality. So, the

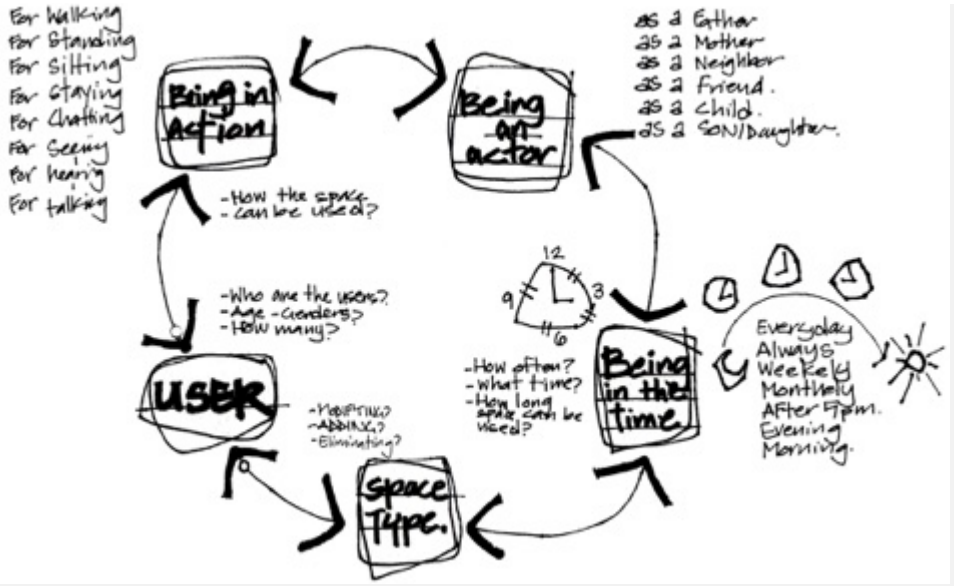
researcher learned that the imagination recalls the important or the priority mental images among the countless information stored in the brain and fit it in the setting situation (see also Figure 6.10).

Figure 6.3: *Imagination is stored knowledge and information about the world, which has built up as a result of mix of experiences*



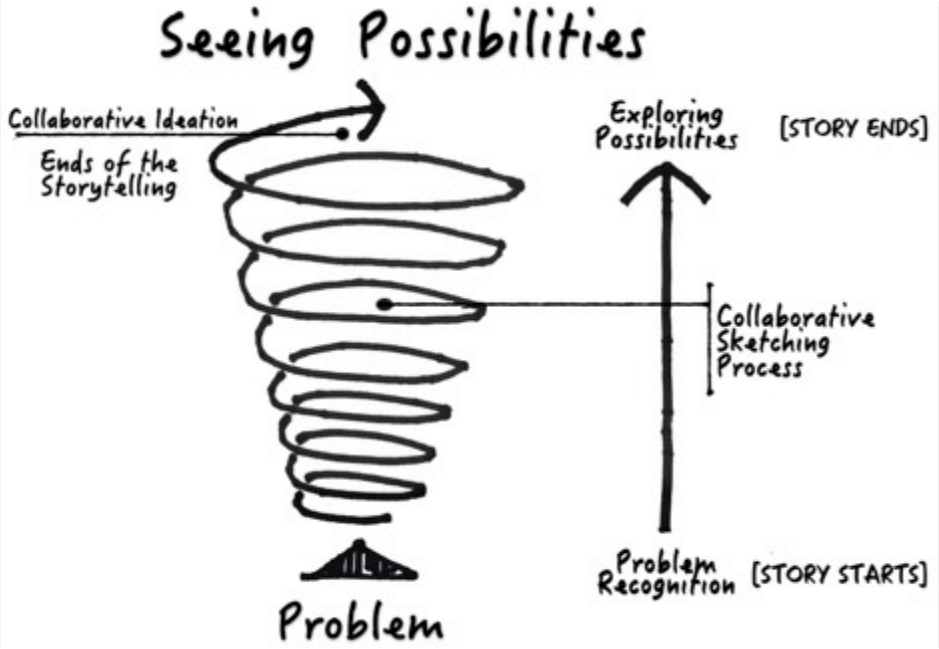
The second lesson, to foster people's social interaction in the outdoor spaces, cannot be achieved through providing a list of requirements and multiple choices collected from citizens, stakeholders and decision makers. The information needed to create an outdoor social place should not be like a "recipe ingredients" added to the outdoor spaces like cooking a dish. Rather, fostering people's outdoor social interaction is a "story" that ties their needs and desires to the place. Storytelling carries a weight of values and meanings of socio-cultural experiences beyond the words themselves that provides a powerful mechanism for the disclosure of knowledge and intellectual assets in the ideation process. The researcher argues that storytelling shows how the participants subconsciously imagined health social relationship that leads them to be in a social cohesive atmosphere. The "storytelling" has a role to play in reforming the outdoor paces and directing the social interaction and fostering social cohesion among the users. Figure 6.4 shows how the story components emerged.

Figure 6.4: *The cycle components of the story*



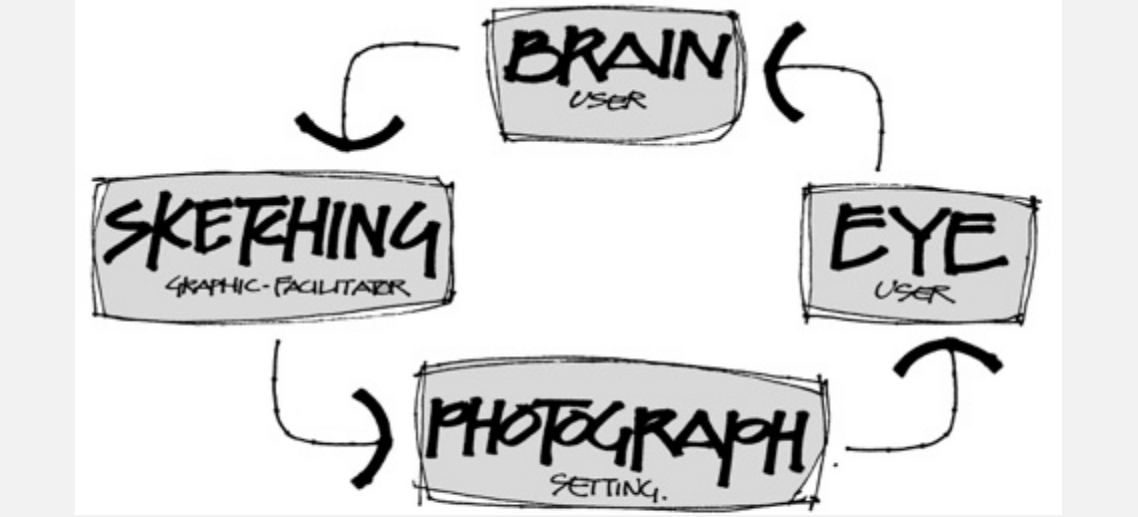
For the third lesson, the researcher learned that the use of sketching actively helped the participants to describe their mental images as a "deeper storytelling." This type of storytelling came from the mental images of the participants and not from fully conscious thoughts. This, as the researcher believes, produced five keys from the points of view of research and design practice: active engagement, embedded personal experiences, active thinking, exploring uniqueness among users, and lessons to learn form. Participants' deeper storytelling during the sketching process made the conversation between the researcher and the participants richer in terms of the amount of information and ideas produced from the participants' imagination because of the emotion, vision and anticipation involved. This made a point for the researcher—what if we look at the "placemaking" itself as a form storytelling? Local people know their place best, therefore, their imagination that goes beyond their insights informed the researcher's knowledge in many ways by identifying visual possibilities of how to accomplish their needs and desires. The deeper storytelling started with a suggestion, followed by the range of the story becoming richer and more thoughtful (as seen in Figure 6.5 below).

Figure 6.5: *The building of the deeper storytelling as seen by the researcher in a form of spiral*



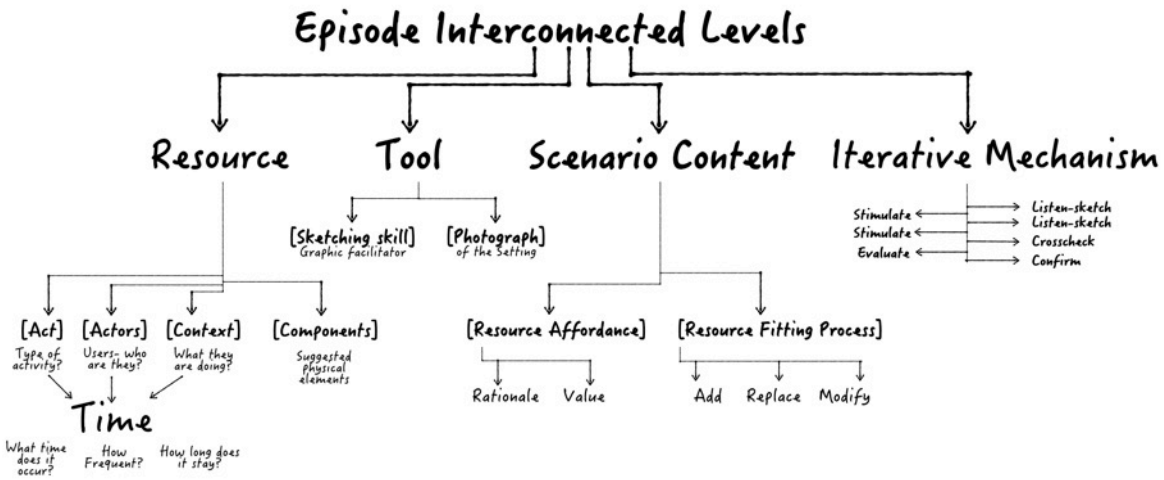
The fourth lesson learned was that in the collaborative process there is a cycle of understanding and thinking to feed the ideation. The user as a layperson cannot exactly express any ideas or information relating to placemaking only orally without something stimulating his/her eyes and brain. Incorporating the researcher ability to sketch over a photograph of a setting helped the participants to connect his oral productions to a cycle of two abilities (i.e. brain and eye) as a process of understanding and building mental images. Live sketching over a setting photograph acted as a stimulator to the visual and mental images of the participants, while at the same time helped to produce ideas continuously, iteratively, and instantly that formed possibilities. Transforming abstracted ideas and information visually from the users themselves helped to connect the users' imagination to reality by combining the process of generating ideas and representing the ideas at the same time. There is nothing called a "brief stage" to collect information from the users and transform it into lists. Rather, it is a collaborative ideating process that generates ideas and represents visually to show what is possible.

Figure 6.6: *Cycle of stimulating*



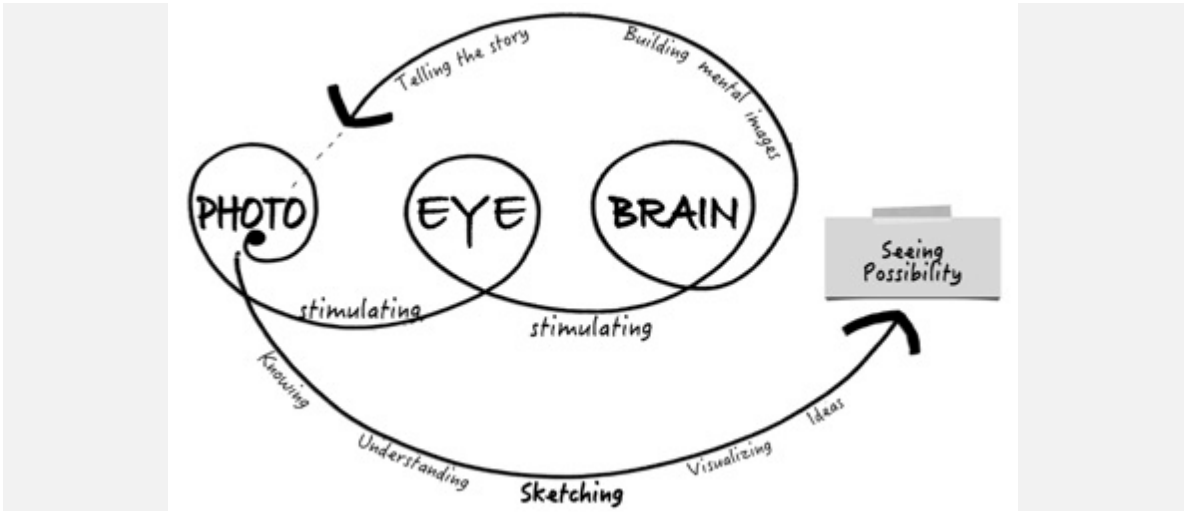
For the fifth lesson, the way of feeding the ideation stage, the researcher recognized four interconnected levels involved in generating collaborative ideas. These four levels were essential to the designer in order to know how to stimulate the users and help them to build their mental images in order to create an episode—or parts of the story in a setting. Figure 6.7 shows the four interconnected levels and their elements. These four interconnected levels include: resource, tool, scenario content, and iterative mechanism. Resource is the level that contains the character and structure of the episode. Tool level is what is needed to visualize the story episode and includes: sketching skills of the graphic facilitator (researcher) and the photograph of the setting. Scenario content is the most important level that helped the researcher to understand what action takes place inside the setting. Iterative mechanism is the level that included the feedback cycle between the researcher and participants and the feedback helped the participants to stimulate their mental images that were latterly built and visualized by the use of sketching. More importantly, if one of these levels is absent, the collaborative-sketching process and its outcome will be meaningless.

Figure 6.7: *The four interconnected levels to build a visual episode.*



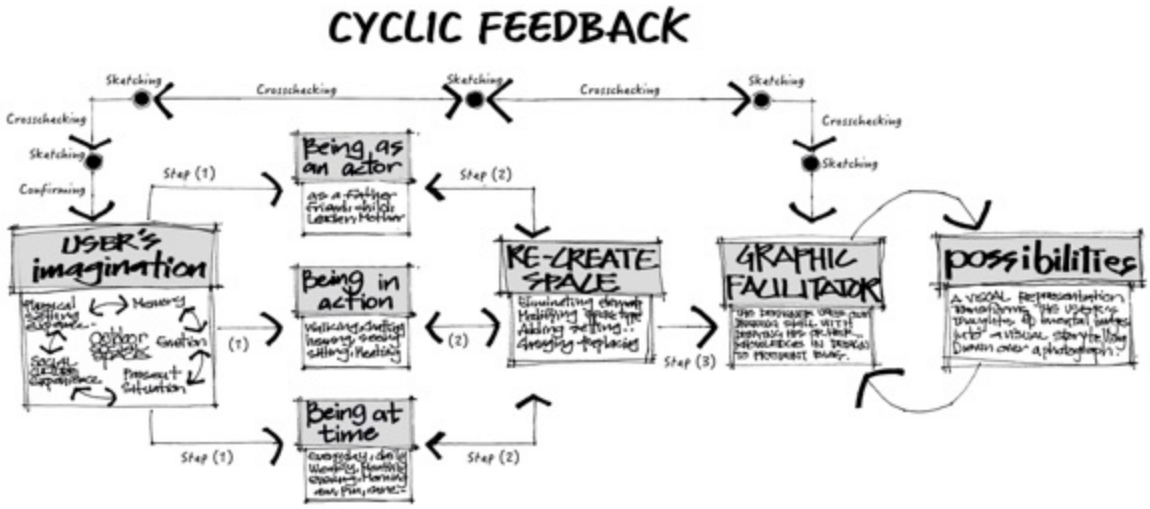
As the sixth lesson, the participants were able to interpret the world around them and make sense of their experiences (if given the opportunity) by stimulating their mind and eyes in order to extract their mental images. The researcher agreed with his suggestion, which is also supported by the results, that he had to free his mind and deny his design knowledge to focus not on the ideas, but on both what comes out of the mind of the participants and how to master the sketch. The good collaborative-sketching process is a result of a balance between three weights: listening to the participants, sketching the possibilities, and knowing what is coming after. This balance is highly important because it helps to situate the participants in a form of continuous stimulation that enabled the researcher to transform and visualize their mental images. Therefore, a good collaborative-sketching process outcome is dependent on continuous stimulation. A bad collaborative-sketching process is the extreme result if any of the three weights are out of balance.

Figure 6.8: *The photo-eye-brain-sketch cycle*



The seventh lesson was that the collaborative sketching is high immersive and allows the researcher to get inside the head of the participants to capture their impression, feelings and emotions that cannot be extracted by a classic interview. The immersion leads to understand the mental images of the participants, and the researcher used his understanding to reform the place according to what was imagined and described by them. The immersion was directed by the feedback cycle in order to enrich the knowledge exchange and it put the participants in the setting.

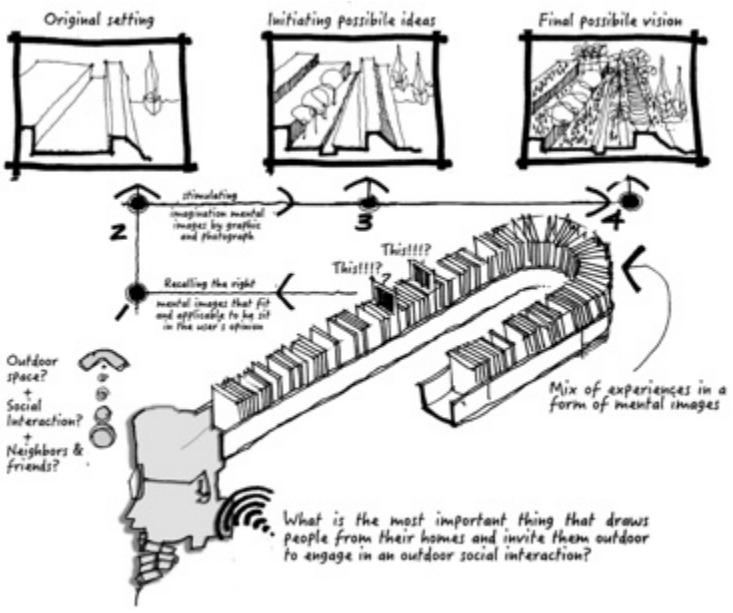
Figure 6.9: *The iteration and knowledge exchange in a form of cyclic feedback*



Eighth lesson learned was that imagination of the users is filled with a lot of visual mental images. The use of sketching helped the imagination of the users to pick one or more mental images. The selected mental images were continuously being stimulated and being created by adding, modifying and replacing the elements in the existing setting as a reaction to the deficiency in their needs and desires. For the users' mind, it is a world of outdoor social interaction, or being with others in a visual experience. In the middle of the collaborative-sketching process, users experienced this outdoor social interaction and being with others continuously through their imagination by stimulating their eyes and brains (Figure 6.10). The more the researcher sketched what the users were imagining, the more their imagination was stimulated and the more their mental images were being created and being filled with information. The user added a life to the mental images (i.e., by adding emotion, sounds, etc.) to enforce his/her imagination and visualization. Therefore, imagination is interconnected with visualization because, as discussed in the literature review, we receive almost 90% of all the information through the eyes. Thus the visual senses play a dominant role in processing the information.

Finally, the ninth that the researcher learned was that the photograph's eye view should be kept as wide as 180 degrees.

Figure 6.10*: The process of picking the mental images and developing through the collaborative-sketching process*



6.3 Researcher's Self-Reflection on Collaborative-Sketching Process

The researcher self-reflected on five aspects of the collaborative-sketching process: collaborative-sketching technique, collaborative-sketching communication, engagement patterns and stages, and does the meeting setting matter.

6.3.1 Collaborative-Sketching Technique

First, the researcher sketched in the past by using the sketching tools to illustrate three directions: 1) sketching to record ideas and analyze things from real life; 2) sketching to explain and explore ideas further and expand according to previous ideas; and 3) sketching to explain conceptual ideas to others. These three directions were not individually involved in the collaborative-sketching process; rather they can be seen as being compressed into one collaborative process involving the users' imagination. Now, the researcher found that sketching could go beyond just being an illustration tool and suggests a fourth direction by showing its importance and requisite for being a research tool that can provide better knowledge in order to understand the research problem. Usually we use different types of surveys, perception, observation, and interviews to reach to a point that help us to understand the users. However, this collaborative-sketching interview provided a different form of information that cannot be obtained by other types of research methods.

Second, the researcher found himself every time using a technique called "warming-up-sketch" by moving his hand with the pen freely over the photograph without letting the pen touch the paper for few seconds (3 to 5 seconds). This warm-up-sketching technique helped the researcher to define the angle and the place of the first line the researcher wanted to stroke before starting the sketch. Moreover, this warm-up served as a way of shaking the pen to prepare the ink in the tip to be ready to touch the paper.

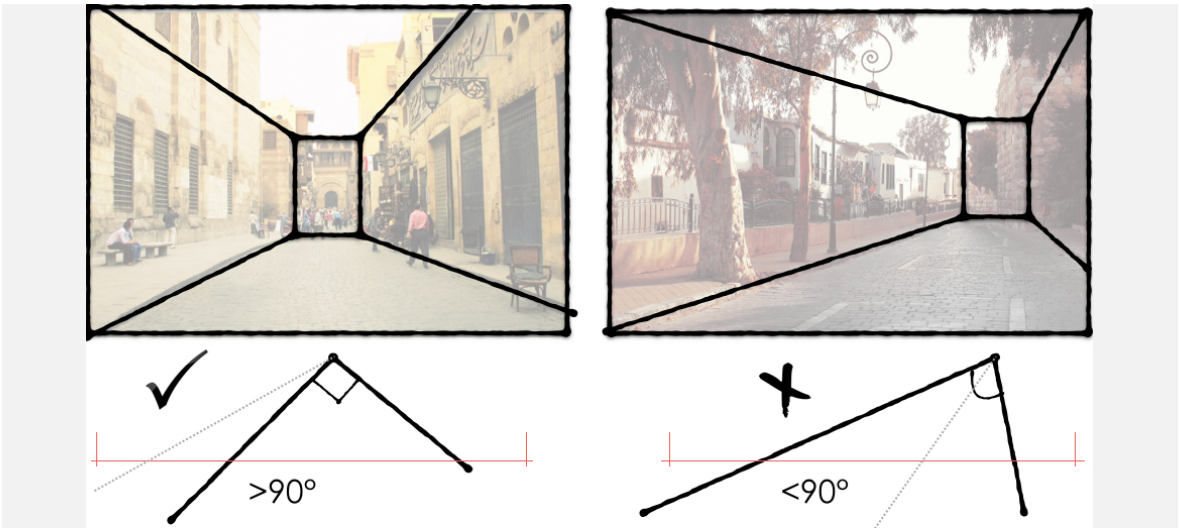
Third, the researcher realized that during the use of black colors in sketching, he did not need to use other colors in the sketch because the colors of the photograph were more than enough to keep the story in the sketch clean, simple, and strong.

Fourth, the researcher found that the sketch without notations was like a black-and-white story. Adding the notation to the sketch to name everything made the story colorful

because the descriptions of the components were expressed by how each participant perceived the suggested components.

Fifth, the angle of the setting in the photograph is not enough to be only on an eye-level as described in section 4.3.1 (Chapter 4: Techniques). The photograph angle should also be with at least at an angle 90 degree and larger as shown in Figure 6.11. The figure below shows the [>90°] angle vs. the [<90°] angle. The >90° gives the opportunity to the participants to see the two sides of the scene and help them to distribute the story equality on both sides. While the <90° gives a truncated feeling and an incomplete scene for seeing what can be possible in the whole setting along the two sides. For future studies, the researcher suggests using ≥90° with eye-level photography.

Figure 6.11: *On the right side the suggested ≥90° angle in the collaborative-sketching photograph vs. the avoided <90° angle on the left side.*



6.3.2 Collaborative-Sketching Communication

Collaborative-sketching is the tool that communicated the essence of the participants' needs and desires and illustrated design possibilities. The researcher realized that this communication was accomplished by the simplicity of a connection between the participants' eyes and mind on the one side and the researcher's hand, pen, and ear on the other side. Both sides were found to be complementary to each other. The simplicity of the

connection between these two sides ensures fresh thinking and iterative communication that is quick, clear, and immediately visible.

The researcher observed that in the past, he had to go through various steps to produce a sketch that included a concept that he believed meet the user's needs. However, in the collaborative-sketching process, the researcher found that it is very important that for anyone involved as a sketcher in such as study, he or she has to have a high level of coordination of the hand-eye-ear-mind. This coordination is the communication between the researcher and his own senses, such as to listen, to ask, to sketch, to understand and to respond by either to asking to understand more or to sketch. This communication, the researcher believes, has to be at a high level of coordination. So, when the participant was telling a story and the researcher was in the middle of sketching something, the researcher had to keep his hand sketching to finish the part he was sketching, but at the same time he had to keep his ears listening to pay attention to what the participant was narrating. This attention is important for one or more of the four reasons, as the participant may want: 1) to add something to the sketch; 2) to change something; 3) to redirect the idea the researcher was sketching it; or 4) to emphasize something important that might inspire the researcher more to enrich the sketch. Therefore, paying close attention during sketching is strongly related to how well-coordinated the communication between the researcher and his senses is.

6.3.3 Engagement Pattern and Stages

Engaging the participants in the process as described in section 5.4.3 showed that there was a high level of engagement as observed from the videotape. As described, their high level of engagement was divided into three common patterns found among the majority of the participants. These patterns of engagement showed how the collaborative-sketching process influenced the perception of the participants towards the environment and how they express their needs and desires. Therefore, the researcher found that when he used the collaborative technique, it did not only enable the researcher to get visible information, but also the collaborative-sketching technique changed how the participants perceived the environment. In other words, the researcher's technique and communication

influenced the participants' ability to see and imagine. This collaborative-sketching process could be enlightened further with collaboration work with a team from cogitative science and neuroscience.

6.3.4 Does the Meeting Setting Matter?

The place where the researcher did all the interviews in his office in the landscape architecture department—as mentioned previously in the methodology chapter. The reasons behind choosing this setting to implement the interviews were because it was considered as a neutral place for meeting and convenient to the researcher since it was the place where all the sketching tools and materials and video cameras were set up. None of the interviews were held in another place. Therefore, does the meeting setting matter? The researcher suggests that this can be an avenue of further future research to investigate how much the setting can play a role in the amount of information generated during the collaborative-sketching process if the process is held in different settings. This is emphasized in the implication for future research section 6.4.3 below.

6.4 Implications and Future Directions

The findings of the process provide opportunities for three types of implications, which include: implications for academia, implications for practice, and implications for further research.

6.4.1 Implications for Academia

The process of this research could be added as an approach to the studio and evaluated as a teaching strategy. The idea is to create a studio curriculum that focuses only on community-design and make the collaborative sketching process a part of the design process. This will add value by teaching the students how to incorporate the users' perspective in a systematic detailed way by using sketching in the early stages of design process. Part of teaching the collaborative process is to enable the students to be more realistic, more sensitive to the users' perspective, and get out of the designer uni-mental approach. Another implication is to teach the students that looking for ideas and concepts can be revealed and extracted by storytelling rather than restricting their methods to the traditional interview process. Teaching this collaborative approach should not be limited to outdoor spaces, but rather be examined in interior settings as well. It would be interesting to explore this process in the interior design teaching field. Also, the level of engagement as described in section 5.4.3 can be used in teaching as well, or emphasizing the ability of using collaborative-sketching and photographs. For example, one could explore how teaching the collaborative-sketching skills can influence student to be curious, then contemplate, and finally initiate ideas. Another implication for academia is how the collaborative sketching technique can shift the way in which students go and sketch abroad.

6.4.2 Implications for Practice

The study also has relevance for practice. This collaborative process may reduce the pre-judgment of designers and authority decision-makers that may reflect their own interests more so than those of the end users. In addition, this may lessen the need for the extensive overwhelming ideation stage of the design process by using the rich outcome of the collaborative sketching process. Another implication is to use this collaborative

sketching when students get involved in internships with non-profit organizations (e.g. NGOs, INGO, UN-Habitat) for community development with active participation from the community. This may lead to more socially sustainable users-friendly designs. Also, how this collaborative-sketching process once put into practice will help designers to implement neighborhood designs that actually meet the needs of residents instead of assuming what residents may want and creating unattractive spaces as a result. This may increase the success of newly designed neighborhoods.

6.4.3 Implications for Further Research

There is considerable room for extending this research project, due to the scope and limitations of this study. The research could be extended to involve more than one sketcher to sketch, and also evaluate that process. Moreover, it would be interesting to see if the collaborative-sketching varies based on the personality of the users, such as introvert vs. extravert. Another implication, it could be interesting for environment-behavior researchers and phenomenologists to investigate the sense of place and what makes a space into a place. Also, adapting the study design to capture the intangible feelings and emotions in a more systematic way would be thought-provoking. An additional possibility is to examine the diversity of other (non-residential) built environments in future research, such as rural dwellings, recreation settings, and informal settlements. It would be interesting to extend this research to involve only stakeholders, such as local authorities, urban designers, planners, and housing developers, and then compare their input with the residents—the eventual users. Aspects of social cohesion are relevant to anthropology, cultural studies, and sociologists. Your study could be useful as a launching pad for other studies that want to understand issues of social cohesion in newly urbanized cities. Further research could therefore examines the visual preference to identify key means of promoting wider social engagement of various outdoor spaces.

Another implication for future research is to examine whether or not the interview meeting setting matter. This study was held in one setting, but for future research it will be interesting to conduct the process in different settings and to examine how the users' levels of engagement are different and how their interactions are influenced according to the meeting setting. For example, what will happen if the process were held in the participants'

homes? Another implication for future research is to delve more deeply into the level of engagement by collaborating with cogitative science and neuroscience to understand how the participants mentally engaged and how they mentally perceived the environment.

Another implication for future research is related to implementing technology. Can the collaborative-sketching process be implemented in the same iterative and instant way by using digital graphics and devices to replace the role of the graphics facilitator? What will happen if enabling technology had the same skills as a graphic facilitator, and will the future technology be able to read the expression of the users and interact with them?

6.5 Strengths of the Study

The study has several strengths. The first strength is that it is the first study to examine the use of sketching in a collaborative, continuous, iterative, and instant way by tapping into users' imaginations as a source of their needs and desire to empower the design process. This process enables the users to provide focused, realistic input. Also, one of its strengths is it stimulates the users to prioritize from the most important component to least important component, and helps them to decide applicability and fittingness. This process also provides micro-details that cannot be provided by conventional data collection. It is a creative way of looking into community needs and providing the possible organization and arrangement of the setting. Moreover, it is a way to ensure and verify the users' needs and desires from a realistic perspective. The study also provides the fourth dimension of the space, which is the context of time. Finally, it is not limited to participants who have attained a certain level of education, as it allows involving the imagination of any layperson including illiterates.

6.6 Limitations of this Study

There are several limitations to this study. First, it is important to say that one of the major limitations in this study can be seen as the need of the designer or graphic facilitator to possess a high-level of sketching skills as a fundamental tool in order to accomplish the study. Second, in evaluating the feasibility and practicality of this collaborative sketching process, only one sketcher was involved in this study, which may limit the generalizability of the study. There are things that are not captured or visually

represented in the sketch in anyway, but are perceived only by the researcher (such as exact feelings and emotions of the user), which need the researcher to subsequently describe to team members if the project is going to be implemented. Further research on how to capture these feeling and emotions and interpret them in a systematic way will be essential.

6.7 Conclusion

Applying a collaborative sketching process in the early ideation stage of design can result in a rich exchange between designers and users, enabling the designer to have a better and more realistic understanding of needs and desires from the perspective of the user. Through this collaborative-sketching process, the users are continuously, iteratively, and instantly stimulated to not only narrate their needs and desires, but to visually provide realistic and specific details about the social activities and physical elements including their affordance, rationale of using, value of use, and how social interactions might occur within the different settings. Not only that, but also the participants' experience in the process was expressed and showed that the collaborative technique enabled them to embrace their specialness, interact joyfully, be taught and gain knowledge, and provide information by stimulating their "seeing-and-imagining."

APPENDIX A: Interview Instruments

Stage I: Pre-Sketching Interview

Part – I
I would like to ask you some question about your life in your neighborhood

1. How would you describe your neighborhood to a friend in another city?

   Probe: Describe important physical elements that help understand place where you live
   Describe the people who live there and social relationship
   What do you like most about living in this neighborhood? Why?
   What do you like least about living in this neighborhood? Why? How would you like it to be changed?

2. Please draw a map of your neighborhood and show the favorite places to you?

   Probe: Why these are your favorite places?
   Are there outdoor spaces where people gather and sit?
   Describe what they are doing? Is there any activity happening there?

3. When you walk in your neighborhood to i.e. going to mosque, grocery, neighbor…etc. Describe for me:

   Probe: Preference time to walk: day/time? Why
   What type of trip? Where do you usually go?
   Do you see neighbors while you are walking? How many?
   Do you spend time chatting with neighbor or just greet?
   What is your feeling when seeing your neighbor while walking?
   What is your experience (feeling) like when you walk inside neighborhoods?

Part – II
I would like to ask you some question about outdoor spaces in your neighborhood

4. What [type of activities] that occur outdoor in your neighborhood?
   Such as, *walking, taking and watching children to play, setting with neighbors having tea, gather with neighbors, holding funeral event, sport activities, walking for grocery*

   Probe: What type of activities? Then ask about sub activities?
   Where does this activity take place in your neighborhood?
   With whom and number of people? What are the characteristics of the people?
   What (day/time) does it usually occur?
   How long does it usually take?
   How often does it usually occur?

5. What is the [type of outdoor space] in your neighborhood that holds this activity and is most important and meaningful to you? Why?
   Such as, park – stoop – sidewalks – mosque courtyard – street corner, etc.

6. Tell me about [this outdoor space] that you use in your neighborhood?

   Probe: What time of activities [day / time]?
   What is the shape of this space?
   What is the way of interaction?
   What makes this place a good place for such activity?
   To what extent do you believe that this place is important to the people who live the neighborhood? Why?
   What services [available]? *I.e., light, seats, benches, trash cane, etc.*
   Is there a certain outdoor place where you feel especially relaxed and comfortable? *I.e., roof - backyard - courtyard – large balcony, etc.*
   Is there an outdoor space that you like to go to be alone?
   Is there an outdoor space that you go to be around other people?

7. Do you walk in your neighborhood on a regular basis?

   Probe: Has this experience facilitate or increase your interaction with neighbors? How?
   What prevent you from walking? Is there a better thing to do to let you walk?
   Do you think your neighborhood is a good place to walk? Why?

Part – III
I would like to ask a question about the past residential environment experience:

8. When you think about your [childhood], was there outdoor activities that come to mind:

   Probe: What was that activities?
   Where was that activities happened?
   Why was that place in particular?

9. If you were given the opportunity to do one thing to develop your neighborhood to make it a better place for daily outdoor activities:

   Probe: What is that thing? Please use your own terms to describe it.

_____End of pre-sketching interview_____

Stage-II: Collaborative-Sketching Interview Process

Phase 1: Descriptive-Notation

Now, I will show you some of photographs. I want you to choose at least 2-3 photographs that you want to be in in your neighborhood.

Photograph ID#:

1- How much would rate this place in this photograph?

1	2	3	4	5
Not preferred	Preferred a little	Preferred somewhat	Preferred	Preferred very much

Now, I need you to imagine you are in this place in your neighborhood?

2- How would you [*describe*] this place?

3- What comes to mind [when you are in this place]?

4- How do you think you would [feel] when you are in this place?

5- What is it about this [place] that [makes you feel] this feeling?
Probe: How does this place come to be [this feeling] for you?
If response is negative: What kind of thing you would add to change this feeling?

6- Would you [like to be with others or alone] in this place?

Phase 2: Top-up Composite

7- What would be the most important component that makes this place a good place for outdoor social activities and draw people from their home and engage outdoors?

8- What [type of activity] do you have in mind [to be involved] in this place in your neighborhood?

9- [Who] will be [involved] with you in this activity?
Probe: What is happening in this place?
Who are those people?
How many are they?
How old are they?
How are they using this place?
Where are they sitting, standing, walking…etc.?

10- What [time] this activity [could happen]?
Probe: What time frame of the day [morning, noon, evening, night]?
How long does it take?

How frequent does it happen [yearly, monthly, weekly, daily]?

11- What is your [feeling] being involved in this activity in this place in your neighborhood?

12- Do you think this place can have [another type of activity]?

_____End of collaborative-sketching interview process_____

Stage-III: Post-Sketching Interview

1- How much would you like to rate this photograph after sketching?

1	2	3	4	5
Not preferred	Preferred a little	Preferred somewhat	Preferred	Preferred very much

2- Does this drawing [capture what you have in your mind]?

Probe: Anything you would like to add to this drawing?
What is missing could be added? Is it physical or feeling?

3- To what extent this drawing captures what you have in your mind?

1	2	3	4	5	6	7	8	9	10
Not at all……Perfect									

4- Does this drawing [change your feeling]? Yes / No? How?

5- How would [describe] this place now?

6- Do you think this [sketch] close to what you have in your mind? How?

_____End of interview _____

APPENDIX B: Consent form and photo release

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects

Title of Study: Understanding Outdoor Social Spaces: Use of Collaborative-Sketching to Capture Users' Imagination as a Rich Source of Needs and Desires

Investigator (s): Adel Alzahrani, Doctoral Candidate; Professor Patrick Miller, Faculty Advisor; School of Architecture +Design Research, Virginia Polytechnic Institute and State University

I. Purpose of this study

The main purpose of the study is to identify the necessary characteristics of neighborhood outdoor spaces that draw people from their homes and encourage them to engage in outdoors social activities that support and build community.

II. Procedure

You are being asked to conduct a personal interview with Adel Alzahrani—a doctoral student in Virginia Tech's PhD program: Architecture + Design Research. Your participation in the above-mentioned interview will involve sharing your experiences of outdoor spaces that influence the daily activities that take place in your neighborhood. Your participation is voluntary and will take approximately 60-75 minutes. The interview will take place at your convenient or at another mutually agreed upon place. The above-mentioned interview will be audio recorded, and video taped and will be accessible only by the researcher and his faculty advisor. The transcript interview will be kept in a secured location for a period of one year. A shot screen will be taken from the video to be used as a figure in the research, and if your interview was chosen, your face in the shot screen will be fully covered with a black spot to protect your identity and privacy. Also, this video might be attached to the dissertation in the appendix to the public to present how the interview has been conducted.

III. Risks

We believe that the risks of harm associated with your participating in this study are minimal.

IV. Benefits

We cannot promise or guarantee any benefits from participating, but we are grateful for your consideration and hope that you may find this a worthwhile opportunity to reflect on your experiences as a Saudi resident at Jeddah neighborhood. If you are interested in having a copy of the results of this research, Mr. Alzahrani will be happy to provide you with a copy of his final dissertation. Our contact information is provided below.

V. Anonymity and Confidentiality

We are seeking your written consent to allow the researcher to include your statements in the scholarship that will result from this effort. Transcripts of your interview will be used only for fact checking and quotations in Mr. Adel Alzahrani's dissertation and any associated research papers. You will have the option of sharing information "on the record" or "off the record" throughout

your conversation. When the audio recording is transcribed, he will use pseudonyms (i.e., false name) in order to protect the confidentiality of your name and responses.

It is possible that the Virginia Tech Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research at Virginia Tech.

VI. Compensation

We do not provide any form of compensation for your participation.

VII. Freedom to Withdraw

Your participation in his study is entirely voluntary and you are free to withdraw from this study at any time. There is no penalty or loss of benefits to refuse or withdraw from participating in this study. Also, you are free NOT to answer any questions that you choose during the interview.

VIII. Optional:

By initialing my name, I consent to have my interview audio / video recorded _____

IX. Your Responsibilities and Permission

I, _____, voluntarily agree to participate in this study that attempts to identify the influence of the physical built environment particularly outdoor spaces on the daily life patterns and quality of people's social interactions in neighborhoods of Jeddah. I am Saudi national; I am 18-years- old or older; I am currently a Jeddah resident; I have been a Jeddah residents for 10 years or more; and I have been in this neighborhood for 2 years or more.

I have read and understand the Consent Form and the condition of the research. I have also had all of my questions answered. I hereby acknowledge the above and give my voluntary consent:

_____ _____

Signature Date (D/M/Y)

Should I have any questions about this research or its conduct, or questions regarding my rights, I may contact:

Faculty Advisor:
Dr. Patrick Miller
Virginia Tech Professor
pmiller@vt.edu

Investigator
Adel Alzahrani
Doctoral Candidate
zahrani@vt.edu

IMPORTANT:
If I should have any questions about the protection of human research participants regarding this study, you may contact Dr. David Moore, Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects, telephone: (540) 231-4991; email: moored@vt.edu; address: Research Compliance Office, 1880 Pratt Drive, Suite 2006 (0497), Blacksburg, VA 24061, USA.

THANK YOU FOR YOUR TIME AND PARTICIPATION!

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Photograph Release Form

Title of Study: Understanding Outdoor Social Spaces: Use of Collaborative-Sketching to Capture Users' Imagination as a Rich Source of Needs and Desires

Investigator (s): Adel Alzahrani, Doctoral Candidate; Professor Patrick Miller, Faculty Advisor; School of Architecture +Design Research, Virginia Polytechnic Institute and State University

Photograph Release to be signed by participant
Authorization for the use of Photograph

I give Adel Alzahrani via Virginia Tech, School of Architecture the right to use any photo of my subject taken during my participation in this study in their publications and presentations. I waive the right of inspection and approval of the final photos or any printed materials that can be used in conjunction with it now or in the future, whether that use is known or not by myself, and waive the right to royalties or compensation that may result from the use of the photo.

_____ _____

Name Date (D/M/Y)

_____

Signature

Should I have any questions about this research or its conduct, or questions regarding my rights, I may contact:

Faculty Advisor:
Dr. Patrick Miller
Virginia Tech Professor
pmiller@vt.edu

Investigator
Adel Alzahrani
Doctoral Candidate
zahrani@vt.edu

IMPORTANT:
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THANK YOU FOR YOUR TIME AND PARTICIPATION!

APPENDIX C: IRB approval letter

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: September 15, 2014

TO: Patrick Miller, Adel Bakheet Alzahrani

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: The influence of the quality of outdoor spaces on the daily patterns of people's social interactions

IRB NUMBER: **13-812**

Effective September 15, 2014, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the Continuing Review request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Expedited, under 45 CFR 46.110 category(ies) 6,7**
Protocol Approval Date:	**September 13, 2014**
Protocol Expiration Date:	**September 12, 2015**
Continuing Review Due Date*:	**August 29, 2015**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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An equal opportunity, affirmative action institution

APPENDIX D: IRB amendment approval letter

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: March 17, 2015

TO: Patrick Miller, Adel Bakheet Alzahrani

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: The influence of the quality of outdoor spaces on the daily patterns of people's social interactions

IRB NUMBER: **13-812**

Effective March 17, 2015, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

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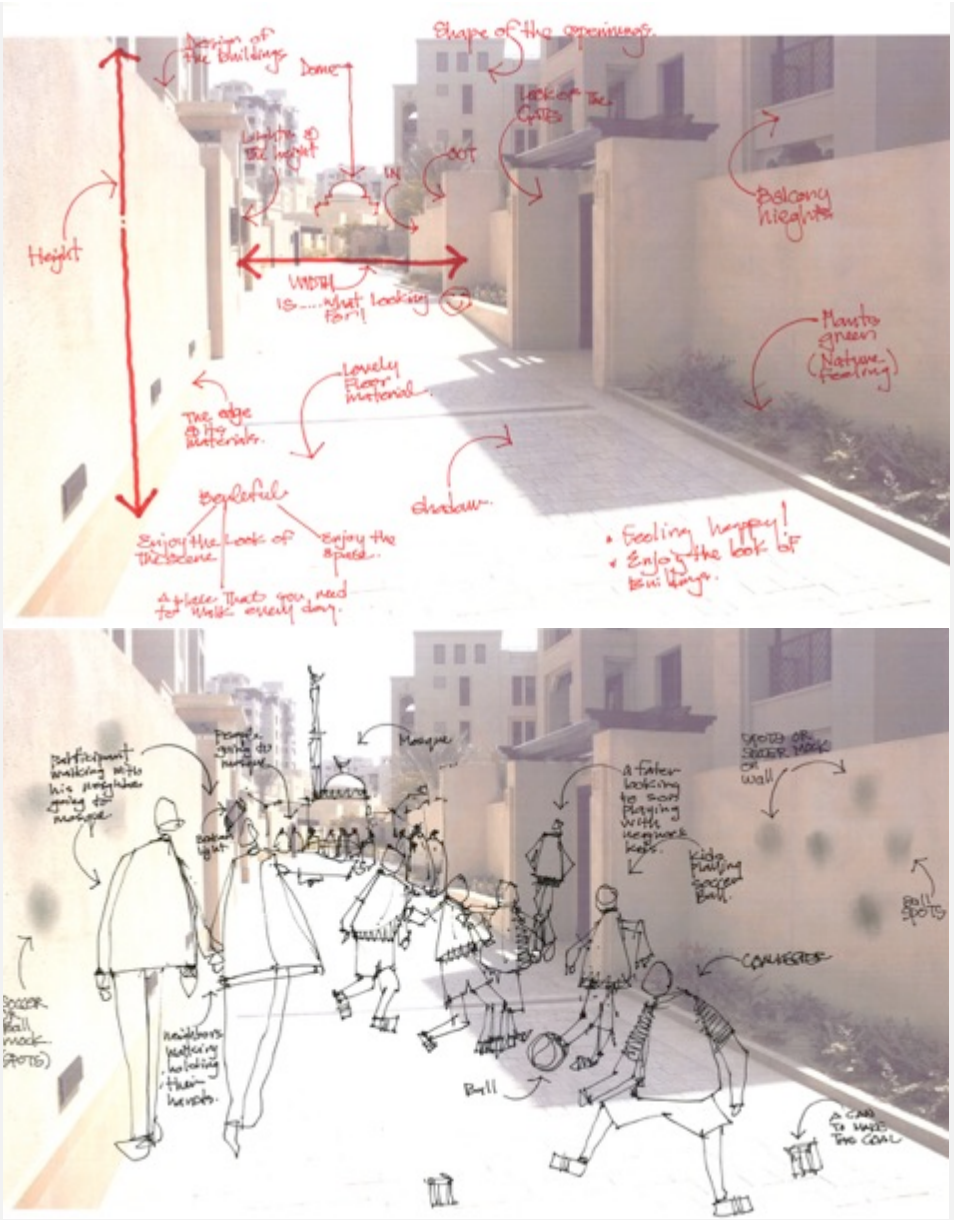
FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

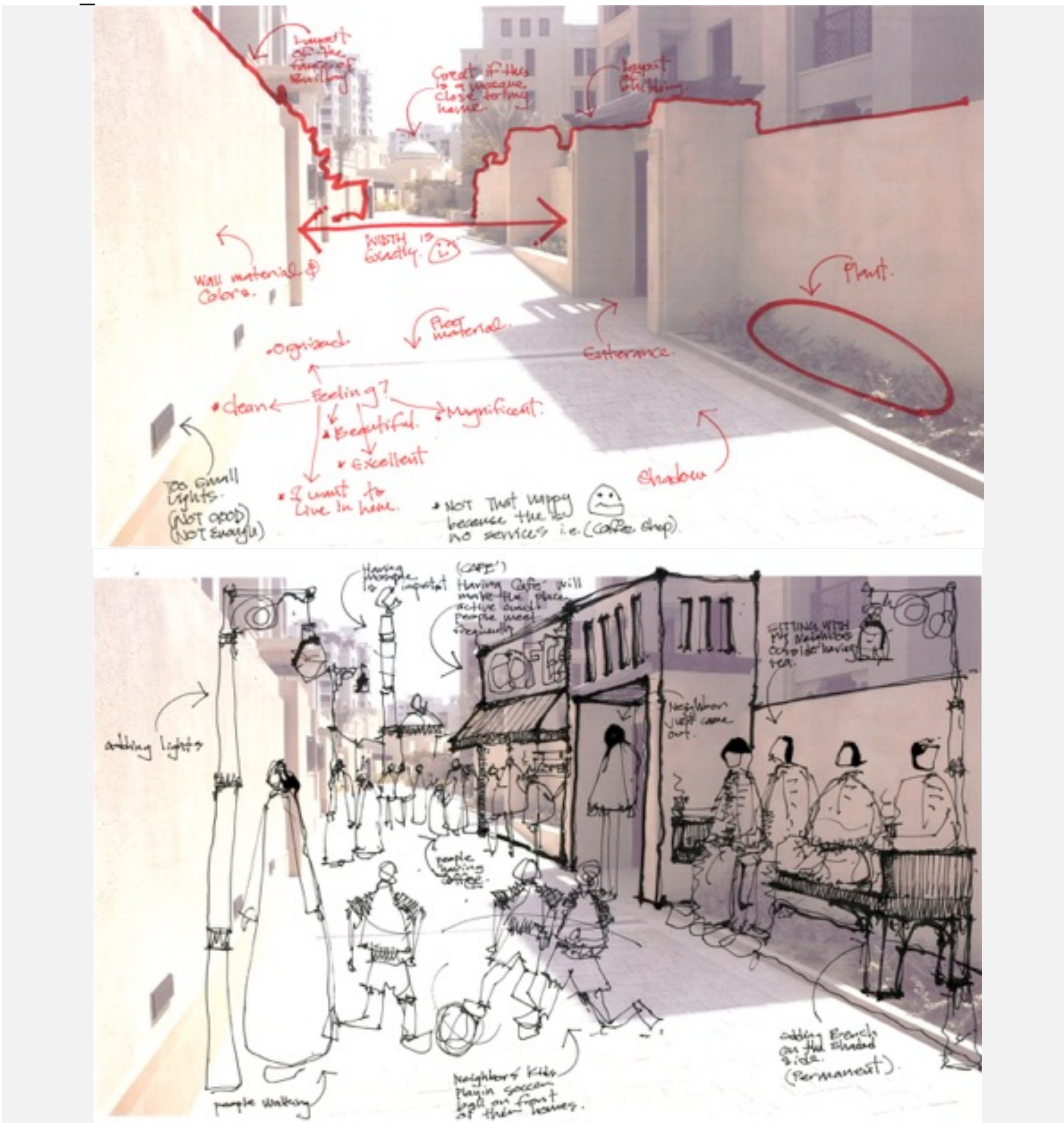
The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

APPENDIX E: Collaborative-Sketching Cases – Setting 1

Case 1_zah



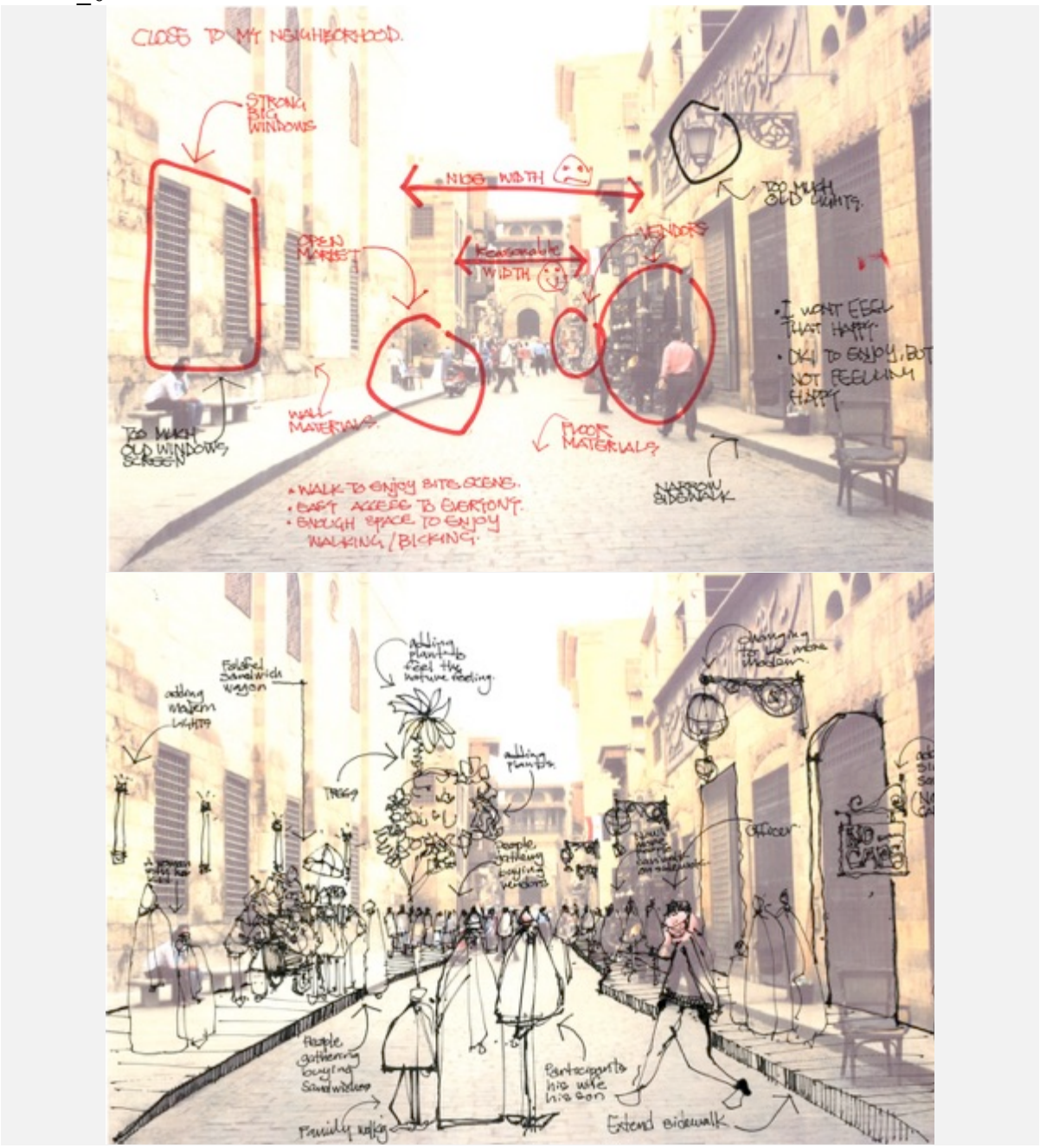
Case 2_mtsh



Wall material & Colors.
Plant.
Floor material
Entrance
organized
Feeling?
clean
Magnificent.
Beautiful.
Excellent
I want to live in here.
Shadow
Too small lights. (NOT GOOD) (NOT Enough)
NOT That happy because there is no services i.e. (Coffee shop).
adding lights
people walking
Neighbors Kids Playin soccer ball on front of their houses.
adding Bench on the shaded side. (Permanent)
Having mosque is important
(CAFE') Having Cafe' will make the place active and people meet

APPENDIX F: Collaborative-Sketching Cases – Setting 2

Case 1_zhn

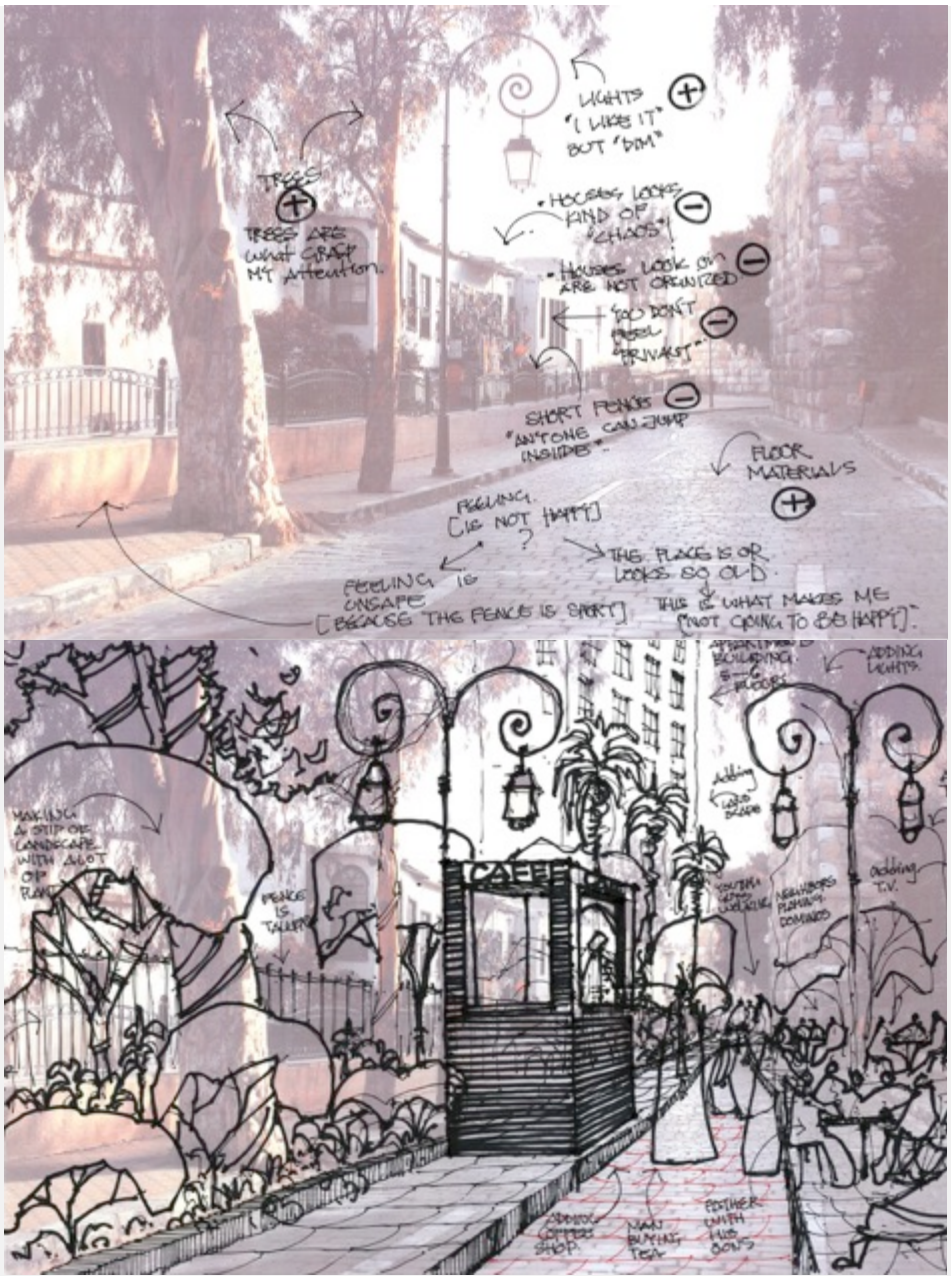


Case 2_zbg

APPENDIX G: Collaborative-Sketching Cases – Setting 3

Case 1_mtsh

Case 2_mhn


LIGHTS
"I LIKE IT"
BUT "DIM"
TREES
TREES ARE
WHAT GRAB
MY ATTENTION.
HOUSES LOOK
KIND OF
"CHAOS"
HOUSES LOOK OR
ARE NOT ORGANIZED
"SO DON'T
FEEL
PRIVACY"
SHORT FENCES
"ANYONE CAN JUMP
INSIDE"
FLOOR
MATERIALS
FEELING.
[IS NOT HAPPY]
?
THE PLACES IS OR
LOOKS SO OLD.
FEELING IS
UNSAFE
[BECAUSE THE FENCE IS SHORT]
THIS IS WHAT MAKES ME
NOT GOING TO BE HAPPY].
ADDING
LIGHTS
MAKING
A STRIP OF
LANDSCAPE
WITH ALOT
OF
PLANTS
FENCE
IS
TALLER
adding
T.V.
ADDING
COFFEE
SHOP.
MAN
BUYING
TEA
FATHER
WITH
HIS
SONS

APPENDIX H: Permission of Using Photographs - Setting 2

File:Old Town in Dubai Downtown 9 July 2007 No. 4.jpg

From Wikimedia Commons, the free media repository

Size of this preview: 800 × 480 pixels.
Original file (1,209 × 726 pixels, file size: 99 KB, MIME type: image/jpeg)

Open in Media Viewer

Summary

Description	Old Town at Dubai Downtown on 09/07/07
Date	9 July 2007
Source	Dubai Construction Update (text was removed)
Author	Imre Solt
Permission (Reusing this file)	Approval for the use of this photo can be found at Dubai construction update Part 7 Page 12 (http://www.skyscrapercity.com/showthread.php?t=503681&page=12) at Post 223. Imre Solt's exact statement is: "I, Imre Solt, put all my images found on the Dubai Construction Update sites on the GFDL (GNU Free Documentation License). I agree to the terms that my images may be freely redistributed and used, that they may be freely modified (and modified versions may also be freely redistributed and used), that any redistribution must include the full text of the GFDL itself, that the work (and modified versions of it) must be attributed to me (the creator), and that the images can be re-used for commercial purposes (as long as the use is under the terms of the GFDL and that the full text of the GDFL goes along with the work). I acknowledge that I cannot withdraw from this agreement." He gave this statement on 17 August 2007.

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APPENDIX I: Permission of Using Photographs - Setting 3

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New York, NY 10118
USA

RECEIPT

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Bill To
adel alzahrani VT 305 Cherokee dr. Blacksburg, VA 24060 United States Username: azsketch

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6/3/2015	0170	Paid

Qty	Description	Amount
1	365-day Images On Demand, with 2 Standard License Downloads	$29.00
	TOTAL:	**$29.00**

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Gmail by Google

Adel Al-Zahrani <zahrani.adel@gmail.com>

Shutterstock Support

1 message

Support <support@shutterstock.com> Wed, Jun 3, 2015 at 1:59 AM
To: "zahrani.adel@gmail.com" <zahrani.adel@gmail.com>
Cc: "zahrani@vt.edu" <zahrani@vt.edu>

Hello Adel,

It was nice having you in chat.
You find the chat transcript you requested below

07:46:10Christina H: Thank you for reaching out!
07:46:19Christina H: Hi Adel
07:46:22Visitor: Hello Christina
07:46:25Christina H: How can I help you?
07:46:36Visitor: I would like to buy a photo
07:46:40Christina H: Okay
07:46:41Christina H: I am sorry but we don't sell single images. But remember you have 1 year to use the downloads. You can find all our plans here: http://www.shutterstock.com/subscribe
07:47:13Visitor: yes I found that I can buy at least 2 photos
07:47:17Christina H: Okay
07:47:36Visitor: I want to use the photo in my PhD dissertation
07:47:39Christina H: Great
07:48:01Visitor: and I am using a sketching technique over the photograph.
07:48:10Christina H: Okay
07:48:53Visitor: of course I will refer your compony as the source of the photograph
07:49:05Christina H: I see
07:49:27Visitor: is there any problem to use the photograph after I bought?
07:49:37Christina H: It depends
07:49:46Christina H: As long as it is not a sensitive subject
07:50:37Christina H: And I guess you are not printing it more than 500.000 times
07:50:45Visitor: No, it dose not have any sensitive subject... I am doing my PhD in architecture. and I just draw over the photograph physical settings
07:50:54Christina H: Perfect

07:51:00Visitor: no no no ... just 10 times
07:51:01Christina H: That's what I thought
07:51:16Christina H: Then you can totally go for the standard license
07:51:44Christina H: Make sure to credit this way: "Name of Artist/Shutterstock.com"
07:52:17Visitor: absolutely
07:52:32Christina H: Great
07:53:08Visitor: Ok, do you mind send me an email as a permission to use the photograph after buying it to add it to my appendix in my dissertation?
07:53:23Christina H: Would it help if I send you this chat transcript?
07:53:55Visitor: Sounds great! but I don't know if my university will have it as enough..
07:54:00Christina H: Okay
07:54:09Christina H: You can always use our license
07:54:21Christina H: http://www.shutterstock.com/en/license
07:54:29Christina H: It has all I said in it
07:55:16Visitor: Ok Great! would you please email me this chat transcript too? I really appreciated
07:55:30Christina H: Of course Adel
07:55:58Christina H: I will send it after the chat ends so you have the whole transcript
07:56:16Visitor: Awesome .. Thank you so much.. this is it..
07:56:34Christina H: No problem
07:56:37Christina H: Okay
07:57:04Christina H: Have a great day and good luck with your PhD dissertation
07:57:09Visitor: you too!
07:57:16Christina H: One last question
07:57:17Visitor: Thank you so mcuh
07:57:22Visitor: yes
07:57:45Christina H: We have sometimes issues with yahoo e-mail addresses
07:57:58Christina H: Do you have another email address I could put in as CC just in case
07:58:07Visitor: zahrani.adel@gmail.com
07:58:11Christina H: Perfect
07:58:13Visitor: zahrani@vt.edu
07:58:19Christina H: Great
07:58:22Christina H: Thank you so much
07:58:28Visitor: Thank you!
07:58:34Christina H: You're very welcome
07:58:36Christina H: Bye Adel
07:58:42Visitor: Bye!

If you have any further questions feel free to reach out.

Kind regards
Christina Hoeck
Shutterstock Support

ref:_00D301GgSC._500a0udZ13:ref

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