

EXPLORING THE USE OF 3D VIRTUAL WORLDS FOR  
PSYCHOEDUCATIONAL GROUPS: A MULTIPLE CASE STUDY

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## **ABSTRACT**

### **EXPLORING THE USE OF 3D VIRTUAL WORLDS FOR PSYCHOEDUCATIONAL GROUPS: A MULTIPLE CASE STUDY**

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The main aim of this study was to explore psychoeducational group counseling process in 3D VWs. The purposes of current study were; to explore affordances and challenges of 3D VWs for psychoeducational groups, to describe how features of 3D VWs are perceived by participants, to explore psychoeducational groups process and outcomes in 3D VWs and understand how it differs from face-to-face, and to identify effective instructional strategies for psychoeducational groups. In this respect, two psychoeducational procrastination groups were organized. There were nine participants in each group and two group counseling leaders led both groups.

The research design was qualitative in nature; more specifically, multiple case study methodology guided the researcher. Multiple forms of evidences were collected from group members and group counseling leaders. The data were collected through interviews, questionnaires and observations. Collected data were analyzed according to qualitative data analysis techniques and non-parametric tests.

The results of this study revealed some prominent findings. First, features of 3D VWs indicated important affordances for psychoeducational groups. These affordances included interactive 3D space, avatar representation, extended sense of presence and comfort of self-disclosure. On the other hand, some identified challenges were; technical issues, multitasking and lack of non-verbal cues. Second, both cases showed similar patterns in terms of procrastination behavior outcomes, motivation and

satisfaction. Finally, effective instructional strategies were discussed. Due to limited research regarding participants' and counselors' experiences of using 3D VWs in the literature, results of this study might provide invaluable information for researchers, practitioners and administrators.

Keywords: 3D Virtual Worlds, Online Counseling, Psychoeducational Groups

## ÖZ

### 3B SANAL DÜNYALARIN PSİKOEĞİTİM GRUPLARINDA KULLANIMININ İNCELENMESİ: ÇOKLU DURUM ÇALIŞMASI

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Bu çalışmanın temel amacı, 3B Sanal Dünyalarda psikoeğitim grup sürecini araştırmaktır. Çalışmanın amaçları; 3B Sanal Dünyaların kullanımının psikoeğitim gruplarındaki kolaylık ve güçlüklerini araştırmak, 3B Sanal Dünyaların özelliklerinin katılımcılar tarafından nasıl algılandığını belirlemek, 3B Sanal Dünyalarda psikoeğitim grup sürecinin ve sonuçlarını araştırmak ve bu grubun yüz yüze gruptan hangi açılardan farklılaştığını belirlemek, ve psikoeğitim grupları için kullanılacak etkili öğretim yöntemlerini belirlemektir. Bu bağlamda, iki erteleme davranışı psikoeğitim grubu düzenlenmiştir. Her grupta dokuz katılımcı yer almıştır ve her iki grubu iki psikolojik danışma grup lideri beraber yürütmüştür.

Çalışma genel anlamda nitel analiz yöntemi; spesifik olarak ise araştırmacı tarafından çoklu vaka analizi yöntemi kullanılmıştır. Çalışmada veriler hem grup üyelerinden hem de grup liderlerinden çeşitli yollarla toplanmıştır. Bu veri toplama yollarını görüşmeler, anketler ve gözlemler oluşturmaktadır.

Çalışmada önemli bulgular elde edilmiştir. Bu bulgular öncelikli olarak, 3B Sanal Dünyaların, psikoeğitim grupları için önemli kolaylıklar sağladığını göstermektedir. Bu kolaylıklar arasında etkileşimli 3B alanı, avatarla temsil edilme, ortamda daha fazla var olma hissi ve kendini açma rahatlığı yer almaktadır. Diğer taraftan, çalışmada, özellikle teknik konular ve aynı anda birden fazla iş yürütmeye ilgili göz önünde bulundurulması gereken bazı güçlükler de belirlenmiştir. İkinci olarak, iki grubun da

erteleme davranışı sonuçları, motivasyon ve doyum açısından benzer örüntüler gösterdiği bulunmuştur. Son olarak da etkili öğretim yöntemleri tartışılmıştır. Alan yazında, katılımcıların ve liderlerin 3B Sanal Dünyalarla ilgili deneyimlerini içeren çalışmaların az olması sebebiyle bu çalışmanın sonuçları araştırmacılara, uygulamacılara ve yöneticilere değerli bilgiler sağlayabilecektir.

Anahtar kelimeler: 3B Sanal Dünyalar, Online (Çevrimiçi) Psikolojik Danışma, Psikoeğitim Grupları



*To great people who supported me during this journey*

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## **CHAPTER 1**

### **INTRODUCTION**

Social and economic transformations have been leading paradigm changes in education system's goals and expectations. Education had dramatic changes in terms of theoretical and methodological foundations during transition from industrial-age to information-age. This slow yet radical change had great impact on all societal institutions including schools (Dede, 2000). As a result of these systemic changes (Reigeluth, 1999), education's role was no longer perceived solely as academic development but also social and psychological development has become a central responsibility. In a report published by World Health Organization (1999), personal, social, cognitive, affective and universal psychosocial skills were defined as "life skills" which are "abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life" (World Health Organization, 1993, p. 1). In the same report, it was stressed that life skills education is essential for; promotion of healthy individuals, prevention of some key disorders, and preparing young people for rapidly changing socio-cultural circumstances.

College years constitute a unique stage in life that individuals experience great changes and they are confronted with various personal, social and academic problems. At this stage, students need to cope with the issues of identity, socialization, adaptation of university life and academic career. Therefore, higher education institutions have responsibility to develop appropriate interventions for students and to help them dealing with these difficulties (Richards, 2009). Many universities have been making great efforts to develop counseling and guidance services in order to respond mental health and academic development needs of their students. As expressed by Mallen &

Vogel (2005), counseling services do not only focus on the treatment of psychological disorders, but they are also crucial for academic issues, career counseling, prevention of psychological problems and wellness.

Despite the growing importance of student counseling services in universities (Güneri, 2006), they struggle with many logistical challenges to meet the increasing demand of such services (Kincade & Kalodner, 2004; Riva & Haub, 2004). The fact that evolution of information and communication technology has a great impact on the educational reforms in many ways has raised the question of whether computer mediated communication (CMC) tools can be utilized for counseling services as well. Travers and Benton (2014) assert that rapidly advancing technology can be a promising direction to find innovative and effective interventions in universities. Furthermore, students' use of CMC tools for communication and collaboration increasing exponentially which can be leveraged to help students master the required complex psychosocial skills of information-age. Within this context, this chapter aims to present a brief background of the problem from higher education perspective. Then, the purpose of the study, research questions and the significance of the study are stated.

## **1.1 Background of the Problem**

Traditional approach of educational objectives is limited for helping students master complex skills. Educational institutions are attempting to improve their policies and practices to prepare students not only for reaching higher standard of academic achievement but also for mastering high order cognitive, affective and social skills (Dede, 2000). This transformation has been leading higher education institutions to provide mental health support services to meet emerging needs of students. These help services are usually provided in university counseling services. According to Richards (2009), the ultimate goal of counseling practice is to diminish counselee's anxiety, stress and concerns that are experienced before the counseling. Similarly, Mallen and colleagues (2005) express the goal of counseling as enhancing client's psychological strength and improving overall functioning. In addition to therapeutic needs, some clients need consultation about career, social skills, and other self-help related improvements.

There is an increasing demand of psychological support among college students as they are confronted with variety of personal, social and career difficulties (Erkan, Çankaya, Terzi, & Özbay, 2011). College years form a unique developmental stage in which students experience great changes in terms of identity, social environment and academic responsibilities. A growing body of literature in recent years has identified students' major problems faced with and their help seeking patterns to deal with these problems (Aluede, Imhonde, & Eguavoen, 2006; Çebi, 2009; Erkan, Yaşar, Cihangir-Çankaya, & Terzi, 2012; Güneri, Aydın, & Skovholt, 2003; Koydemir, Erel, Yumurtacı, & Şahin, 2010; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Schwitzer, 2005). In his study, Schwitzer (2005) surveyed undergraduate students and found that their major concern was academic problems, followed by emotional problems and career related concerns. Similarly, a number of studies have reported that academic, career, emotional and social issues are the highest ranked problems among college students (Atik & Yalçın, 2010; Erkan et al., 2012).

Different types of counseling practices are available to be utilized based on the demographics of target population, severity of the problem, the structure of sessions and setting. One type of counseling services is the psychoeducational group which is very common type of support services in university setting (Golden, Corazzini, & Grady, 1993) as they are cost effective and flexible to be tailored for specific population or cultural context. Moreover, counseling groups have therapeutic factors (Yalom & Leszcz, 2005) that may be particularly relevant for services offered in universities. Corey (2012) stated that “psychoeducational groups serve a number of purposes: imparting information, sharing common experiences, teaching people how to solve problems, offering support, and helping people learn how to create their own support systems outside of the group setting” (p. 8). This type of group utilizes various activities to teach specific skills or coping strategies. A broad spectrum of topics fall under the psychoeducational counseling as there is a wide range of problems addressed. Also, intended audiences can vary from children to old adults, and settings of counseling can be a school, university, hospital, company or a community agency. Some of the topics for psychoeducational groups are; procrastination, stress management, depression prevention and management, substance abuse, eating disorders, self-esteem, loneliness, shyness, grief, communication skills, and career

development. Despite this vast variety of practices in psychoeducational group counseling, they have a common denominator; they “have a significant educational component in addition to the psychological component” (Brown, 2004, p. 5) their primary goal is to educate clients about a psychological concept or topic (Gladding, 2004), and they help clients develop skills to cope with an array of academic and life problems (Corey, 2012).

Despite the fact that psychoeducational groups have been found to be effective for many interventions (Kincade & Kalodner, 2004; Riva & Haub, 2004), there are many barriers, particularly in university setting, for delivering effective and efficient psychoeducational support services. Although, these barriers are not exclusive for psychoeducational groups, their implications in the context of such groups have been discussed in the literature. The first challenge is the lack of resources to meet the increasing demand; in very recent study, Travers and Benton (2014) argued that over the past years there is a dramatic rise in help seeking demand without a corresponding increase in available resources. Similar concerns are expressed by other scholars too (Bishop, 2006; Kincade & Kalodner, 2004). The second challenge is the inadequacy of physical facilities in counseling centers. In a study surveying counseling services in Turkey, Güneri (2006) concluded that physical facilities of counseling services do not fulfill the standards suggested in the literature. In another similar survey study, physical condition was identified as one of the major weaknesses of university counseling services. It was found that most of the counseling services have only one individual counseling room, while most of them do not even have any group counseling room (Erkan et al., 2011). Another important challenge of counseling is the stigma attached to professional help seeking (Koydemir et al., 2010; Nicholas, 2002; Rickwood et al., 2005; Yalçın, 2016). Rickwood and colleagues (2005) underlined the high rate of fear and the stigma in young people who do not want be seen inadequate or 'sick' by their peers. Previous studies have reported various sociocultural factors indicating the level of stigma; socioeconomic status (Erkan et al., 2012), self-construal (Yalçın, 2016) and cultural context (Koydemir et al., 2010). Moreover, it is argued that the fear of stigma might be related to privacy and confidentiality concerns, which needs a special consideration in group setting (Rickwood et al., 2005; Riva & Haub, 2004). Social stigma, privacy and confidentiality concerns are the possible reasons that

discourage students benefiting from counseling services, even when they strongly need it (Nicholas, 2002). The last challenge is the attitude towards getting professional help. Several studies have consistently revealed that young people mostly tend to apply informal sources such as family and friends for help rather than professional support (Çebi, 2009; Erkan et al., 2012; Koydemir et al., 2010; Rickwood et al., 2005; Yalçın, 2016). Interestingly, in these studies, participants reported that they would consider seeking help from specialists as a third or even later option. Although there is no question that the low level of seeking professional help has a relationship with some misconceptions and challenges discussed so far, sociocultural factors need special consideration. Schwitzer (2005) reported that approximately 20% of the students benefited from university counseling services. In another study, it was concluded that around 20% of the students benefited from just group counseling (Golden et al., 1993). On the other hand, in a recent study by Erkan and colleagues (2011), eight major universities in Turkey were surveyed and it was revealed that only 2% of the students applied counseling services for some kind of help. It can be argued that this dramatic difference highlights the importance of sociocultural factors such as rigid cultural beliefs, stigma attached to psychological support, misconceptions about counseling and social acceptance.

The increasing demand for psychoeducational support among young people and challenges mentioned above highlight the need for finding alternative modes of delivering support services. Some authors have urged for further research to find cost and resource effective and easily accessible forms of interventions (Glick & Orsillo, 2015; Travers & Benton, 2014). Indeed, many practitioners have been utilizing CMC technologies for providing stand-alone counseling services or as a complement of traditional face-to-face services. This technology based form of intervention, online counseling, is not a new phenomenon; in fact, it has been used for many years (Mallen, Vogel, Rochlen, et al., 2005). Phone, email, synchronous chat and video conferencing have been used as medium of distance counseling. Synchronous chat and email are the two popular tools for researching online counseling (Pelling, 2009).

Emerging new technologies have been an interest area of researchers to investigate their potential for solving our major educational and psychosocial problems. One of

the technologies that is becoming more popular and has promising future for education and counseling is the immersive 3D virtual worlds (3D VWs). Growing interest towards using these environments can be explained by their affordances that are not available in traditional 2D web environments. Understanding affordances of 3D and immersive virtual environments and their implications on society, business, and education is not easy yet very important (Kapp & O'Driscoll, 2010). Dickey (2005) listed three critical features of VWs as; illusion of 3D space, representation of users with avatars and interactive communication tools among users. Furthermore, a large and growing body of literature has discussed the learning affordances of 3D VWs. Dalgarno and Lee (2010) asserted that 3D environment, smooth temporal transitions and high interactivity are the features of 3D learning environments that are not present in traditional online learning environments. In the same vein, Kapp and O'Driscoll (2010) formulated 3D immersive learning environments as places for leveraging interactivity and immersion to achieve high level of engagement, which causes increase in motivation of learner. As a constructivist learning environment (Dede, 1995), 3D VWs research focuses on collaboration of learning and co-creation. Furthermore, communication among learner through avatars in 3D VWs provides leverage for fostering social interaction (Dede, 1995; Hew & Cheung, 2010). It can be argued that unique affordances of these virtual spaces present an opportunity for researchers to develop new training modalities which enable learners being immersive in the environment.

In addition to educational use of immersive 3D environments, they have been attracting the attention of researchers for psychological and social research as well (Gorini, Gaggioli, Vigna, & Riva, 2008). Previous studies have specifically focused on psychosocial aspects of virtual worlds and investigated how they affect the role and behavior of users in these environments. Some of the investigated aspects include, presence (Bente, Rüggenberg, Krämer, & Eschenburg, 2008; Lee, 2004; Mikropoulos & Strouboulis, 2004), identity and its formation (Childs, 2011; S. Evans, 2011; Mazalek, Chandrasekharan, Nitsche, Welsh, & Clifton, 2011; Peachey & Childs, 2011), trust (Steele, 2013) and empathy (Gehlbach, Marietta, King, Pritt, & Dede, 2012; Yee & Bailenson, 2006). Whilst avatar-based counseling has many similarities with other forms of online counseling, 3D VWs' provide an immersive environment

and offers new possibilities for the mental health intervention. Comparing this technology with conventional applications such as email, chat and videoconference, Gorini and colleagues (2008) argued that 3D VWs have great potential as they might extend sense of place and social presence, convey the effectiveness of communication between client and counselor, positively contribute to group interaction and cohesiveness, and increase the level of trust between clients and counselors. Morie and colleagues (2012) speculated in the same vein; they highlighted three powerful affordances that can be used as leverage for enhancing counseling practice; highly social nature of the environment, building spaces that can promote psychological health and well-being, and representation via an avatar which can affect behavior and emotions of clients.

Using avatars and communicating with other users in such an immersive environment creates unique affordances for psychosocial and educational researchers. On the other hand, whether an effective relationship between client and counselor can be established when they share different physical spaces has been concern of researchers (Chester & Glass, 2006). However, there is limited research investigating the effectiveness of integrating psychoeducational services and 3D VWs technology in order to reveal an effective way of supporting learning and psychosocial development. As little information is known about the process of these groups in online environment, several scholars have highlighted the need of further research particularly for online psychoeducational groups (Barnett, 2005; Chang, 2005; DeLucia-Waack, 2011; Page, 2004). Chang (2005) urges researchers to investigate group process in online environment in terms of group dynamics, comfort of self-disclosure, potential for reducing shame and stigma, interaction among members and sociocultural aspects. The research to date has tended to focus primarily on the text-based online groups such as synchronous chat groups and support groups. Therefore, as asserted by Baker and Ray (2011), it is critical to investigate the use of 3D VWs for group counseling setting and develop sound research which addresses the effectiveness of particular type of counseling and establishes standards of best practices for researchers, practitioners and policy makers.

Despite the research gap in this area, only few studies have addressed the use of 3D VWs for counseling practices. An early example of using virtual environments for counseling was “The Place” synchronous virtual support group which allowed members, to communicate via synchronous text-based chat, to change their primitive avatars, and to change their proximity relative to other members (Page et al., 2000). In another ethnography research, Witt (2011) explored the perceptions of counselors who provided online counseling services in a modern virtual world, SecondLife. Furthermore, Walker (2009) integrated SecondLife to a graduate level course in order to teach clinical counseling skills and techniques. In conclusion, to the best of our knowledge, there is no previous study investigating counseling groups in 3D VWs from both counselors’ and clients’ perspectives. Thus, this study is unique in terms of addressing a major knowledge and practice gap in the literature.

## **1.2 Purpose of the Study**

The main aim of this study was to explore psychoeducational group counseling process in 3D virtual worlds and identify the similarities and differences between face-to-face setting. The purposes of current study were; to explore affordances and challenges of 3D VWs for psychoeducational groups, to describe how features of 3D VWs are perceived by participants, to explore psychoeducational groups process and outcomes in 3D VWs and understand how it differs from face-to-face, and to identify effective instructional strategies for psychoeducational groups. In order to achieve these purposes, multiple case study methodology was utilized. Two procrastination psychoeducational groups were organized and multiple forms of evidences were collected from group members and group leaders.

## **1.3 Research Questions**

Based on the purpose of this study, the following main research question will be investigated in this study:

What is the process throughout the psychoeducational group counseling for group counseling leaders and group members in 3D VWs and how it differs from face-to-face groups?



This broad research question is elaborated with following research questions:

1. What are the perceived *affordances and challenges of 3D VWs* for psychoeducational groups?
  - 1.1. What are the affordances perceived by group members and how do these factors differ in face-to-face group?
  - 1.2. What are the challenges perceived by group members and how do these factors differ in face-to-face group?
  - 1.3. How would counselors describe the affordances and challenges of 3D VWs based on their experiences in 3D group and face-to-face group?
2. How do the *unique characteristics of 3D VWs* influence the psychoeducational groups?
  - 2.1. How do group members perceive 3D environment in terms of user interface, communication tools and environment design?
  - 2.2. How do group members perceive anonymous identity and how it affects the psychoeducational group counseling in 3D VWs?
  - 2.3. How do group members perceive avatar representation and how it affects the psychoeducational group counseling in 3D VWs?
  - 2.4. How does presence influence the psychoeducational group counseling in 3D VWs? What are the factors affecting the sense of presence?
3. What are the similarities and differences between 3D group and face-to-face group in terms of *self-disclosure and factors affecting self-disclosure*?
4. What are the similarities and differences between 3D group and face-to-face group in terms of *group outcomes*?
5. What are the *instructional strategies* for successful delivery of psychoeducational groups in 3D VWs from the perspective of counselors and group members?
6. What are the factors affecting the *motivation* of group members in 3D VWs and how do these factors differ from face-to-face group?

7. What are the factors affecting the *satisfaction* of group members in 3D VWs and how do these factors differ from face-to-face group?

#### **1.4 Significance of the Study**

Based on above discussed framework, this multiple-case study aims to explore psychoeducational group counseling process in 3D VWs from group members' and group leaders' perspective. Considering that millions of people use Internet to find information about mental health and self-help (Chang, 2005) and that hundreds of thousands practitioners (Barak, Hen, Boniel-Nissim, & Shapira, 2008) have been already utilizing online communication tools, indicates this research study is significant. It is believed that this study will make important contributions to the current literature and provide valuable insights for researchers, practitioners and higher education administrators.

Firstly, findings of the present study will make several noteworthy contributions to the current literature. They will shed a light on the implications of using avatar representation, anonymous identity and interactive 3D environment for psychoeducational groups. Some research gaps addressed in the literature are the influence of presence on online counseling (Holmes & Foster, 2012); relationship between online counseling and help-seeking barriers particularly stigma (Chang, 2005); which clients and intervention are appropriate for online counseling (Mallen, Vogel, Rochlen, et al., 2005); role and characteristics of counselors in the context of online environment (Richards & Viganó, 2013). Furthermore, revealed insights will illuminate participants' motivation, satisfaction and encountered technical and methodological issues. Unlike some previous studies, such as Witt (2011), this study investigates the phenomenon from group leaders' and members' perspective; therefore, it will provide a more holistic view of the findings. Another important aspect of this study that enhance its significance is the fact that two cases are investigated to identify their similarities and differences. Baker and Ray (2011) highlighted the importance of researching commonalities between online and face-to-face counseling in terms of the process and outcome, and they asserted that such comparison can reveal invaluable insights. Thus, the findings of this study will provide readers an opportunity

to evaluate whether a condition is specific to virtual environment or whether it is similar to traditional environment.

Another worthy of mentioned significance of this study is its potential of contributing to virtual worlds and online counseling research in the matter of cultural context. The literature of virtual worlds is limited in terms of addressing sociocultural factors; Hew and Cheung (2010) urged that cultural and individual differences need to be further explored for virtual worlds. In fact, in their extensive review of the literature, it is reported that 87% of the studies had participants from North America and Europe which clearly shows the need of studies with participants from other countries. A similar gap exists in online counseling research; Amanvermez (2015) compares the online counseling studies in United States and Turkey and concludes that most of the studies in Turkey are descriptive and focusing on the counselors' and clients' perceptions. In another study, Erkan et al. (2011) reported that online counseling is the rarest form of services provided by university counseling centers in Turkey. Considering the importance of cultural context, this study has potential to reveal valuable insights for researchers and practitioners.

The third significance of this study is its contribution to instructional strategies. Current literature has guidelines and best practices of teaching and facilitating groups. In their books, Brown (2004) and Gladding (2004) provided extensive resources about group activities (such as games, role playing, drama and simulations), teaching approaches and content presentation. However, in the literature, there is limited information for online environment especially for 3D VWs. Therefore, the findings of this study might guide practitioners for choosing effective instructional strategies.

The fourth significance is that this study might be considered as a model by university counseling services. This procrastination psychoeducational group in 3D VWs is an attempt to find cost and resource effective, convenient and accessible solution for undergraduate students' problems. Therefore, based on the findings of current study, higher education administrators and practitioners will have an opportunity to consider whether 3D VWs are appropriate medium for their institution while providing psychoeducational support, particularly for coping with procrastination. Finally, practitioners can benefit from the findings while organizing online groups particularly

in terms of appropriateness of participants, group size, session length, and group management.

## **1.5 Definition of Terms**

In the following section some of the key terms which readers may not be familiar are defined. These relevant terms are explained in order to avoid any ambiguity while interpreting the results and assist the reader to understand the overall studied phenomenon better.

*3D VW*: A three-dimensional virtual environment in which people are represented with avatars and interact through synchronous and asynchronous communication tools. Also, it simulates the real world in terms of navigation and basic rules of physics.

*Avatar*: It is a visual representation of the self that increase the sense of embodiment in the virtual environment. In a typically 3D VW, a user can customize her/his avatar's appearance and perform various actions such as walking, running, dancing, rising hand or waving.

*Anonymity*: It is the condition when acting person's real identity is not known. In virtual environment, people usually use a nickname to ensure the anonymity.

*Computer mediated communication (CMC)*: A form of communication that occurs through networked devices.

*Counseling*: "Counseling is the application of mental health, psychological, or human development principles, through cognitive, affective, behavioral or systemic intervention strategies, that address wellness, personal growth, or career development, as well as pathology." (National Board for Certified Counselors, 2007, p. 1)

*Counselor*: A professional trained to provide counseling services.

*Psychoeducational groups*: These are the counseling groups which "have a significant educational component in addition to the psychological component" (Brown, 2004, p. 5). The goal of psychoeducational groups is to increase awareness of group members

about some certain life problems and help group members develop specific skills to cope with these problems.

*Procrastination*: Refers to “the act of needlessly delaying tasks to the point of experiencing subjective discomfort” (Solomon & Rothblum, 1984, p. 503). There are various forms of procrastination depending on tasks putted off; academic procrastination, work related procrastination and life routine procrastination are some of the common forms.

*Presence*: A psychological state in which one feels being in the place or virtual environment rather than in the immediate physical environment. Various forms of presence are available; for instance, place presence is the sense of being in virtual space, while social presence is the sense of being with other actors in the virtual environment (Lee, 2004).

*Immersion*: Perception of being physically present in a virtual environment. The main difference between presence and immersion is that whilst immersion depends of the technical capabilities of the used technology, presence is context-dependent subjective psychological state (Dalgarno & Lee, 2010).

*OpenSim*: A free and open-source platform to develop virtual worlds. To use OpenSim, it should be configured on a server and a viewer should be installed to connected to the virtual space.

*Online Counseling*: A form of counseling in which counselor and client are physically separated and computer mediated communication tools are utilized to conduct counseling including but not limited to therapy, psychoeducation, consolation, and guidance.

*NPC*: Non-player Character. It is a computer generated and computer controlled character. This type of character can be programmed to perform specific actions.

*Teleport*: It is the term used in virtual spaces when users change their location from one point to another without traditional movement actions. With teleport, location change occurs instantly.

*Viewer:* Viewer is a special software that is used to connect a 3D VW. It is similar to a browser, which is used to connect web pages. Various viewers are available that user can choose and they usually differ in terms of their user-interface and functionality.

## **1.6 Organization of the Study**

In the current study, Chapter 1 presents background of the problem, purpose of the study, research questions, significance of the study and definitions of terms. Chapter 2 begins by laying out the theoretical aspects of the study and presents related research studies. Chapter 3 details the methodology of study and it is organized into the following sections: the rational of choosing multiple-case study, the design of the virtual environment, plot study, instruments, data collection procedure, data analysis procedure, trustworthiness, researcher's role, ethical issues, the limitations and delimitations of study. Chapter 4 presents the results of study organized by research questions. Finally, Chapter 5 discusses the findings in the light of literature. Furthermore, implications of this study and recommendations for further researcher are presented.

## CHAPTER 2

### LITERATURE REVIEW

“A literature review is a narrative essay that integrates, synthesizes, and critiques the important thinking and research on a particular topic” (Merriam, 2009, p. 75). The goal of literature review in qualitative research is to establish theoretical framework of the study and revise existing knowledge base to reveal what is already known and what problems need further investigation. Inductive nature of qualitative research raises questions about function and extend of this section of the study. As answered by Merriam (2009) and Saldana (2011), literature review sets the stage for the data analysis and interpretation of the results, and contributes to the study’s field by providing new perspectives based on previous findings.

Therefore, the aim of this chapter is to review available knowledge base and present essential definitions and concepts related to investigated phenomenon. Firstly, 3D VVs and related concepts are reviewed. Then, online counseling literature in terms of historical development, affordances and challenges is reviewed. Then, definition and characteristics of psychoeducational groups are presented. In the last section of this chapter, a review of previous studies related to counseling in 3D VVs is presented.

#### **2.1 3D Virtual Worlds**

Emerging technologies have been transforming Internet from passive and isolated environment into an immersive and more interactive environment. Three-dimensional (3D) technologies have become an essential component of this transformation. Immersive 3D virtual worlds (3D VVs) are one of these technologies that is attracting increased attention in recent years. There has been a growing interest among researcher

and practitioners from a range of disciplines to leverage the interactive and immersive virtual space of 3D VWs.

The term “virtual world” has been defined differently based on contextual usages and varying perspectives of researchers, media and industry professionals and there is not a agreed-upon definition (Bell, 2008; Warburton, 2009). Therefore, Bell (2008) proposed a combined definition of this term which emphasis essential components; a virtual world is “a synchronous, persistent network of people, represented as avatars, facilitated by networked computers” (p. 2). A similar definition was suggested by Bartle (2009) “a virtual world is an automated, shared, persistent environment with and through which people can interact in real time by means of a virtual self” (p. 24). Although various forms of virtual worlds are available, these definitions highlight a number of recurrent characteristics: users can interact simultaneously in shared 3D environment, users are represented with avatars, users are able to interact with objects in the environment, and environment is simulated like real-world in terms of physics, movement which enhance users’ feeling of being present. In the literature, a range of terms have been used to denote immersive 3D virtual worlds. As listed by Tokel and Topu (2016), the most common terms are; Online 3D Virtual Worlds, 3D Virtual Learning Environments (VLEs), 3D Multi-User Virtual Environments (MUVEs), and Immersive 3D Virtual Worlds. Although these terms are often used interchangeably, in this study the term 3D VWs is used.

3D VWs are emerged from various technologies such as online games, social networks and virtual reality. Messinger et al. (2009) asserted that online games and social networks are the precursor of 3D VWs. Although 3D VWs share common characteristics of online games and social networks, it is important note some unique distinctions. Kaplan and Haenlein (2009) highlighted three aspects that differentiate 3D VWs from social networks; (1) users in virtual worlds usually interact synchronously, (2) virtual worlds allows users to represent self in form of fully customized avatars, (3) virtual worlds allow possibility of interactive 3D space. Similarly, Warburton (2009) highlighted the major difference between 3D VWs and Massively Multi-Player Online Games (MMORGs); virtual worlds do not have a pre-defined goal or storyline which means users have freedom of interacting with other



users, creating objects, and shaping the virtual space in various ways. These features distinguish 3D VWs from games and make them flexible and easy to adopt for different purposes.

Popularity of 3D VWs in many disciplines led to emergence of a long list of virtual world platforms since early 1990s. A comprehensive list of available 3D VWs have been compiled by Tokel and Topu (2016). Some of the most known and used platforms are the ActiveWorlds, Open Simulator (OpenSim), Open Wonderland, SecondLife, There and Twinity. This broad panorama of virtual worlds can be categorized in a number of ways. Platform's technology, target audience, profit model and graphical representation are some of the factors that can be used for classification. For instance, some of the worlds are developed specifically for teenagers, while some are developed for business and industry. Similarly, some of the worlds are offered as open-source applications, while others offered as proprietary software or paid online service. In this study, OpenSim, free and open-source virtual world platform, was used.

Applications of 3D VWs appear in different forms and have various features; however, researchers define some recurrent features. According to Dickey (2005) illusion of 3D space, avatar representation and interactive chat environment are the three typical features of 3D VWs. Furthermore, Warburton (2009) defined common features as persistence, simultaneous shared user space, virtual embodiment as an avatar, interaction between users and objects, immediacy of actions and illusion of being there through actions similar to real world. In this section, some major features of 3D VWs are discussed.

### **Avatar Representation**

One of the unique features of the 3D VWs that distinguishes it from other form of CMC technologies is the avatar representation. Avatar is an “embodied and psychological projection of a person” (Morie et al., 2012, p. 26). Users can create avatars, their virtual self-representation, and customize them. Compared to traditional tools, avatars have some affordances. The first affordance is that avatar representation enable users to interact with each other in a more personal way (Morie et al., 2012). The second affordance is that avatar has features which enhance communication in the

environment. Avatars can perform postures and gestures which can be used as form of interpersonal communication. Furthermore, avatar's real-life like movements and behaviors increase the sense of presence in the virtual environment. Another affordance is the emotional and social implications of avatars. Avatar appearance in virtual environment can potentially reflect users' various characteristics such as emotional state and social norms (Yee & Bailenson, 2007). Analysis of data collected from avatar observations in Second Life, researchers revealed that people transfer social norms about gender, interpersonal distance and eye gaze in to the virtual environment despite the difference in modality of movement and interaction between virtual world and physical world (Yee, Bailenson, Urbanek, Chang, & Merget, 2007).

The effects of virtual self-representation on behaviors and perceptions have been investigated by several researchers. In two related studies, Yee and Bailenson (2007) analyzed participants' behaviors based on manipulated avatar appearance in virtual environment. In the first study, participants with attractive avatars acted more confident while approaching opposite gender, whilst in the second study participants with taller avatars tend to negotiate with more confidence than participant with shorter avatars. Authors denoted this effect of digital self-representation on the behaviors with term "Proteus Effect". In another study, Fox and Bailenson (2009) revealed that avatar appearance had significant impact on the health behavior change about exercise; participants engaged in more exercises after seeing their avatars losing weight and exercising.

Research discussed above shows that there is a two-way interaction between digital self-representation and physical world. In other words, our emotions, perceptions and social values affects our digital self-representation, while this representation can affect these parameters in physical world. Yee and Bailenson (2007) stated that "our self-representations have a significant and instantaneous impact on our behavior. [...] As we choose our self-representations in virtual environments, our self-representations shape our behaviors in turn. These changes happen not over hours or weeks but within minutes." (p. 287) The value of 3D VWs for counseling comes from this interaction as virtual environment has potential to enhance the emotional level on interaction and sense of presence (Morie et al., 2012). Furthermore, during counseling process, a client

may create an avatar which can make him/her more comfortable and secure. Avatar's this benefits was expressed by Evans (2009); "Using an avatar as a form of online identity could provide a 'security blanket' which places the actual person at a distance." (p. 35)

### **Rich and Interactive Environment**

The rich and interactive 3D environment of VWs enables users to have unique experience. Firstly, unlike other CMC mediums, the environment is not static; users can create objects, build a new environment using available objects, and add various interaction capabilities into the environment (Dalgarno & Lee, 2010). Second, virtual space simulates the physical world; basic principles of physics are applied which makes the navigation and interaction similar to real world (Warburton, 2009). Furthermore, real world like distance and depth of perspective allows users a familiar experience (Kapp & O'Driscoll, 2010). The third aspect is that users can incorporate multiple multimedia formats inside the virtual space. They can embed pictures, videos and even websites into the environment and create a more interactive experience. Last, created and manipulated environment is persistent which means users can join the environment anytime.

Rich and interactive environment has important implications for counseling practices. Including variety of multimedia formats has potential to make the environment more dynamic and engaging. In the context of counseling, use of greater variety of media makes the counseling process not only attractive but also enhances the effectiveness of the intervention (Abbott, Klein, & Ciechomski, 2008; Barak et al., 2008). Interactive environment enables counselors to conduct individual or group activities in order to increase the effectiveness of learning content, facilitate collaboration among group members, and create a greater feeling of connectedness (Barak, Klein, & Proudfoot, 2009).

### **Multi-Channel Communication**

In 3D VWs, users can communicate with each other in multiple ways. Pita and Pedro (2012) categorized all these forms of communication into two groups; verbal communication and non-verbal communication. In most platforms, verbal

communication is established via text-based chat and audio chat. Avatars' verbal communication can be synchronous or asynchronous. Furthermore, most virtual platforms have private communication mode in addition to the public mode. Verbal communication is the major communication channel in 3D VWs and as discussed by Pita and Pedro (2012), it has affective, social, interactive, cohesive and participative parameters. In addition to verbal channel, 3D VWs provide non-verbal communication as well. There is no question that non-verbal cues in virtual environment are very limited compared to physical environment. However, compared to other form of communication technologies, non-verbal channel in virtual worlds has promising benefits. Researchers identified major non-verbal communication parameters as kinesics, physical appearance, proxemics and intentionality (Pita & Pedro, 2012). Avatar's gesture and animation capabilities enhances the kinesics form of non-verbal communication. Moreover, an avatar's physical appearance and proximity to other avatars or objects are considered as forms of non-verbal communication.

Effective communication is crucial for counseling practice and the most obvious difference between virtual counseling and face-to-face counseling is the lack of non-verbal cues (Barak et al., 2008; Fenichel, 2011; Mallen & Vogel, 2005; Suler, 2011). Compared to other communication mediums, 3D VWs have rich verbal and non-verbal communication capabilities via avatars. However, there is limited research investigating 3D VWs and their communication capabilities in the context of counseling practices.

### **Extended Sense of Presence**

A key feature of 3D VWs is the level of how a person feel present in the environment. Witmer and Singer (1998) defined presence as "the subjective experience of being in one place or environment, even when one is physically situated in another" (p. 225). It is important to note that presence is not solely about features of a technology, rather it is a psychological construct (Lee, 2004). The level of presence has strong implications for evaluation and design of a technological medium. Moreover, it is a vital component of effective interaction in virtual environment. Previous literature has shown that presence has positive correlation with learning effectiveness (Aragon, 2003), satisfaction (Bulu, 2012; Holmes & Foster, 2012), social interaction (Gerhard,

Moore, & Hobbs, 2004). Presence is not a unique feature of 3D VWs; in fact, all distance communication mediums facilitate this feeling to a certain extent. However, visual stimuli of 3D environment and avatar representation enhance the perception of presence (Peterson, 2006). Researchers have proposed various terms to denote different types of presence (Biocca, Harms, & Burgoon, 2003; Heeter, 1992; Lee, 2004). Place presence and social presence are the two mostly discussed forms of presence in existing literature.

Place, or physical, presence is the psychological state of experiencing virtual objects as actual objects (Lee, 2004). This sense increases the feeling of being in a virtual environment as real or present even when being situated in physical environment. Various aspects of the virtual environment have effect on this form of presence. Witmer and Singer (1998) presented a comprehensive list of factors affecting this feeling and they categorize these factors into four major groups; sensory factors, control factors, distraction factors, and realism factors. First, sensory factors are the factors related to visual stimuli of the 3D environment. Visually appealing and interactive environment might enhance the sense of presence. The second group of factors, control factors, are related to users' ability to control the environment and manipulate the environment. Interactions in environment should be meaningful, natural, predictable and flexible. Third, distraction factors refer to all aspects that affect user's attention. An environment which isolates users from real world and focus their attention on the virtual world might increase the feeling of presence. The final factor, realism factors, incorporates the aspects of realistic design, consistent placement of objects and meaningfulness of the experience.

Lee (2004) defined social presence as "a psychological state in which virtual (para-authentic or artificial) social actors are experienced as actual social actors in either sensory or nonsensory ways." (p. 45) This type of presence is essential for feeling of being together and building community. It is one the most essential factor for creating a sense of community in online environment (Aragon, 2003). Therefore, group cohesion, intimacy and interactions among users might be enhanced with the increased social presence (Leh, 2001; Whiteman, 2002). Some authors assert that feeling socially present within an online learning context facilitates the establishment of trust and self-

disclosure (Gunawardena et al., 2001). Another important aspect is that extended sense of social presence enhance the effectiveness of instructional environment by making group interactions more appealing and engaging (Rourke, Anderson, Garrison, & Archer, 1999). Although utilized medium's features and level of presence have an impact on the sense of community in virtual environment, Rovai (2002) highlighted other factors such as transactional distance, group activities, teaching style and group size. Similar to other forms of presence, level of social presence in online communication depends on the used medium's capacity. Compared to other online communication mediums 3D VWs are able to convey higher level of social presence as avatar interaction enhances feeling of togetherness and social connectivity (Adams, Astruc, Garrido, & Sweeney, 2011; Gorini et al., 2008; Morie et al., 2012)

In the context of virtual counseling, the sense of presence has noteworthy implications. For instance, increasing feeling of presence might decrease the sense of "distance" between client counselor which eventually can eliminate the difference between being-there in real life and being there in virtual environment (Holmes & Foster, 2012). Level of presence has an effect on the intimacy (Kang & Gratch, 2010), trust, commitment and therapeutic relationship between counselor and clients (Riva, 2005; Suler, 2011). Furthermore, it can be argued that social presence has crucial implications for group counseling in virtual environment. Gorini et al. (2008) argued that use of avatars in 3D VWs extend the sense of social presence which plays a critical role for effectiveness of therapeutic intervention. Extended social presence allows group participants to experience a socially interactive communication. This is particularly important for online group counseling as extended social presence facilitates the communication, influence interaction among members, and enhance the group cohesiveness (Gorini et al., 2008). 3D VWs might be more advantageous compared to other communication mediums in the context of virtual counseling. For instance, while communicating with email and talking with a person over videoconference, a person feels different sense of "being there" with other person. Supporting this statement, Suler (2011) speculates that asynchronicity in mediated communication can decrease level of presence between counselor and clients due to the feeling of disconnection or sense of less commitment. One of the benefits of 3D VWs is that interactive 3D environment, synchronous communication tools and users' ability to be together in the environment

at the same time extends the level of presence which can simulate a face-to-face interaction. Sense of presence can increase the effectiveness of a therapeutic intervention as a better communication established when two parties have higher sense of presence. These findings show that sense of presence can be a crucial component of psychoeducational groups in 3D VWs; therefore, research needed to investigate what factors affect this feeling and how it affects the group process.

### **Immersive Environment**

3D environment of virtual worlds offer a highly augmented experience in which users immersed beyond what can be achieved with audiovisual stimulation (Witt, 2011). This immersive experience depends on the level of presence and responsiveness of the feedback in the environment (Gorini et al., 2008). The implications of these characteristics of VWs for online counseling can be better illuminated with research in the field of virtual reality.

Researchers argued that virtual reality's immersive environment has great potential for research in psychology (Loomis, Blascovich, & Beall, 1999). Exposure therapy is the term used for this type of interventions where a person is exposed to specially developed 3D environment. Research shows that virtual reality as a therapeutic tool has been clinically effective in diagnosis and treatment of various disorders such as phobias, social anxiety and stress disorders (Gorini et al., 2008).

Although these virtual reality applications have great benefits, they also have some limitation: they are usually developed as stand-alone software that are not easily accessible and need to be applied in expert's office or special laboratories; social connectivity is very limited; most of them does not provide personal avatar that can be customized (Morie et al., 2012). In order to address these limitations, 3D VWs can be utilized as a counselor can create a virtual environment based on therapeutic needs and expose patient to this environment while accompanying in the same virtual environment in a distance (Witt, 2011). It should be noted that VWs may not support all kind of simulations as provided with virtual reality applications. In the same vein, some type of psychological disorders, especially those require psychical intervention

of counselor, may not be appropriate to be treated from distance (Chester & Glass, 2006; Finn & Barak, 2010).

An example of immersive environment was provided by Morie and colleagues (2012) in their study conducted with U.S. military veterans in a virtual Iraqi Village environment, one of the participants could not bear to remain in the desert and looking the village even from the outside as it reminded her/him “bad memories”. Therefore, researchers changed the environment to a more comfortable and warm place with water and woodland. In another study, some professional counselors stated that they used meditation and relaxation activities as part of counseling process (Witt, 2011).

## **2.2 Online Counseling**

Different terms have been used to denote counseling activities via Internet: online counseling, online therapy, e-therapy, cybertherapy, or telehealth. These terms are often used interchangeably, although each term suggested based on its unique type of activity and technology used to delivery the counseling service. Mallen and Vogel (2005) defined online counseling as “any delivery of mental and behavioral health services, including but not limited to therapy, consultation, and psychoeducation, by a licensed practitioner to a client in a non-FtF setting through distance communication technologies such as the telephone, asynchronous e-mail, synchronous chat, and videoconferencing.” (p. 764) This definition covers all forms of technology currently used as well as the new technologies that will emerge in the future (Mallen & Vogel, 2005). Similar definitions are suggested by other authors (Chester & Glass, 2006; Richards & Viganó, 2013; Rochlen, Zack, & Speyer, 2004), and the core of these definitions is that communication between counselor(s) and client(s) is facilitated over computer-mediated communication (CMC) technologies. In addition to the utilized form of CMC technology, online counseling can encompass various forms of therapeutic services. Therefore, it is an umbrella term used to cover when any type of CMC technologies, therapeutic services and group/individual interventions combined together.

Despite this major difference in definition of online counseling, its ultimate goal is the same as the traditional form of counseling; which is to diminish counselee’s anxiety,



stress and concerns that are experienced before the counseling (Richards, 2009). Mallen and colleagues (2005) expressed the goal of counseling as enhancing client's psychological strength and improve overall functioning. In addition to therapeutic needs, some clients need consultation about career, social skills, and other self-help related improvements; therefore, both face-to-face and online counseling's one objective is to provide effective and efficient psychoeducational support. This consistency between their goals create opportunity for counselors to consider two forms of counseling as valuable complements. This combination might allow both counselor and counselee to take advantage of each form's strengths in order to enhance counseling process. In their study, Chester and Glass (2006) revealed that a significant number of counselors had combined face-to-face and online counseling with some of their clients. Thus, it is essential for researchers to investigate strengths and weaknesses of each form of counseling and provide guidelines for practitioners.

In this section of the review, a brief chronological development of the online counseling, related previous research studies, unique characters and challenges of online counseling and potential of the future developments will be presented.

### **2.2.1 Development of Online Counseling**

In its early days, telephone and email were used as supplemental tools of face-to-face counseling for scheduling, crisis management, and short-term consultations that can be considered as predecessor of modern online counseling (Mallen, Vogel, Rochlen, et al., 2005). Evolution of the technology and its tremendous impact on communication made CMC technologies prevalent in the counseling practice and research. This trend has been affecting counselors' and clients' attitudes towards online counseling (Richards & Viganó, 2013) as communication over technology becoming indispensable in their daily life.

From its infancy to today, there have been many criticisms and oppositions against this form of counseling from professionals and laypeople (Barak et al., 2008; Rochlen et al., 2004). Some authors related these oppositions due to myths about online counseling rather than reality (Fenichel et al., 2002). Barak and colleagues (2008) categorized these critiques as: lack of face-to-face communication and contact, ethical

issues, legal issues, concerns about technical issues, and lack of counselor training to conduct online counseling. Even though some of these issues still exist, there has been many efforts by researchers and practitioners to address them. Barak et al. (2009) argued that, despite the criticisms, the growth trend of online counseling likely to continue as: Internet is becoming an indispensable tool for communication and socialization, hardware and software technology continues to improve, ethical guidelines are provided by many organizations, research in the field is growing, and online training opportunities are becoming available for professionals.

### **2.2.2 Affordances and Challenges of Online Counseling**

Online counseling has unique characteristics that have potential to be considered as affordances in appropriate situations. At the same time, these features might be considered as a challenge for effective counseling process. An extensive list of these benefits and challenges discussed by scholars in the field (Mallen, Vogel, Rochlen, et al., 2005; Rochlen et al., 2004). Higher degree of self-disclosure (Suler, 2004), increased accessibility (Mallen, Vogel, Rochlen, et al., 2005), convenience (Richards, 2009), cost-effectiveness (Colon & Stren, 2011), and opportunity of richer and accessible multimedia content (Mallen & Vogel, 2005) are some of the highlighted advantages. On the other hand, challenges include ethical issues (Richards & Viganó, 2013), privacy and security concerns (Young, 2005), lack of non-verbal cues, technical and logistical problems (Mallen, Vogel, Rochlen, et al., 2005), and counselor's deficiency of computer skills for online counseling skills (Fenichel et al., 2002). Although some of the challenges stem from the communication modality and technology used, some of them are due to the nature of distance between counselor and client. It is crucial for both researchers and practitioners to understand and investigate unique affordances and issues of this form of counseling. Therefore, in this section these features are discussed based on the previous research and implications for present study are discussed.

## **Affordances**

### *Self-disclosure*

The first and most prominent characteristic of online counseling is the higher level of self-disclosure (Mallen, Vogel, Rochlen, et al., 2005). One of the well known fact about the Internet is that people feel more free to act according to their inner feelings with less concerns about restraints and norms imposed in face-to-face communication. They reveal their thoughts, emotions, feelings and concerns more openly than in offline communication. The effect of online communication is defined with term “disinhibition effect” (Suler, 2004, 2005). As stated by Suler (2011), high level of self-disclosure “is double-edged sword” (p. 30). People do not just reveal positive feelings and kindness, but they also do bad things such as using rude language, insulting and threatening others, expressing hate and anger, and even organizing and promoting violence. This negative form disinhibition is denoted as *toxic disinhibition* (Suler, 2004).

Suler (2004) listed six factors that create the online disinhibition effect: dissociative anonymity, invisibility, asynchronicity, solipsistic introjection, dissociative imagination, and minimization of authority. Among these factors, asynchronicity and solipsistic introjection become evident in text-based asynchronous communication such as email and forums. Firstly, dissociative anonymity is one of the major factors that create disinhibition (Suler, 2004, 2011). When people’s identity is hidden, they are anonymous in the online environment and they can not be traced back. This anonymity allows a person to separate their ideas, background, race, ethnicity, life-style and emotions from their real identity. Further, it ensures person’s privacy which can make them feel safer to self-disclose. Previous research has presented evidences that anonymity facilitates self-disclosure in online counseling and considered a favorable factor by clients and counselors (Colon & Stren, 2011; Young, 2005). The second factor is invisibility; when people do not see each other they tend to feel more comfortable about self-disclosure as they do not need to worry about how they look like and how others look like (Suler, 2004). Although this factor partially overlaps with previous factor, the author asserts that invisibility leads disinhibition even when identity of person knows. Finally, minimization of authority in online communication

creates the disinhibition effect; fear of disapproval or punishment and concerns about authority's status give place to a more equal and democratic discourse (Suler, 2004).

Level of disinhibition and self-disclosure has vital implications for counseling process. Clients and counselors can establish a more honest relationship (Cook & Doyle, 2002) and become more expressive in their communication (Fenichel et al., 2002). As stated by Suler (2011) "disinhibition indicates an attempt to understand and explore oneself, to work through problems and find better ways of relating to others." (p. 31) Although research has shown higher level of self-disclosure in online, it is crucial to be cautious not take this for granted as this effect is not found consistently. Individual differences have an important impact on this effect as some personality types can be more close to self-disclose in online communication (Suler, 2004). Furthermore, Nguyen and colleagues (2012) revealed that relationship between parties, mode of communication and context of the interaction are the factors that affect the degree of disclosure.

#### *Accessibility*

One of the most featured and cited affordance of online counseling is the increased accessibility compared to face-to-face counseling (Layne & Hohenshil, 2005; National Board for Certified Counselors, 2007; Rochlen et al., 2004). There are many groups that need counseling services but unable to attend due to the limited resources, geographical constraints and personal disabilities. Counselors can provide services to geographically remote areas (Chester & Glass, 2006), rural and underserved areas where counseling services are not available (Colon & Stren, 2011), isolated groups (Griffiths, Lindenmeyer, Powell, Lowe, & Thorogood, 2006), and people with disabilities (Mallen, Vogel, Rochlen, et al., 2005; Rochlen et al., 2004). This affordance shows that online counseling research and practice can be beneficial for supporting psychological needs of disabled and underserved groups. In case of geographical distance, Fenichel et al. (2002) expressed that counseling with completely different cultures need special consideration.

#### *Convenience and Cost-Effectiveness*

The Internet allows people to connect each other from anywhere at anytime. Consultation usually requires special settings and a dedicated place where clients and

counselors meet. This requires transporting from one place to another and requires additional time in addition to main counseling activity. Especially for group counseling, the time of consultation is important as it should suit to all members' schedule and place of group sessions should be big enough to hold all members. Therefore, online counseling is more convenient compared to face-to-face form as people can participate in counseling session from their homes or any comfortable place they prefer (Colon & Stren, 2011). Secondly, online counseling is more flexible as counselor and clients can meet at any time agreed upon. Psychoeducational and other forms of self-help content can be available online at anytime. This form of counseling can be more convenient option for people who have required communication tools but does not have time for attending to face-to-face sessions (Mallen & Vogel, 2005). In another study conducted with college students, Richards (2009) found that the rate of counseling submission outside of the regular office hours were much higher. He further highlights that students' high rate of services usage outside of regular hours and on weekends indicates that students who cannot attend to regular office hours can easily benefits from online counseling. Finally, online counseling can be a more practical and cost-effective (Colon & Stren, 2011) method of delivery. Similarly, in their review of the literature, Griffiths and colleagues (2006) found that cost-effectiveness was one the significant reasons of delivering health care interventions in online as it can reduce healthcare cost, reduce waiting lists and reduce counselor's time.

#### *Multimedia Rich and Interactive Content*

Depending on the CMC technology used, online counseling can benefit from used technology to offer rich content for clients. Content can easily contain and linked to various online resources such as websites, blogs, video clips, pictures, documents, surveys etc. (Rochlen et al., 2004). Although similar resources can be provided in face-to-face meeting too, in online counseling rich content is integrated to the whole process and creates a richer context. Moreover, advances in technology allow counselors many possibilities to enrich their services with various multimedia content. For instance, virtual reality simulations and virtual worlds provide unique opportunity for creating interactive environments that individuals can experience and learn while interacting

with environment. When effectively designed, interactive content can be more interesting for clients and provide a more effective learning experience.

### *Visual Anonymity*

Although lack of visual cues considered as main limitation of online communication (Barak et al., 2008; Fenichel, 2011; Mallen & Vogel, 2005; Suler, 2011), clients can benefit from visual anonymity in online environment. Firstly, Suler (2004) argues that this characteristic is a benefit as it can contribute to disinhibition of clients. Visual anonymity allows people to feel safer and express themselves more freely due to the lack of cues indicating disapproval or judgment (Richards & Viganó, 2013). Another benefit is that lack of social markers such as race, ethnicity, physical condition and socioeconomic status can eliminate possible prejudice (Miller & Gergen, 1998). Finally, participants suffering from social anxiety, shame or stigma can benefit from visual anonymity of online communication (Suler, 2011)

### *Other Benefits*

In addition to the affordances discussed above, online counseling has some indirect benefits and benefits specific to the communication modality used. The first benefits is that online counseling can be primary step into the face-to-face counseling for clients who do not have prior experience or clients who feel uncomfortable, shy and stigma (Colon & Stren, 2011). This is especially important for the cultures that people visiting psychologist are seen as “problematic” persons. Therefore, online counseling can encourage clients and be a gateway for other forms of counseling. In previous study conducted with college students, 24% of the students attended to online counseling joined the face-to-face counseling in average of six months of finishing online counseling (Richards, 2009). Client autonomy is another benefit of online counseling for clients tend to rely extensively on the counselor (Fenichel et al., 2002). Person can feel less dependent on the counselor, make decisions by herself or himself and take responsibility for self-help. This benefits apply to certain personality types or certain interventions.

## **Challenges**

### *Lack of Non-verbal Cues*

One the most criticized characteristic of the online counseling is the absence of non-verbal cues. During the communication, mimics, gestures and voice cues are whether not available or not natural as face-to-face interaction. Communication with non-verbal cues can hinder the effectiveness of the therapeutic relationship (Mallen & Vogel, 2005). Previous research shows that absence of this factor is one of the most commonly stated limitation of online counseling (Barak et al., 2008; Witt, 2011). Lack of non-verbal communication affects therapeutic communication in couple ways. Firstly, for some individuals, it may limit expression of feelings and they may not able to express themselves without talking with somebody face-to-face. Another issues is that lack of the cues can cause ambiguity and inaccurate perception of the meaning in communication (Fenichel, 2011; Suler, 2011), which is likely to cause one of the parties feel that s/he was not understood. Finally, interaction is limited in terms of information exchange and it requires more time than face-to-face counseling (Mallen, Vogel, Rochlen, et al., 2005). Comparing the transcripts of online chat session and face-to-face session, Day and Schneider (2000) found that the number of words in face-to-face transcripts were three times more than words in online chats transcripts. In addition to significant difference between the number of words, qualitative analysis of the same study revealed that counselors in face-to-face session were more focused on the issues and were more likely to provide feedback.

Although this limitation is not present for some CMC tools, such as video conferencing, the distance between counselor and client does not provide same communication. Suler (2011) stressed this limitation and stated that “the lack of physical presence may reduce the sense of intimacy, trust, and commitment in the therapeutic relationship” (p. 26). Echoing this, Mallen and Vogel (2005) argued that the distance in online counseling limits the impact of person-environment interaction.

### *Technical Problems*

Technical problems are common in all form of technologies dues to failures in software, hardware or Internet connection. Such kind of problems are critical in

synchronous communication as suddenly disconnecting from session may cause client to feel abandoned, which can cause counselor to panic and interrupt the counseling process (Mallen, Vogel, Rochlen, et al., 2005). In group counseling environment, technical problems are paramount importance as any member's difficulty affects all members. Therefore, it is crucial that counselor be prepared to deal with unexpected situations and address concerns of disconnected members, concerns of remaining members, and possible effects on group's process (Page, 2004). While expressing the difference between leaving group in face-to-face environment and disconnecting from online group because of technical problems, Page (2004) states that "[w]hat differs between the two situations is that a member who is cut off from a group because of a technology issue did not make a conscious choice to leave the group" (p. 614), which raises ethical concerns. It should be noted that technical problems are more likely to occur while using new technologies. Thus, 3D VWs utilized in study expected to be less robust compared to other CMC tools as it requires higher hardware requirements in terms of computer performance and speed of Internet connection.

### *Suitability*

There is a growing body of literature indicating that online counseling is an effective method; however, the extend of appropriateness and effectiveness of online counseling still remains as debated topic among scholars in the field (Mallen, Vogel, Rochlen, et al., 2005). Practitioners also perceive that it is not appropriate for all problems (Ohio Psychological Association, 2009). Previous research revealed that although majority of the surveyed online counselors believed that this form of counseling was appropriate for interpersonal and social issues, they did not considered it suitable for serious issues such as suicidal thoughts, violence or substance abuse (Chester & Glass, 2006; Finn & Barak, 2010). On the contrary, Fenichel et al. (2002) considered this argument as a myth of online counseling and they argue that this medium can be effective to address most serious disorders and crisis interventions. Despite the on going arguments, it is not clear what kind of interventions are appropriate for online counseling due to limited empirical research (Richards & Viganó, 2013). The second factor that is argued for appropriateness is target population. Barak et al. (2008)'s review revealed that although all age groups benefited from this medium, individuals at age range of 19-39 benefited the most. Mallen and Vogel (2005) stated that there



are not enough empirical studies to answer the question of which population of clients benefit most from online counseling (Barnett, 2005) . Finally, individual factors are of great importance to decide if a client suits this form of counseling. Both clients and counselors need to have specific skills and characteristics to suit this form of counseling, and more importantly they should believe in its the therapeutic advantages (Fenichel et al., 2002).

### *Counselor Skills and Training*

Intervention process in online environment is quite different than face-to-face; therefore, a counselor need special training before delivering services online even if s/he experienced in face-to-face (Barak et al., 2009; Fenichel et al., 2002). In order to deliver an effective online intervention, Fenichel and colleagues (2002) provided a list of practical skills and emotional skills that counselors should have.

Most of the current literature shows that counselors support online counseling practices less than clients (Mallen, Vogel, Rochlen, et al., 2005). Although there is not enough evidences, one possible reason is the lack of training for this specific mode of counseling. Majority of counselors (94%) surveyed by Finn and Barak (2010) reported that they did not receive any particular training for online counseling. Most of them learned with personal efforts such as personal readings about this topic and getting help from their colleagues. Similar results were revealed by Chester and Glass (2006) and authors underline the fact that it is difficult to validate counselor's qualifications for delivering online counseling.

### *Ethical Issues*

Online counseling literature has addressed ethical concerns as one of the essential challenge of delivering counseling services over a distance using various technologies (Mallen, Vogel, & Rochlen, 2005; Richards & Viganó, 2013). Ethical concerns in face-to-face counseling are valid for online form and issues related to these concerns are multiplied when using technology (Rapin, 2004). Various ethical issues have been identified for online counseling (Abbott et al., 2008; American Psychological Association (APA), 2013; Chester & Glass, 2006; European Federation of Psychological Associates, 2001; Gorini et al., 2008; Mallen, Vogel, & Rochlen, 2005;

Page, 2004). The most common ethical issues are privacy, confidentiality, competency of counselor skills, client's capabilities and characteristics, identity of counselors and clients, technical failures, scope and appropriateness of the practice, and credentials. Some of these ethical issues are related to the online counseling challenges that are discussed in the previous sections, while others are related to technology used.

In order to facilitate the development of online counseling and ensure effectiveness of the practice many professional organizations (American Psychological Association (APA), 2013; European Federation of Psychological Associates, 2001; Ohio Psychological Association, 2009) have developed specific ethical guidelines. Furthermore, scholars in the field (Abbott et al., 2008; Kraus, 2011; Page, 2004) have discussed these issues and provided best-practices and guidelines for researcher and practitioners. In addition to the vast amount of available guidelines, development of technology and widespread of technology in our daily life help to eliminate some ethical issues. However, the fact that majority of counselors do not receive training about online counseling (Chester & Glass, 2006; Finn & Barak, 2010) highlights the importance these issues and requires special consideration.

### **2.3 Psychoeducational Group Counseling**

According to report published by World Health Organization (1999, para. 1), "Life skills education is designed to facilitate the practice and reinforcement of psychological skills in a culturally and developmentally appropriate way; it contributes to the promotion of personal and social development, the prevention of health and social problems, and the protection of human rights." Life-skills education and various other forms of support have emerged in schools and universities to meet need of students' academic, personal and social problems. Counseling is not only focuses on the treatment of psychological disorders, but also provide services for academic issues, career counseling, prevention, and wellness (Mallen & Vogel, 2005). As highlighted by Mallen and colleagues (2005), psychoeducation, consultation and wellness promotion are the core components of counseling which boost awareness and helps clients to make responsible decisions. A broad spectrum of topics fall under the psychoeducational counseling as there is a wide range of problems addressed, intended audiences can vary from children to old adults, and settings of counseling can be a

school, university, hospital, company or a community agency. Some of the topics for psychoeducational groups are; procrastination, stress management, depression prevention and management, substance abuse, eating disorders, self-esteem, loneliness, shyness, grief, communication skills, and career development.

Despite this vast variety of practices in psychoeducational group counseling, they have a common denominator; they “have a significant educational component in addition to the psychological component” (Brown, 2004, p. 5), their primary goal is to educate clients about a psychological concept or topic (Gladding, 2004), and they help clients to develop skills in order to cope with an array of academic and life problems (Corey, 2012). “Psychoeducational groups serve a number of purposes: imparting information, sharing common experiences, teaching people how to solve problems, offering support, and helping people learn how to create their own support systems outside of the group setting” (Corey, 2012, p. 8). This type of group utilizes various activities to teach specific skills or coping strategies. In order to better understand psychoeducational groups, it is essential to analyze unique characteristics of group counseling and highlight the differences between various group types. Thus, in this section, benefits and challenges of counseling in group settings will be discussed, after that, characteristics and essential components of psychoeducational groups will be presented.

### **2.3.1 Group Counseling**

Groups are part of our daily life in many settings. People naturally tend to form groups in order to share information, learn from others and find support from other members. The value and benefits of groups are to connect people and increase productivity making them popular education, business, and healthcare. It is clear that groups are very effective tools in the field of counseling as well (Gladding, 2004). Corey (2012) defined the aim and extend of group counseling as;

“Group counseling has preventive as well as remedial aims. Generally, the counseling group has a specific focus, which may be educational, career, social, or personal. Group work emphasizes interpersonal communication of conscious thoughts, feelings, and behavior within a here-and-now time frame. Counseling groups are often problem oriented, and the members largely determine their content and aims. Group members typically do not require extensive personality reconstruction, and their concerns generally relate to the developmental tasks of the life span. Group counseling tends to be growth oriented in that the emphasis is on discovering internal resources of strength” (p. 4).

The Association for Specialists in Group Work Professional (2000) categories group counseling types, based on their goals and process, under four types: task/work groups, guidance/psychoeducational groups, counseling groups, and psychotherapy/personality groups. Similarly, Corey (2012) and Gladding (2004) categorized various types of groups. These types of groups have common characteristics in terms of their procedures, techniques and process; however, they diverge regarding group’s aim, role of counselor, target population and level of intervention (i.e. treatment, remedial, prevention, self-help) (Corey, 2012). “Groups, like people, have personalities of their own that must be understood if they are to be properly utilized” (Gladding, 2004, p. 15).

As stated by Yalom and Leszcz (2005, p. 1), a vast amount of research demonstrated that group counseling is at least as effective as individual form in terms of outcome effectiveness. Supporting this statement, Corey (2012) argued that counseling practice should not be limited to individual counseling because group counseling is frequently more effective than individual counseling and it provides promising benefits for today’s challenges; it is cost and resource effective as practitioners can work with many clients at the same time, it has unique learning affordances, and groups environment has natural therapeutic benefits for coping with problems. Moreover, Gladding (2004) highlighted benefits of group counseling as promoting; effectiveness in accomplishing new skills, group cohesiveness, and social connectedness. In groups, members not only learn from the presented information, but also they learn from each other’s experiences, benefit from other member’s feedbacks, and model others for overcoming the problems. The connection and interaction among group members and group leader(s) produce sense of hope, optimism, and togetherness.

These unique factors that enhance group counseling have been organized and termed as therapeutic factors (Yalom & Leszcz, 2005). Although various other terms (such as curative factors, helping factors, positive group factors, positive group factors) have been used by other scholars, their common ground is that these factors enhance group's effectiveness (Brown, 2004). Some of these factors are (Yalom & Leszcz, 2005; Brown, 2004);

- *Universality*: After hearing group members or leader(s), they realize that there are people with similar problems and concerns like to their own. "This reduces the feelings of isolation and alienation."
- *Hope and Optimism*: Group leader can establish hope and optimism in the group which can increase the effectiveness of the group outcome. Also, the sense of hope can arise seeing that other group members coping with the problem.
- *Altruism*: Group members offer help, suggestions and insight to each other without any expectations in return. This unselfish help change the person who offered the help and make them feel productive and responsible (Gladding, 2004, p. 8).
- *Interpersonal Learning*: Sharing knowledge and providing feedback to each other allows group members to learn from their peers and see various perspectives.
- *Social Learning*: Members learn in a social environment with various activities. This social environment allows them to learn new social skills and practice them. Also, members do not feel isolated or lonely during the counseling.
- *Modeling*: Group members can have role models and imitate their solutions to the common problem. Group leader has important responsibility as a role model for group members.
- *Catharsis*: Expressions of suppressed or denied emotions is critical for relief. This emotional openness linked to hope, self-understanding and ability to cope with problems. Members can express negative and positive feelings toward members or group leader.

- *Group Cohesiveness*: Group cohesiveness is similar to the relationship between counselor and client in individual counseling; it is established when members feel as part of group and feel that they are accepted by the group. When trust between group members established, they tend disclose more, care about each other and provide more feedback.
- *Existential factors*: Communication in groups can help members to realize about some difficulties that everyone faces at various times in life and about immortality. This realization can help them to feel stronger instead of feeling isolated and weak.

As noted by Yalom and Leszcz (2005) the difference between these factors is arbitrary as they are interrelated and depend on each other. Existence and level of these factors varies based on type of group, populations, intervention method and group setting (DeLucia-Waack, 2011). For instance, the level of catharsis in psychoeducational groups expected to be lower than therapy groups. Brown (2004, p. 80) stated that although all of these factors can appear in a psychoeducational group, the factors that most likely to emerge are universality, altruism, modeling and guidance.

There are some myths that pull back counselors from considering group counseling in their practices. Gladding (2004) addressed some of myths and presented his counter arguments. He argued that groups can be effective for addressing current and past problems, group members do not need to be completely open and honest all the time, group does not force its participants to loose their identity, and groups are not artificial formations.

Despite the long list of advantages of group counseling, there are some limitations need to be addressed. Gladding (2004) lists some of the drawbacks as follow;

1. Not every group member benefits from the group.
2. Composition of group and each person's appropriateness for participating in the group is paramount importance. In the same vein, groups are not appropriate for providing support for some issues.
3. Confidentiality in the group can be difficult to established.

4. *Defusion of individual responsibility* can occur which means some members may not feel responsible for their behaviors.
5. Group leaders need to have appropriate training and skills to lead the group. Furthermore, their personal characteristics are vital for effective group leadership.

### **2.3.2 Characteristics and Structure of Psychoeducational Groups**

The characteristics and structure of each type of group differentiate it from other forms. DeLucia-Waack (2011) stressed the importance of drawing outline of each group type due to the fact that most people view groups as therapy groups and they generally have negative perception; they may feel fear of being labeled as “problematic”. The author further pointed out that it is crucial to explain the description and purpose of psychoeducational groups in schools so that people do not feel intimidated and increase the number of students to receiving support.

#### **Psychoeducational Group vs. Counseling Groups**

DeLucia-Waack (2011) differentiated psychoeducational groups from counseling and therapy groups based several aspects: (1) they have more specific goals about development of behaviors or skills; (2) they are more structured; (3) they focus on the preselected content and activities; (4) they are shorter in terms of both the intervention period and session length; (5) role of leader is to teach, guide members during the activities and provide feedback. A similar distinction was made by Brown (2004, p. 5) as she highlighted the educational aspect of psychoeducational groups and states that cognitive component of such groups is more dominant than affective component. She defined psychoeducational groups as “a hybrid of an academic class and a counseling group, and have many characteristics of each.” (Brown, 2004, p. 5) The cognitive aspects is similar to academic class as leader present information and use various activities to teach skills or increase their awareness about a specific topic. The affective component represents the interaction among members, emotional state of members and self-disclosure. Finally, the therapeutic factors (Yalom & Leszcz, 2005) available in psychoeducational group are different than counseling groups as the factors related

to cognitive aspects such as vicarious learning, guidance, self-understanding and interpersonal learning are more likely to be observed (DeLucia-Waack, 2011, p. 13).

### **Planning and Conducting Psychoeducational Groups**

The fact that psychoeducational groups are more structured makes the planning and organization of group critical for effective group intervention. Therefore, DeLucia-Waack (2011) and Brown (2004) listed a number of parameters that need to be defined prior to group;

- *Need assessment:* Collect information about the problem and expectations of the target population. Potential group members can provide valuable information that can be used as input for organizing content and activities.
- *Group goals:* Group leader need to define group's goal and use it as guideline for member selection, content and activities.
- *Group size and demographics:* Group leader need to define the size of group and its composition in order to create a balanced environment in respect to age and gender.
- *Intervention period and session length:* The intervention period and session length helps leader to create a schedule of the group intervention.
- *Instructional Strategies:* Based on the goals and participants' characteristics, learning strategies need to be defined. Brown (2004) expressed that for psychoeducational groups instructional methods that encourage members to be active (such as discussions, role-playing and games) should be preferred.

Brown (2004) argued that psychoeducational groups have some common dynamics that drive the group process. These variables include level of participation, resistance, communication patterns, relationships, non-verbal behaviors, feeling tone, and aroused/expressed feelings. These variables are not static, rather they are dynamic and changing throughout the group routine. Brown (2004) divided the routine of a typical psychoeducational group into four different stages and highlights each stage's characteristics based on the group dynamics;



*Stage 1 - Beginning Stage:* Participants feel anticipation, excitement and confusion. Their level of disclosure is very low, they look for similarities with other members, and they expect to be included in the group. Moreover, they search for the meaning of the group in terms of its goal and potential to address their problem.

*Stage 2 - Conflict and Controversy:* In this stage group members have conflicts between each other and with group leader. Negative comments, criticism and judgments are dominant in this stage, which requires group leader to be careful not to be defensive or retaliate.

*Stage 3 - Working:* Exactly opposite of the previous stage, in this stage group cohesiveness starts to merge and cooperation is dominant. Level of trust and self-disclosure increase and intimacy develops. Furthermore, sub-groups among members may emerge.

*Stage 4 - Termination:* This stage is emotionally intense due to ending of the group and separation from social environment. Depending on the achievement level of individual goals and satisfaction level, members may resist to end the group process or leave with feeling of uncompleted process. Also, emotional bond between group members and leaders, fear of dealing with problems individually and feeling of incomplete learning can be barriers of terminating the group (Gladding, 2004).

Similar to phases occurring in overall group routine, there are some typical phases for group sessions. Unlike counseling groups, psychoeducational group sessions are structured and commonly have four main phases (DeLucia-Waack, 2011);

*Opening Phase:* In this phase, previous session's topic and homework activities are discussed. Also, group leader presents new topic for the session.

*Working Phase:* This part of the session aims to present necessary information about session's topic and to discuss building skills.

*Processing Phase:* Processing is "an activity in which individuals and groups regularly examine and reflect upon their behavior in order to extract meaning, integrate the resulting knowledge, and thereby improve functioning and outcome." (Ward & Litchy,

2004, p. 104). This phase has great impact on members as it provides opportunity for them to reflect their personal ideas and individual experiences on the session's topic. Various collaborative group activities such as role-playing can be utilized to help members exercise new skills and transfer them to real life situations.

*Closing Phase:* Group leader summarizes the session and gives belief information about next session's topic.

An essential component of psychoeducational groups that distinguishes it from other groups are the techniques and activities used. Activities are integrated into the group process in order to promote active participation of members, enhance the learning of presented information and help personalized learning (Brown, 2004). In addition to these advantages, Gladding (2004) presented further advantages of using activities in group counseling such as making concepts concrete, learning in experiential form, increasing the awareness, and accelerating the group process.

While choosing an activity, group leaders need to consider the characteristics of target population, at what stage the activity will be used, and how to implement the activity (Gladding, 2004). DeLucia-Waack (2011) discussed that activities should be chosen to overcome obstacles at specific phases of the group intervention. Based on three main stages she argued that "[i]nitial-stage activities should focus on building trust and introducing members to the group and to each other. Working-stage activities should focus on assisting members to self-disclose, become involved in the process of group, and learn new behavioral and thought patterns to meet group goals. Ending activities focus on assisting the members in termination and bringing what they have learned to use once the group has ended." (p. 31)

## **2.4 Procrastination and Psychoeducational Groups**

Procrastination is a self-defeating habit that cause difficulties in personal and career life. In the literature, various definitions of procrastination have been suggested. Lay (1986) simply defined procrastination is an irrational tendency to delay important tasks. Highlighting the psychological aspect, Solomon and Rothblum (1984) defined it as "the act of needlessly delaying tasks to the point of experiencing subjective discomfort" (p. 503). These definitions and findings in the literature suggested that

procrastination is not a habit just caused from lack of time management skills, rather, it is a complex phenomenon that involves cognitive, affective and behavioral components (Ferrari, 1994).

It is important to underline that not all forms of postponements are problematic. Ferrari (1994) categorized delaying of tasks as functional procrastination and dysfunctional procrastination. Functional procrastination is occasional intentional postponements of tasks for prioritizing or waiting for additional information, which might even maximize the success of completing a task; however, dysfunctional procrastination is chronic habit of putting off important tasks (Ferrari, 1994). A similar perspective was suggested by Chu and Choi (2005); they used term “active procrastination” for intentional task delaying decisions which are based on strong motivation to achieve success under time pressure.

There are various forms of procrastination depending on tasks putted off; academic procrastination, work related procrastination and life routine procrastination are some of the common forms. Although procrastination is common among all demographics, this habit has serious consequences for university students (Chu & Choi, 2005). Research findings have shown that academic procrastination is very common among college students (Clark & Hill, 1994; Solomon & Rothblum, 1984; Steel, 2007; Uzun Ozer, Demir, & Ferrari, 2009). High rate of procrastination among college students not only causing the low grades but also causing the high level of stress and low self-rated mental health (Tice & Baumeister, 1997). Moreover, in another study it was reported that procrastinator students had less confidence in terms of self-regulation of learning (Klassen, Krawchuk, & Rajani, 2008).

Research findings have reported a wide range of factors which are related to the procrastination. Self-efficacy (Ferrari, Parker, & Ware, 1992; Tuckman, 1991), irrational beliefs (Burka & Yuen, 1983; Senecal, Julien, & Guay, 2003), self-esteem (Burka & Yuen, 1983), self-regulation (Ferrari & Tice, 2000; Knaus, 2001), motivation (Brownlow & Reasinger, 2000) are some of the identified factors. In addition, some studies focused on the factors specific to academic procrastination. Research findings reported a number of factors including academic self-efficacy (Klassen & Kuzucu, 2009), evaluation anxiety (Solomon & Rothblum, 1984),

rebellion against control (Uzun Özer, Saçkes, & Tuckman, 2013), self-regulation (Digdon & Howell, 2008), perfectionism (Burka & Yuen, 1983), and locus of control (Deniz, Traş, & Aydoğan, 2009).

Various forms interventions have been suggested to deal with procrastination. Among them, group treatment was suggested for academic procrastination (Walker, 2004), as group environment has many benefits (Corey, 2012). In her study, Kutlesa (1998) investigated the effects of psychoeducational group on procrastination behavior. Although Kutlesa (1998) did not find a significant difference between pre-test and post-test scores, follow-up interviews showed that participants experienced major cognitive, affective, and behavioral changes. In another more recent study, Uzun Ozer, Demir, and Ferrari (2013) assessed the effectiveness of group counseling program on university students' academic procrastination tendency. They found a significant decrease in participants procrastination scores. Furthermore, Uzun Ozer and colleagues (2013) reported that most of the students participated in the group process expressed cognitive and emotional outcomes such as increased self-awareness, decreased perfectionism, decreased anxiety, ability to cope with irrational beliefs and awareness of time management techniques. These findings indicate that group counseling process can be an effective form of intervention for college students, especially for cognitive and emotional outcomes.

## **2.5 Research Related to Counseling in Virtual Worlds**

Various technologies and communication modalities have been used in online counseling and there is relatively extensive research about the benefits and limitations of these technologies. In the previous sections of this chapter, related studies were discussed in terms of both used CMC technology and provided counseling service. 3D VWs is another innovative technology that getting attention from researchers and professionals (Gorini et al., 2008). Development of 3D VWs and their increasing popularity make counseling with avatars a viable method of delivering services and create opportunity for new interventions and new form of interacting with clients (Zack, 2011). Counseling in 3D VWs is similar to synchronous forms on online counseling in many aspect, such as ability to communicate with text or audio, increased access for all parties and visual anonymity of clients. In addition to

affordances inherited from other modes of communication, 3D VWs is promising technology that can offer more advanced types of counseling due to its unique features. According to Morie and colleagues (2012), 3D VWs has three powerful affordances that can be used as leverage for enhancing counseling practice. These are highly social nature of the environment, building spaces that can promote psychological health and well-being, and representation as avatar which can affect behavior and emotions of clients. Similar effects were discussed by Witt (2011) and he further added that this medium offers enormous therapeutic benefits for clients feeling comfortable in the environment, and it provides opportunity to deliver various types of counseling online such as art therapy and play therapy. In the same vein, other researchers claimed that 3D VWs have extended sense of presence, sense of social presence, personalized immersive experience, and real-time feedback compared to other conventional online counseling mediums such as email, chat, and videoconference (Gorini et al., 2008).

An early example of using virtual environments for counseling is “The Place” synchronous virtual support group (Page et al., 2000). This software was developed to create a virtual group environment where members can communicate via synchronous text-based chat. The goal of this virtual room was to address the issues in conventional synchronous online support groups such as loss of visual cues, slow interaction and isolated group members (Page et al., 2000). Although “The Place” is a primitive form of virtual counseling, it has some features that are used in modern 3D VWs as well. For instance, group members were represented by avatars and users could change their proximity relative to other members. Page and colleagues (2000) discussed the results and concluded that avatar representation in virtual environment provided more personal experience, identity of members were known, members could reflect their mood with different costumes; members could build effective group connections instead of feeling isolated; members’ ability to change their proximity to other members allowed them to express their comfort level. In another study, Page (2004) compared this virtual group process with face-to-face groups and pointed out to the technology’s effect; members’ computer skill competency affected the participation and technical problems caused critical incidents in group process. Furthermore, in the same study, he compared this virtual group with another study that used audio only communication and highlighted that participants were satisfied in both groups,

technological issues were major concerns in both groups, and interactive group was more effective in terms of flow and process of the group.

In a previous ethnography research, Witt (2011) aimed to explore the perceptions of counselors who provide online counseling services in SecondLife. In the study, interviews were conducted with five professional counselors and four main themes were emerged. As the discussed by author, the first theme revealed that immersive environment of virtual world has potential for therapeutic interventions such as creating comfortable and relaxing environments through visual design and sounds. The second emerged theme was conditions for success, as Witt (2011) stated, this theme consisted three sub themes: expansion of opportunities for clients and counselors, counselor characteristics and skills, and client characteristics. It was highlighted that counseling in virtual world inherited many characteristics of other forms of online counseling such as increased self-disclosure, convenience, accessibility and cost-effectiveness (Witt, 2011). The third and the most comprehensive theme was the practice of counseling in virtual worlds which had sub themes related to avatar appearance, communication and relationship between counselor and clients, technical issues, and ethical considerations. As discussed by Witt (2011), the findings of the study were consisted with the online counseling literature in terms of benefits and challenges of this form of counseling. This ethnographic study uncovers some invaluable insights about professional counseling in virtual worlds from practitioners' perspective. However, he outlined some limitations. For example, findings about clients are based on counselors' perspective and there was no information about the process of counseling. Moreover, there was no information about clients such their demographics and whether group or individual counseling they attended.

Another area that needs special attention for using 3D VWs in counseling field is the counselor training. Walker (2009) integrated SecondLife, a popular 3D virtual world, to a graduate level course in order to teach clinical counseling skills and techniques. SecondLife was preferred as substitute of chat and video conference as it allowed educator to create an environment where she could present information, and students could discuss, practice skills with role-playing activities and receive feedback and instructor

feedback (Walker, 2009). Even though results of this study were descriptive based on personal reflection of author's experience, some interesting anecdotes were presented. Based on students' reactions; (1) students considered the simulated environment for counseling and practicing inside it as the most beneficial feature; (2) ability of navigating with an avatar and role-playing with avatar was making this environment superior of video conferencing tools; (3) technical issues about computer performance and Internet connection was considered as most difficult part of the experience (Walker, 2009). As argued by the author too, interactive 3D environments can offer unique benefits for educators to simulate counseling environment where students can practice counseling skills and techniques with role-playing. However, available research investigating the effectiveness of counselor training in 3D VWs is very limited and need special attention for further research.

## **2.6 Chapter Summary and Research Gaps**

The review of the literature in this chapter shows that various technologies and communication modalities have been used in online counseling. Although benefits and limitations of some CMC technologies are investigated, there is limited studies researching affordances and challenges of 3D VWs and their effect on the psychoeducational group process. Page (2004) highlighted that little is known about online groups utilizing emerging technologies and available studies primarily focus on the text-based mediums. Similarly, DeLucia-Waack (2011) expressed the need of research in terms of online psychoeducational groups. Mallen and Vogel (2005) and Richards and Viganó (2013) noted the need of research to answers questions about effectiveness of online counseling whether it can accommodate the lack non-verbal cues and distance between client and counselor. In terms of sense of presence, Holmes and Foster (2012) note the research gap for understanding and its implications for online counseling. Lastly, Witt (2011) explored the perceptions of counselors who provide online counseling services in 3D VWs and he underlines some important research gaps. Witt (2011) urged the need of further studies to explore the client perspective and the need of determining the strategies of increasing the effectiveness counseling. To sum up, previous studies have identified various gaps and this study aim to address them.





## **CHAPTER 3**

### **METHODOLOGY**

In this chapter the aim is to present a detailed description of the overall research design employed in this study. In addition to the overall skeleton, it presents procedures and strategies that were followed at different stages of the study that guided researcher and used as reference while making critical decisions. Firstly, employed research methodology and its rationale are discussed. Then, design and development phases of the used program and virtual environment are described. Next, pilot study's process and its results are discussed. Finally, participant selection procedures, instruments, data collection procedures, data analysis process and trustworthiness of the study are described.

#### **3.1 Research Questions**

The main aim of this study was to explore psychoeducational group counseling process in 3D virtual worlds and identify the similarities and differences between face-to-face setting. The purposes of current study were; to explore affordances and challenges of 3D VWs for psychoeducational groups, to describe how features of 3D VWs are perceived by participants, to explore psychoeducational groups process and outcomes in 3D VWs and understand how it differs from face-to-face, and to identify effective instructional strategies for psychoeducational groups. In order to achieve these purposes, multiple case study methodology was utilized. Two procrastination psychoeducational groups were organized and multiple forms of evidences were collected from group members and group leaders.

Based on the purpose of this study, the following main and sub research questions were investigated in this study:

What is the process throughout the psychoeducational group counseling for group counseling leaders and group members in 3D virtual world and how it differs from face-to-face groups?

This broad research question is elaborated with following research questions;

1. What are the perceived *affordances and challenges of 3D VWs* for psychoeducational groups?
  - 1.1. What are the affordances perceived by group members and how do these factors differ in face-to-face group?
  - 1.2. What are the challenges perceived by group members and how do these factors differ in face-to-face group?
  - 1.3. How would counselors describe the affordances and challenges of 3D VWs based on their experiences in 3D group and face-to-face group?
2. How do the *unique characteristics of 3D VWs* influence the psychoeducational groups?
  - 2.1. How do group members perceive 3D environment in terms of user interface, communication tools and environment design?
  - 2.2. How do group members perceive anonymous identity and how it affects the psychoeducational group counseling in 3D VWs?
  - 2.3. How do group members perceive avatar representation and how it affects the psychoeducational group counseling in 3D VWs?
  - 2.4. How does presence influence the psychoeducational group counseling in 3D VWs? What are the factors affecting the sense of presence?
3. What are the similarities and differences between 3D group and face-to-face group in terms of *self-disclosure and factors affecting self-disclosure*?
4. What are the similarities and differences between 3D group and face-to-face group in terms of *group outcomes*?

5. What are the *instructional strategies* for successful delivery of psychoeducational groups in 3D VWs from the perspective of counselors and group members?
6. What are the factors affecting the *motivation* of group members in 3D VWs and how do these factors differ from face-to-face group?
7. What are the factors affecting the *satisfaction* of group members in 3D VWs and how do these factors differ from face-to-face group?

### **3.2 Research Methodology**

In this study, qualitative research methodology guided the research process and it was considered as reference by research for making critical decisions. Qualitative research is an umbrella term that is used for variety of interpretive research methods. Unique characteristics of qualitative inquiry highlighted by scholars (Merriam, 2009; Miles & Huberman, 1994; Patton, 2002; Yıldırım & Şimşek, 2013) are as follow: it focuses on the process to discover and understand meaning; it is conducted in real context; researcher is an instrument with his/her personal and active role that often requires interpretations based on personal view and experiences; research process is inductive; and findings are rich in details and present a holistic view of complex interrelationships of the investigated phenomenon. Qualitative research study is developed around the “central phenomenon” (Creswell, 2012, p. 16) which is a key idea, concept or process aimed to be explored. Researchers prefer to employ this methodology when the aim is to understand people’s perceptions about their experiences and how they make sense and construct meaning in a specific context (Merriam, 2009; Stake, 2010). This process of qualitative inquiry does not include any manipulation as every individual and context is important for researcher in its naturalistic form (Yıldırım & Şimşek, 2013). Furthermore, unlike the structured process of quantitative methodology, the process is flexible and active as some aspects of qualitative study emerge during the study.

Based on the characteristics aforementioned and discussed, qualitative methodology was found to be the most appropriate research methodology for the current study. Firstly, qualitative research is appropriate methodology to investigate and understand a complex phenomenon at its natural context. Investigating the process of

psychoeducational group counseling process in 3D VWs and face-to-face without any manipulation could be best investigated with qualitative inquiry. Secondly, qualitative inquiry is the appropriate method when investigated research problem does not have clear variables and need exploration of the studied phenomenon (Creswell, 2007). The fact that there is limited research about this phenomenon indicates that clients' and counselors' perceptions towards 3D virtual environments could be best explored with inductive approach (Yıldırım & Şimşek, 2013) of qualitative methodology. Finally, data collection and data analysis process in this study fitted the process of qualitative research: qualitative data collection instruments such as interviews and observations were the primary data sources for this investigation; and inductive approach guided the data analysis.

### **Case Study**

Case study's philosophical underpinnings grounded on constructivist paradigm which recognize multiple realities that are subjective and linked to individual and social context (Baxter & Jack, 2008). Creswell (2007) defines case study method as "a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information ..., and reports a case description and case-based themes" (p. 73). Case study has been commonly used in education, psychology, sociology, public health, and business in order to understand a phenomenon related to an individual, community, organization, process or event. The reason of preferring case study is clearly explained by Gerring (2007): "[w]e gain better understanding of the whole by focusing on a key part" (p. 1). Another reason can be the method's style which examines a case in its natural setting. This is especially appropriate to study people in real-life situations, understand the complex activities and illuminate how they construct the meaning in the context (Gillham, 2000; Merriam, 2009).

Being one of the most common type of qualitative research (Yıldırım & Şimşek, 2013), case-study shares all characteristics of qualitative research methods such as in-depth investigation to understand a phenomenon, researcher's active role in interpretation, inductive approach of analysis, multiple forms of data collection strategies and rich description of the findings (Merriam, 2009). Since all cases inherently different from

each other, the goal of researcher is not to generalize the results, instead the aim is to present description of the process and experiences in order to help readers understand the case or transfer findings to similar cases (Yıldırım & Şimşek, 2013). In addition to characteristics inherited from qualitative methodology, case study has some unique characteristics that differentiate it from other forms. Firstly, the investigation involves analyzing an in-depth description of a bounded system, a case. As defined by Stake (1995) and Miles and Huberman (1994), a case is a specific and functioning phenomenon in a bounded context. It is the unity of analysis in case study research. A case can be an individual, a group, an organization, a service or an educational program. The second unique feature is that researcher can explore one or more cases in the same study depending on the research design. Researcher can analyze cases separately and incorporate comparison of multiple cases for a deeper understanding and enhancing the credibility of findings. Lastly, multiple forms of evidences are collected that can include both quantitative and qualitative data (Gibson & Brown, 2009).

The research design for this qualitative study will be a case study due to the nature of research questions and context of the study. Firstly, this study requires in-depth investigation of the psychoeducational group members and counselors in both 3D virtual environment and face-to-face environment in order to reflect their experiences from their own views. Furthermore, researcher will investigate phenomenon in its natural setting without manipulating participants' behaviors. Finally, exploration of experiences of both clients and counselors in psychoeducational counseling in study is dependent on the virtual environment. There are not clear boundaries between the context of this study, which is 3D virtual environment, and psychoeducational counseling.

### **Multiple-Case Study**

When the number of cases in a case study is more than one, it is referred as multiple-case study (or multisite study or comparative case study). The most important characteristic of this type is the researcher's ability to investigate particular phenomenon in different settings and compare their results for similarities and differences (Mills, Wiebe, & Durepos, 2010a). The need of multiple-cases is clearly

stated by Stake (2005) “we cannot understand a given case without knowing about other cases” (p. 444). Yin (2009) recommends investigating multiple cases instead of a single case when enough resources available. After taking available resources into consideration, two cases were investigated in this study. The first case was 3D psychoeducational counseling group and the second was face-to-face psychoeducational counseling group.

Inclusion of multiple cases in a study has some advantages. Data collected from cases can be analyzed to understand context of each case and illuminate the similarities and differences between cases. Yin (2009) states that multiple cases used either for “(a) predicts similar results (a literal replication) or (b) predicts contrasting results but for anticipatable reasons (a theoretical replication)” (p. 47). In this study, the rationale of selecting multiple-case study was mainly due to ability of cross-case analysis and enhanced credibility of findings. Firstly, two counseling groups were analyzed to examine cases indecently and also compare their similarities and differences. One case’s unique characteristics can be illuminated and interpreted more effectively only when compared with with a similar case of different context (Mills et al., 2010a; Stake, 1995). Cross-case analysis may reveal interesting findings that can help researcher to solve complex relationships, make sense of puzzling findings and reach detailed interpretations. For instance, in this study, cross-case analysis of groups can help research to reveal whether a discovered concept is caused by 3D environment’s affordances/limitations or not. The second reason of investigating multiple cases instead of one case was to enhance the credibility of the study in general. A study’s findings are more compelling in multiple-case studies as within-case and between-case analysis enhances the credibility, generalizability and robustness of findings (Baxter & Jack, 2008; Merriam, 2009; Miles & Huberman, 1994). Miles and Huberman (1994) explain robustness in multiple-case study as “if a finding holds in one setting and, given its profile, also holds in a comparable setting but does not in a contrasting case, the finding is more robust” (p. 29)

### **3.3 Research Context**

This study was conducted in Middle East Technical University (METU) which is one of the largest universities in Turkey. It has more than 26,000 graduate and

undergraduate students. There are five faculties in METU including 40 undergraduate and more than 100 graduate programs with around 26,000 graduate and undergraduate students. METU also hosts many international students along with Turkish students.

In METU, there are two main units that provide counseling services. The first unit is the Psychological Counseling and Guidance Service (PCGS) operating as a sub-unit of the METU Medical Center. PCGS provides both individual and group counseling services in order to help mental, emotional and social development of students and staff of the university (“METU PCGC,” 2015). The second unit is the Learning and Student Development Office (LSD). LSD’s aim is to provide services that support academic, social and development of students and faculty members (“METU LSD,” 2015). Furthermore, LSD conducts research to identify needs of students and faculty in their academic development and improve learning environment.

LSD was considered an ideal place for developing research as “university and college counseling centers are an ideal place to begin research on the effectiveness of online counseling, as well as psychoeducation, self-help, and mutual help.” (Mallen, 2005, p. 914) Moreover, LSD was consider as center’s management and counselors were willing to collaborate as stakeholder of this study. The fact that 3D virtual counseling environment for this study was a new environment it required extensive effort of counselors to develop a counseling program. Therefore, LSD’s cooperation was important to reach students for participating this study and to use unit’s resources.

### **3.4 Research Study Overview**

General overview of this study is illustrated in Figure 3.1. This figure presents a chronological framework for the stages of the study. Further details of each stage are discussed in the following sections of this chapter.

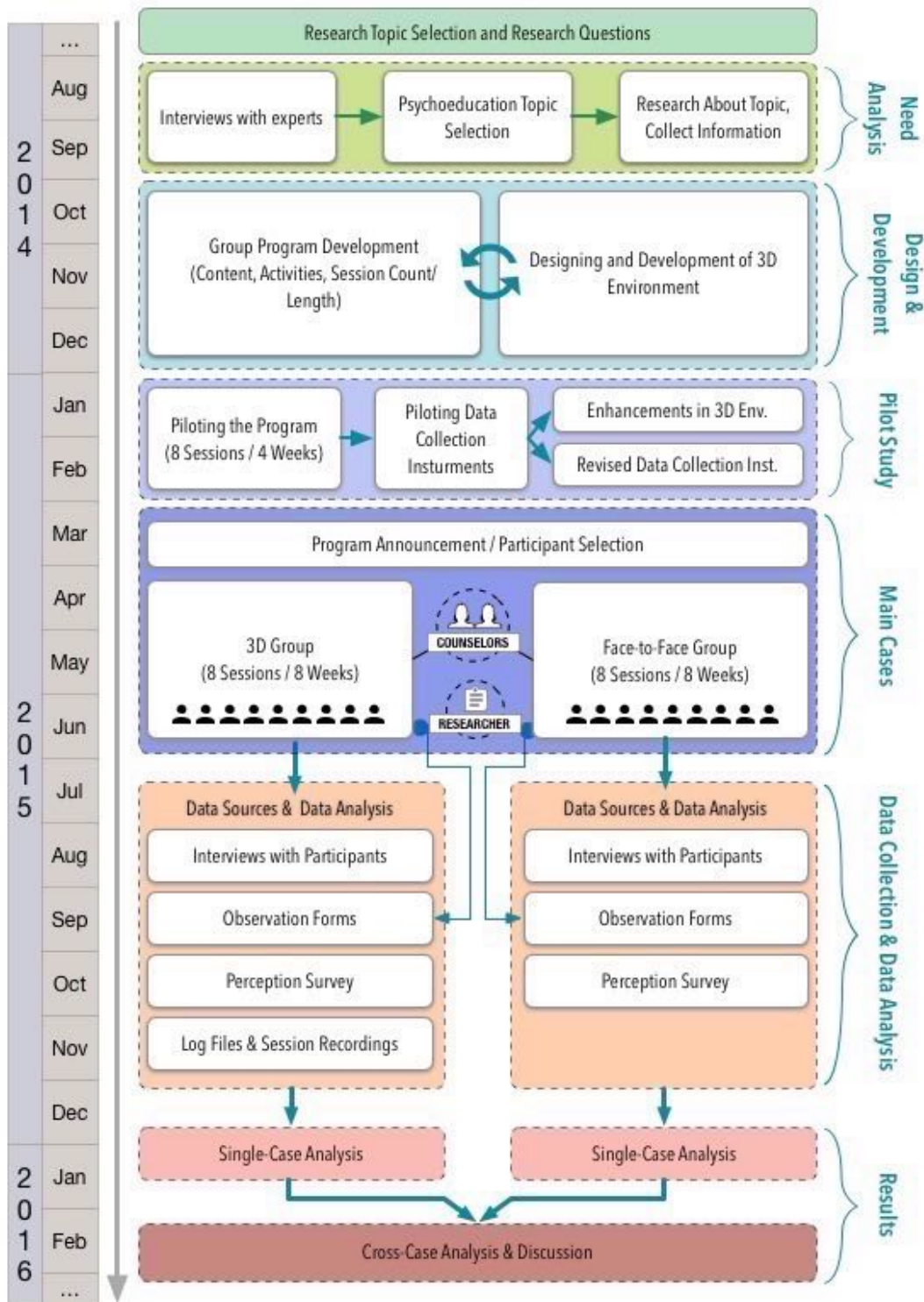


Figure 3.1 – Chronological overview of the study



### **3.5 Psychoeducational Group for Procrastination**

Psychoeducational group for procrastination was organized based on the conducted need analysis and meetings with experts. The first step of the program was to develop syllabus of the program and decide about various aspect of the group.

A detailed syllabus (see Appendix J) was collaboratively developed by two counselors in METU LSD Center and the researcher based on the literature review and resources that were already available about procrastination in the center. In addition to the content, researcher and counselors brainstormed about activities that could suit to face-to-face. group and 3D virtual group. While designing activities, stages of group intervention were considered to address participants' needs at different stages. In parallel with DeLucia-Waack (2011)'s classification, initial-stage activities was focused on introducing members to each other and create a friendly environment; middle stage activities aimed to encourage self-disclosure and build the group cohesiveness; and ending activities focused on new skills and techniques to cope with procrastination which they could use after terminating the group.

One of the important decisions in case study research is the selection of the cases. Merriam (2009) expresses this with her statement, "[t]he unit of analysis, not the topic of investigation, characterizes a case study" (p. 41). This decision is also critical for maximizing what we can understand about the investigated phenomenon (Patton, 2002; Stake, 1995). Echoing this view, Yin (2009) states that studying multiple cases requires selection of cases that will provide most valuable information for the research questions. Therefore, in this multiple-case study, the first criterion of case selection was its potential to achieve a full understanding of central phenomenon and answering research questions. The second criterion was the available resources and appropriateness for 3D environment. Cases that have adequate participants and cases that counselors have knowledge, experience and willingness to use 3D virtual environment were selected. Furthermore, learning environment, activities and techniques are vital part of the psycho-educational groups which need to be designed based on the goals and objectives. For some groups, techniques that promote active participation need to be designed, others may require techniques that present

information and facilitate comprehension, still some groups need to provide personalized activities for each participant (Brown, 2004).

Based on the case selection guidelines discussed above, researcher conducted interviews with four counselors who had previous experiences in group counseling. In this need analysis, an interview protocol (see Appendix C) was prepared and utilized to gather information. Their experiences about group counseling process and potential use of 3D VWs were discussed. Alternative psychoeducational counseling groups such as interpersonal communication, forgiveness and conflict management were considered and their potential for this study are discussed. At the end of interviews and brainstorming with counselors, procrastination group was selected for this study. Furthermore, the researcher had informal conversations with undergraduate and graduate contacts to collect their thoughts about selected topic. These conversations showed that procrastination was a common problem among students and most of them were expressing their willingness to receive support about this issue.

Procrastination psychoeducational group was considered as appropriate case for this study for several reasons. Firstly, due to the fact that procrastination is very common among undergraduate and graduate students, this would make it easy to find enough participants for the study. Second, group counseling leaders who managed groups in this study had previous knowledge and experience with procrastination and they organize hourly seminars during the semester about this topic. Last, group activities and techniques for this group could be implemented in both face-to-face and 3D environment based on the group's objectives. Furthermore, group size, length and duration, nature of the problem and leader responsibilities were suitable for this group to be implemented in both environments.

### **3.6 3D Virtual World for Counseling: Virtual OGEB**

*Virtual OGEB* is the 3D virtual counseling environment developed for this study. It was created based on free and open-source system, OpenSim. OpenSim is one of the most popular virtual world and it is under active development. Among various available virtual platforms OpenSim was selected as development platform mainly because of its flexibility and ethical concerns. Firstly, in counseling services privacy

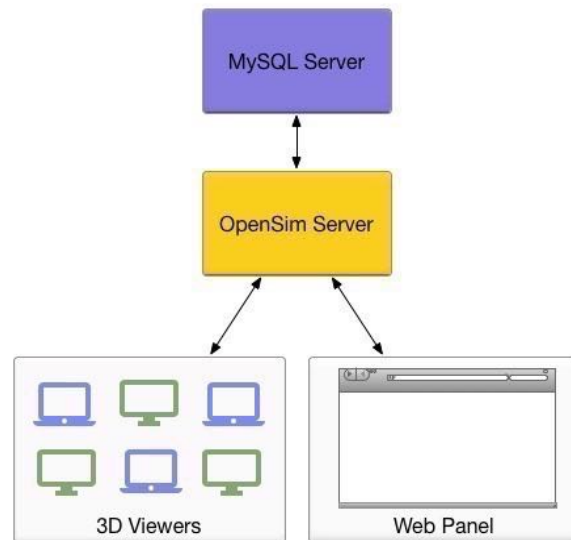
and confidentiality of participant is a crucial factor that needs to be considered. Gorini and colleagues (2008) expressed similar concern; “virtual worlds were not created with clinical purposes in mind” and they urge that “clinicians and researchers have to create specific and protected environments to meet their clinical needs as well as the needs of patients.” (Conclusions, para. 2) In order achieve this, the system needed to be managed by researcher and have control over the various functionalities of the system. Although self-managed platforms require much more effort, privacy and confidentiality of users can be ensured. Another factor for choosing a dedicated platform was that most 3D VWs have open access which can cause inappropriate situations, such as external interferences, during counseling sessions (Gorini et al., 2008). The fact that OpenSim platform was only open to participants of this study created a more private environment. Furthermore, self-hosted and managed platform enabled researcher to add extra functionalities to the system. For instance, NPCs (non-player characters) that used in some activities can only be implemented in self-managed platforms. Finally, thanks to this self-managed and dedicated platform, researcher had opportunity to allocate as much virtual space as needed without need of allocating extra budget.

### **Platform Components**

3D virtual environment was developed on the OpenSim’s system architecture. Created platform is composed of these four main components (see Figure 3.2);

- *OpenSim Server*: This component was the main server that clients connected. It was also the management tool for all server operations.
- *Database Server*: This component was responsible for storing all data used by the system such as regions, objects, users, groups etc. MySQL Server was used as database server.
- *3D Viewer*: Viewer is the software that users used to connect to the main server and interact with 3D environment. Further details of the viewer interface are discussed below.

- *Web Panel*: This web-based interface was used for managing users. In addition, users created and managed their accounts using this component. This component was available as webpage and address was provided to all participants. (See Figure 3.3)



*Figure 3.2* – Architectural overview of the system

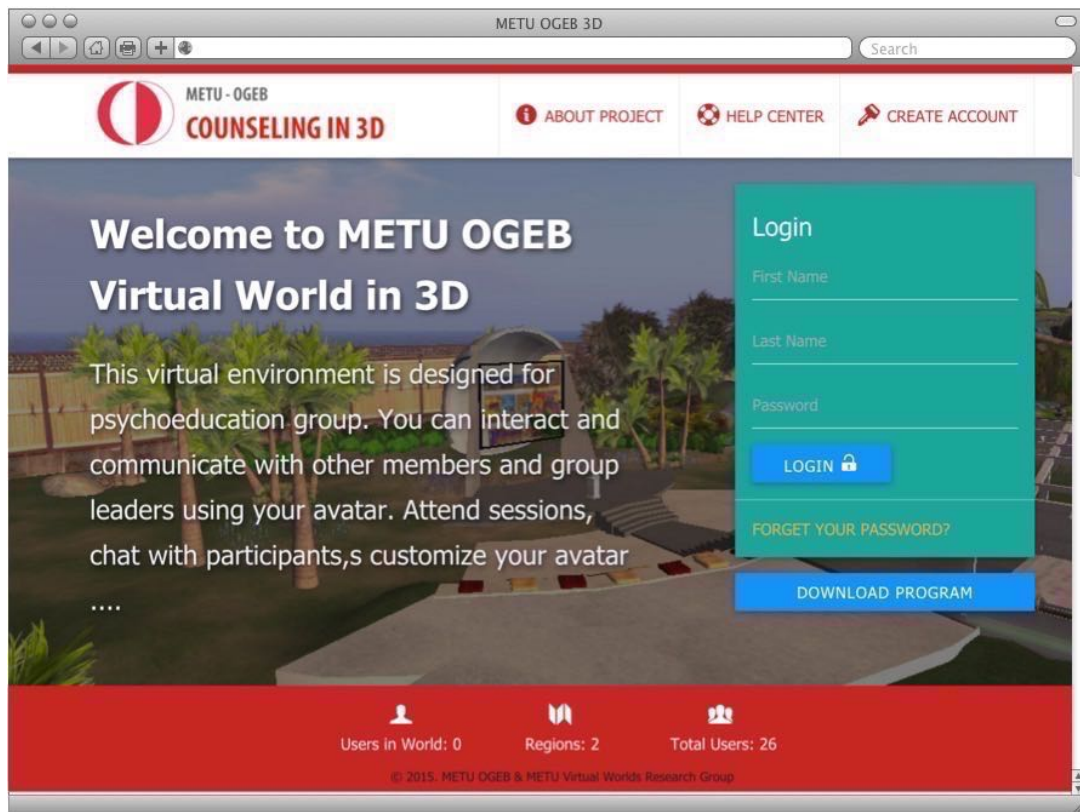


Figure 3.3 – Web panel of the Virtual OGEB

A 3D Viewer is similar to the browser that are used to connect a webpage over Hypertext Text Transport Protocol (HTTP). User were required to install this software on their personal computers for connecting the virtual world. As illustrated in Figure 3.4, 3D Viewer had many elements that users can use to communicate with other avatars and interact with 3D environment. The most frequently used components were movement control, communication tools, avatar appearance, maps and inventory.

- *Text-based Communication Tools:* Users can communicate with any user in the environment using integrated text-based chat tool. OpenSim provides two modes of the text-based chat; public chat and private chat. Communication in public chat area was seen by all users in the environment at a certain distance. For instance, in the virtual classroom, avatars could communicate in public chat in a way that everybody could read what is written and respond to it. As its name implies, private chat was the conversation between two avatars (or a

group of avatars) that could only be seen by the avatars who joined the conversation.

- *Voice-based Communication:* OpenSim has capability of voice-based communication same as other Voice-over IP (VoIP) technologies. Users could push the “talk” button and start talking in the environment. Similar to the text-based communication, voice-based communication could be either public or private.
- *Movement Controls:* Although many users prefer to use keyboard for movement controls, there were also buttons on the toolbar that user could utilize to move or fly with their avatar in the environment. Furthermore, maps were available that allowed avatars to see an overview of the environment and other avatars’ positions. Users could click on any part of the map to instantly teleport to that specific location instead of walking or flying.
- *Avatar Appearance:* Users had opportunity to customize their avatars using simple user-interface of 3D viewer. It allowed users to change various properties of their avatar such as gender, body shape, skin color, height, weight, hair and clothes.
- *Inventory:* This feature is specific to the 3D virtual worlds. Inside the inventory, users had dedicated folders for various entities used inside in the environment. For instance, a chair (which is considered as an object in OpenSim) could be located under “objects” folder in the inventory. Similarly, folders were available for scripts, animations, clothes, textures etc. Users could reach to these entities any time they want and also they could share them with other avatars.



Figure 3.4 – 3D Viewer user interface

## Design and Development of the Virtual Environment

Virtual OGEB environment was designed with collaboration of counselors. The fact that counselors had previous experience, knowledge and resources about procrastination made the process easier. Following best practices for designing 3D virtual environment, this environment was developed for group intervention based on the group intervention curriculum.

This immersive environment was designed around two main areas (also called island); central island (see Figure 3.5) and tropical island (see Figure 3.6). Central island was the main location of the group sessions, while tropical island was used for specific activities.



*Figure 3.5 – Overview of the central island*



*Figure 3.6 – A view of the tropical island*

Tropical island was designed to leverage the immersion of the virtual environment and integrate it into group intervention process. This area had a relaxing music playing in



the background and various places for sight seeing. Some activities were also conducted in this island.

The central island was composed of four interconnected areas: classrooms, activity area, shopping center, amphitheater.

- *Classrooms:* The goal of this area was to provide an immersive environment for group sessions as a learning and discussion place. For each session, a classroom hall was designed based on the session's topic. A sample classroom is presented in Figure 3.7. In a typical session, group members and leaders would meet at the session's classroom, share information about session's topic using presentation boards and discuss the topic.
- *Activity Area:* This area was developed based on the feedbacks received from participants of the pilot study (see Figure 3.8). After each session there were activities, or homework, that participants need to complete until the next session. The goal of this area was to present instructions about each activity and provide appropriate tools for participants to complete them. For instance, for any activity that required writing or drawing, a dedicated board for each members was placed in the area to write or draw on.
- *Shopping Center:* The goal of this area was to furnish an organized area where users could enjoy customizing their avatars. This area had small shops that users could find various avatar clothes and body parts.
- *Amphitheater:* The goal of this zone was to supply a place for group discussions. Furthermore, some specific group activities and presentations were organized in this area.



Figure 3.7 – A view of group session room



Figure 3.8 – Overview of the activity area

### **3.7 Pilot Study**

Pilot study is an essential step of research process which help researchers to practice and refine many aspects of a study (Yin, 2011). As discussed by Yin (2009), data collected from pilot process provide valuable insights about methodological and substantive topics. Thus, this phase contributes to active development and improvement of a study and helps research to make important decisions about the actual phase of study. Furthermore, for a case study pilot phase is required when similar research process is not available in the literature or when theoretical framework is not enough to clearly define the process (Kaarbo & Beasley, 1999). Based on this argument, piloting was need for 3D case as; group counseling process in 3D VWs was not clear; and to our knowledge there was not any conducted study about group counseling in 3D VWs. The literature of face-to-face group counseling is rich and scholars in the field had discussed the process and dynamics of the group interventions, and therapeutic factors in face-to-face environment (Corey, 2012; DeLucia-Waack, 2011; Gladding, 2004; Yalom & Leszcz, 2005). Thus, necessity of a separate pilot study for FtF group was not considered.

In this study, conducting pilot case study was considered as an essential phase of the research in order to; (1) test the virtual environment, (2) test the content to be covered, (3) refine research methodology to be followed and data collection instruments, and (4) train counselors about environment and process.

Firstly, it was important to see developed virtual environment in action in order to identify strengths and weakness of the environment. The fact that technical problems are a major concern in implementation of the new technologies in counseling interventions (Mallen, Vogel, Rochlen, et al., 2005; Page, 2004), prior identification can help researcher to take precautions and prevent some of the major problems. In addition to technical problems, some of the decisions about program's technical infrastructure were left to be finalized after the pilot study. For instance, there were alternative viewers for connecting the 3D environment; however, it was not clear which of them would be better option for this study.

Second, content of the counseling program and activities were also required to be practiced prior to main study. Virtual environment and face-to-face environment has many different contextual factors. Instructional activities should be chosen based on the group's goal, participants' characteristics (Brown, 2004), and stage of the group process (Gladding, 2004). Therefore, pilot study was conducted to finalize the outline of the content, decide about appropriateness of the planned activities and identify the required time for each activity in virtual environment.

Third, a number of parameters, such as group size, participants' demographics, number of sessions and session length, need to be defined prior to starting group process (Brown, 2004; DeLucia-Waack, 2011). Furthermore, for an effective group process the parameters could vary in 3D environment and face-to-face due to the different communication mediums and context. Therefore, researcher and counselors discussed this issue and final decisions about these factors were left to be made after completing pilot study. It was crucial to test data collection instruments in pilot study in order received feedbacks from participants and identify existing issues such as language ambiguity, grammatical mistakes etc. At the end of pilot study, participants were interviewed using the developed interview protocol and they were asked to fill developed perception survey.

Lastly, both of the leaders had prior experience of face-to-face group counseling; however, they did not have any experience of 3D VWs. This was a major issue that required to be carefully addressed as; counselor's competency of used technology and required skills of delivering service over this communication medium are the major ethical concerns in all forms of online counseling (American Psychological Association (APA), 2013; Mallen, Vogel, & Rochlen, 2005; Ohio Psychological Association, 2009). Although the researcher had trained group leaders about using the software, experience of 3D virtual counseling process was necessary. The fact that group counseling leaders had essential role in counseling process required them to feel comfortable and confident about using environment, leading the members and implementing the activities. Therefore, pilot case study was an opportunity for counselors to practice group process with real clients in virtual environment.

## **Process of Pilot Study**

Participants selection process and implementation process of pilot study were carefully designed. As suggest by Yin (2009), convenience, access and prior personal contact can be the main criteria for participant selection in pilot study. In addition, the participant selection criteria were established around including students from diverse backgrounds. The fact that opinions and experiences of participants had great value during the pilot phase, it was considered crucial to notify participants about the aim of the study and encourage them for providing their suggestions for improvements of the study (Yin, 2011). Therefore, seven students from METU were invited by researcher to participate in this study. Four participants were undergraduate and three were graduate students. There were four male and three female participants. Their age range was 20-27.

This pilot case study started in January 2015 with seven participants. There were two sessions per week (Monday and Friday) lasting for four weeks. The length of each session was around 60 minutes and all participants were connecting to the virtual environment from their personal computers. Before starting the group process, research had a meeting with each participant to provide information about the goal of the study, background of group leaders, and how to contact group leaders in case of need for individual support. Furthermore, they were trained about using the software in terms of movement control, communicating with text or voice, changing avatar appearance and interacting with objects in the virtual environment.

## **Findings of Pilot Study and Updates**

Researcher's observations, received feedbacks during the pilot process and conducted interviews with participants provided invaluable insights about the issues of this study. These findings were used with ongoing review of the literature and discussions with counselors to finalize the research design, redesign/improve virtual environment, make final decision about group parameters, and revise data collection instruments. Pilot study helped to ensure that group leaders had enough practice to manage main study and that main study reflect an effective group process with less technical and

organizational problems. Based on the findings of pilot study, some decisions were made to address emerged issues.

Decisions about group process and structure were;

- Except for the first week, some of the ice-breaking activities were replaced with activities focus specifically on the procrastination. Most of the participants expressed that activities should focus on the problem instead of ice-breaking as they were feeling comfortable in online environment to interact and share with other participants from the first week. They further expressed that ice-breaking activities are “wasting” too much time.
- In the pilot study there were graduate and undergraduate participants; however, it was found that there were differences between their issues regarding the psychoeducational topic. This difference was stated by participants as well. Therefore, the decision was made to include only undergraduate students for main study.
- Pilot study showed that group activities were more effective due to the enhanced interaction between participants and increased sense of presence. Therefore, more group activities were included to the program.
- Session length was 60 minutes for the pilot study. Based on the activities and participants’ feedbacks the length of sessions was increased to 90 minutes.
- Group size was another decision to be made and a group of eight to ten participants were considered as the appropriate size.

Decisions about technical issues and design of the environment were;

- During the pilot study, participants had some technical problems mainly related computer performance. In addition, installing and configuring the viewer, software used to connect virtual environment, was considered as complicated process. Therefore, a portable viewer was configured with custom setup to eliminate some technical issues and smiley the process.

- Some areas of the online environment were redesigned based on participants' feedbacks. In the pilot study activity boards were placed in the corresponding session's room; however, participants expressed that a dedicated area for activities would be more organized. Thus, an activity zone was designed to have a zone for each activity.
- Additional enhancements were implemented for presentation boards, NPC characters and activities to solve technical issues which occurred during the pilot study. For instance, feedbacks showed that NPC were not perceived realistic with text. Thus, NPC's conversations were converted to audio format.

### **3.8 Case and Participant Selection**

In multiple-case studies, sampling procedure is two-step process; case selection phase and participant selection phase (Merriam, 2009). In the first step, cases to be investigated were defined. Then, within-case sampling (Miles & Huberman, 1994), was discussed along with the rationale of utilized sampling procedure.

For the aim of current study, two cases were selected; (1) procrastination psychoeducational group in 3D VWs (3D Group) and (2) procrastination psychoeducational group in face-to-face environment (FtF Group). When conducting multiple-case studies, researcher required to consider some issues to be able to employ cross-case comparison. Miles and Huberman (1994) warn researchers about cross-case comparison of radically different cases; it is not appropriate to compare cases that have different process, participants and participant selection procedure. Furthermore, Mills et al. (2010b) suggests that in order to overcome validity threats such as history, maturation and instrument effect, researcher should select cases from same organization and same year. Thus, two cases of this study were organized in the same semester and had same participant selection processes. Furthermore, group leaders were also the same for both groups and participants were selected from the same sample.

### **3.8.1 Participants Selection Process**

In qualitative case studies, after selecting the cases, the second step of sampling is the within-case sampling which aims to select participants for each case (Merriam, 2009). Participant selection procedure for both groups was started after completing required changes and updates which emerged based on pilot study. In qualitative research, the sampling procedure is usually purposive (Miles & Huberman, 1994; Yıldırım & Şimşek, 2013). As expressed by Patton (2002) “[t]he logic and power of purposeful sampling lie in selecting information-rich case for study in depth.” (p. 230) One strategy of purposeful sampling is the maximum variation (Patton, 2002) which aims to obtain information about central phenomenon from as much diversity as possible. Participants selection for both cases of the current study was purposeful and aimed to include students with various demographics such as year of study and department.

Participant selection process started with the announcement of the procrastination psycho-educational groups across the university campus. A poster (see Appendix K) was designed to provide information about the program in general and details about each group such as date and time of group sessions. This poster was delivered to main locations on the campus such as library, dormitories, shopping area and health centers. In addition, the program was announced on the digital announcement boards, LSD’s website and social media accounts. An online application form was designed for the program and students had two weeks for applying the program. Applicants’ name, department, contact information, group preference (3D or FtF) and reason of the group preference was collected via this online application form. A total of 48 undergraduate students applied for the program. Program participation was on a voluntary basis. Participants’ responses to application form showed that most of the applicants had awareness about the procrastination behavior and coping with this behavior was the major motivational factor for applying the program.

### **3.8.2 Case-1: 3D Virtual Group**

The first and main case of this study was psychoeducational counseling group in virtual 3D environment. A total of 30 students applied for this group of the program. Among them, 9 participants were selected for the program in accordance with the purposeful maximum variation sampling procedure. In other words, researcher



selected participants from different departments and different year of the study. All selected applicants were informed about the process and a face-to-face meeting with researcher was arranged. In this meeting, researcher provided all the details about the program and contact information of the counselors and LSD center. Moreover, researcher installed the software that will used during the program and trained each participants about how to; navigate in the virtual world, use communication tools, change avatar's appearance, interact with objects, and use the inventory. At the end of the meeting, participant was asked to sign Informed Consent Form (see Appendix B) and fill the pre-test, Tuckman Procrastination Scale (Uzun Özer et al., 2013).

In this group, sessions were scheduled on the Wednesday at 19:00 (7 pm) for eight weeks. Every week, before each session, a SMS reminder was sent to all participants. Group leaders, group members, and the researcher connected from their computers in each session. Depending on the session's content and activities, various areas in the virtual platform was used. As described previously in this chapter, for each session a classroom or hall was designed for meeting and discussions (see 3.9).



*Figure 3.9 – A view of session in 3D group*

### **3.8.3 Case-2: FtF Group**

The second case of this study was face-to-face psychoeducational counseling group. 18 students applied for this group of the program. Unlike the 3D group, for this group all participants were invited to the first meeting in order to be informed about the process of the program. At the end of the first session, participants were asked to sign an Informed Consent Form (see Appendix B) and fill the pre-test, Tuckman Procrastination Scale (Uzun Özer et al., 2013). After this initial informative session, 12 students decided to continue attending the program. Three of them discontinued the group after the third week. The researcher was able to contact two of them. One of them stated that she did not have time to attend the group. Another one stated he left the group because he realized that his problem is not related to procrastination. To sum up, in the FtF group, data were collected from nine participants who attended the sessions regularly and completed the program.

In this group, the sessions were on the Thursday at 14:00 (2 pm) for eight weeks. Similar to the other group, every week before each session, an email reminder was sent to all participants. Face-to-face sessions were held in a meeting room at LSD center (see Figure 3.10).



*Figure 3.10 – A view of session in face-to-face group*

#### **3.8.4 Group Members**

In this section, demographic information of group members of 3D group and FtF group are presented. Participants were selected based on gender, academic level and department. In addition, information about their internet usage patterns, gaming experience, social network usage and prior counseling experience was collected with demographics questionnaire and through attribute coding of the interviews. Furthermore, a detailed list that highlights each group member's prior counseling experience (individual and psychoeducational group), online education and 3D VWs experience is provided at the end of this section.

*Gender.* Group balance in terms of the gender was considered during participant selection process (see Table 3.1). In 3D group, there were five female and four male participants. Similarly, there were four female and five male participants in FtF group.

Table 3.1 – *Gender frequency by group*

Gender	Group ( <i>f</i> )	
	3D Group	FtF Group
Female	5	4
Male	4	5

*Academic level.* This was the second variable was taken into account during the selection process. As presented in Table 3.2, both cases had participants from each academic year and their frequency was balanced.

Table 3.2 – *Academic level frequency by group*

Level	Group ( <i>f</i> )	
	3D Group	FtF Group
Prep. Class	1	2
1. Year	2	1
2. Year	2	3
3. Year	2	2
4. Year	2	1

*Department.* The final factor was participants’ departments. Participants were selected from various departments and only one applicant was selected from each department to each group. Participants’ department based on faculty frequencies is presented in Table 3.3

Table 3.3 – Faculty frequency by group

Faculty	Group ( <i>f</i> )	
	3D Group	FtF Group
Engineering	5	3
Education	2	3
Art and Science	1	1
Economic and Administrative Sciences	-	2
Architecture	1	-

*Internet use duration.* Participants' weekly Internet use showed that majority of the participants connected to the Internet more than 10 hours. Furthermore, there was not much difference between both groups' Internet connection durations. Internet use frequencies for both groups are presented in Table 3.4.

Table 3.4 – Participants' weekly Internet use frequency

	Group ( <i>f</i> )	
	3D Group	FtF Group
1-5 Hours	1	2
6-10 Hours	1	1
11-15 Hours	2	2
16-20 Hours	2	-
20+ Hours	3	4

*Internet access place.* Main Internet access places for 3D group and FtF group are presented in Table 3.5. Almost all members connected to the Internet from their home or school dormitory. In addition, access locations were quite similar for both groups.

Table 3.5 – Participants' Internet access location

	Group ( <i>f</i> )	
	3D Group	FtF Group
Home	6	5
School / Dormitory	6	7
Internet Cafe	-	-
Other	1	1

*Major activities while connecting the Internet.* All participants were asked about their major activities while connecting to the Internet. Major activities, presented in Table 3.6, were research/homework, communication, reading news and music. The only notable difference between both groups was the gaming activity.

Table 3.6 – *Major purpose of Internet access*

	<b>Group (f)</b>	
	3D Group	FtF Group
News	7	8
Shopping	2	2
Music	6	7
Gaming	7	3
Communication (Email/Social Media)	8	7
Research / Homework	9	8
Other	1	-

*Actively used social networks.* Participants’ actively used social networks showed that all of the participants in both groups use at least one social network. Facebook and YouTube were the most actively used social networks. Furthermore, results showed that both groups’ social network use patterns were similar. Details of participants’ actively used social networks are presented in Table 3.7.

Table 3.7 – *Participants’ actively used social networks*

	<b>Group (f)</b>	
	3D Group	FtF Group
Facebook	9	8
Twitter	3	5
LinkedIn	4	2
YouTube	9	8
Instagram	3	2
Other	1	1

*Computer or video gaming experience.* 3D VWs have common characteristics with computer games; therefore, participants’ gaming experience was investigated. Details about whether participant has gaming experience and average gaming experience

presented in Table 3.8. Although there were only three participants in FtF group, in 3D group there were six participants playing computer/video games. Common types of games that participants play were MMORPGs (massively multiplayer online role-playing games) such as World of Warcraft, FPS (first person shooter games) such as Counter Strike, sports games such as PES, and simulated social network games such as FarmVille.

Table 3.8 – *Computer/Video gaming experience*

	Group ( <i>f</i> )	
	3D Group	FtF Group
Playing computer/video games	6	3
Average gaming experience		
1-5 Years	1	-
6-10 Years	3	3
11-15 Years	2	-

*Participants' prior counseling, online education and 3D VWs experience.* Detailed list of each participant's previous experience is presented in Table 3.9. Firstly, in terms of the individual counseling (face-to-face), three participants of each group stated that they had this experience. Secondly, two members of the 3D group had prior psychoeducational group counseling experience while nobody had this experience in FtF group. 3DMember5 stated that he had participated in two psychoeducational groups, one of them lasted for 16 weeks. The other person, 3DMember9, had participated in a psychoeducational group for a period of 8 weeks. For the third experience type, online education, only one of the 3D group's member had prior experience. Finally, one person from each group had experience of 3D VWs. 3DMember5 had experience of IMVU while FtFMember4 had experience of SecondLife.

Table 3.9 – *Participants’ counseling, online education and 3D VWs experiences*

Group / Member		Experiences			
		Individual Counseling	Psychoeducational Counseling	Online Education	3D VWs
3D Group	3DMember1				
	3DMember2	✓		✓	
	3DMember3				
	3DMember4				
	3DMember5	✓			✓
	3DMember6	✓	✓		
	3DMember7				
	3DMember8				
	3DMember9		✓		
FtF Group	FtFMember1	✓			
	FtFMember2				
	FtFMember3				
	FtFMember4	✓			✓
	FtFMember5				
	FtFMember6	✓			
	FtFMember7				
	FtFMember8				
	FtFMember9				

### 3.8.5 Group Leaders

There were two counselors leading the psychoeducational group counseling program of the study. Both of them had at least two-year experience of individual counseling and had experience of group counseling as leaders and as participants. Furthermore, they were studying PhD in the field of Psychological Counseling and Guidance.

*Leader1.* As group leader, she had more than eight years of individual counseling experience. Moreover, Leader1 had three group counseling experience as leader. She did not have any previous experience of online education, gaming or 3D VWs.



*Leader2*. She was the co-leader in both groups. Leader2 had one group counseling experience and four years of individual counseling experience. Similar to group leader, she did not have previous experience of online education, gaming or 3D VWs.

Although one of the counselors was group leader (Leader1) and one was co-leader (Leader2), they attended to all of the 3D and FtF sessions together and managed the sessions based on the predetermined responsibilities.

### **3.9 Data Collection Instruments**

Scholar have highlighted ability of using multiple data sources as a distinctive characteristic of the case study methodology (Gillham, 2000; Patton, 2002). Depending on employed research design, various sources of evidence can be utilized; the most common types can be listed as interviews, observations, documents, physical artifacts and archival records (Gillham, 2000; Yin, 2003). Although qualitative data is more common in case study designs, quantitative data, along with qualitative data, can be utilized in order to facilitate investigator's holistic understanding of the central phenomenon (Baxter & Jack, 2008; Creswell, 2009; Yin, 2009).

In case study, collecting data from multiple sources has many benefits. The first and most important advantage is that data triangulation, comparison of multiple data sources for consistency, corroborate the finds of a study (Yin, 2003). Data triangulation is a primary method to enhance the credibility and trustworthiness of a research (Saldana, 2011). Another advantage is that data gathered from various sources and their combination can reveal additional dimension of the investigated phenomenon and help researcher for deeper understanding. "Each data source is one piece of the 'puzzle,' with each piece contributing to the researcher's understanding of the whole phenomenon" (Baxter & Jack, 2008, p. 554). Finally, any data collection tool's limitations can be compensated by other tool's strength. For instance, observations enable researcher to see and hear participants' actions in natural context which can not be collected with other data collection instruments.

In order to answer researcher questions and have an in-depth understanding of investigated phenomenon, multiple sources were utilized to collect evidences. Interviews, participant observations and questionnaires were the primary data sources.

Furthermore, for 3D group, server logs and chat conversations of participants in the virtual environment were collected as supporting evidences.

### **3.9.1 Interview Protocols**

Interview is a data collection tool that many qualitative researchers rely on as it is “an effective way of soliciting and documenting, in their own words, an individual’s or group’s perspectives, feelings, opinions, values, attitudes, and beliefs about their personal experiences and social world, in addition to factual information about their lives” (Saldana, 2011, p. 32). This data collection tool is very common in qualitative research as it is “the main road to the multiple realities” (Stake, 1995, p. 64). Unlike surveys, with interview, researcher’s aim is not to get an answer but rather to access people’s lived experiences and how they make sense of that experience (Seidman, 2006). As pointed out by Hatch (2002), another strength of interview is that it helps researcher to bring hidden thoughts, feelings or meanings to the surface that can not be achieved with direct observations or surveys.

Interviews are categorized based on their level of structuredness: structured, semi-structured and unstructured interviews (Yıldırım & Şimşek, 2013). Semi-structured interviews designed based on pre-defined questions; however, during the interview researcher is open to follow participant to new avenues and reorder or expand questions if needed (Hatch, 2002). In this study, semi-structured interviews enabled researcher to be both organized, timely effective and also be flexible to respond interviewees’ characteristics.

The primary data source of this study was semi-structured interview protocols conducted with members of both counseling groups as well as the group leaders. Guiding questions in the interviews schedules were developed to address research questions. The development phase was started with an extensive literature review. Although the number of similar studies were limited, valuable information was extracted regarding the theoretical framework and best practices for developing and conducting effective interviews.

The first developed interview protocol was 3D Group Members Interview Protocol (see Appendix D). This interview protocol was piloted during the pilot study and

necessary edits were applied. These changes were mostly reorganization of questions, elaboration of questions and language corrections. Furthermore, outcome related questions were added after the pilot study. The second interview protocol was Face-to-Face Group Members Interview Protocol (see Appendix E) which had questions for FtF group. Due to the fact that in this study FtF was not piloted, it was not possible to pilot interview protocol for FtF group. However, the fact that questions of both instruments were parallel allowed researcher to apply edits that were decided based on the feedbacks received in pilot study for 3D group's interview questions. The final interview protocol was developed for group leaders which composed of questions regarding their experiences in each group independently and also questions for comparing their overall experience in both groups (see Appendix F).

Prior to using interview protocols, two methods were employed to enhance credibility of the instruments. The first method was expert opinion. Three interview protocols were sent to two experts, one faculty member in the field of Instructional Technology and one faculty member in the field of Psychological Counseling and Guidance, to check them in terms of content validity, organization, clarity of the language and ethical considerations. The second method was think-aloud protocol, which conducted with two undergraduate students who were not participant of the study but had similar demographics in many aspects. Up on completing this phase, all necessary edits based on expert feedbacks and think-aloud method were applied to the instruments and final versions were generated.

The final version of interview protocol for 3D group consisted of 14 questions and each question had sub-questions. The first two questions were related to demographic information and prior experiences. Other question was addressing were addressing one or more of the research questions. The final version of interview protocol for FtF group had 11 questions and each question has sub-question for further details. First question was about participants' demographics and prior experiences. Other questions were addressing research questions. The final version of interview protocols for group leader had 16 questions and each question had sub-questions. While some of the questions were asking leaders' experience specific to one case, other questions were based on the comparison and contrast of their experiences in both cases. In all three

interview protocols, although questions were addressing research questions, they were not organized based on organization of research questions. Furthermore, some of the questions could yield responses related to more than one research question.

### **3.9.2 Observation Forms**

Observation is another frequently used data collection method in qualitative research (Yıldırım & Şimşek, 2013) as certain aspects of investigated phenomenon can be best understood by observing people's actions, reactions, interactions and emotions in natural context (Creswell, 2012; Saldana, 2011). In this process, researcher records firsthand information with structured or understructures field notes. Observation has unique advantages such as opportunity to collect non-verbal data, to record people's naturalistic behaviors, and to feel what is like to be participant in research site (Yıldırım & Şimşek, 2013). On the other hand, Creswell (2012) points out the challenges of this method; researcher need to gain access to the research site, have good listening skills, manage unexpected situations, and minimize the feeling of being and "outsider" (p. 214).

One of the important aspect of observations is the researcher's degree of engagement and role during data collection process. Researcher's role can vary from complete observer to complete participant (Fraenkel, Wallen, & Hyun, 2012; Merriam, 2009). The balance between being an observer and a participant is important and need to be considered based on researcher design. This balance is clearly outlined by Patton (2002) as "[t]he challenge is to combine participation and observation so as to become capable of understanding the setting as an insider while describing it to and for outsiders" (p. 268).

In this study, observation was one of the primary data collection method for both cases. The aim of utilizing this method was to collect firsthand data during the counseling sessions about; group members' natural behaviors and emotions, physical and virtual counseling environment, group leaders and activities. Researcher's role was *observer-as-participant* during the observations in 3D group and FtF group. Fraenkel et al. (2012) define observer-as-participant as an observer who watch research site and collect data without directly involving in the activities. Although researcher role was

completely fitted to this definition in FtF group, in 3D group researcher was also responsible for providing technical assistance to the group members and leaders during the program.

An observation form was developed (see Appendix G) in order to systematically record notes during each session. The researcher used this form to take notes in terms of; learning environment and its organizations, activities, problems, and suggestions for improvements. Furthermore, in 3D group, all sessions were recorded in researcher's computer using a screen capturing software. This allowed researcher to later evaluate each session.

### **3.9.3 Questionnaires**

Although case studies are commonly associated with qualitative data, quantitative evidences can also be integrated in order to address research questions (Gerring, 2007; Gibson & Brown, 2009; Yin, 1981). The value of integrating multiple forms of data is the researcher's ability to better understand investigated phenomenon and convey readers with supporting evidences. Furthermore, credibility of a study can be enhanced by triangulating one form of data with the other one. In order to strength credibility of findings and have a deeper understating of examined phenomenon, quantitative data were collected with questionnaires.

There were two main questionnaires administered to both cases. The first employed questionnaire was the Tuckman Procrastination Scale (TPS) (Uzun Özer et al., 2013). The second questionnaire was the demographics and perception questionnaire. Demographics questions collected information about participants' frequency and purpose of Internet usage, gaming experiences, counseling experiences. This questionnaire was designed in two formats; one for 3D group's members (see Appendix H) and one for FtF group's members (see Appendix I). Perception questionnaire consisted of questions related to satisfaction, self-disclose, presence and perceived easy of use. Details of these scales are discussed below.

The first issue that needed to be addressed was that developed instruments should be appropriate to be applied in both cases. Miles and Huberman (1994) argue about this issue and urge that instruments need to be standardized in multiple-case studies in

order to enable cross-comparison of cases during the analysis. Thus, adopted questionnaires, which were administered to both cases, standardized in terms of the language. Except for TPS, all other scales were originally in English; therefore, translation procedure was carefully followed. Prior to administering scales, draft versions were sent to an expert who had previous translation experience. She controlled scales in terms grammatical, spelling, and punctuation issues. Final versions of the questionnaires were developed after completing language related edits based on the feedbacks.

**Tuckman Procrastination Scale (TPS).** The original scale was in English and consists of 16 items. Turkish translation and adaptation of this instrument was conducted by Uzun Özer and colleagues (2013) and the final scale consisted of 14 items. Four items (7, 10, 12, 14) of the scale were negatively stated; therefore, these items were reverse coded during the data analysis. Authors reported that the validity and reliability measures of the scale was established; exploratory and confirmatory factor analysis results supported the validity of the scale, and internal consistency coefficient (Cronbach's  $\alpha = .90$ ) and coefficient of stability (Pearson  $r = .80$ ) indicated high reliability of the scale. Based on the validity and reliability scores of the adopted scale, authors recommended this scale to be used for assessing procrastination with Turkish college students. In this study, only Cronbach's  $\alpha$  was calculated and results showed good internal consistency coefficient; for pre-test it was  $\alpha = .83$ , for post-test it was  $\alpha = .85$ , and for follow-up test it was  $\alpha = .88$ . Due to very small sample size ( $N = 18$ ), researcher was aware of limitation of this reliability evidence. However, the fact that characteristics of sample in Uzun Özer et al. (2013)'s study were very similar to the participants of this study might support reliability evidence of the instrument.

**Client Satisfaction Scale:** Several questionnaires, such as Client Satisfaction Questionnaire (CSQ-8) (Larsen, Attkisson, Hargreaves, & Nguyen, 1979) and CSI-SF (McMurtry & Hudson, 2000), were reviewed; however, they were not appropriate to measure satisfaction level. The main reason was that questions were not appropriate for virtual setting as questions were based on the physical environment. Therefore, a six-questions Likert-type (1 = Completely Disagree, 5 = Completely Agree) scale was developed based on an extensive review of the literature. Furthermore, developed scale

was standardized in terms of the language and it was context neutral which allowed to administer it for assessing both groups' satisfaction.

**Learning Satisfaction Scale:** This scale was adopted and translated based on learning satisfaction sub-scale developed by Chou and Liu (2005). The aim of this scale was to assess group member's satisfaction regarding instructional content and activities of the procrastination program. The final scale has 8 Likert-type questions and it was administered to both groups. Due to small sample size, in this study it was not possible to calculate reliability coefficients.

**Self-disclosure Scale:** In order to assess comfort and self-disclosure level of the participants, developed based on self-disclosure dimensions of an available scale (Ledbetter, 2009). The original questions were assessing online communication. However, in this study it was necessary to have a scale that can be administered both cases. Thus, questions were notified to make them environment neutral. Final scale has 6 Likert-type items (1 = Completely Disagree, 7 = Completely Agree).

**Presence Scale:** This scale was administered just to the 3D group and the aim was to assess member's sense of presence in virtual environment. This scale composed of two sub-scale; general (or place) presence scale and social presence scale. Place presence scale was modified from previous studies (M. Slater, Sadagic, Usoh, & Schroeder, 2000; M. Slater, Usoh, & Steed, 1994). Social presence scale's questions were based on an existing scale (Bailenson, Blascovich, Beall, & Loomis, 2003). This scale has 11 Likert-type questions (1 = Completely Disagree, 7 = Completely Agree). Due to small sample size, in this study it was not possible to calculate reliability coefficients.

**Perceived Ease of Use Scale:** These questions were administered in order to measure 3D group's participants' perceived ease of use. This scale was adopted from Davis (1989)'s Perceived Easy of Use scale. This scale has six Likert-type questions (1 = Completely Disagree, 5 = Completely Agree). Author reported the reliability measurements of the scale based on two studies; Cronbach's  $\alpha = .86$  and Cronbach's  $\alpha = .94$  respectively. Due to small sample size, in this study it was not possible to calculate reliability coefficients.

### 3.9.4 Other Data Forms

In addition to the three main data collection instruments discussed before, server logs and chat logs were used as supportive data forms for the 3D group. Server logs contains records about user's interaction with the server such as login time and login frequency. Chat logs were the public chat conversations during each session. These two forms of data were analyzed and used as supportive data sources.

### 3.10 Data Collection Procedure

Data collection procedure is illustrated in Figure 3.11 and an overview of the instruments and the corresponding data collection procedure is presented in Table 3.10. In this section, a detailed overview of this procedure is discussed.

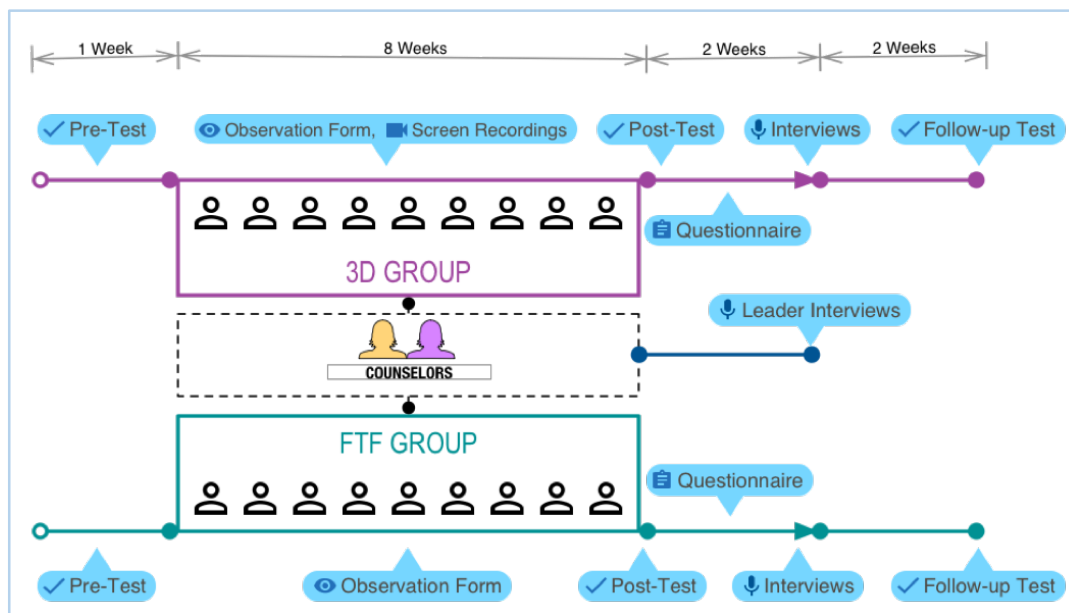


Figure 3.11 – Illustration of data collection procedure



Table 3.10 – *Data collection procedures*

<b>Data Source</b>	<b>Case</b>	<b>Participants / Aspect</b>	<b>Procedure</b>	<b>Phase Employed</b>
Interview	3D	9 Group Members	Semi-structured interviews were conducted face-to-face and tape recorded.	At the end of the program
Interview	FtF	9 Group Members	Semi-structured interviews were conducted face-to-face and tape recorded.	At the end of the program
Interview	3D & FtF	2 Group Leaders	Semi-structured interviews were conducted face-to-face and tape recorded.	At the end of the program
Observation	3D	All aspects of the group	Researcher collected data about various aspects (group members, group leaders, group process, virtual environment) using observation form.	During the sessions
Observation	FtF	All aspects of the group	Researcher collected data about various aspects (group members, group leaders, group process) using observation form	During the sessions
Procrastination Questionnaire	3D & FtF	18 Group Members	Administered in both groups three times; before the program (pre-test), at the end of program (post-test), and four weeks after the program ended (follow-up test)	Pre-test, Post-test and Follow-up test
Perception Questionnaire	3D	9 Group Members	Group members filled questionnaire with demographic questions and with six sub-scales	At the end of the program
Perception Questionnaire	FtF	9 Group Members	Group members filled questionnaire with demographic questions and with four sub-scales	At the end of the program
Other	3D		Chat logs and screen-captured recordings were used as supplemental data sources	During the program

Data collection procedure for interviews started immediately after counseling programs ended and it was completed in two weeks. The fact that 3D group's program finished one week before FtF group (due to the one-week holiday delay), data collection started one week earlier. All interviews were conducted by the researcher in order to ensure consistency of the data. All interviews were face-to-face except for one interviewee who participated via videoconferencing. Prior to starting each interview, participants were informed about the scope of the interview and confidentiality of the conversation. Researcher went through the interview process following the interview schedule and provided further details/clarifications and asked extra questions when needed. Furthermore, after getting permission of interviewee, every interview was tape recorded. Researcher had interviews with nine participants in each case. Due to difference in number of interview questions, the duration of interviews varied between cases. In 3D case, the average length of interviews was around 75 minutes, while in FtF case, it was around 45 minutes. Finally, interviews with two group leaders were conducted and tape recorded immediately after completing data collection procedure for both groups' members.

An observations form was developed (see Appendix G) in order to systematically record field notes during each session. This form was filled for all sessions in both groups after participants granted permission. In addition to this form, it was planned to audio record sessions for the purpose of not missing any details of environment and conversations. However, participants of FtF group expressed their concerns about privacy and that they would not feel comfortable in case of any recording. Therefore, following ethical codes (American Mental Health Counselors Association, 2000), no recording was done in FtF group. Researcher tried his best to take notes about all details of the environment and conversations. For the 3D group, all participants were unanimous about feeling completely comfortable in case of recording (as they were using avatars and anonymous identity) and gave permission. Thus, all session in 3D group were recorded in researcher's computer using a screen capturing software. Session recordings enabled researcher to conduct a detailed examination of the counseling process afterward. Finally, having recording opportunity helped researcher to not worry about missing details and provide technical assistance when participants needed.

Quantitative data were collected with the procrastination scale and perception questionnaires. Procrastination scale was employed as pre-test, post-test and follow-up test for both psychoeducational groups in order to evaluate the outcome of the program. This scale was filled by participants of both groups three times; before starting the program, at the end of the program and 4 weeks after the termination of the program. Perception survey, on the other hand, was employed at the end of program in order to assess the difference between 3D and FtF group in terms of the level of learning satisfaction, client satisfaction and self-disclosure.

### **3.11 Data Analysis Procedure**

In this section, data analysis procedure of quantitative and qualitative data is presented. Firstly, employed statistical tests for analyzing survey data are discussed. Then, coding procedures and strategies of analyzing quantitative data are presented.

#### **3.11.1 Quantitative Data Analysis Procedure**

Nonparametric tests were employed during the quantitative data analysis. Although nonparametric tests are statistically less powerful, they have less or sometimes no assumptions regarding the distributions of data and they are appropriate for analyzing data of small sample size (Dunn, 2001; Field, 2009; Howell, 2007). In fact, nonparametric tests can be used for small sample sizes, as small as  $N = 6$  (Siegel, 1956). Due to the very small sample sizes of two groups in this study, nonparametric statistical tests were utilized.

The first performed test was Friedman test, the nonparametric equivalent of the repeated-measures analysis of variance (ANOVA). The aim of using this test was to identify whether a statistically significant difference exists among procrastination scores of members based on pre-test, post-test and follow-up test. The analysis was conducted for 3D group members' and FtF group members' scores separately. The second intended test was Mann-Whitney  $U$  test, the nonparametric analogue of the independent  $t$ -test, which is used to assess the difference between two independent samples. However, this test was not performed due to lack of reliability and validity evidences of the questionnaires. Thus, descriptive results of items in each

questionnaire are presented. All descriptive statistics and nonparametric tests were conducted using the Statistical Package for the Social Sciences (SPSS) version 23.

### **3.11.2 Qualitative Data Analysis Procedure**

In qualitative data analysis, a researcher required to report analytical procedures and analysis steps objectively in full details (Patton, 2002). In this section, the aim is to provide rich and thick description about the data analysis rationale, coding process and reporting results.

Data sources of this study were collected through various sources which were initially unstructured, complex and in different formats. In qualitative data analysis, making sense of such massive amount of data is a major challenge (Patton, 2002); and unstructured raw data need to be processed to prepare for analysis (Miles & Huberman, 1994). Yin (2011) called this compiled data form as “*case study database*” (p. 182). Collected raw data was organized in a standardized format to be available for coding and analyzing. Firstly, all notes taken during both counseling groups were read, converted to write-ups, organized and grouped per case. Then, all audio-recorded interviews were transcribed verbatim and corrected by the researcher. Although recordings were transcribed based on unfocused transcription approach (Gibson & Brown, 2009), some remainder and clarification notes and memos were added to the text. Gibson and Brown (2009) pointed that transcription process enables researcher to focus on the data, discover important features of data and eliminate unimportant sections. Similarly, Saldana (2011) suggested researchers to transcribe interviews by themselves as it provides “cognitive ownership of and potentially strong insights about [the] data” (p. 44). Therefore, researcher transcribed interviews by himself and used this phase as an initial analysis for better insights and understanding the data.

Yıldırım and Şimşek (2013) outlined data analysis process based on four main steps; (1) coding data, (2) constructing themes, (3) organizing codes and themes, (4) presenting and interpreting findings.

Depending on the research design, analysis can be guided by inductive or deductive approaches. In inductive approach, analyst discovers patterns out of the qualitative data without preliminary themes, while in deductive approach analyst conduct analysis

based on an existing theory or framework (Patton, 2002). He further states that “qualitative analysis is typically inductive in the early stages, especially when developing a codebook for content analysis or figuring out possible categories, patterns, and themes” (p. 453). Depending on its approach, data analysis can start with completely absent concepts, completely predefined concepts, or a mixed approach of the two (Yıldırım & Şimşek, 2013). In this study, data analysis was based on mixed approach; although some preliminary themes based on the research questions were defined, inductive approach was applied to the discover natural variations in the data, and to capture other possible emerging concepts and themes. This investigation was not based on any predefined assumptions and all cases and dimensions were treated equally important.

The analysis process starts with data reduction which involves selecting, transforming and simplifying data with “codes”. “A code is a researcher-generated construct that symbolizes and thus attributes interpreted meaning to each individual datum for later purposes of pattern detection, categorization, theory building, and other analytic processes” (as cited in Miles, Huberman, & Saldana, 2014, p. 72). While coding the data, list of suggested phenomenon that could be coded (Miles & Huberman, 1994; Saldana, 2009) was used for guiding which features in data to be coded.

According to Saldana (2009) coding typically evolves as two stage process: the first stage is descriptive, involves line-by-line analysis to discover different dimensions and labelling of data. The second stage is interpretive and analyst’s aim is to discover patterns and their relationships, classify concepts and construct themes. In the first stage of coding process of this study, all interview transcripts were carefully read twice and coded using suggested coding strategies. Among the first cycle coding strategies, these strategies were utilized:

- *Attribute coding* is appropriate for most qualitative studies that have multiple participants in order to standardize and code participants’ characteristics, demographics or other variables of interest (Saldana, 2009). Attribute codes can be used to discover unanticipated concepts or relationships by querying data based on coded characteristics. This strategy was utilized in this study to

code participants' demographics, their previous experiences in counseling, online learning and 3D VWs.

- *Open (initial) coding* is employed at the beginning of analysis as starting point by breaking down data into discrete parts and carefully examining each part to identify concepts and compare them for similarities, differences and relationships (Saldana, 2009; Strauss & Corbin, 1998). During the first cycle of analysis, open coding was the main strategy used in this study. Interviews were examined word-by-word without any predefined code while remaining open to all possible ideas of participants. Every explored aspect during this micro-analysis was coded using appropriate coding form discussed in this section.
- *Descriptive coding* is commonly used in qualitative research, as description draws on ordinary vocabulary to present what researcher see in data and it is the basis for the interpretation and constructing more abstract frameworks (Strauss & Corbin, 1998). In descriptive coding, segments of data are tagged with short descriptive phrases mostly as nouns (Saldana, 2009). This coding strategy was employed in this study to summarize data and present ideas and concepts with most appropriate phrase that can be easily understood by reader.
- *Structural coding* is used for collecting segments of data that are related to specific research questions (Saldana, 2009). Therefore, this method was used to code data in parallel with the research questions.

After completing the first cycle of coding process, coding strategies for second cycle were used to organize and classify created codes. The challenge of the second stage is that analysts need to figure out repeating ideas, reveal similarities and differences and fit them into appropriate themes (Patton, 2002). Gibson and Brown (2009) asserted that themes are the key aspects of qualitative analysis. In order to develop themes from data, pattern coding was employed in the second cycle of analysis. Miles and Huberman (1994) defined pattern codes as “explanatory or inferential codes, ones that identify an emergent theme, configuration, or explanation... They are a sort of meta-code” (p. 69). Furthermore, they express the difference between first and second cycle

coding by stating the “first-level coding is a device for summarizing segments of data. Pattern coding is a way of grouping those summaries into a smaller number of sets, themes, or constructs” (p. 69).

In multiple-case studies, research should consider how to treat each case in data analysis. Data collected from each case is context depended; therefore, researcher need to set boundaries among them. Patton (2002) suggested that firstly each case should be analyzed in-depth and reported separately, then cross-case analysis should be employed to compare and contrast emerging patterns. In this study, data analysis was iterative process which started with treating each case as a separate study and conducted within-case analysis, which followed by cross-case analysis to search for similarities and differences of emerged themes and explanations. Firstly, inductive analysis of interview documents of 3D group was completed and indecently form this process, F2F groups’ interviews were analyzed.

Data analysis was conducted with MAXQDA, one of the popular Computer Assisted Qualitative Data Analysis Software (CAQDAS). Although data analysis can be conducted in traditional ways, using a CAQDAS tool can facilitate and speed-up the analysis process. They have many advantages such as easily locating codes, indexing various data types, creating memos, linking data segments, visualizing concepts and patterns, and preparing final reports (Miles & Huberman, 1994; Patton, 2002). Bazeley (2013) highlighted that using CAQDAS in coding enables researcher increased attention to details and very close degree of examination.

Firstly, all data sources were imported into MAXQDA for analysis. Documents were organized based on cases and participants which followed by coding using coding strategies discussed above. Initially data was coded without any hierarchical organization. In the later stages of analysis, codes were organized under the categories and themes. MAXQDA was used for coding, retrieving coded segments, filtering based on participants and defining weight of a code in a category. Furthermore, MAXQDA was used for intercoder reliability measure using its internal “intercoder agreement” feature.

### **3.12 Trustworthiness**

Regardless of the research type and orientation, one of the main concerns in scientific research is the issue of validity and reliability. Research need to present details about the study's design, sampling procedures, data collection and analysis methods, and the way findings are interpreted and presented in order to convince reader about trustworthiness of the findings.

Validity and reliability are the core concepts which are grounded in positivist paradigm in order to refer findings' replicability and accuracy. Fraenkel et al. (2012) defined them as; "validity refers to the appropriateness, meaningfulness, and usefulness of the inferences researchers make based specifically on the data they collect, while reliability refers to the consistency of these inferences over time, location, and circumstances" (p. 458). Due to the paradigm difference between qualitative and quantitative research, qualitative scholars find these terms problematic (Bassegy, 1999). Thus, various scholars redefined these terms and adopted alternative terms that are analogies for validity and reliability concepts of quantitative paradigm (Creswell, 2007). Lincoln and Guba (1985) developed term "trustworthiness" to replace the conventional terminology of validation and provide an alternative that fits to postmodern and interpretive perspectives. Trustworthiness is an umbrella term constructed based on core issue of credibility, transferability, dependability and confirmability; these are the substitute terms for internal validity, external validity, reliability, and objectivity in quantitate paradigm (Cohen, Manion, & Morrison, 2007; Merriam, 2009).

Scholars have suggested several strategies for qualitative researchers to enhance trustworthiness of a study (Merriam, 2009). In this section, the aim is to address specific trustworthiness concerns and present the employed strategy to deal with each issue.

#### **3.12.1 Credibility**

Credibility, equivalent of internal validity, is the accuracy level of the results with reference to the agreement between participants and researcher (Creswell, 2007). Credibility is one of the most important factor while assessing a qualitative study's



trustworthiness (Mills et al., 2010b). Various strategies have been suggested by scholars to establish credibility (Merriam, 2009; Miles & Huberman, 1994; Patton, 2002) and among them following strategies were taken into account; data triangulation, prolonged engagement and persistent observation, member checks, reflexivity, peer debriefing.

### *Triangulation*

Triangulation is the strategy of combining multiple methods or data sources to strengthen the confidence of a study (Merriam, 2009; Miles & Huberman, 1994). It is the most common strategy to grant credibility in qualitative studies (Yıldırım & Şimşek, 2013). The goal of data triangulation is not about finding the same results across different data sources, rather it used for assessing consistency of findings which may reveal inconsistent results too (Patton, 2002). As pointed out by author, these contradicting results are also valuable; they provide opportunity for researcher to better understand and interpret the findings. Denzin proposed use of (1) multiple methods, (2) multiple sources of data, (3) multiple investigator, and (4) multiple theories to triangulate a study (as cited in Stake, 1995). In this study, three of these triangulation types were employed. Firstly, multiple data collection methods were utilized to gather both qualitative and quantitative data. Interviews, observations and questionnaires were administered as primary and secondary data sources to complement each other. The second method was ensured by collecting data from different people with different perspectives and from different settings. Data were collected from both groups' participants as well as the group leaders. Finally, peer debriefing, explained in the next section, and intercoder agreement during data analysis were taken into account for the purpose of investigator triangulation.

### *Peer Debriefing*

Peer review or peer debriefing is another strategy for enhancing trustworthiness of a study. Using this strategy, a peer familiar with the research method and research topic, provides support, asks questions about important aspects of research and challenges researcher about assumptions and interpretations of the study (Creswell & Miller, 2000; Lincoln & Guba, 1985). This strategy was used in different stages of the current research process. Researcher consulted two colleagues, who were also PhD students

and familiar with research topic, on regular bases and discussed about process of the research. Furthermore, during data analysis phase, they reviewed the coding process and provided support. Finally, the advisor and dissertation committee's feedbacks were valuable sources for making decisions in the research process.

#### *Member Checks*

In order to enhance credibility, researcher can check with some respondents to validate the emerged findings after data collection or preliminary analysis process (Creswell & Miller, 2000; Merriam, 2009). This strategy is important to eliminate the possible misinterpretations and misunderstandings about participants. Although in this study it was not convenient to check with members due to limited resources and availability of group members, researcher used this strategy to check findings with group leaders. Researcher asked feedback from group leaders about their experiences and findings of the study and also about group members related findings. Their suggestions and interpretations were also used tune final results.

#### *Prolonged Engagement*

Prolonged engagement is a credibility procedure which is about "spending enough time on a case in order to be immersed in its issues, build the trust of those who provide data and try to avoid misleading ideas" (Bassegy, 1999, p. 76). Researcher need to experience a long term interaction with participants, research context and data. The goal of interaction is to establish rapport with participants, discover multiple perspectives of investigated phenomenon and answer puzzling questions (Baxter & Jack, 2008). Starting from the design and development phase of the study, researcher spent as much time as possible with counselors and group members. Researcher attended to all 24 sessions (8 pilot study, 16 main study) sessions of 3D and FtF psychoeducational counseling groups. Furthermore, researcher was actively working with group leaders while preparing activities and planning each session of the counseling program.

#### **3.12.2 Transferability**

Transferability, equivalent of external validity, "is concerned with the extent to which the findings of one study can be applied to other situations" (Merriam, 2009, p. 222).

Due to the nature of bounded context of case study, generalizing the findings of case studies may not be possible. However, it is important that researcher provide rich details for the readers so that they can decide about the transferability of the research process and findings (Lincoln & Guba, 1985). As suggested by Merriam (2009), in this study thick description and maximum variations were employed to enhance transferability of the study.

### *Thick Description*

Thick description “refer to a highly descriptive, detailed presentation of the setting and in particular, the findings of a study” (Merriam, 2009, p. 227). This procedure used to establish both credibility and transferability of a study. Detailed and vivid description of a study enables readers to make decisions about the extend of applicability and transferability of findings to the similar context (Creswell & Miller, 2000; Guba & Lincoln, 1982). Therefore, following this procedure, researcher clearly explained research setting, cases, participants, and data collection and analysis procedure in full details to enable researchers and practitioners understand the investigated phenomenon and possibly transfer findings to the similar contexts.

### *Maximum Variation*

A carefully and intentionally decided sampling strategy is another way of increasing the transferability potential of a study. Purposeful case selection and within case sampling which is intended to maximize the variation can extend the range of information to be investigated; therefore, such a sampling strategy can enhance the transferability of a study (Guba, 1981; Merriam, 2009). As discussed in the case selection and participant selection sections of this chapter, in this study, case selection was purposeful selection and within case selection was based on maximum variation sampling strategy. For the both selection procedure, the main criteria was the potential to achieve a full understanding of the investigated phenomenon. Both case selection and participant selection procedures of this study enhance the transferability of the research process and the findings.

### **3.12.3 Dependability**

Dependability or consistency, equivalent of reliability, is an issue related to the internal consistency and stability of the findings over time (Miles & Huberman, 1994). The positivist paradigm's criterion of reliability is based on whether findings can be replicated or not; however, in qualitative studies this criterion is problematic as human behavior is not static and it is difficult to be replicated between different people. Instead, qualitative researchers concerned about the consistency of the findings; whether the similar findings would be found if another person analyze the same data (Merriam, 2009). Methodological triangulation, peer examination, audit trail and intercoder agreement in data analysis are the suggested strategies for dealing with dependability issues (Creswell, 2007; Guba, 1981).

#### *Audit Trail*

Audit trail is unique strategy suggested by Lincoln and Guba (1985) that can be used to deal with dependability and credibility issues. For audit trail, researcher need to keep a journal to record all the research details and decisions about research context, timeline of study, data collection and analysis procedures (Creswell & Miller, 2000). An external auditor should be able trace-back all research decisions from these document (Guba & Lincoln, 1982). All details about this study's research process were recorded and presented to construct a traceable trail by readers who can benefit from details. In this chapter, research context, case selection, participant selection, data collection instruments and data analysis procedures are described in details based on the notes taken during the study.

#### *Intercoder Reliability*

The fact that coding process is highly interpretive, an external coder check is essential for the stability of the emerged codes and themes. Intercoder agreement is a special procedure that is applied during the data analysis phase to enhance the dependability of the findings (Creswell, 2007). In this cross-checking process, two or more researchers compare their independent coding of the same data to check whether they agree on the tagged segments of the data. As noted by Creswell (2009), "it is not that they code the same passage of text. but whether another coder would code it with the

same or a similar code” (p. 191). Various approaches of intercoder reliability measures are proposed. For instance, Miles et al. (2014) suggested that the final intercoder agreement should be within 85% - 90% range (p. 85). On the other hand, Bazeley (2013) argued that the goal of this process is not to just reach a statistical measure, instead, research should provide clear evidences of the coding decisions and ensure that these decisions make sense by a second observer.

In light of suggested procedures, in this study, the goal of second coder was not to come up with same codes. The goal was to ensure the consistency of codes and categories. Furthermore, discussions and brainstorming with someone else would be invaluable.

For intercoder procedure, researcher asked help from two graduate students. Both of them were familiar with the aim and overall process of this study. As first step, researcher coded one participant’s interview data with one intercoder and explained the rationale of codes and categories. In the second step, researcher gave two participants’ data to be coded by researchers independently. Each intercoder analyzed one case’s data; researcher who had 3D VWs experience coded 3D case’s data while the other researcher coded the FtF case’s data. As third step, their coded data and researcher’s coded data were compared using MAXQDA’s “intercoder agreement” feature. During the analysis, 85% segment agreement correlation was used; which means for one code to be identified as agreement the 85% of text segment should be the same. The initial agreement between both intercoders were around 65%, which is expected for initial step (Miles & Huberman, 1994). Some reasons of disagreements were length of coded segments, code name differences etc. In the final step, these text related disagreements were fixed. Later, researcher and intercoder discussed and brainstormed about non-agreed codes. After reaching an agreement, all necessary changes were done in other data files. Using MAXQDA’s “intercoder agreement” feature, the final reached intercoder agreement for 3D case was 86% and it was 92% for the FtF case. It is important to note that data files for 3D case were longer than the other case.

### **3.12.4 Confirmability**

Confirmability, equivalent of objectivity, refers to whether the findings are confirmable; in other words, whether the analysis is grounded in the data and whether inferences based on the data are logical, appropriately coded, and clearly explained (Lincoln & Guba, 1985). This concept emphasizes the neutrality and confirmability of the data more than the neutrality of the researcher (Guba, 1981). While seeking confirmability, Guba recommends to employ triangulation and reflexivity strategies.

#### *Triangulation*

Triangulation strategy was explained at the beginning of this section for establishing credibility. Similarly, multiple data sources from multiple participants were collected to ensure the confirmability of this study.

#### *Reflexivity*

Reflexivity is the procedure that researcher self-disclose him/her about the beliefs, biases, assumptions and experiences that may influence the inquiry (Creswell & Miller, 2000; Merriam, 2009). This procedure enhances the credibility and confirmability of the research as it allows readers to understand researcher's position and how researcher arrived to particular interpretations. In order to deal with credibility and confirmability issues of this study, researcher's role and biases are discussed in the next section of this chapter.

### **3.13 Researcher Role and Bias**

The role and status of researcher is critical, especially in qualitative research, as researcher is the primary source of data collection and analysis (Merriam, 2009). This requires clear identification of the personal experiences and biases about the investigated topic (Hatch, 2002; Yin, 2009). In this study, the researcher's role was an evaluator, as described by Stake (1995); to search for strengths and shortcomings of each case based on pre-defined criteria.

The researcher, had taken several PhD level course related to designing and conducting both qualitative and quantitative research methodologies. Also, previous research

experiences in the field of Instructional Technology enabled him to identify strengths and weakness of the used method and data collection methods.

In addition to research methodology knowledge, researcher has extensive experience of using 3D VWs both as a user and a researcher. He took a graduate course about 3D VWs in education, and developed projects in this environment. Additionally, he has been conducting research about effectiveness of these environments in education and other potential areas. Although previous experience and knowledge of the field has great value, it leads to a “bias toward verification, understood as a tendency to confirm the researcher’s preconceived notions” (Flyvbjerg, 2006, p. 234). Despite all efforts made to enhance objectivity, it may still shape researcher’s understanding of the data and interpreting the results. Therefore, researcher was aware of this bias and ensured to not take favorable position for 3D Group or FtF Group. Research’s main goal was not to judge which environment was better, instead his goal was to identify both environments’ strengths and weakness which can help practitioners, policy makers and researchers about making decisions. This bias was minimized by using various data sources, observing all group sessions and discuss about the effectiveness of sessions with group leader at the end of each session.

While collecting qualitative data, particularly with observations and interviews, the interaction between researcher and participants is inevitable; therefore, researcher need to take certain precautions to eliminate negative effects (Yıldırım & Şimşek, 2013). While interacting with participants of the study researcher’s status was observer-as-participant (Stake, 1995). This allowed researcher to focus on the primary research concerns and build a balanced relationship with participants. However, researcher was actively involved in the process of organizing sessions and activities, and had effective cooperation with counselors. Furthermore, researcher designed and developed the virtual environment and all instructional materials which helped him to better understand and interpret overall research process.

### **3.14 Ethics**

Ethical protocols are essential to every type of research, particularly for the qualitative case studies as it involves direct contact with participants in real context and recording

various information about them (Yin, 2009). In addition to general research design related ethical standards, online counseling related ethical issues were considered carefully as privacy and confidentiality of participants is one of the main concerns in this type of counseling.

Yin (2009) listed the essential procedures for protecting human subject as; gaining informed consent from all participants, protecting participants from any harm, ensuring the privacy and confidentiality of participants. These protocols and Patton (2002)'s "Ethical Issues Checklist" were used as guideline.

The first step of ethical consideration was to get approval from Institutional Review Board (IRB). "The purpose of an IRB is to insure that its institutional representatives are conducting research with humans in an ethical manner and in compliance with governmental and legal regulations." (Saldana, 2011, p. 86). Researcher submitted research proposal, data collection instruments and informed consent form to the METU Ethics Committee and obtained approval from the committee (see Appendix A). Secondly, at the beginning of the program all participants were openly and clearly informed about the program without any deception to ensure their awareness and volunteer participation. All participants signed the informed consent (see Appendix B) before joining the study. Finally, during the data collection and data analysis process ethical issues were considered based on guidelines provided by Creswell (2009). Prior to each data collection procedure, participants were informed about the purpose and were provided right to decline or remove any section of the recorded data. Similarly, during the data analysis and presenting results participants' anonymity was considered as priority and several precautions were utilized such as using labels instead of names and removing all individual identifies.

In addition to addressing ethical concerns about general research process, in this study special consideration was required for the implementation of the program due to importance of ethics in online counseling. Ethical concerns is one of the essential challenge of practicing online counseling that need to be addressed(Mallen, Vogel, & Rochlen, 2005; Richards & Viganó, 2013). Furthermore, there are some ethical and professional concerns specific to the group practice (American Mental Health Counselors Association, 2000; Corey, 2012; Rapin, 2004).



In order to address ethical concerns about practice of this study, specific guidelines published by professional organizations (American Mental Health Counselors Association, 2000; American Psychological Association (APA), 2013; European Federation of Psychological Associates, 2001) and guidelines suggested by scholars (Abbott et al., 2008; Mallen, Vogel, & Rochlen, 2005; Page, 2004) were considered. Based on these guidelines;

- Participants of 3D virtual group were selected after screening process to ensure that they have required skills and technological tools for participating the program. Furthermore, before starting the program all members were trained for using the system.
- Group members were informed about professional qualifications of group counseling leaders. In addition to researcher's contact information, contact details of METU LSD Center and counselors were provided to participants and they were informed that they can meet counselors in face-to-face in case of need for individual support or emergency.
- Researcher provide necessary training and support to group leaders in order to ensure their competency with used technology. Also, during the pilot study, they had opportunity to practice counseling in 3D environment.
- In order to protect participants' data and maintain confidentiality, a dedicated closed system was used. Nobody, except participants, had access to the the virtual environment.

### **3.15 Delimitations and Limitations**

This study had some delimitations that should be considered by readers. Firstly, this study was delimited to investigating psychoeducational group process in 3D virtual world based on procrastination program. Other types of counseling groups and psychoeducational topics may yield different results. Second delimitation was the qualitative research design of the study. The aim of case-studies is not to generalize the findings (Yıldırım & Şimşek, 2013); therefore, current study aimed to provide thick descriptions which can be used for transferability and confirmability of the study.

Another delimitation of study was its small sample size of undergraduate students in METU, Ankara. It was considered to only include undergraduate students after pilot study. Although graduate students could provide invaluable information, there was not enough resources and time to conduct a group with this population.

In addition to above mentioned delimitations, this study had some limitations that were out of researcher's control. Firstly, this study was limited to students who applied to participate study voluntarily to cope with procrastination. Collected data could be influenced by their motivation and severity of the procrastination behavior. Furthermore, results were limited to participants' honest answers to questionnaire and honest reflections during the interviews. The fact that participants built an intimate relationship with counselors and researcher, especially in FtF group, might led them to express only positive experiences. Although researcher utilized other forms of data collection methods such as observation to not over-rely on participants' opinions, it was not possible to collect data about some aspects with this method. The third limitation was the short length of the intervention. This limitation particularly important for 3D virtual group as participant competency of using the software and environment might take some time to effectively participant in the group process. Finally, this data was limited in terms of the questionnaires used for data collection. As explained in data collection instruments section of this chapter, reliability and validity of evidences of some instruments were not ensured. Therefore, results of the questionnaires should be interpreted carefully and they need to be considered for descriptive purposes only due to very small sample size and limited reliability evidences.

## **CHAPTER 4**

### **RESULTS**

This chapter presents the finds of current multiple-case study based on group members' demographic information and research questions. The first section of this chapter presents participants' demographic information. It consists of descriptive information of their prior Internet usage patterns, gaming experience, counseling experience and 3D VWs experience. In the second section of the chapter, results of the study are presented. According to Gibson and Brown (2009) results of qualitative data analysis might be organized around particular concepts or around particular research questions. In this study, the latter structure is preferred as it provides a very clear way to address research questions.

Firstly, participants' perceived affordances and challenges of the 3D VWs for psychoeducational groups are presented. Second, specific aspects of the 3D VWs and members' experiences of the environment are described. Furthermore, 3D group participants' overall sense of presence and factors affecting it are investigated. Third, both cases' similarities and differences in terms of group process and group outcomes are discussed. While group process mainly discussed based on self-disclosure and factors affecting it, group outcomes are discussed in terms of cognitive, emotional and behavioral changes. Fourth, results related to instructional aspects of delivering successful psychoeducational groups in 3D VWs are presented. Finally, both cases' motivation and satisfaction aspects are described.

#### **4.1 Affordances and Challenges of 3D VWs (R.Q. 1)**

The first research question of this study was “*What are the perceived affordances and challenges of 3D VWs for psychoeducational groups?*”. The fact that 3D environment’s affordances and challenges for psychoeducational group counseling were the main focus of the research question, data analysis and coding was constructed based the 3D group. Therefore, revealed categories from 3D group’s data are presented along with the categories from FtF group (see Table 4.1). The categories were revealed from coding of the interview data. Furthermore, categories were supported with the researcher’s notes, observations forms and session recordings. It is important to note the difference between both cases; identified affordances and challenges in 3D group are based on the group members’ experience while in FtF group they are based on their perceptions. Moreover, FtF group’s challenges are presented, which can help reader while interpreting the findings.

Table 4.1 – *Frequencies of affordances and challenges by group members*

<b>3D Group (N = 9)</b>			<b>FtF Group (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>3D VW's Affordances</b>			<b>3D VW's Perceived Affordances</b>		
Comfort of Self-disclosure / Sharing	9	53	Convenience	6	10
Anonymity	8	44	Comfort of Self-disclosure / Sharing	7	9
Interactive & Rich Environment	8	43	Anonymity	7	8
Convenience	9	29	Interactive & Rich Environment	5	8
Accessible & Reachable Content	5	12	Accessible & Reachable Content	3	3
<b>3D VW's Challenges</b>			<b>3D VW's Perceived Challenges</b>		
<i>Technical Issues</i>	9	43	Lack of Socialization / Friendship	7	13
<i>Interaction Issues</i>	8	21	Lack of Non-verbal Cues	7	9
Connected Place	5	18	<i>Negative Attitudes for Virtual</i>	4	6
Multitasking	5	17	Multitasking	4	5
<i>3D Environment as Distraction</i>	3	15	<i>Less Dedication</i>	3	5
Lack of Non-verbal Cues	6	13	Connected Place	2	3
Lack of Socialization / Friendship	5	9	Respect and Trust Concerns	2	3
Trust Concerns	4	4			
			<b>FtF Environment's Challenges</b>		
			Physical Environment	7	16
			Technology Integration Issues	6	13
			Interaction Issues	3	7
			Negative Attitudes in Group	3	5

*f* = Code frequency

#### 4.1.1 Affordances of 3D Virtual Environment

Affordances of 3D VWs were investigated based 3D group members' overall experiences and based on FtF group members' perceptions. Results revealed that both

groups identified similar affordances; *comfort of self-disclose and sharing, anonymity, interactive and rich environment, convenience, and accessible content* were the major affordances. In this section, further details of these affordances and participants' responses are presented.

### **Comfort of Self-disclosure and Sharing**

The expected level of self-disclosure in psychoeducational groups is quite low compared to other counseling types. However, due to socio-cultural differences, counselee may not feel comfortable even in psychoeducational groups. Some participants may not feel comfortable to talk in social setting and hesitate sharing experiences. For example, some members of both cases of the current study stated that they would not share their participation of such a program with their friends or parents.

Results of 3D case revealed that comfort of self-disclosure and level of sharing experiences was the most significant affordance of the 3D VWs. All members of this group underlined this factor. Participants expressed that anonymity increased their comfort of self-disclosure. Moreover, some participants commented about the general comfort of sharing experiences from their private life.

3DMember7: Virtual environment helps people to self-disclose. I don't know, if there was my classmate may be I would not want to share those with them.

3DMember7: Sanal ortam insanların kendisi açması açısından yarar sağlıyor. Ne bileyim belki benim sınıf arkadaşım olsaydı ... belki ben onları onların yanında söylemek istemezdim.

3DMember2: For example, I shared my problem with my girlfriend, in the section of procrastinating breaking up with someone ... Normally, I would not share [in face-to-face] this among those many people.

3DMember2: Mesela kız arkadaşım ile olan sorunu söyledim, birisiyle ayrılmayı erteleme kısmında.... Onu normalde söylemezdim hani o kadar kişinin içinde.

Analysis of the qualitative data further revealed the sub-dimensions of this factor. For instance, comments showed that 3D VWs can be beneficial for shy or timid individuals.

3DMember1: I am a very shy person. I care too much about what other people think and what they will think about me. I pointlessly care much. Therefore, as I just said, virtual environment led me to behave more comfortably.

3DMember1: Ben çok çekingen bir insanım. İnsanların hakkımda ne düşüneceğine ve ne düşündüğüne çok önem veririm. Gereksizce önem veririm. O yüzden demin dediğim gibi sanal ortam daha rahat davranmama sebep oldu.

3DMember6: Really, virtual environment can be a very good environment for friends who hesitate to contact with other people while talking.

3DMember6: Gerçekten, konuşurken diğer insanlarla temas kurmaktan çekinen arkadaşlar için güzel bir ortam olabilir sanal ortam.

Results of FtF group displayed a similar pattern in terms of perceived affordances. Seven participants in FtF group perceived comfort of self-disclosure and level of sharing experience as an affordance of virtual group. One participants asserted this:

FtFMember6: I think; members would definitely be more comfortable there [virtual environment]. There would not be a difference for me, but would be a difference in general. Because people really express things, that could not express in real life, more comfortably in virtual environment.

FtFMember6: Kesinlikle oradaki (sanal ortam) üyelerin daha rahat olacağını düşünüyorum. Kendi adıma herhangi bir fark olmazdı ama genel olarak ben bir fark olacağını düşünüyorum. Çünkü insanlar cidden ... sanal ortamda, gerçek hayatta ifade edemedikleri şeyleri daha rahat ifade edebiliyorlar.

## **Anonymity**

Anonymity is a major component of the online counseling. However, level of anonymity depends on the used technological medium and setup of the system. For instance, in video conferencing participants are psychically not anonymous. In order to achieve full anonymity, in this study, participants used avatars and nicknames to ensure physical and identity anonymity.

Anonymity, in general, was the second most mentioned affordance of 3D group; eight participants considered this as a significant factor. An interesting result was revealed in FtF group; although participants in FtF group did not have any experience of anonymous counseling, most of them perceived that this factor can be beneficial for group counseling process.

Qualitative analysis of the participants' comments showed that there were sub-categories of anonymity affordances namely decreased anxiety, no prejudice, help adaptation, and easy of escape.

*Decreased anxiety.* This benefit of anonymity was mainly related to the physical anonymity. Participants expressed that they felt less anxious as they did not need to worry about how they look like. Furthermore, it was clear that lack of non-verbal cues had some advantages.

3DMember4: I could be timid [in face-to-face]. Thinking about how I look like... It is actually kind of a good thing that other side does not see me and to not see other side's mimics. It increased confidence.

3DMember4: Ama çekingen olabilirdim (yüz yüze grupta). Nasıl görüldüğünü düşünmek... Ben konuşurken karşı tarafın bakmaması onların mimiğini de görmemek biraz da aslında iyi bir şey. Güven veriyor.

A member of FtF group pointed to the importance of physical anonymity in the same manner as other group.

FtFMember8: It could be easier to adapt [in virtual environment] since here people are looking at you while you are speaking. This is something discomforting. I mean you move your hands, you don't know where to place them...

FtFMember8: Adapte olmak daha kolay olabilirdi çünkü burada konuşurken insanlar sana bakıyor. Bir kere bu rahatsız edici bir şey. Yani elin kolunu oynatıyorsun, nereye koyacağını bilemiyorsun...

*No prejudice.* Anonymity decreases members' prejudices and pre-judgments towards each other in the group. For instance, 3DMember5 expressed that there could be prejudice for a member who has scar on face or an over-weight girl. Similarly, another member commented as:

3DMember8: It is a big advantage of virtual environment as nobody has any prejudice for my name. Because I was there from the beginning, there is none information about me in any one's mind.

3DMember8: Hiç kimsede benim ismim ile ilgili hiç bir ön yargının olmaması sanal ortam da çok daha avantajlı. Çünkü ben en baştan ordayım, hiç bir bilgi yok kimsenin aklında benim ile ilgili.

*Help for adaptation.* Participants of both groups expressed that anonymity is important as it can be leverage for adapting the group environment.

FtFMember2: In my opinion, starting can be more comfortable there [virtual environment], I can just start talking as I want in the beginning. Here, in face-to-face, it is a process developing slower.

FtFMember2: Orada başlangıcı daha rahat olabilir bence, derse direk istediğim gibi konuşabilirim başlangıç açısından. Burada, yüz yüze de, biraz daha yavaş gelişen bir süreç.



*Ease of escape.* Comfort and ability to leave the environment in negative situations or when feeling uncomfortable was accepted as a benefit of anonymity. For example, 3DMember9 commented that leaving group environment in unpleasant situations would be difficult in face-to-face environment while in virtual it was “as easy as pushing a button”.

Effective for more severe issues. An unexpected finding was that two participants in 3D group expressed the importance of anonymity for different types of counseling groups.

3DMember9: If it was a vital, more serious, topic for me... I think about alcohol addiction group... If it was group for alcohol addiction, virtual could be a good method.

3DMember9: Benim için daha hayatı bir konu olsaydı, daha kritik... Alkol grubu aklıma geliyor. Alkolikler için bir grup olsaydı, sanal güzel bir yöntem olabilir.

### **Interactive and Rich Environment**

3D interactive space is one of the virtual worlds’ unique characteristics compared to traditional mediums. Users can interact with objects in the environment or even manipulate them. This rich and interactive environment’s effects on the counseling process is a crucial question investigated in this study.

Results of the qualitative data analysis presented that 3D VWs’ interactiveness was considered as a major affordance. Eight members who have experienced counseling process in this environment considered this as an affordance. Interestingly, the frequency of participants who identified this factor in FtF group was also high; five participants perceived interactive and rich environment characteristic as an affordance of virtual environment.

A further investigation of data showed that interactive 3D environment can contribute to psychoeducational counseling process in three ways.

*Attractiveness of the environment.* Firstly, this environment can be a motivational factor for participants. It can attract more people to prefer counseling in such environment. For instance, one participant commented as:

3DMember4: When I first saw it [3D environment], I thought that we will try to learn while having more fun.

3DMember4: İlk gördüğümde, daha çok eğlenerek bir şeyler öğrenmeye çalışacağımızı düşündüm.

*Interactive activities and materials.* The second benefit of 3D interactive environment is the ability to create more effective instructional materials. Also, various activities can be organized using this environment. Participants from 3D group gave examples based on their experiences, while similar comments in FtF group showed they perceived this affordance.

3DMember2: There are many possibilities in virtual environment in terms of materials. It is possible to open something in computer, there are tables, surveys and interactive boards. Now what I see here [face-to-face environment] is a board; therefore, virtual environment is more advantageous .... In terms of the activities, again, virtual environment is a big advantage, because you could create something in 5 seconds and we could do something around it.

3DMember2: Materyaller açısından sanal ortamda bir çok olanak var. Hani bilgisayardan bir şeyler açılabilir veya tablolar var, anketler var, interaktif tahtalar var. Burada tek gördüğüm şu anda tahta, o anlamda sanal ortam daha avantajlı ... aktiviteler açısından da sanal ortam yine çok büyük avantaj, çünkü siz 5 saniyede bir şey yaratıp biz onların etrafında bir şeyler yapabiliyoruz.

FtFMember2: It [virtual environment] could be more interactive ... There are unlimited resources there, it was a bit limited here. More effective things could be conducted there.

FtFMember2: O daha interaktif olabilirdi. ... Orda çok daha sınırsız kaynağımız var, burada biraz daha kısıtlı idi o. Orada daha etkin şeyler yapılabilirdi.

*Environment's therapeutic effect.* This rich environment's visual effects can be used for therapeutic purposes in counseling process. Participants' comments showed that visually appealing environments such as tropical island, mountain views etc. was preferred more. They expressed that such environments were relaxing and encouraging participation. One participant's response which illustrated the environment effect was as follow;

3DMember6: In environment, especially in island, a person feel good and relaxed... I don't know, even though we are not there, seeing it makes someone happy. In fact, sometimes I was logging and walking around by myself without any reasons. I relate this with the fact that I liked the environment.

3DMember6: Ortamda, özellikle ada da, kendini iyi hissediyor, rahatlıyor insan... Ne bileyim orda olmasak bile onu görmek insanı mutlu ediyor. Ya aslında ara sıra girip, boş boş kendimce dolandığım da oluyordu. Bunu şeye bağlıyorum, ortamı seviyor oluşuma...

## Convenience

Convenience is a well-known advantage of online counseling. As expected, this factor was identified as a major affordance of 3D VWs. All members of 3D group and six members of the FtF group shared the same opinions about convince of counseling in virtual environment.

Based on the results, convince had three major sub-categories; time, connecting from anywhere, and comfort of connected place.

*Time convenience.* Participants' comments revealed that the ability of meeting online at anytime and allocation of less time were time related advantages. A comment from each group was presented below:

3DMember6: I think there are many people that would really prefer [virtual group] because of the time. Person who does not have time would attend to that [virtual group] just because of this.

3DMember6: Zaman açısından tercih etmeyi düşünecek çok fazla insan olduğunu düşünüyorum gerçekten. Vakti zamanı olmuyor, ona katılacaktır sırf bu yüzden.

FtFMember1: Virtual is more favorable because of the time. For example, you can organize it at any time we want, in my opinion this is important.

FtFMember1: Saati ile daha olumlu sanal. Mesela istediğimiz saate yapabiliyorsunuz, bana göre o önemli.

*Connect from anywhere.* The second convenience sub-category was transportation related advantages. Participants of both groups stated that ability to connect from anywhere was a major advantage. In 3D group, a member shared an interesting experience; for one session, after the exam, he unplugged wending machine and connected from there.

3DMember2: In one session... I unplugged wending machine's cable and plugged in my computer :)

Researcher: How was the experience of connecting from there?

3DMember2: In terms of the emotion, I felt like I succeeded everything. It was kind of I can do anything from anywhere...

3DMember2: Bir oturuma da ... koridorda yiyecek makinesinin fişini çektim, bilgisayar fişini taktım :)

Araştırmacı: Oradan bağlanmak nasıl bir deneyimdi?

3DMember2: Duygu anlamında aslında hani her şeyi başardığımı hissediyorum. Hani her yerde her şeyi yapabiliyorum tarzında...

*Comfort of connected place.* Two participants in 3D group shared their experience about the comfort of connecting from their home. They stated that it was a good feeling to connect from their home which was more comfortable compared to face-to-face environment.

### **Accessible and Reachable Content**

This affordance was emerged for both cases of this study as well. In 3D group, five participants considered access as an affordance. Interestingly, three participants of the FtF group also perceived this as an affordance. 3DMember5 highlighted the benefits of reachable content and activities. Moreover, FtFMember9 commented in the same manner.

3DMember5: The fact that activities and presentations were there [virtual environment] always helped me a lot. When I missed something, it helped me to check them again after the session.

3DMember5: Sunum ve etkinliklerin sürekli orda olması baya yardımcı oldular bana. Konuyu kaçırdığımda orda seminerden sonra tekrar bakmama yardımcı oldu.

FtFMember9: It can be more permanent in 3D. Here, it is happening instantaneously; we are here for 1.5 hours, it is like the process flows faster. Maybe they could reach the content more easily in 3D.

FtFMember9: Daha kalıcı olabilir 3D’de. Burada anlık oluyor; 1.5 saat buradayız, biraz daha hızlı akış geçiyormuş gibi. 3D’de belki daha rahat ulaşabiliyorlardır içeriğe.

#### **4.1.2 Challenges of 3D Virtual Environment**

Challenges of 3D VWs were investigated based 3D group members’ overall experiences and based on FtF group members’ perceptions. Results showed that whilst there were common challenges identified in both groups, some challenges were only in one group. *Technical issues, interaction issues, multitasking, connected place, lack of socialization, lack of non-verbal cues, negative attitudes for virtual communication, and trust concerns* were stated challenges. Another interesting finding was that the significance level of these challenges varied between groups. For instance, while *lack of socialization and friendship* in 3D environment was perceived as a major challenge in FtF group, the same challenge was one of the least significant challenge for 3D group. In this section, further details of challenges and participants’ responses are presented.

## Technical Issues

3D group was designed based on OpenSim, which requires Internet connection, audio capable computer and decent graphic card for rendering the 3D environment. All participants were connected to the environment using their own computers from their home or school dorms. Due to the fact that technical problems is a well-known challenge of online counseling, researcher took precautions before starting the program in order to decrease their occurrence. However, they were still the problems because of the technical infrastructure and computers' performance.

Results clearly showed that technical issues were the main challenge of the 3D environment for psychoeducational group counseling. Voice problems (eight participants) and Internet connection problems (eight participants) were the mostly occurred issues. Moreover, four participants had problems with their computer's performance and three participants experienced problems of not seeing their avatars.

As discussed in the other sections of this chapter, technical problems had impact on participants' motivation, satisfaction and counseling experience. In this group, participants who frequently experienced technical problems noted these issues affecting their experience as frustration, barrier to adopt, feeling of isolation and missing some parts of the session. 3DMember3 stated that the week she experienced technical problem, she was less motivated to attend the session. Similarly, one member highlighted such problems' effect on adaptation and missing some parts of the session:

3DMember4: Technical problems delayed my adaptation to the environment. Because there was an ongoing topic and program. When you miss one part, you try to compensate that... When asking group leaders, I was feeling as I am pulling them back; therefore, I was hesitating a bit.

3DMember4: Teknik problemler oraya adapte olmamı erteledi. Çünkü konuşulan bir konu var ilerleyen bir ders program var. Onun bir yerinden kaçırınca o arayı doldurmaya çalışıyorsun ... Grup liderlerinden rica ettiğim zaman geri atıyormuş gibi hissettiğim için biraz çekingen davranıyordum.

During the program researcher was providing technical support to members and leaders. The importance of technical support was expressed as crucial factor by some participants.

3DMember7: We could ask you [help] when having a difficulty ... This definitely was a very good feeling.

3DMember7: Zorlandığımızda da size sorabiliyorduk zaten ... Bu kesinlikle çok güzel bir duygu!

3DMember6: In general, I did not have problems with things I used. I did not find anything difficult. In case of such a [problem], it was a big advantage to be able to contact you immediately.

3DMember6: Ama genel olarak kullandığım şeylerde problem yaşamadım. Zor gelen bir şey olmadı. Zaten öyle bir [problem] olsa, hemen sizinle iletişim kuruyor olabilmek büyük bir avantajdı.

## **Interaction Issues**

The second most commented challenge of 3D VW was interaction issues. At most all of the participants stated the interaction challenges during the counseling experience. These issues were mostly related to technical limitations which caused communication deficiencies.

*Speaking order.* The first issue was related to speaking order. Some participants stated that they were interrupting each other or did not know when to start talking. One member highlighted this limitation as;

3DMember8: In virtual environment we can not speak whenever we want ... For example, we did not know when to speak, this is very important.

3DMember8: Sanal ortamda istediğimiz zaman konuşamayız ... Ne zaman konuşacağımızı bilemiyorduk mesela, bu çok önemli.

*Lack of interaction with group members and leaders.* This was the second issue stated in terms of interaction. 3DMember6 stated that in face-to-face environment it would be more effective to see people following you and get feedback based on what you shared. Similarly, 3DMember4 pointed to the lack of immediate reaction about interaction with group leaders;

3DMember4: For example, our instructors were saying something entertaining, as our microphones were off, we seemed as we were not caring them, which was a bad feeling. If we had laughed, it would be too loud.

3DMember4: Mesela eğitmenlerimiz eğlenceli bir şey söylüyor, bizim mikrofonlarımız kapalı olduğu için sanki onu takmıyormuşuz gibi o his kötü oldu. Eğer gülssek te böyle ağzımızdan çok çıkacaktı.

## **Multitasking**

Computer environment has various distractions for users. Unlike individual counseling session, in group session the focus is not on the counselee every time. This is valid for online group programs as well. Thus, group members may tend to multitask during the counseling sessions.

Five participants in 3D group noted multitasking and distractions in computer environment as a challenge of psychoeducational counseling in 3D VWs. Based on their comments, playing game, talking with friends, checking social media accounts, and organizing books were the multitasking activities. 3DMember5 underlined the risk of losing focus in computer environment:

3DMember5: Sometimes [I] lost focus, it is easier to lose focus. In this [face-to-face] seminar environment, we can not go out to check mobile phone... one second I have a notification :) However, there [online] we could lose focus with in a minor distraction.

3DMember5: Bazen odak kaçabildi, daha kolay odak kaçabiliyor. Bu seminerde ortamından çıkıp cepe baksak olmaz... bir saniye bir bildirim geldi :) Ama orda en ufak bir şey direk başka yerlere dağılabildik.

Another member explained the reasons of multitasking and underlined that she associates computer environment with playing games:

3DMember7: I guess the thing attracted me was connecting with computer. Because I associated computer mainly with games ... When logging to the computer, same thing happens when writing [homework] reports too, I am conditioned for games in computer.

3DMember7: Sanırım bilgisayar ile bağlantılı olmaktı beni çeken. Bilgisayar ile o oyunları daha çok özdeşleştirmişim çünkü ... Bilgisayarımı elime alınca, rapor yazarken de aynı şey oluyor benim için, bilgisayar ... kullanmışım aslında o oyun için.

Similar to 3D group, multitasking and distractions in online environment were perceived as challenge by FtF group's participants. Four participants of the group identified this challenge in the same manner; noted distraction factors were social media and gaming.

## **Connected Place**

In 3D group five participants told about the appropriateness of the connected place which was considered as a challenge of counseling in 3D VW. 3DMember5 shared his experience while connecting one of the sessions during the holiday;

3DMember5: That Sunday session, I was with my parents, I typed in keyboard and I did not talk that week. I mean, maybe I would tell something that they did not know, in fact they think that I am studying. May be I would talk about that I am not studying and I have problems.

3DMember5: O Pazar günü yaptığımız, yanım da ailem vardı, klavyeye yazdım o hafta konuşmadım. Yani belki onların bilmediği bir şey diyecektim, nitekim onlar çalıştığımı biliyorlar. Belki böyle yani çalışmadığının ve sıkıntı duyduğumu konuşacaktım.

In addition to family related concerns, two participants who connected from their dorm rooms had similar challenges. They stated that they did not feel comfortable while somebody else was in the room as they could not concentrate and had privacy concerns.

Issues related to connected place were perceived as challenges of online counseling by two participants of FtF case in the same manner as 3D case. One FtF case's participant commented about privacy concerns and challenges in case of online participation;

FtFMember3: Somebody would be at dormitory and other would be at home. Simply, for example, one of friends would come ask about what I am doing, and you can not tell everybody about such things. The guys would make fun of you, it does not matter how something great we are doing, s/he would make fun of... I did not tell all my friends [that I am attending this grup]... In computer environment, the guy would come and ask about what I am doing, what I am up to. I may not tell... it can be a problem.

FtFMember3: Kimisi yurttta olacak kimsi evde olacak. En basitinden mesela ne yapıyorsun sen diyecek gelip arkadaşım, ve herkese de söylemiyorsun bu tür şeyleri. Adam dalga geçecek yani, ne kadar güzel bir şey yapsak da dalga geçecek... Ev arkadaşlarımın bile hepsine söylemedim [bu gruba katıldığımı]... Bilgisayar ortamında, adam gelecek ne yapıyorsun, ne ediyorsun gibisinden. Söylemeyebilirim... sıkıntı olabilir.

## **Lack of Socialization / Friendship**

In 3D group, participants used avatars and nicknames during the program. It is clear that distance communication over a technological medium is quite different than face-to-face communication. Although socialization with anonymous identity is constructed in some virtual worlds, in this group this was not constructed. Moreover, socialization was not an intended goal of the program and this factor was verbalized



only by members who had social expectations. As expected, some members of the FtF group expressed that they have socialization expectations in group counseling.

Results showed that five participants in 3D group noted lack of socialization and friendship as challenge of 3D VW. Interestingly, this factor was the most perceived challenge by FtF group's participants. Due to the constructed social relationships in FtF environment, seven members of this group expressed concerns related to factor more than other challenges. Comments below portrayed that concerns were similar for both groups.

3DMember5: In physical environment there would be same content, and you know who you are talking to. That second factor did not happen for me. In face-to-face environment we would gain 10 more friends after the program had ended; however, in [3D] interactive this did not happen because nobody knows each other.

3DMember5: Fiziksel ortamda aynı content olacak, kimlere karşı konuştuğunu biliyorsun hani. O ikinci madde benim için çok olmadı. Program bittikten sonra yüz yüze ortamda artı 10 arkadaş kazanacaktık ama interaktifde böyle bir şey olmadı çünkü kimse birbirini tanımıyor.

FtFMember2: It would not be easy to establish friendship relationship there [online environment]. It would be binding for me in terms of social perspective. I was coming here for socialization as well, but there is not such a thing there.

FtFMember2: Orada bir arkadaş ilişkisi kolay kolay kurulmazdı. Benim için sosyal açıdan bir bağlayıcılığı olmazdı. Buraya sosyalleşmek içinde geliyordum ama orda öyle bir şey olmayacaktı.

### **Lack of Non-verbal Cues**

There is a considerable amount of literature portraying the relationship between lack of non-verbal cues and effectiveness of communication. This phenomenon has been a point of interest for counseling practice as well. Psychological anonymity is a double-edged sword for counseling process; it has affordances and limitations. Therefore, this factor was an expected challenge of 3D VWs. Results related to affordances of this phenomenon was presented in other sections of this chapter.

Qualitative data results showed that six participants considered lack of non-verbal cues as a challenge of 3D VWs, while even more participants perceived this phenomenon as challenge in FtF case. Based on the comments, for both cases it can be concluded that communication deficiency was the main challenge due to lack of non-verbal cues.

3DMember6: For example while talking to you now, we have eye contact and I can see your mimics and gestures, this makes me relaxed. I think I am communicating easier.

3DMember6: Mesela sizinle şimdi konuşurken de arada göz teması kuruyoruz, mimiklerini jestlerini görüyorum, bu beni rahatlatıyor. Daha rahat iletişim kurduğumu düşünüyorum.

FtFMember4: First of all I think all communication would be limited [in online environment]. I would be limited to express myself and limited to understand people because I can not see gestures and mimics and this is very important for me. I would not like this.

FtFMember4: Bir kere bence bütün iletişim kısıtlanırdı. Benim insanlara kendimi ifade etmem de kısıtlanırdı, insanları anlama boyutunda kısıtlanırdı çünkü onların ben yani jest ve mimiklerini görmüyordum ve bu beni için çok önemli. bundan hoşlanmazdım.

### **3D Environment as Distraction**

3D interactive environment and avatar representation are unique characteristics of the 3DVWs. These features are common in 3D multiplayer games as well. This interactive environment can prompt a gaming experience and led some user to focus on the environment too much.

One interesting finding was that three members of the 3D group considered 3D environment as immensely interactive. While two of them had used environment for gaming and a medium of procrastination rarely, one member, 3DMember9, expressed that he was immersed in the environment too much that he lost focus of the subject.

3DMember9: No be honest, for me this experience was transformed to program's [3D VW] fascination after a certain time. At certain point ... I moved away from the procrastination topic. Procrastination topic became less important, while program's [3D VW] beauty and gamification became more precious. If I had attended to face-to-face group, I would have had a procrastination related experience but now I had a 3D related experience.

3DMember9: Benim için bu olay bir yerden sonra birazcık programın büyümesine donuştu açık konuşmam gerekirse. Bir noktada ... erteleme mevzuatından uzaklaştım. Erteleme mevzuatı daha önemsiz bir şeye, programın oyunsuluğu ve güzelliği daha kıymetli bir şeye dönüştü. Yüz yüze olan gruba katılsaydım, erteleme ile ilgili bir deneyim yaşayacaktım şimdi 3D ile ilgili bir deneyim yaşadım.

### **Negative Attitudes for Virtual**

Four participants in the FtF group pointed to the importance of attitudes towards virtual communication. They expressed that they do not like any form of virtual communication and would not feel comfortable in such an environment. However,

they also highlighted the importance of personal preferences and that some people would like virtual communication more. One participant's comment was;

FtFMember1: Even though I am new generation, I am against the virtual things, I don't like them. I don't like text messaging.

FtFMember1: Yeni çağ olmama rağmen sanal şeylere karşıyım, sevmiyorum. Mesaj atmasını sevmiyorum.

Interestingly, one member from the 3D group explained her attitudes before and the program.

3DMember7: If it [FtF group] fitted my schedule, I most probably would not choose virtual environment. However, what I have come across destroyed my prejudice. The result, even for a person who approached with prejudice, like me, made me to say that ok! it is good, it can be done.

3DMember7: Saat uysaydı büyük bir olasılıkla sanal ortamı tercih etmezdim. Ama karşılaştığım şey ... ön yargılarımı genel olarak yıktı. Ortaya çıkan sonuç, benim gibi ön yargıyla yaklaşan bir insanın bile, tamam ya! İyi olmuş, yapabilmişler dedirtti.

### **Trust Concerns**

It was found that trust concern was a challenge of the virtual environment. In 3D group, this was stated by four participants. In FtF group, respect and trust was also a perceived challenge. Lack of views and control led some of them to feel uncertain and have doubts about others' actions. For instance, 3DMember5 state that he had doubt about other members' shared information in the first week. One key finding was that trust related concerns exist in the beginning of the process.

3DMember5: Firstly, I did not know who I was talking to, this is a disadvantage sometimes. I don't know who I am talking to. For example, there was a skepticism in the first week; somebody said a department or third year... may be s/he was in prep. class.

3DMember5: Bir kere kimlerle konuştuğum bilemedim, bu dezavantaj bazen. Konuştuğum kişinin kim olduğunu bilmiyorum. Mesela ilk hafta bir şüphecilik oldu; biri dediki bilmem ne bölümü 3.sınıf... belki de o hazırlıktı!

Participants of FtF group shared similar concerns. One difference was that in FtF group, they related expressed the trust and respect concerns together. One of them expressed her concerns about lack of control during the session; FtFMember4 said "may be the computer is on and s/he is gone, there is no way to control this". Another member pointed to the possible disrespectful attitudes; FtFMember9 commented as

“There can be communication problems. People are sometimes behaving disrespectfully”.

### **Less Dedication**

This factor was emerged in FtF group only. Unlike 3D group, they perceived that in virtual counseling process participants may not feel responsible enough. Three members of the FtF group perceived this factor as a challenge of the 3D VWs. FtFMember4 underlined the relationship of the procrastination and responsibility; she thought that virtual environment will be less serious, which would decrease her dedication to the program.

FtFMember4: In this group, people had procrastination problems. I think, my devoutness could decrease in virtual environment. I could procrastinate attending it, I could underestimate it. Ours was an environment that we look at face-to-face and felt responsibility against each other.

FtFMember4: Bu grupta insanların erteleme problemleri var. Sanalda oturuma dair biraz ciddiyetim azalabilirdi diye düşünüyorum ben. Ona girmeyi erteleyebilirlerdi belki, hafife alabilirlerdi diye düşünüyorum. Bizim ki daha yani insanların yüz yüze bakıp birbirlerine karşı sorumluluk hissettikleri bir ortam bence.

### **4.1.3 Challenges of Face-to-Face Environment**

Although the purpose of this study was not to identify challenges of face-to-face environment, participants were asked about their perceived challenges relative to the virtual environment. Four major challenges were noted; *physical environment*, *technology integration issues*, *interaction issues* and *negative attitudes among members*. In this section these challenges are presented.

#### **Physical Environment**

Physical environment, more specifically limited space and room’s ambiance, was the major perceived challenge of face-to-face environment. Seven members of FtF case commented about this challenge.

FtFMember4: This place very small, it is more like an office. I would prefer to have sessions in a wider and spacious place.

FtFMember4: Burası böyle çok minik, ofis havasında. Daha geniş ferah bir yerde oturum yapmayı tercih ederdim.

## **Technology Integration Issues**

Comparing with 3D environment, in face-to-face environment it was considered more difficult to integrate technological materials. Six members expressed that using presentations or other digital materials was not effective during the sessions.

## **Interaction Issues**

Some of the members highlighted their experiences related to interaction issues. The first issue was that some of the members were willing to talk too much which causes interruptions. Such interruptions led to negative attitudes among members, which is discussed in the next section. The second issue was that shy members had difficulties in group activities. One member shared his experience in one group activity:

FtFMember7: Because I did not know the other person at all. Should I speak first, should she speak first, will I get stuck ... I did not want to have a negative impression.

FtFMember7: Çünkü karşımdakini hiç tanımıyordum. İlk o mu konuşsun ben mi konuşayım, konuşabilir miyim, takılır mıyım gibi bir ... yani kötü bir etki bırakmak istemiyordum.

## **Negative Attitudes in Group**

Results revealed that face-to-face communication, compared to virtual counterpart, has some challenges. Three participants in FtF group shared their negative attitudes in the group. One of them stated that she had bias against some group members in the beginning of the program and that it was not easy to overcome this. Interestingly, another member had negative feeling against group leader based on gestures.

FtFMember3: Leader2 should not sit as she knows everything. It was sticking out to me. There was expression of "I know everything". For instance, this negatively affected me to some degree.

FtFMember3: Lider2 çok bilmiş tarzda oturmaması lazım. Benim o çok gözüme batmıştı yani ... Her şeyi ben biliyorum edası vardı ... mesela o beni biraz negatif etkiledi.

### **4.1.4 Counselors' Perceived Affordance and Challenges**

In the previous sections, affordance and challenges of both cases were presented from counselee's perspective. Counselors' opinions are invaluable in order to understand the overall counseling process better. The fact that they had experience of counseling in face-to-face setting will allow them to evaluate various aspects of virtual

environment. In this section, affordances and challenges of virtual environment from counselors' perspective are presented.

### **Counselors' Identified Affordances**

*Convenience.* The major affordance identified by counselors was the convenience factor of the virtual environment. They considered this environment convenient in terms of flexibility, on demand access and no need of transportation. Furthermore, they highlighted the importance of convenience in university setting. The fact that most students have courses or exams during the day, it is invaluable to have an alternative which can be accessed after the regular office hours.

Leader1: After having this experience my opinion is this; this environment has many substantial advantages in terms of economic, time and ability to organize any time.

Leader1: Yapıp gördükten sonraki kanaatim şu; ekonomik olarak, zaman olarak, istenilen saate konulabilirliği olarak, bir sürü avantajı var bu ortamın, ciddi anlamda var.

Leader2: I think it had a major in terms of transportation and no need of relocate physically... Also, it is more comfortable as you can eat or drink as you want.

Leader2: Bence ulaşım anlamında, fiziksel anlamda kalkıp bir yere gitmemenin büyük avantajı vardı ... Ayrıca daha rahatsın istediğini yeyip içebiliyorsun.

*Managing Group Environment.* The second major advantage of the virtual environment was ease of managing group environment. Counselors compared their group management experience of both cases and noted that in face-to-face setting it was more difficult to prevent undesired member behaviors. Immediacy of intervention was important in FtF group in order to prevent negative attitudes among members. Leader2 compared both cases and expressed the importance of immediacy. Moreover, Leader1 pointed to the difficulty of controlling members as they tend to chat about irrelevant topics.

Leader2: In face-to-face, a problem should be well managed immediately after it emerges. There is not chance of thinking about it ... things that you are not prepared for can come up any time... For example, one member can say something very severe to another member, in fact something similar happened. They showed very intense attitudes. This should be controlled very well. Here-and-now in face to face group is much more stronger than virtual environment.

Leader2: Yüz yüze de ortaya çıkan bir problemi o anda çok iyi yönetebilmek gerekiyor. Bunun için düşünme fırsatın yok ... orda hazırlıklı olmadığın şeyler her an gelebiliyor ... Mesela bir üye bir üyeye çok sert bir şey diyebilir, nitekim benzer bir şey oldu. Çok sert tutumlarını gösterdiler. Bunu çok iyi kontrol edebiliyor olmak lazım. Yüz yüze grubun şimdi ve burada özelliği çok daha güçlü sanal ortamdandır.

Leader1: Something that I considered as problem in face-to-face was the parts which turned into chit-chat. It was difficult to prevent them and it was something I considered as problem.

Leader1: Yüz yüze de sorun olarak hissettiğim şey; o sohbeta, yoruma dönen kısımlardı. Onları engellemek zorlayıcı idi ve sorun olarak gördüğüm şeyler idi mesela.

*Interactive Environment.* Visually rich and interactive environment of the 3D was considered a major affordance. Counselors expressed the benefits of this factor in terms of practicality, ability to demonstrate abstract activities, and creating visually appealing environments.

Leader2: Of course there are advantages of the environment. For example, in that island activity, you try to make them feel here [face-to-face] too, but there [virtual environment] visiting different environment's effect of warm and feeling of very beautiful place... You can not do it in face-to-face. In face-to-face, you can visually concretize something, you tell them to imagine it. Everybody can imagine something different. Virtual environment has very big advantages in terms of visualization and concretization.

Leader2: Tabii ki ortamın kattığı avantajlar var. Mesela bir ada etkinliğini, tamam burada da götürmeye çalışıyorsun ama orda farklı bir ortama girmelerinin onlara kattığı o sıcaklık, ve çok güzel bir yer hissi... yüz yüze ortamda bunu yapamıyorsun. Bazı şeyleri görsel olarak canlandırabiliyorsun yüz yüze de hayal edin diyorsun. Herkes başka bir şey hayal edebilir orda. Görsellik ve somutluk koymak açısından çok büyük avantajları var sanalın.

*Comfort in Self-disclosure.* Self-disclosure in both cases and influencing factors were discussed under another section of this chapter. Comfort of self-disclosure in virtual environment was identified as a benefit by leaders. Leader1 noted this factor and she further explained the reasons compared to face-to-face setting.

Leader1: They are more comfortable in expressing themselves, they are more honest! The effect of social acceptance is more in other [face-to-face]. In other words, in face-to-face s/he tries to be accepted by others because s/he knows others. S/he wants to obtain approval. In 3D there is not such a thing; nobody knows him/her, it is not important to be accepted or to be approved. S/he only gets what really matters. Therefore, the placebo effect is less in 3D. Members leave with a more inflated effect in face-to-face.

Leader1: Kendilerini daha rahat ifade edebiliyorlar, daha dürüstler! Öbüründe sosyal kabulün etkisi daha fazla. Yani yüz yüze de diğerlerine de kendini kabul ettirmeye çalışıyor çünkü diğerlerini tanıyor artık. İstiyor ki onlardan onay alsın. 3d de öyle bir şey yok; kimse tanımıyor zaten, onaylamaları, işte kabul etmeleri, önemli değil. Gerçekten işe yarar kısmı alıyor sadece. Dolayısıyla 3D de ki plasebo etkisi daha düşük. Yüz yüze de daha şişirilmiş bir etki ile gidiyorlar üyeler.

*Physical Anonymity.* Counselors considered physical anonymity as advantage due to two reasons. The first reason was isolation of negative situations. They stated that physical anonymity isolated both leaders and members from the negative situations. For example, Leader2 shared one of the moments that she did not feel good; yet, she could lead the group.

Leader2: The day I had stomachache, I can not imagine how it would be in face-to-face group. There are such advantages; you can perfectly manage the group even if you don't feel good.

Leader2: Benim mesela karnımın ağrıdığı gün yüz yüze grup olduğunu hayal edemiyorum ben. Öyle avantajları var; kendini iyi hissetmediğinde de çok iyi yürütebiliyorsun.

The second reason was the importance of attitudes among members. As responded by Leader2, in face-to-face, leaders should spend more effort to construct a positive group dynamic.

Leader2: We realized that members' opinions about each other is very important. This happens in face-to-face group but virtual group did not have such a concern. Therefore, in face-to-face you need to deal with these sub-dynamics inwardly. Even members' seating order can change.

Leader2: Fark ettik ki üyelerin birbirleri ile ilgili düşünceleri çok önemli. Yüz yüze grupta bu oluşuyor ama sanal grubun hiç böyle bir kaygısı yoktu. O yüzden yüz yüze de içten içe o alt dinamikler ile de baş etmek durumunda kalıyorsun. Kişilerin birbirinin yanına oturma şekli bile değişebiliyor.

*No Physical Limitations.* One challenge of the traditional physical setting is the limited flexibility. Although the ideal counseling environment is clearly known by counselors, physical limitations and lack of resources prevented them to design an ideal place. This issue was expressed by counselors for the FtF case of this study, and it was noted that 3D did not have such limitations. Virtual environment was much more interactive and flexible.



Leader1: Physical environment was one the biggest disadvantages in face-to-face; we have only one room in fact sometimes we even don't have a room, we do it in tiny rooms. Ideally, it is preferred to have a dedicated group counseling room [ideal properties are listed]. Hence, one of the biggest advantages in online was having different rooms for each session ... and that we could design it as we want based on that session's activities and information to be presented.

Leader1: Yüz yüze de ki en büyük dezavantajlarımızdan biri fiziksel ortam; tek bir odamız oluyor hatta bazen bir odamız bile olmuyor eciş bücüş yerlerde yapıyoruz. Normalde bir grupta psikolojik danışma odasının olması tercih edilir [ideal özellikler sıralandı]. Dolayısıyla onlinedaki en büyük avantajlarımızdan biri bence oturma odalarının ayrı olmuş olması ... ve o oturma vereceğimiz bilgiye ve etkinliklere göre de istediğimiz şekilde tasarlayabilmemiz.

## **Counselors' Identified Challenges**

*Lack of Non-verbal Cues.* Lack of non-verbal cues was the major challenge that is identified by counselors. As discussed in previous sections, this factor was identified by participants as well. However, it has different effects on counselors' experience. Counselors stated that lack of non-verbal cues was a challenge because without them it was difficult to feel they are following and get feedback about the content or activities. Comments presented below show that both leaders shared similar concerns.

Leader2: Lack of mimics and gesture made me feeling uncomfortable as; I worried whether they were there, whether they were following.

Leader2: Mimik ve jestlerin olmaması açısından şöyle bir rahatsız oldum; buradalar mı, bizi takip ediyorlar mı, kaygım oluştu.

Leader1: At the points where I felt that I talked too much, I felt this: I wondered whether they were listening. I am telling these, but how much of these they understand? Because I am the one who knows, and therefore it is easy for me. However, I had doubts whether they understood it.

Leader1: Çok konuştuğumu hissettiğim noktalarda şunu hissettim; ya acaba beni dinliyorlar mı. Ben anlatıyorum bunları da dinlediklerini ne kadar anlıyorlar? Çünkü ben bilen tarafım, bildiğim için de anlattığım şey bana kolay geliyor. Ama onlar anlıyor mu şüphem oluyordu.

*Interaction Issues.* The second challenge related to physical anonymity was interaction issues. Similar to the previous factor, this was a major challenge for counselors to interact with members and express their emotions. Leader2 stated that in FtF group it was easy to understand when a member wants to talk; however, in 3D it is not possible. Moreover, talking order was difficult in 3D because members would interfere with each other. Leader1 compared the talk order follow between both cases as follow:

Leader1: Lets say, when FtFMember2 shared one of his experience, FtFMember3 could jump in and say something. But this was not possible in 3D. They again were talking about each other ... but saying only when it was his/her turn to speak. In other [face-to-face] the interaction moves on quicker at that moment.

Leader1: Diyelim ki FtFMember2 kendi yaşantısından bir şey paylaştığında, FtFMember3 oradan atılıp bir şey söyleyebiliyordu ... Ama mesela 3D de o mümkün değil. Yani gene birbirleri hakkında konuşuyorlardı ... ama söz ona geldiğinde söylüyor. Diğerinde etkileşim o anın içinde daha çabuk ilerleyebiliyor.

The second interaction challenge was expression of feelings. Although there were available avatar gestures in the system and participants were trained about how to use them, there were some technical constraints. This was expressed by Leader2 as follow:

Leader2: I would like it a lot to be able to clap. With just one button, to be able to rise hand. I mean I would like to do it more practically ... avatar could do facial mimics. It would be good to be able to use body language with avatar.

Leader2: Alkışlıyor olabilmeyi çok isterdim. Tek bir butonla, el kaldıracabiliyor olmak. Yani daha pratik kullanılmasını çok isterdim ... avatar yüz mimiklerini yapabilir. Vücut dilini avatar ile daha rahat kullanabiliyor olmak olurdu.

*Technical Problems.* As expected, technical problems were a challenge that is noted by counselors. They also underlined the importance of technical support as stated by Leader2, a counselor would not be able to technically handle it.

Leader2: There should be a very good technical infrastructure. Without a technical personnel, a counselor can not do this. I definitely decided that.

Leader2: Çok iyi bir teknik alt yapı gerekiyor. Bir teknik personel olamadan bir danışman bunu yapamaz. Ben ona kesin karar verdim.

*Type of Counseling Group.* Counselors asserted that 3D VWs may not be appropriate for all kind of counseling types. Leader2 stated that although 3D environment was effective for psychoeducational group, it may not be appropriate for grief counseling group, for example. On the other hand, Leader1 expressed that this environment can be used for various types of counseling but it may require a more structured and controlled structure.

Leader2: I think the topic of the group is very important. It definitely can be used for a psychoeducational group, but for example for a grief group virtual can be very difficult. Because these are the groups that people need to see and touch each other. When somebody cries and if you can not do anything you may feel awful.

Leader2: Grup konusunun çok önemli olduğunu düşünüyorum. Bir psikoeğitim grubu için kesinlikle kullanılabilir, ama mesela bir yas grubu için, çok zor olabilir sanal. Çünkü insanların birbirini görmeye dokunmaya ihtiyacı olduğu gruplar oluyor bunlar. Birisi ağladığında siz hiçbir şey yapamadığınız zaman çok kötü hissedebiliyorsunuz.

*Attitudes towards Virtual Communication.* It was noted that negative attitudes towards virtual support can be a challenge for people to accept this type of service. Counselors considered that some members can resist at the initial stages due to prejudices. Even Leader1 admitted that her initial attitude was not that positive: “To be honest my initial opinion was not that positive. I mean, I did not believe that it would be that effective. But after seeing and doing it, this opinion changed completely”. Leader2 commented as looking from members’ perspective:

Leader2: To be honest, if I were a member and I saw the poster of this program, I would say “how would they do it online, how can it be”... This is something related to prejudices.

Leader2: Dürüst olayım, ben üye olsaydım böyle bir program için görseydim afişi, “nasıl online nasıl yapacaklar ki, nasıl olabilir ki” falan derdim ... Bu biraz ön yargılar ile alakalı.

## **4.2 3D VW and Its Characteristics (R.Q. 2)**

There are various aspects of the 3D VWs that need investigation along with their relation with counseling process. The second research question was “*How do the unique characteristics of 3D VWs influence the psychoeducational groups?*”, which aimed to investigate various features of 3D VWs. OpenSim was the virtual world platform used in this study. Firstly, results related to user interface and design of the 3D environment are presented. Then, communication tools and information presentation tools and participants’ responses about them are discussed. Lastly, results related to participants’ preferences of nicknames and avatar representations are presented.

### **4.2.1 3D Environment and User Interface**

In this section results related to various aspects of 3D environment in terms of user interface, design of the environment and design of the learning environment are presented.

## User Interface and Its Perceived Easy of Use

There are various viewers, software used to connect a 3D VW, options that can be used for connecting virtual environment. In this study, a customized version of Singularity Viewer was used. Users' perceived easy of using this tool was investigated during the interviews, in addition to quantitative data.

In 3D group, participants' perceived ease of using the virtual environment was assessed using 5-point Likert type scale. Descriptive results are presented in Table 4.2. It is apparent from this table that participants considered use of 3D viewer and environment easy to use. Overall responses showed that all of the participants perceived the user-interface of the viewer as simple and easy to user ( $M = 4.26$ ,  $SD = .32$ ). In other words, they were able to use software's user interface, moving their avatars, navigating in the environment and interact with 3D environment without experiencing major difficulties. Participants who had previous experience of 3D games stated that this experience made them to feel more comfortable while moving their avatars and interacting with environment.

Table 4.2 – *Perceived easy of use scores*

	<i>M</i>	<i>SD</i>
1. 3D sanal ortamı kullanmayı öğrenmek benim için kolaydı.	4.78	0.44
2. 3D sanal ortamı kullanma becerisini kazanmak benim için kolaydı.	4.00	1.22
3. 3D sanal ortamı kullanmayı kolay buldum.	4.67	0.50
4. 3D sanal ortamda yapmak istediklerimi gerçekleştirmek kolaydı.	4.33	0.71
5. 3D sanal ortamının ara yüzündeki öğelerin işlevleri açık ve anlaşılırdı.	3.67	0.50
6. 3D sanal ortamının ara yüzü esnekti.	4.11	0.60
<b>Total</b>	<b>4.26</b>	

Participants expressed some minor difficulties during the interviews; three members found inventory feature as complex, while one member had navigation issues. This result was supported with questionnaire responses; the only item with lower score ( $M = 3.67$ ) was related to user interface of the viewer. Inventory was mainly used for changing avatar appearance and playing gestures. Complex inventory structure was the only minor challenge for users in terms of the user interface. In addition to

perceived ease of using the software interface, participants were asked about their experience of using and controlling their avatar. All of the participants stated that controlling avatars and changing their appearance was easy. Five participants underlined their satisfaction about the flexibility of avatar to customize. It was found that they did not have major issues in terms of the avatar use. The only minor issue expressed by two participants were difficulty of finding objects in the inventory. These issues were related to inventory complexity.

### **Design of the Environment**

Participants' responses to the interview questions related to the environment were positive. All participants stated that having different areas such as classrooms, amphitheater, activity area was an effective strategy. "It was like a very good living space. I liked the details" said 3DMember3.

In addition, participants perceived the environment as immersive. 3DMember8 stated that "I thought that environment was realistic. In fact, it was like a campus for me". Another member highlighted the importance of immersion and a design factor that can increase participant's motivation:

3DMember4: It was very effective to write each week's topic at the main entrance. It was a sign that the environment is alive and it led to joining environment more and I liked it a lot.

3DMember4: Ana girişte her haftanın konusu yazılması çok iyi idi. O mekana daha çok girmeye, oranın yaşıyor olduğunu gösteren işaretlerden birisi ve onun çok beğendim.

### **Classrooms**

In traditional counseling practice, environment and its characteristics such as space and ambiance is important for the effectiveness of the service. In online counseling though, there are not enough guidelines about the design of the environment and its implications. Therefore, various classroom designs and their effectiveness were investigated in this study. Classroom were designed based on the session's topic and planned activities.

Results showed that environment effect on the process varied for members. Five participants stated that various classrooms had impact on their experience while four

of them did not feel any difference. One participants underlined the difference between environments and compared classrooms with amphitheater; “I think it was effective to do some activities in classrooms and some in amphitheater because there was a formal-informal difference”. Similar feelings were expressed by one member comparing her experience of the different classroom settings:

3DMember8: You feel more comfortable in the rooms with pillows. It is like your are in real environment and you are free and more comfortable while listening. But in the rooms with chairs and tables it is more formal, more serious, and I felt that I need to act more serious and appropriate.

3DMember8: Minderli olan odada daha rahatsın. Böyle gerçek bir ortamdasin da daha rahat bir şekilde daha serbest bir ortamda dinliyormuşuz gibi. Ama sandalyeli masalı olan ortamda daha fazla formal bir şekilde, daha ciddi bir ortamdayız, ve daha düzgün ve ciddi davranmalıyız gibi algıladım.

### **Immersive Environment**

The first immersive aspect was the design of the 3D environment. They perceived it as a scene from real life. For instance, one member responded as;

3DMember8: I really perceived environment as real. Indeed, it was like a campus for me, I thought so.

3DMember8: Cidden gerçekçi olduğunu düşündüm ortamın. Zaten bir kampus gibi idi benim için, öyle düşündüm.

Furthermore, some design issues were considered as important for immersion. Most of the participants stated that having real-life like areas enhanced the immersiveness of the environment. Similarly, one of the participants expressed the importance of environment’s design and its effect as follow;

3DMember4: It was really to good to write each week’s topic and activities in the main entrance. Such thing encourages to login to the environment more. It is a sign that the place is live, and I liked it very much.

3DMember4: Ana girişe o haftaki etkinlikleri ve konuyu yazmak çok iyi id. Onlar mekana daha çok girmeye teşvik ediyor. Oranın yaşıyor olduğunu gösteren işaretlerden birisi, ve onu çok beğendim.

The second aspect was the use of avatar. Firstly, three participants stated that mimic and gestures of the avatar increased the sense of immersion. Especially avatar’s lips synchronization while speaking and animations that were performed while being idle were two main factors. Second, flying experience was perceived as a factor promoting

immersion and enjoyment. All of the participants expressed that this experience was exciting and they liked it. 3DMember9's commented about this experience as "flying was magnificent feeling, I liked flying a lot". Another member highlighted the benefits of flying for navigational purposes:

3DMember8: It was waste of time to walk always while moving from one place to another. Meanwhile, we could see other places better while flying. Therefore, flying was very advantageous.

3DMember8: Bir yerden bir yere gitmek için sürekli yürümek zaman kaybı oluyor. Aynı zamanda yükseklikte iken diğer yerleri daha iyi görebiliyorduk. O yüzden uçmak çok avantajlıydı.

#### **4.2.2 Communication and Information Presentation Tools**

##### **Communication Tools**

OpenSim allows users to communicate via text-based chat and voice. Communication tools are crucial for effectiveness of the online communication. Therefore, participants' experience of these tools and overall effectiveness were questioned.

All of the participants found text and voice enabled communication modalities effective. 3DMember6 commented about his expectations as;

3DMember6: They [communication tools] met my expectations. In fact, I have been in such a voice-based environment for the first time, it met my expectations exceedingly. We are used to chat section, it was easy, accessible and everything can be written.

3DMember6: Beklentilerimi karşıladılar. Hatta dediğim gibi ben ilk defa öyle bir özellikte, sesli ortamda bulundum, beklentimi hatta fazlasıyla karşıladı. Zaten chat kısmına da alışkınız, o kolaylık, erişilebilir, yazılabilir bir şey.

During the sessions, voice mode was extensively used instead of text-based chat. However, availability of both forms of communications was an advantage as highlighted by one member:

3DMember8: It was very good to have both [text and voice communication] because in case of not being able to use one, for example in case not using audio due to technical problem, we could write. Therefore, it is really good to have both.

3DMember8: İkisinin olması gerçekten iyi çünkü birini kullanamadığımızda, örneğin sesimizi kullanamadığımızda teknik problem çıktığında, yazabiliyorduk. bu yüzden gerçekten iyi ikisinin olması.

## **Presentation and Activity Boards**

In the 3D environment, boards were the main interaction items as all presentations and activities were conducted using these objects. Presentation boards were used for slide-by-slide presentations and for instructional visuals, while activity boards were specific boards prepared for each activity.

In terms of the effectiveness of the boards and easy of use, all participants found these boards effective. Ability to collaborate, zoom and open external resources was considered as the major benefits of these boards. 3DMember9 commented as “I think they were effective, ability to write on them was very good practice”. 3DMember6 also expressed another aspect “I was easy to access them... for instance it was very effective as we could zoom to the content from anywhere we were sitting.”

The only minor issues that some participants encountered were loading problems and zooming problem. Most of these issues were related to Google Docs documents that were used for collaboration.

## **NPCs**

Non-player characters (NPCs) were used for simulating some conditions of a person procrastinating. For instance, one NPC (called Merve) illustrated her procrastination cycle in front of other group members. There is limited research about using NPCs in 3D VWs; therefore, use of NPCs in counseling context and their potential contributions were investigated.

Results revealed that six participants considered that NPCs did not have any contributions for counseling practice. Also, they also expressed sound synchronization problems for these characters. However, it was not clear whether sound related issues were the main reasons of considering NPCs ineffective. One member perceived that group leaders were the main contributors and NPCs did not have any benefits for him.

3DMember6: I understand the message it [NPC] aimed to give but I think I get it from Leader1 and Leader2. I can say that it [NPC] did not have extra contribution for me.

3DMember6: Onun vermeye çalıştığı mesajı almıştık ama Lider1 ve Lider2'den aldığımı düşünüyorum. O ekstra bana katkı sağlamadı diyebilirim.



Three members, on the other hand, expressed that NPCs had contributions despite the sound synchronization issues. 3DMember8 stated that NPCs can be used to symbolize counselee in case of conditions that we do not want to accept. She added that this symbolization can help counselee to accept the condition slowly. Similarly, 3DMember5 expressed another use case of NPCs as:

3DMember5: It was well prepared; it is showing a person that s/he is not the most desperate one. While looking at it [NPC], it was motivating to think that there are people in worse conditions than me.

3DMember5: Yani güzel hazırlanmış; bir insana en çaresiz kişinin kendisi olmadığını gösteriyor. Ona bakınca benden daha kötü durumu olanlar var diye bir motive ediyor insanı.

### **4.2.3 Avatar Representation**

Avatar representation is one of the unique characteristics of the 3D VWs. This feature's implications for self-disclosure and physical anonymity are discussed in "Self-Disclosure" and "Affordances and Challenges" sections of this chapter. Participants' avatar preferences, ease of use and advantages and limitations are presented.

#### **Avatar Preferences**

Results showed that most participants preferred their avatar appearance to match their style or match their real appearance. This was the preference of seven participants, while the other two participants preferred fantasy style avatars. It was observed that they created fancy characters during the sessions. Another finding was that the main reason for participants who preferred human characters was that non-human characters were considered as less-serious and not appropriate for counseling.

#### **Advantages and Disadvantages of Avatar Representation**

Advantages and disadvantages of avatar representation compared to other forms of communication were investigated. Results revealed that avatar representation's major advantage was feeling of being present alive in the environment. Among five participants who shared this opinion, 3DMember1 commented about this as "having an avatar increased the feeling of really being there". The second advantage, which mentioned by two participants, was increased feeling of being part of a group.

3DMember8 compared avatar representing with video conferencing and expressed its effect on the group feeling:

3DMember8: We would be real in video conferencing and we would feel more separated. It would not be like the community here, but we were part of a group here.

3DMember8: Video konferans ortamında zaten kendimiz olacaktık ve daha ayrık hissedecektik. Burada ki topluluk şeklinde olmazdı, ama biz bir topluluğa ait idik burada.

The third identified advantage was being symbolized and recognized with an avatar. Three participants stated that being symbolized in the environment made them feel better.

3DMember4: I enjoyed that fact that people embraced something beside me that I added my own characteristics. Even if there was not my name, they would call me. This was a good thing for me.

3DMember4: Ya kendi dışımda bir şeye kendi özelliklerimi ekleme ve insanların onun benimsemesi hoşuma gitti. Yani evet isim yazmıyor olsa da beni gördüklerinde 3DMember4 diyeceklerdi. Bu güzel bir şey benim için.

#### **4.2.4 Anonymous Identity**

All participants in this study used nicknames during the group counseling process. As discussed in other sections of this chapter, anonymous identity was considered a major affordance for counseling in 3D VWs. In this section, participants' perceptions of leaders' identity, preference of nicknames, and perceived advantages / disadvantages are presented.

##### **Leaders' Identity**

Results showed that all participants preferred leaders to use their real name instead of nicknames no matter what. Further investigation of their responses revealed three main reasons; (1) ensuring formal relationship, (2) easy to identify, (3) ability to contact.

Firstly, all of the members commented about the relationship between seriousness of the program and counselors' nickname use and one of them, 3DMember2, stated that "the program probably would be less serious if they used nicknames". The second reason was that with real names it was easier for group members to spot leaders. 3DMember7 expressed that "it was easier to differentiate them from the rest of group

as they used their real name”. Finally, another member underlined the importance of being able to contact counselors:

3DMember8: I think it is much better that they used their real name. Because ... It is needed and something helpful in terms of being able to find them in case we need them or we have a problem.

3DMember8: Gerçek isimlerini kullanmaları çok iyi bence. Çünkü ... eğer ihtiyacımız olursa yada bir problemimiz olursa onları burada bulabilmemiz açısından bence gerekli ve yararlı bir şey.

### **Preference of Using Nickname**

Although anonymity was considered as a major affordance of counseling 3D VW (see affordance and challenges section of the chapter), preference of nickname use was investigated as physical anonymity could be the only driver for some participants.

Six members stated that using nicknames was an effective method for counseling process. For instance, 3DMember2 stated that “I think nickname is the ideal way to go with for this program”. Three members, on the other hand, thought that using nickname was not a big difference for them and using real names would not be a problem. An interesting finding was that all these three participants had previous individual or group counseling experience.

### **Advantages and Limitations of Using Nicknames**

The first and mostly identified advantage of using nicknames in counseling is the self-disclosure factor. This factor discussed under the affordances and self-disclosure sections. The other perceived advantage was that nicknames reflect person’s characteristics and help others to know about him/her. This advantage was noted by six participants. 3DMember3 noticed other’s nicknames and commented about it as:

3DMember3: I felt like they were a way of expressing themselves for people; therefore, I coded my memory that way. For example, there was “baterist”, probably s/he was a friend who was interested in music.

3DMember3: İnsanların sanki böyle kendilerini ifade ediş tarzı gibi geldi o yüzden onları öyle kodladım hafızama. Mesela “baterist” vardı, muhtemelen müzik ile ilgilenen bir arkadaşı.

When it comes to limitations of using nicknames, the well-known one is that people cannot get in touch after the program. This limitation was mentioned by five members in this study. 3DMember8 address disadvantage of using nickname as “The fact that

we won't see people anymore after the program is a disadvantage". The other important finding was that one of the members expressed that using nicknames felt him "criminalized", his comment is presented below. He and another participant who did not feel the same way highlighted that it would be much better to leave using nickname optional as some people may feel better using their real name.

3DMember9: The fact that group leaders used their real names and hide us from each other ... made the situation a bit criminalized. Because I had previous group experience, hiding did not cross my mind.

3DMember9: Grup liderlerinin kendi isimlerini kullanıp bizi birbirimizden gizlemesi bende ... biraz durumu kriminalize etti. Daha önce ... böyle bir grup deneyimim olduğu için benim aklıma gelmemişti gizlenmek.

#### **4.2.5 Sense of Presence**

The level of presence has strong implications for evaluation and design of a technological medium. As discussed in the literature review section, previous studies have shown that presence is a significant factor of learning effectiveness, satisfaction, intimacy, trust, commitment and therapeutic relationship between counselor and clients. Therefore, the second research question of the current study aimed to explore the overall sense of presence along with factors affecting it. Sense of presence was investigated in two main forms; place presence and social presence. Place presence is the psychological state of experiencing virtual objects as actual objects. This sense increases the feeling of being in a virtual environment as real or present even when being situated in physical environment. On the other hand, social presence is the sense of being together with other users in the virtual environment. This type of presence is essential for building community, group cohesion, intimacy and interactions among users. In this study, both quantitative data and qualitative data was collected to explore the sense of presence. Questionnaire results revealed the overall sense of presence during the group process, while qualitative results further revealed the factors increasing and decreasing sense of physical and social presence.

##### **4.2.5.1 Overall Sense of Presence**

Sense of presence in 3D environment was assessed with two scales; place presence scale and social presence scale. Both scales were developed in 7-point Likert scale format. Presence results are presented in Table 4.3. Descriptive results showed that

place presence level in 3D environment was moderate ( $M = 4.52$ ,  $SD = .75$ ) and social presence level was higher ( $M = 5.64$ ,  $SD = .89$ ). Factors that increased or decreased the sense of presence were revealed with qualitative data and they are discussed in the corresponding section of this chapter.

Table 4.3 – *Place presence and social presence scores*

<b>Presence</b>	<b><i>M</i></b>	<b><i>SD</i></b>
Place Presence	4.52	.75
Social Presence	5.64	.89

In addition to presence scales, participants rated their overall sense of two types of presence. Their responses showed that most of the them had moderate high level of place presence. Seven participants expressed that they mostly felt in the environment, while two participants had lower level of place presence. On the other hand, social presence was rated higher than place presence; all the participants responded that their feeling of being with other group members was quite high.

#### **4.2.5.2 Factors Affecting Sense of Presence**

The purpose of this section is to present qualitative results and discuss their implications for online counseling. Two forms of presence specifically place presence and social presence are examined along with the factor increasing and decreasing that feeling during the group counseling process. Frequency results of factors increasing and decreasing two types of presence are listed in Table 4.4.

Table 4.4 – *Frequencies of factors increased and decreased sense of place presence and social presence*

<b>Factors Increased Presence (N = 9)</b>			<b>Factors Decreased Presence (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>Place Presence</b>					
Realism	9	12	Distraction Factors	5	10
Meaningful Content / Activities	6	11	Being Passive	3	6
Speaking Condition	4	8	Technical Issues	4	5
Adapting Environment	5	7	Less Meaningful Content / Activities	2	3
Active / Movement Condition	4	7	Adapting Environment	2	2
<b>Social Presence</b>					
Interaction in the group	8	20	Technical Issues	3	4
Interactive Activities (Group Activities, Role Playing etc.)	8	13	Initial Stage of Adapting Avatar Use	2	4
Group Cohesion	6	13	Limited Interaction with Members	3	3

*f* = Code frequency

### **Factors Increasing Place Presence**

Five major factors were emerged as factors increasing the sense of place presence; *realism, meaningful experience, speaking condition, adopting environment, and active / movement condition*. There are number of similarities between these factors and Witmer & Singer (1998)'s proposed factors.

#### *Realism*

Realism of virtual environment was the major factor promoting the sense of place presence. This factor was identified by all 3D group members. Participants stated that realism of the avatars and realism in 3D environment was the sub-components of this factor. 3DMember6 expressed avatar's lip sync features and realistic fly effect made

him to feel in environment more. Another member underlined the realism of the environment:

3DMember8: Having various areas makes it to be like real world. Because seeing the things I use in real life there ... make me feel being the present moment more.

3DMember8: Farklı alanlar olması gerçekçi dünyaya daha çok yaklaştırıyor. çünkü gerçek hayatta kullandığımız şeyleri orda gördükçe ... daha çok orda hissetmemi sağlıyordu.

### *Meaningful Activities and Content*

The second major factor was participant's perceived meaningfulness of the experience. It is interesting that meaningful activities and content increased participants to feel more present in the virtual environment.

3DMember1: As I said, I was feeling present more when the topic was interesting for me. I was moving away if it was nonsense.

3DMember1: İşte dediğim gibi konu dikkatimi çekiyorsa daha çok kendimi orda hissettim. Ama bana saçma geldiyse daha uzaklaştım.

### *Speaking Condition*

Four participants noted that they were feeling more present when they were speaking. This factor is related to the being active in the environment. 3DMember6 said that "definitely I was feeling that more when it was my turn to speak".

### *Adapting Environment*

Participants' familiarity with the environment, as expected, had influenced their level of presence. Five members expressed that their feeling of presence increased as they adapted the environment.

3DMember7: In the middle of process, it [virtual environment] became a more familiar place for us. I was feeling being present more.

3DMember7: Ortalarda orası böyle bizim için daha alışıldık bir yer olmaya başladı. Daha ordaymış gibi hissediyordum.

### *Active and Movement Condition*

Being active and moving in the environment had led participants to feel physically more present in virtual environment. Four participants identified this factor. 3DMember compared his active and passive conditions as:

3DMember6: I was feeling being more present when actively moving and trying to look at the things around. However, we stand firmly in the classroom and listen to Leader1 and Leader2 as they were speaking. We are looking at a constant place indeed and we are feeling less present.

3DMember6: Aktif bir şekilde hareket ettiğim ve etraftaki şeylere bakmaya çalıştığım için daha çok orda hissediyordum. Ama sınıf ortamında sabit duruyoruz, Lider1 ve Lider2 konuşuyor onları dinliyoruz. Yani sabit bir yere bakıyoruz aslında ve orda daha az hissediyoruz.

### **Factors Decreasing Place Presence**

Five factors that decreased the place presence were emerged. Three of them (*beng passive, less meaningful content and activities, adapting environment*) are the exact opposite conditions of the promoting factors; therefore, they are not discussed in this section. However, *distraction factors* and *technical issues* are the unique conditions that hindered sense of presence and presented in this section.

#### *Distraction Factors*

The first major hindering factor was the distractions. Five members shared their experiences of being distracted during the sessions. Connection place and social media notifications were the noted distractions. 3DMember3 was connecting to the session from her dorm room and comment as:

3DMember3: I was connecting from dormitory, sometimes my roommates were coming in and out, saying something. Such things affected my feeling of presence.

3DMember3: Ben yurttan bağlandım, oda arkadaşlarım bazen girip çıkıyor, bir şeyler söylüyorlar. O tür şeyler ortamda hissetmemi etkiledi.

#### *Technical Issues*

Technical issues had influence on the sense of presence which was mentioned by four members of 3D group. 3DMember's comments regarding this factor was:



3DMember4: As I said, there were connection problems, some physical problems. Right at the time being involved, I was feeling disconnected because of such minor technical difficulties.

3DMember4: Bir de dediğim gibi connection problemi oluyor, bazı fiziksel problemler oluyor. Tam içine dahil olmuşken, bu tarz küçük teknik aksaklıklardan dolayı kopuyordum.

## **Factors Increasing Social Presence**

Based on results, three major factors were emerged. *Level of interaction, interactive activities* and *group cohesion* were the significant factors that increased sense of social presence in the 3D environment.

### *Interaction in the Group*

Most of the participants stated that increased interaction among members increased their sense of social presence as well. 3DMember8 said that “I was feeling being together with others when commutating with them using audio”. 3DMember4 pointed another aspect of communication and stated that “I was feeling that more when they were commenting about what I said”. In addition to interaction among members, interaction with group leaders was also promoting the social presence of participants.

### *Interactive Activities*

The second major factor was interactive activities. Eight members expressed the impact of certain activities on the feeling of social presence. Group activities, role playing activities and real-life like activities were the activities that promoted this feeling. Some of the related comments were as follow:

3DMember5: There were group activities sometimes. For example, we were going to classrooms in groups of three. In those situations ... I was feeling that reality of doing group work.

3DMember5: Bazen grup çalışmaları oldu. Mesela 3 kişi şeklinde sınıflara gidiyorduk. O durumlarda ... bir grup çalışması yaptığımı, hissettim o realityi.

3DMember9: In that amphitheater activity ... There is stress of being on the stage, people are looking at you ... you are telling something about you and they are listening ... In terms of the view perspective, everyone is sitting on the other side and staring at you. That was the time I felt being with others at the most.

3DMember9: O amfi etkinliğinde ... Sahne de olmakla da ilgili bir gerginlik var, insanlar sana bakıyor ... sen kendin ile ilgili bir şey söylüyorsun onlar da dinliyorlar ... bakış açısı olarak da herkes karşıda oturmuş sana bakıyor. En çok orda diğerleri ile birlikte hissettim.

### *Group Cohesion*

The last factor, mentioned by six participants, was group cohesion. As expressed in the comments, their feeling of social presence was increasing as group members know each other and build a friendship. 3DMember8 told that “As time passed by and level of friendship increased, we were more like being together”.

### **Factors Decreasing Social Presence**

Based on participants’ responses, factors decreasing social presence were grouped under three categories. As discussed in the previous section, *interaction among members* was a significant indicator for social presence; therefore, *limited interaction* decreased this feeling in virtual environment. The other two factors were *technical issues* and *initial stage of adapting the environment*.

#### *Technical Issues*

Similar to other form of presence, technical issues had affected social presence as well. One member explained how he felt about other avatars in case of technical problems:

3DMember2: When avatars were stuck or we did not hear their voice. They were just sitting there ... That avatar did not mean much, I did not felt it as a human.

3DMember2: Avatarlar takıldığı zaman yada ses gelmediği zaman. Onlar sadece orda oturuyorlardı ... o avatarın pek bir anlamı yoktu yani, onu bir insan olarak hissetmedim.

#### *Initial Stage of Adapting Avatar Use*

Two participants stated during the initial stage of the program, they did not consider avatars as real people. This was related with their adaptation of the new experience. For instance, 3DMember4 told that “at the beginning, I did not see them as real people instead I felt them as computer images”.

### **4.2.5.3 Overview of Presence and Counselors’ Opinions**

The main finding was that factors promoting and hindering level of presence were similar to group members. Two group leaders considered realism of the environment, state of being and moving, speaking condition were the main drivers of the place presence. Considering the decreasing factors, being passive was a major factor for

group leaders as well. The only hindering factor was anxiety; group leaders expressed that when they had concerns about the activities or group in general, they felt isolated from the virtual environment. Leader2 commented as:

Leader2: If I had concerns about activities... whether the activity would be effective, would they be able to do it, having concerns about the time or not feeling psychically good here. Other than that I were always there. Yes, I did not feel present there when I felt anxious.

Leader2: Etkinlik ile ilgili kaygı taşıyorsam... bu etkinlik olur mu acaba, yaparlar mı acaba, zaman kaygısı taşıdığım da ya da burada fiziksel olarak burada iyi hissetmiyorsam kendimi. Onun dışında ben hep ordaydım. Evet kaygılandığım zamanlar orada çok hissetmedim.

Similar pattern was found for the social presence as well; group leaders noted that interactive activities was the major factor increasing social presence. Group cohesion and adapting the avatar use were also underlined factors. The only decreasing factor was when group members were silent and did not respond much.

Finally, it is important to discuss the perceived benefits of sense of presence of counseling practice. The first benefit that is stated by participants was the increased focus and engagement.

3DMember4: When I felt being present there I focused more on the activities, conversations, presentations, friends there.

3DMember4: Orda hissettiğimde daha iyi odaklanabildim orda olan etkinliklere, konuşmalara, derslere, arkadaşlarıma.

The second benefit was relationship between motivation and presence. Participants stated that increased level of presence was motivating them during the program. The third benefit, as highlighted by Leader2, was the relation between presence and outcomes. She stated that participants who were present at the environment were more willing to attend activities and do homework. She also added:

Leader2: I think members who felt being present there and enjoyed that situation benefited more from the program ... I think we reached [delivered the message] them more effectively.

Leader2: Ben üyelerin de orda olduğunu hisseden ve oradaki durumun tadını çıkarmanın programdan daha fazla fayda kazandığını düşünüyorum ... ben onlara daha iyi ulaşabildiğimizi düşünüyorum.

### 4.3 Self-Disclosure (R.Q. 3)

Although psychoeducational groups don't require extensive member self-disclosure, it is still an import factor in group counseling process. The third research question of this study, “*What are the similarities and differences between 3D group and face-to-face group in terms of self-disclosure and factors affecting self-disclosure?*”, aimed to reveal group process in terms of self-disclosure and factors affecting it. This section was developed based on the overall level of self-disclosure, factors increased self-disclosure, factors decreased self-disclosure and self-disclosure change over the program's duration.

Descriptive results of participants' answers to self-disclosure questionnaire are presented in Table 4.5. The overall responses showed that participants felt comfortable in terms of disclosing self and sharing personal experiences in the group session. Furthermore, results indicated that in 3D group participants felt more comfortable compared to FtF group. However, the difference between overall scores of is not very high.

Table 4.5 – *Self-disclosure questions results*

	3D Group		FtF Group	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. ... ortamda kişisel konularda kendimi rahatça ifade edebildim.	5.89	1.17	5.78	1.39
2. ... ortamda iletişim kurmada daha açık olabildiğimi keşfettim.	5.22	1.56	5.56	1.88
3. ... ortamda iletişim kurarken utangaçlık duygusuna kapıldım.	5.22	1.64	5.11	1.90
4. ... ortamda ortamda kişisel konularda paylaşımında bulunurken kaygılı hissettim.	5.67	1.50	5.11	1.76
5. ... ortamda kişisel konuları paylaşırken çekingen davrandım.	5.56	1.51	5.11	1.62
<b>Total</b>	<b>5.51</b>		<b>5.33</b>	

In addition to questionnaire, self-disclosure was investigated through interviews. Whilst questionnaire results illustrated an overall picture, interview data revealed further details in terms of the factors affecting self-disclosure. Coding and participant

frequencies of factors promoting and factors decreasing self-disclosure for both groups are presented in Table 4.6. In the following sections, firstly, these factors are presented. Then, results related to change of self-disclosure over-time and group leaders' opinions are presented.

Table 4.6 – *Frequencies of categories promoting and decreasing self-disclosure*

<b>3D Group (N = 9)</b>			<b>FtF Group (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>Factors Promoting Self-disclosure</b>					
<i>Virtual Environment</i>	5	14	G. Members' Characteristics	9	23
Group Cohesion	5	10	Having Same Problem	8	13
G. Members' Characteristics	4	9	Leaders' Role	7	10
Leaders' Role	8	9	Group Cohesion	5	10
Having Same Problem	3	4	<i>Personal Characteristics</i>	4	6
<b>Factors Decreasing Self-disclosure</b>					
Personal Characteristics	3	7	Personal Characteristics	4	8
<i>Technical Problems/Concerns</i>	3	4	<i>Concerns of Being Judged</i>	3	7
<i>Speaking Order</i>	2	3	<i>Negative Attitudes among Members</i>	5	5
			<i>Privacy</i>	3	4

*f* = Code frequency

### 4.3.1 Factors Promoting Self-disclosure

Interviews results showed that most of the factors promoting self-disclose were common in both cases. *Group cohesion, group members' characteristics, leaders' role, and feeling of having same problem* were the common self-disclose promoting factors. On the other hand, *virtual environment' characteristics* was significant promoting factor unique to 3D environment.

#### Virtual Environment

3D group's participants defined virtual environment's overall process as a major factor that promoted their comfort of self-disclosure. This category covers online

communication factors including identity anonymity and physical anonymity. Further details of the anonymity (nickname selection, avatar appearance, preferences etc.) are discussed under the “3D VW and Characteristics” section of this chapter. One member stated that:

3DMember3: I felt more comfortable, as I said. If it was face-to-face, I would not be this much realistic about myself while telling people. I procrastinated this, I did these... I don't know, probably I would not say directly but it is much more comfortable while online...

3DMember3: Yani dediğim gibi daha rahat hissettim. Belki yüz yüze olsaydı bu kadar kendime de realistik, kendi açımdan da söylemeyebilirdim insanlara. Hani şunları erteledim, bunları yaptım... bilmiyorum belki direk söylemeyebilirdim ama online olunca çok daha rahat...

3DMember8 expressed the importance of anonymity in virtual environment with this statement:

3DMember8: The fact that nobody had any prejudice against my name because I was there from the very beginning. There is not any information in anybody's mind about me. That we won't see each other face-to-face... which means we can confess anything we want. There is no prejudice at all!

3DMember8: Hiç kimsede benim ismim ile ilgili hiç bir ön yargının olmaması çünkü ben en baştan ordayım. Hiç bir bilgi yok kimsenin aklında benim ile ilgili. Birbirimizi yüz yüze görmememiz... yani istediğimizi itiraf edebiliriz orda. Hiç bir ön yargı yok!

Although the majority of the group members expressed similar thoughts about virtual environment, two members, especially 3DMember6, stated that virtual environment and anonymity did not have any effect on their self-disclosure as they had previous group counseling experience. However, they expressed that such environments can be helpful for shy participants or who does have concerns in social interactions.

3DMember6: Such type of things [anonymity] do not have effect on me anymore because I am kind of used to it as I have been in such [group counseling] environments. For friends who hesitate to contact while speaking, virtual environment can a really good environment.

3DMember6: Bu tarz şeyler [anonim olma] artık benim üzerimde artık çok etki sahibi değil çünkü ben bulunduğum için bu ortamlarda artık biraz alıştım diyebilirim. gerçekten konuşurken diğer insanlarla temas kurmaktan çekinen arkadaşlar için güzel bir ortam olabilir sanal ortam.

### **Group Members' Characteristics**

The second sub-category of the factors promoting self-disclosure was group members' characteristics. Members' attitudes towards each other and willingness to share were

significant factors that led their friends' comfort in self-disclosure. Some of the members' statements were as follow:

3DMember4: ... Because everyone dropped their masks in psychological things, they became themselves more. Therefore, I felt comfortable to self-disclosure too.

3DMember4: ... çünkü psikolojik bir şeyde herkes maskelerini düşürüp de orda, daha çok kendileri oldular. bu yüzden ben de rahat kendimi açtım.

3DMember6: Everybody was sharing something from their life sincerely. Some were sharing their weaknesses, some were sharing their mistakes. People always hesitate to share their weaknesses but we were not like that in that environment. Everyone shared what they have been experiencing in order to find a solution or increase awareness. This was really important for me.

3DMember6: Herkes içtenlikle kendi hayatından bir şeyler paylaşıyor. Kimi zaafalarını paylaşıyor, kimi hatalarını paylaşıyor. Yani insan zayıflıklarını paylaşmaktan çekinir her zaman ama biz o ortamda öyle değildik. Herkes ne yaşadysa çözüm bulmak açısından, ya da diğerleri ile farkındalığını arttırmak adına herkes paylaştı. Bu benim için önemli idi gerçekten.

Similar to the 3D group, group members' characteristics were a major factor promoting self-disclosure in FtF group. In this group, members' characteristics sub-category was underlined by all participants. Openness to share, no judgment, supportive approach and feedbacks were revealed among characteristics.

Openness to share was the most frequently mentioned characteristic and it was mentioned by five participants. FtFMember7' s statement was as follow:

FtFMember7: The thing that they start to speak, share their information, share their private things, led the need for you to share your private things too.

FtFMember7: ... onların da artık konuşmaları, bilgilerini vermeleri, özel şeylerini paylaşmaları, senin de özel şeylerini paylaşmanı ihtiyacını doğuruyor.

The second characteristic was that members did not judge each other during the environment. Five participants indicated the importance of not being judged. As stated by one of them, this reduces the anxiety of members and promoted the self-disclosure.

FtFMember3: While sharing something in friendship environment, I don't feel comfortable, I hold back more, which is strange. Because there is prejudice in friendship environment. For example, after you share one of your problems, I go nuts when they answer it with prejudice. Here, it was not like that. The fact that we just met and there was no prejudice, was a very relaxing factor.

FtFMember3: Ben o kadar rahat anlatamıyorum arkadaş ortamında, daha çok çekiniyorum, gariptir yani. Çünkü bir ön yargı var arkadaş ortamında... Mesela bir probleminizi anlatıyorsunuz, ön yargıyla yaklaşıp cevap verince ben sinir oluyorum. Burada o yok. Yeni tanıştığımız insanlar olduğu için ve belli bir ön yargı olmaması çok rahatlatıcı bir faktördü.

Group members' supportive approach was the third characteristic which was commented by four participants. Similar to the previous participant's statement, another member expressed that unlike normal social environment, in the group environment members were much more supportive and willing to help each other.

3DMember4: In friendship environment I would behave in the same way; however, there was a difference; people here were eager to listen to and know me, they were eager to help me. On the other hand, if I had done this in friendship environment, in a less formal environment, most probably they would decrease my motivation and enthusiasm. Because they would not want to help me to this extent or they would not want to listen to me.

3DMember4: Arkadaş ortamında da aynı şekilde davranırdım ancak şöyle bir fark vardı; buradaki insanlar beni dinlemeye ve tanımaya hevesli idi, bana yardımcı olmaya. Ama mesela bunu bir arkadaş ortamında, daha böyle formal olmayan bir ortam da yapsaydım, benim büyük ihtimalle motivasyonum ve şevkim kıracaklardı. Çünkü bu kadar bana yardımcı olmak istemeyeceklerdi yada beni dinlemek istemeyeceklerdi.

## **Leaders' Role**

Leader's skills and characteristics are crucial in the group environment. Participants in both cases defined leaders' role as a significant factor promoting self-disclosure and sharing. Results showed that eight members in 3D group commented about this factor.

3DMember6: There is one thing that I have to mention about group leaders; they were definitely very encouraging... In all topics they encouraged us to talk and helped us to take action. This was definitely another factor that affected me to self-disclose and share.

3DMember6: Grup liderleri ile ilgili kesinlikle söylemek gereken bir şey var; kesinlikle çok teşvik edicilerdi... Her konuda bizi konuşmaya teşvik edip ve harekete geçmek konusunda yardımcı oldular. Kendimi açma ve paylaşımında bulunmamda etkili bir diğer etken de odur mutlaka.

Participants' statements regarding leaders' role and self-disclosure were very similar in FtF group. This factor was considered as important by seven members of this group.

FtFMember8: To begin with, Leader1 and Leader2 were encouraging about this topic. There was not even one negative glance about anybody's opinion, it was always positive. What they said always encouraged us to share. They were very effective.

FtFMember8: Bir kere Lider1 ve Lider2 ... bu konuda teşvik edici idi. Bir şekilde kimsenin görüşüne olumsuz bir ima bile yoktu, hep olumlu idi. Hep bizim paylaşımına teşvik etti onlarında söyledikleri. Onlar çok etkili oldu.



FtFMember9: One more thing is that in the situations that we do not want to disclose ourselves, they guided us by disclosing themselves. For instance, maybe someone else would not want to talk about her own behaviors. Leader1 did it a lot... she was telling that she did this, did that.

FtFMember9: Bir de mesela kendimiz açmak istemediğimiz durumlarda onlar kendilerini açarak yol gösterici oldular. Mesela başka birisi olsaydı orda belki kendi davranışı ile ilgili bir şey söylemek istemezdi. Lider1 çok yaptı...şunu yaptım bunu yaptım geçen falan anlatıyor.

## **Group Cohesion**

In group counseling, cohesiveness is established among members when they feel as a part of the group, care about other members and feel the trust and intimacy in the environment. Group cohesion was a factor that 3D group members defined as driver of the self-disclosure. It is important to note that group cohesion was not established at the beginning of the program; it was developed over the time.

3DMember6: ... Because when you feel the intimacy on the other side, you can open your feelings with intimacy.

3DMember6: ... Çünkü samimiyet görünce karşıda, sizde samimi bir şekilde duygularınızı açabiliyorsunuz.

Intimacy in virtual environment was different from face-to-face environment due to the identity and physical anonymity of the participants. One of the member pointed out to this difference;

Researcher: What were the factors increased your self-disclosure and sharing in the group?

3DMember3: Participants in the environment were intimate and sincere while speaking, at least their sound seemed like that. Those had an influence.

Araştırmacı: Grupta kendini açmanı ve paylaşımında bulunmanı neler etkiledi?

3DMember3: Ortamdaki katılımcılar da baya samimi içten konuştu, sesleri en azından öyle geliyordu. onlar etkili oldu.

The same as the 3D group, five participants in FtF group stated that group cohesion had an effect on their self-disclosure and sharing experience in the environment.

FtFMember1: In the beginning I was embarrassed, I could not speak. Later, I expressed my self more comfortably after getting used to each other. Otherwise, I could not express myself in the beginning. Later, I mean after having intimate relationship with members, I could share my private things.

FtFMember1: İlk zamanlarda utanıyordum, konuşamıyordum. Sonra birbirine alıştıkça insanlara daha rahat ifade ettim. Yoksa ilk zamanlar kendimi ifade edemiyordum. Sonra özel şeylerini paylaşabiliyorsun yani insanlarla samimi olduktan sonra.

## Having Same Problem

When group members share their experiences about the general phenomenon, they realize the universality of the problem and concerns they have. As stated by some of the members, this realization reduced feeling of isolation and increased the comfort of self-disclosure. Only three members of the 3D group commented about this factor.

3DMember1: For example, when I would say something, somebody else was thinking the same thing and saying it. That time I realize that I am not alone. S/he is thinking the same thing, there are others who think this as well.

3DMember1: Mesela ben bir şey söyleyeceğim, başka biri de aynı şeyi düşünüyor ve onu söylüyor. O zaman hani bakıyorum yalnız değilmişim demek ki. O da aynı şeyi düşünüyor, başkalarında da var bunu düşünün.

3DMember4: As I just said, I did not think about looking weak because everybody was the same, had the same problem.

3DMember4: Az önce söylediğim gibi zayıf gözükeceğim gibi düşünmedim çünkü herkes aynı şekilde idi, aynı sıkıntısı vardı.

In FtF group, realization of the universality of the issue was a much stronger factor compared to the other group. Almost all of the participants in FtF group stated that this feeling helped them to share more.

FtFMember7: When I shared something ... another friend said oh! I have the same thing, then you realize that you are at the same place and level with everyone. Realizing that we were very similar made me to speak more comfortably.

FtFMember7: Ben bir şey paylaştığım zaman ... başka bir arkadaş aaa bende de var öyle bir şey, sonra bakıyorsun herkesle aynı yerdesin aslında, aynı konumdasın. Birbirimize benzediğimizi anladıkça daha fazla rahat konuşabiliyordum.

FtFMember4: We are all the same, we were so much similar to each other in the group... this eliminated all my concerns before sharing something. Because if I were absurdly different than them, I would most probably hesitate to share.

FtFMember4: Hepimiz aynıyız böyle mesela o kadar benzer idik ki gruptakilerle... bütün endişeleri kaldırıyor bir şeyleri paylaşmadan önce. Çünkü hani eğer çok absürt bir şekilde farklı olsaydım onlardan büyük ihtimalle çekinirdim.

## Personal Characteristics

Based on the results, personal characteristics were a promoting factor only in FtF group. Interestingly, personal characteristics were not considered as a significant factor in 3D group. These characteristics were mainly related to being extrovert and

feeling comfortable about disclosing self in a social group. Among four participants, one of the participant's comment about this factor was as follow;

Researcher: What factors affected you to self-disclose and share in the group?

FtFMember4: Firstly, my personal characteristics encouraged me. I have always been an extrovert person and I like to empathize, use body language, understand people. These are the topics I am interested in. My personal characteristics encouraged me.

Araştırmacı: Grupta kendini açmanı ve paylaşımında bulunmanı hangi faktörler etkiledi?

FtFMember4: Bir kere karakteristik özelliklerim teşvik etti. Ben her zaman dışa dönük bir insan oldum ve işte empati yapmayı, beden dilimi kullanmayı, insanları anlamayı. Bunlar ilgi duyduğum konular. Benim karakteristik özelliklerim beni teşvik etti.

### 4.3.2 Factors Decreasing Self-disclosure

Analysis of the participant responses showed that personal characteristics was the only common factor decreasing the self-disclosure in both environments. In 3D case, *technical problems* and *interaction issues* were noted factors, whilst *concerns of being judged*, *negative attitudes among members* and *privacy concerns* were identified factors in FtF case.

#### Personal Characteristics

In both cases, one of the major factors that decreased self-disclosure was personal characteristics. Three members of the 3D group and four members of the FtF group considered that their personal characteristics and concerns decreased their self-disclosure.

In 3D group case, this category had two main sub-dimensions; concerns about privacy and negative attitude towards virtual communication. A member who had anonymity concerns expressed that;

3DMember1: I would say that I was feeling more comfortable in virtual environment but again I even had concerns there too. I felt quite paranoiac in case somebody know who I am. I had that thought in mind.

3DMember1: İşte sanal ortamda daha rahatız diyeceğiz de ben gene onda bile çekincelerim oluyordu...Ben yine biraz paranoyak oldum yani ya tanıyan çıkarsa diye. Öyle bir şey oldu yani kafamda.

The second aspect of the personal characteristics was person's attitudes and feelings about virtual communication. Only one of the members expressed the uncomfortableness of distance communication.

3DMember9: For example, I am a kind of person who does not like to speak over the phone. I mean, communication is not exactly complete unless you are face to face and see other person's face.

3DMember9: Ben telefonda da konuşmayı sevmeyen bir insanım mesela. Yani birisi ile yüze olmadıkça, birisinin yüzünü görmedikçe, iletişimin tam olmadığını düşünüyorum.

Although both cases had personal characteristics as a major factor, the sub-dimensions of this factor varied greatly. Unlike 3D group, shyness and negative self-perception were the personal characteristics in FtF case.

Researcher: What negatively affected you in terms of self-disclosure and sharing?

FtFMember7: Being shy, I can say. I was already shy in the first weeks, I was not sharing because I was not used to it enough. I overcome this towards the end.

FtFMember7: Later, I kind of overcame of this but still it is not totally gone. But you get over this issue to some extend.

Araştırmacı: Kendini açmanı ve paylaşımında bulunmanı neler olumsuz etkiledi?

FtFMember7: Utangaç olmam diyebilirim. İlk haftalarda da zaten utangaçtım, paylaşmıyordum fazla alışamadığım için. Sonlara doğru geçti o yani.

FtFMember7: Sonra kırıldı diyebilirim ama tam kırılmıyor, hepsi tamamen kırılmıyor. Ama yine belli bir yol kaydediyorsun o konuda.

## **Technical Problems and Concerns**

The effect of technical problems and concerns related to communication over a technical medium on the level of self-disclosure was expressed by only three members of 3D group. Although it was not considered as major issue, a member's answer reflected this concern.

Researcher: What were the factors that negatively affected you to self-disclose and share?

3DMember9: Emotionally I did not face with any obstacles to share or not share something. Only this could prevent me; how do I sound, there are headphone etc. There were such kind of technical concerns.

Araştırmacı: Senin kendini açmanı ve paylaşımında bulunmanı olumsuz olarak neler etkiledi?

3DMember9: Duygusal olarak şu nu paylaşım bunu paylaşmayacağım, öyle bir engelle karşılaşmadım. Sadece beni şu engellemiş olabilir; ses nasıl gidiyor, kulaklık var. Bu gibi teknik kaygılar var.

## **Speaking Order**

Due to the lack of non-verbal cues in online environment, speaking order during the conversations was a hesitation factor for sharing experiences. This issue was stated by two members. One of the participants shared experienced difficulty and feelings due to the speaking order as follow;

3DMember8: Because right at the time I would speak, I had hesitation about whether somebody else will speak or will I interrupt someone. For example, it would be better if there was something like hand rising. That is very important there. Interruption is kind of disrespectful. I feel like I did something wrong and I believe that because of this some of the participants were hesitating to speak. There was hesitation of interruptions.

3DMember8: Çünkü tam konuşacağız ama birisi konuşacak mı acaba birinin sözünü kesecek miyim diye sürekli çekimcem oluyordu. Mesela el kaldırma gibi bir şey olsa daha iyi olurdu. O çok önemli orda. Sesin birbirine binmesi ve saygısızlık gibi oluyor biraz. Şimdi kötü bir şey yaptım gibi falan oluyor ve inanıyorum ki bazı katılımcılar da bu yüzden ilk başta konuşmaktan çekiniyorlardı. Birbirinin sözüne kesme çekinceleri vardı.

### **Concerns of being judged**

Some of the concerns in FtF environment had negative effect on members' participation and self-disclosure. Although this was not considered as a major issue, three participants of the FtF case expressed their concerns of being judged.

FtFMember2: Initially, yes, until some progress in the environment... I could not share completely. Ultimately, without getting to know people, there is possibility of being judged, or your image from their perspective... It does not matter from a close friend's perspective, it is not a problem how s/he imagines; however, with the people you just met ... you hide your weaknesses, of course.

FtFMember2: En başlarda, evet yani, ortam ilerleyene kadar ... her şeyimi tam olarak anlatamadım. Sonuçta insanları biraz da olsa tanımadan yargılanma ihtimali olabiliyor, ya da onların gözündeki imajınız... Yakın bir arkadaşın gözünde, istediği gibi görsün sorun değil ama yeni tanıştığınız insanlarla ... olumsuz yönlerinizi saklıyorsunuz tabii ki.

### **Negative attitudes among members**

Results revealed an interesting factor, negative attitudes among members, that decreased self-disclosure and sharing in the group. Five participants of FtF group commented about this factor, whereas this factor was not identified in 3D group. Negative attitudes were derived from members talking too much, in cases of being interrupted or being judged. One of the members commented about another group member's characteristics and its effect as follow:

FtFMember5: Sometimes, [Member Name] was speaking too much, she had negative effect on me. I mean, ahhh I would not gonna catch her anyways, so I thought that it would be better not to say it.

FtFMember5: Ya bazen o [Üye İsmi] vardı ya çok konuşuyordu, o beni olumsuz etkiledi. Şey anlamında, ya off ben zaten yetişemeyeceğim ona diye, ben de en iyi söylememek denim.

FtFMember4: When I was interrupted for instance... I was pulling myself back... In those cases I did not want to share and speak.

FtFMember4: Mesela sözüm kesildiği zaman ... kendimi çekiyorum. ... o zamanlarda paylaşım yapmak istemedim, konuşmak istemedim.

## **Privacy concerns**

Privacy concerns was a factor revealed only in FtF group. Group members stated their concerns about sharing experiences or examples about their private life. Moreover, although what is shared in the group will be kept within the group and not be shared outside was a group rule and all members were informed in the beginning, some of them were concerned about their relationships in the group environment and outside such as meeting in the campus etc.

### **4.3.3 Self-disclosure Change Over Time**

In addition to the factors affecting self-disclosure, its change over the duration of the program was investigated. Participants were asked whether there was a change in terms of the self-disclosure, sharing and contributions starting from the first week till the end.

Results showed that in 3D group six participants pointed to increase in their level of the self-disclosure over the time, while three participants did not experience any change. In the group, the main driver of this change was group cohesion. Participants who did not experience any change expressed that they were feeling comfortable to share from the beginning of the program. Similar results were revealed in FtF case; six of the members stated an increase and three of them did not have any change over the time.

Although the results were similar for both cases, the level of change was different. As stated by FtFMember2, the significant change for FtF group was starting very late compared to the 3D group.

FtFMember2: Although the start was very good in the first week, I started to disclose after the 3rd-4th week. I mean if there was not such a start, I am not sure whether it could start until the end. With a good start, it [self-disclosure] started after 3rd-4th week.

FtFMember2: İlk hafta çok iyi bir başlangıç olmasına rağmen, 3. 4. haftadan sonra ben açılmaya başladım. Yani öyle bir başlangıç olmasa belki, sonuna yetişir yetişmez onu bilemiyorum. İyi bir başlangıç ile 3. 4. Hafta sonra başladı benim için.

A similar comment was expressed in 3D group; 3DMember4 said that she overcame the barriers quicker in 3D environment.

Researcher: What would be different in face-to-face? [This was asked after the statement of the issues related to self-disclosure]

3DMember4: I think it would take more time. I was hesitating to speak in the beginning, and it decreased in time. In real life, [face-to-face] it would take more time. Because as I just said, thoughts about how I look, how I look from outside... As these were not present in virtual environment, it decreased the duration.

Araştırmacı: Yüz yüze de neler farklı oldu? [Kendini açma ile ilgili yaşanan sorunlardan sonra ki soru]

3DMember4: Zaman uzayabilirdi bence. Yani başta konuşmaya çekiniyordum, zamanla çekinme aza indi. Gerçek hayatta olsaydı daha da uzardı diye düşünüyorum. çünkü az önce de söylediğim gibi, nasıl gözükiyorum nasıl hani kendime dışardan baktığımda nasıl bir yerdeyim gibi düşünceler... orda çok olmadığından dolayı o zamanı kısalttı bence sanal ortam olması.

#### 4.3.4 Counselors' Opinions and Overview of Self-Disclosure

Group leaders expressed their opinions about group members' self-disclosure in both groups based on their observations. Both leaders considered anonymity as the main factor promoting self-disclosure in 3D group. Leader1 commented about importance of anonymity and its possible impact on the process;

Leader1: I think the fact that they do not know each other may ensured them to express themselves more comfortably. In other words, [a person think that] they don't know me anyways, they won't see me, they don't know how I look like... For instance, there is such risk in face-to-face; even though we felt that trust feeling, I think some members may not felt that trust and with that nervousness they may not say what they they could disclose faithfully. However, in 3D, this experience was formed and I think it prevented that timidity.

Leader1: Bence birbirleri hakkında fikir sahibi ... olmamaları onların kendilerini daha rahat ifade etmelerini sağlamış olabilir. Yani nasıl olsa bunlar beni tanımıyor, nerde görecekler ki, tipimi de bilmiyorlar... Mesela yüz yüze de öyle bir risk var; her ne kadar tamam güven sağlamış hissini duysak ta biz, belki bazı üyeler işte bence o güveni duymadılar ve onun tedirginliği ile belki burada dürüstçe açabilecekleri şeyleri söylemediler. Ama 3D de bu deneyim oluştu ve bence o çekingenliğin önüne geçti.

In addition to the self-disclosure, group members commented about the difference between both group in terms of members' feedbacks. Leader1 stated that in 3D case members were more comfortable in criticizing activities and more direct in their statements, whereas in FtF case they were more indirect about things they did not like.

Finally, group members pointed the self-disclosure change level between both groups. Similar to group members' comments, they also thought that in 3D group, members

tend to express their feelings and emotions right away, while in FtF environment it took more time.

Leader2: For example, 3DMember6 said how he felt sad in just second session; he stated that the information was very intense. In face-to-face, for example, they did not react as much as him. I think, he expressed how bad he felt much more comfortably. We understood others [FtF group] from their body language. If we compare both groups' sentences, I think in virtual they expressed such things much more easily.

Leader2: Mesela 3DMember6 kötü hissettiğini daha 2. oturumda söyledi; hocam bana çok ağır geldi bu bilgi dedi. Yüz yüze grupta onun verdiği kadar tepki verilmedi mesela böyle konulara. ... Orda kötü hissettiğini çok daha rahat söyledi bence. Öbür taraftakileri biz beden dilinden anladık. 2 tarafın cümlelerini karşılaştırırsak bence sanalda çok daha fazla kolay ifade edildi bu tür şeyler.

Results showed that some the factors promoting self-disclosure were similar in 3D and FtF environment. Leaders' role, group cohesion, group members' characteristics were the factors that stated by participants. However, some interesting results were revealed; in 3D group, virtual environment was the mostly stated factor, while in FtF group members' characteristics and feeling of having same problem was the major factors. Turning now to factors decreasing self-disclosure two groups differ mostly. Personal characteristics was the only common category which was identified by half of the participants. In 3D group technical issues were the major obstacles. On the other hand, social environment related factors (concerns of being judged, negative attitudes and privacy) were the major obstacles for self-disclosure. Finally, group members' and leaders' statements clearly showed that in 3D environment group members tend to self-disclose and express their feeling right away while in FtF environment this process take more time for members who does feel shy or uncomfortable in social setting.

#### **4.4 Outcomes (R.Q. 4)**

Assessing outcomes of the psychoeducational groups is important to identify the effectiveness of the group. Groups can be evaluated in terms of outcome measures such as change in behavior (DiStefano, Hohman, & Barker, 2013). Therefore, in this study both groups were evaluated based on change in participants' procrastination behavior. The fourth research question, "*What are the similarities and differences between 3D group and face-to-face group in terms of group outcomes?*", was organized based on three categories; cognitive, emotional and behavioral outcomes. These outcomes were investigated with both qualitative and quantitative data.



Procrastination scale was employed to measure the change over time, while interview responses were utilized to triangulate scale results and further reveal various aspects of outcomes.

#### 4.4.1 Procrastination scores change over the time

Participants' procrastination behavior was measured three times (pre-test, post-test and follow-up test) with Tuckman Procrastination Scale (Uzun Özer, Saçkes, & Tuckman, 2013). These three data sets were collected from the same participants which means they are related or dependent data. Therefore, Friedman test was conducted for each group's scores separately in order to identify whether a significant change in procrastination scores occurred over the time.

The first Friedman test was conducted for nine members of 3D group and results revealed that there was no significant difference for repeated measures of procrastination scores over the time,  $\chi^2(2, N = 9) = 5.200, p = .087$ . Similarly, a Friedman test was conducted for FtF group and results revealed that this group members' procrastination scores did not significantly change across three time periods,  $\chi^2(2, N = 9) = 5.543, p = .059$ . The change of scores in three measures is illustrated in Figure 4.1

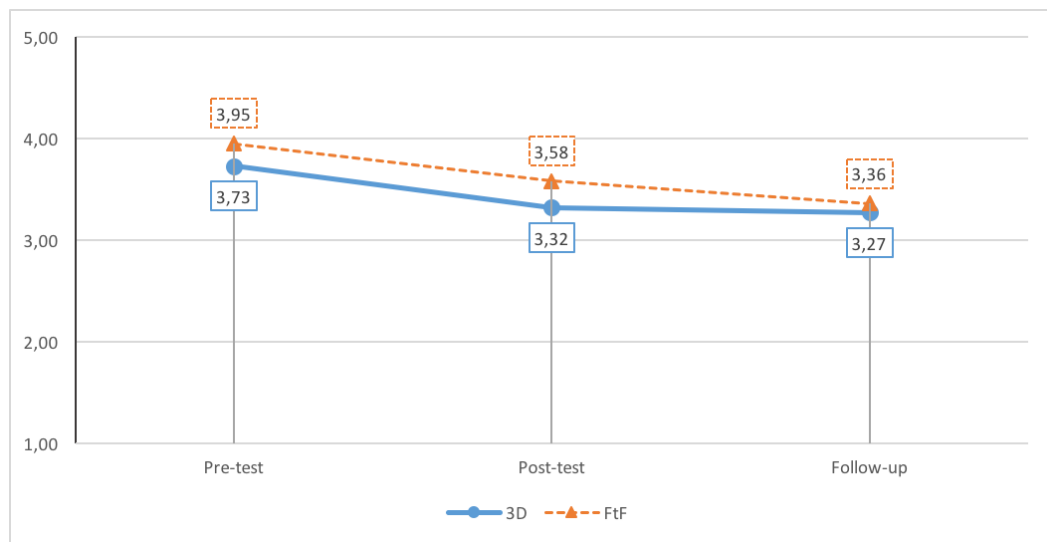


Figure 4.1 – Procrastination score changes in pre-test, post-test and follow-up

Participants' procrastination scores are presented in Figure 4.2 and Figure 4.3. These figures illustrate that in both cases there was a decline trend of procrastination scores for majority of the participants. However, this change was not significant among three measurements.

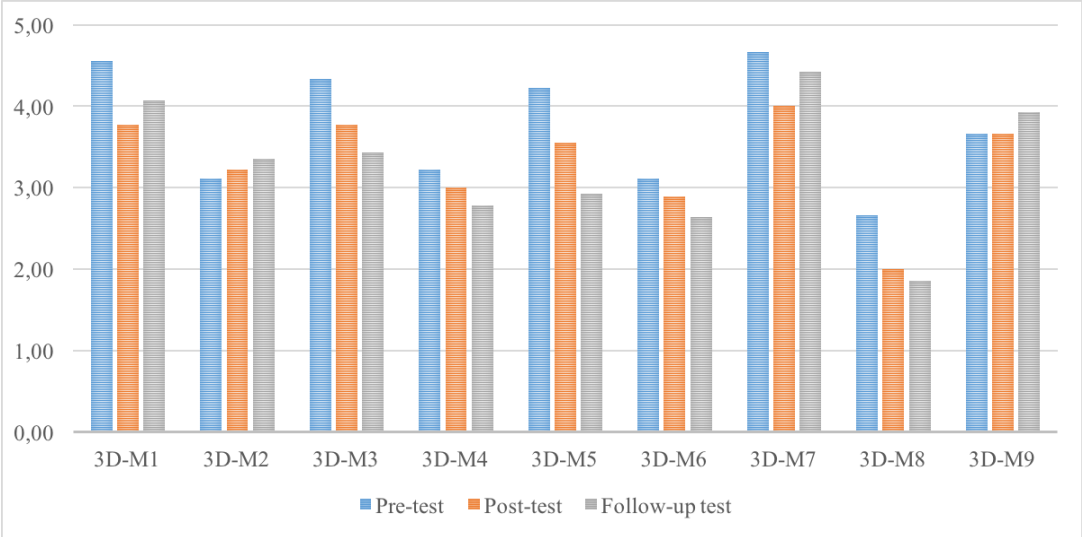


Figure 4.2 – 3D group members' procrastination scores

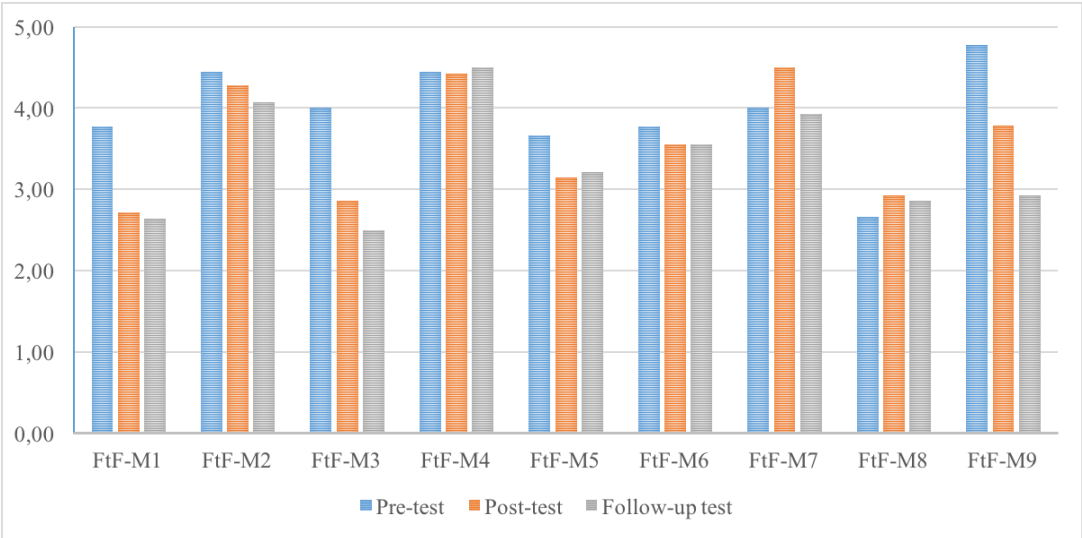


Figure 4.3 – FtF group members' procrastination scores

In addition to survey data, interview responses provided further details about groups. Results of qualitative data triangulated the survey results presented above; participants' behavior change were limited; however, they stated major outcomes in terms of cognitive and emotional aspects. Outcome results for both groups are presented in Table 4.7. In this section each outcome will be presented along with participants' comments.

Table 4.7 – *Frequencies of cognitive, emotional and behavioral outcomes*

<b>3D Group (N = 9)</b>			<b>FtF Group (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>Cognitive Outcomes</b>					
Awareness of Problem / Solutions	6	14	Belief in Overcoming	5	10
Self-awareness	6	8	Awareness of Problem / Solutions	6	10
Universality of Procrastination	4	4	Awareness of Irrational Thoughts	6	7
Awareness of Irrational Thoughts	4	4	Universality of Procrastination	5	6
Belief in Overcoming	2	3	Self-awareness	5	6
<b>Emotional Outcomes</b>					
<i>Responsibility of Procrastination</i>	5	9	Hope to Solve	5	9
Not Feeling Alone	4	7	<i>Improvement of Self-confidence</i>	5	6
Decreased Anxiety	4	4	Stop Blaming Self	3	6
Hope to Solve	2	3	Not Feeling Alone	3	4
Stop Blaming Self	1	1	Decreased Anxiety	3	4
<b>Behavioral Outcomes</b>					
Practicing Learnt Methods	7	19	No Significant Change	7	15
No Significant Change	7	12	Practicing Learnt Methods	8	13
<b>Other Outcomes</b>					
Different Experience in 3D Env.	2	3	Social Outcomes	6	8
Social Outcomes	1	2			

*f* = Code frequency

#### **4.4.2 Cognitive Outcomes**

This category was constructed based on participants' interview responses about cognitive outcomes. Results showed that these outcomes were quite similar for both cases. *Awareness of the problem and solutions, self-awareness, universality of procrastination, awareness of irrational thoughts, and belief in overcoming* were revealed cognitive outcomes. It should be noted that the frequencies of codes in data were close to each other except for the *belief in overcoming* sub-category.

##### **Awareness of Problem and Solutions**

The first major cognitive outcome of the program was participants' awareness of their procrastination behavior and awareness of the solutions. Six participants in each group stated that this program increased their awareness about their behaviors.

3DMember6: I realized that problems that I am having in some areas are caused from this procrastination behavior. Because, in order to recover something firstly you need to reveal the problem. I did reveal another problem.

3DMember6: Bazı konularda çektiğim sıkıntıların bu erteleme davranışından kaynakladığını fark etmiş oldum. Çünkü bir şey iyileştirmek için evvela sorunu ortaya koymak lazım. Bir sorunu daha ortaya koymuş oldum.

##### **Self-Awareness**

Results showed that self-awareness was another cognitive outcome of the psychoeducational group. In both cases, participants' self-awareness was related to noticing their weaknesses, strengths and main causes of the procrastination behavior. Furthermore, one participant from each case stated that during the program they realized that procrastination was not the major issue for them and they noticed other factors to deal with.

##### **Universality of Procrastination**

Universality is one of the therapeutic factor of group counseling (Yalom & Leszcz, 2005; Brown, 2004, p. 78-79). While participants share their experiences in group environment, they realize that they are not alone and there are other people sharing similar problems and concerns.

As expected, this factor was revealed in the results of this study as well. Four participants in 3D case and five participants in FtF case explicitly noted the realization of universality as an outcome of the program.

3DMember3: I am saying this; it [procrastination] is with everyone, everyone complains about it and it is normal. There are solutions...

3DMember3: Dedğim şu, herkes tarafında olan bir şey, herkes bu konudan şikâyetçi ve normal hani. Çözümleri var...

3DMember2: Before the program, I was thinking that this behavior was specific to me. Of course it collapses directly ... I don't hide behind this excuse anymore.

3DMember2: Programdan önce bu işin biraz bana has olduğunu düşünüyordum. O tabii ki direk yıkılıyor... Bu bahänenin arkasına saklanamıyorum artık.

### **Awareness of Irrational Thoughts**

Although there were various causes of procrastination among members, irrational thoughts were very common in both cases. Thus, participants had identified their awareness of such thoughts as an outcome of the group. Four participants in 3D group and six participants in FtF group commented about this outcome sub-category. One member gave an example from one activity in the program as follow:

3DMember7: An incident happens and as a result we feel this. No! An incident happens, in the middle, we have a thought to feel this... I had a negative and absurd type of thought. We can reach better outcome by changing this irrational thought.

3DMember7: Bir olay olur ve bunun sonucunda böyle hissederiz. Hayır! Bir olay olur, bunun sonucunda böyle hissetmek için arada bir düşünceye sahibiz ... Olumsuz ve saçma bir düşünce şeklim vardı. Bu sağlıksız düşünceyi değiştirerek daha doğru sonuca ulaşabiliriz.

### **Belief in Overcoming Procrastination**

Results showed that belief or overcoming the procrastination behavior was another outcome. Although both groups had this category in common, in FtF group it is identified by more participants. This difference can be better interpreted along with the emotional outcome differences between both cases.

FtFMember1: I was thinking that I would not overcome this. I was thinking that procrastination will continue forever... However, they [group leaders] showed us that in fact we achieve exactly the opposite.

FtFMember1: Ben üstesinden gelemeyeceğimi düşünüyordum. Sürekli ertelemenin devam edeceğini düşünüyordum... Ama aslında tam tersini yapabileceğimizi gösterdiler.

### 4.4.3 Emotional Outcomes

In addition to cognitive outcomes, the change of their emotions and feelings during the counseling process was investigated. Results showed that both cases had similar patterns in terms of emotional outcomes. *Not feeling alone, decreased anxiety, hope to overcome* and *stop blaming self* were common emotional outcomes, whilst *responsibility of overcoming* was unique outcome for 3D case and *improved self-confidence* was unique outcome for FtF case.

#### Not Feeling Alone

As discussed in the previous section, realization of a problem's universality reduces feeling of isolation. Four participants in 3D group and three participants in FtF group expressed that they felt better after realizing that they are not alone. FtFMember4 address this as "it was a good feeling to know that I am not alone". A similar comment from a member of 3D group illuminates the importance of this feeling:

3DMember4: This problem is not just specific to me, it is for many people. Everyone can express themselves in some way. I am one of them, I am not alone... knowing this improved me... knowing this made me more relieved.

3DMember4: Bu sorun sadece ben de değil çoğu kişide var. Herkes de kendini bir şekilde ifade edebiliyor. Hani ben de onlardan biriyim, yalnız değilim... o hissi öğrenmek beni ilerletti... bunu öğrenmek beni daha da rahatlatı.

#### Decreased Anxiety

Decreased anxiety was another common emotional outcome. Four participants of 3D group and three participants of FtF group underlined the decrease of anxiety as an outcome of this psychoeducational counseling group. This decrease was mainly due to increased hope, awareness of negative thoughts, and stopping to blame self. For instance, 3DMember8 talked about her feelings as "it [program] made me feel better, decreased my stress because I had defined the problem and know how organize my time". A member from FtF group shared more intense feelings:

FtFMember1: Before coming here, I was feeling totally exhausted. My anxiety level was very high ... However, I realized that my thought were the only thing that I should blame, that they made me to feel bad... My anxiety level is lower now.

FtFMember1: Kendimi tamamen bitmiş gibi hissediyordum buraya gelmeden önce. Kaygı seviyem çok yüksekti ... Aslında suçlamam gereken tek şey düşüncelerimin olduğunu fark ettim, onların beni kötü hissettirdiğini... Kaygı seviyem daha aşağıda artık.

### **Hope to Solve**

Feeling of hope to overcome the procrastination behavior was an outcome. As shown in results, it FtF group this feeling was identified by more participants than 3D group. The common feeling was that they did not feel desperate anymore. A member of FtF group said “I was seeing this as a chronic illness... but this process gave me hope and confidence”.

### **Stop Blaming Self**

Participants’ another response to question related to emotional change was decrease of self blame in all negative situations. Only one participant of 3D group and three participants of FtF group expressed this. A statement of one member was “I stopped blaming myself, this is a big change for me.” (FtFMember9)

### **Responsibility of Overcoming Procrastination**

This category was emerged only in 3D case. The common statement in this category was that participants felt responsible about their behaviors and they tried to avoid procrastinating in order to do not feel bad. 3DMember6’s comment showed how he felt about his behavior and the feeling of responsibility:

3DMember6: When procrastinating this disturbs me because I have determined responsibility. I have to act to reach the solution. If I do not act, it disturbs me.

3DMember6: Ertediğim zaman bu beni rahatsız ediyor, çünkü sorumluluk belirlemişim artık. Çözüme ulaşmam için harekete geçmem lazım. Geçmiyorsam bu bana rahatsızlık veriyor.

### **Improvement in Self-confidence**

Results showed that this outcome was emerged in FtF group; five participants stated that this program helped them to improve self-confidence to overcome procrastination behavior. FtFMember2 commented as “there was a significant improvement of my self-confidence about this topic”. FtFMember6 mentioned about similar feelings; “I was loosing self-confidence but I regained that”

#### **4.4.4 Behavioral Outcomes**

In order to investigate psychoeducational program’s effects on participants’ procrastination habits, they were asked whether there was any behavioral change in

the course of the program. Furthermore, behavioral changes of participants who stated about a change were investigated. Most of the participants stated that they did experience a significant change in terms of procrastination behavior. However, they stated that they practiced learnt method which help them to get more organized, prioritize tasks and act more responsible.

### **No Significant Change**

Results revealed that participants' behavioral changes were limited or there was no change. Similar results were found in quantitative data as well; there was not a significant change of procrastination behavior before and after the group period. Results showed that major changes were cognitive and emotional. One member pointed to this as;

FtFMember6: There is not much change in behaviors but I prepared a base for behavioral changes, I constructed its foundation.

FtFMember6: Davranışlarda çok değişiklik yok ama davranış değişikliği zeminini hazırlamış oldum, alt yapısını yapmış oldum.

### **Practicing Learnt Methods**

Comments of participants who declared some sort of behavioral change were analyzed. Majority of the participants in each group stated that they had practiced methods they learnt during the program. The fact that there was not a major change for most participants, the extend of these practices varied among members.

Group members' employed strategies can be categorized as prioritizing, effective planning and dividing tasks. They used the methods thought in the program to achieve these strategies. Among these strategies Pomodoro was the mostly used strategy. Some of the participants' responses were as follow;

3DMember6: I could not make any improvement in terms of practice. The methods I gained will be helpful in terms of practice. Pomodoro and ABC thoughts system are some of them and I am using them now.

3DMember6: İcraata geçme konusunda bir türlü ilerleme kaydedemiyordum. İlerleme kaydetmek adına, edindiğim yöntemler bana faydalı olacak. Pomodoro ve ABC düşünce yapısı bunlardan bazıları ve bunları kullanıyorum şimdi.



FtFMember3: Now, for example when there is a task to be done, I do that than play games. Before, I would start playing games before and I could not do it.

FtFMember3: Şimdi, bir iş yapılacak mesela onu yapıp ondan sonra oyun oynuyorum. Eskiden olsa önce oyun oynamaya başlar, yapamazdım.

#### **4.5 Instructional Aspects (R.Q. 5)**

The fifth research question this study was “*What are the instructional strategies for successful delivery of psychoeducational groups in 3D VWs from the perspective of counselors and group members?*”. This research question was aimed to address the the importance of educational aspects of psychoeducational groups. The primary focus of psychoeducational group counseling is to educate individuals about a psychological topic (Gladding, 2004). Brown (2004) asserts that they “have a significant educational component in addition to the psychological component” (p. 5). Therefore, it is crucial to investigate the educational component of this group in 3D VWs in order to identify effective instructional strategies. In this section, participants’ opinions about the content of the program, presentation of information and activities will be presented. Furthermore, counselors’ opinions regarding similarities and difference of instructional strategies for both groups will be discussed.

##### **4.5.1 Activities**

Participants’ responses about activities were positive in both cases. As categories by DeLucia-Waack (2011), there were three categories of activities; initial, middle and ending stage activities. Results showed that contributions of activities to the group counseling process was invaluable. These contributions were similar in 3D case and FtF case. Motivation was the first factor; participants stated that activities were motivating during the process. Secondly, activities were considered as significant leverage for increasing awareness. Finally, group activities increased the interaction among group members. Particularly in FtF group, participants stated that there could be more group activities.

When it comes to problems participants experienced during the activities, minor issues were experienced. In 3D group, clarity of instructions was an issue noted by two participants. The issue was that some exercises’ instructions were not well understood by these members.

Interesting results were revealed in terms of the activities' effectiveness and differences between both cases. In both cases, practical methods to use for procrastinations (such as pomodoro and "getting things done") and activities related to emotional feelings were considered as most effective. One major difference was that role playing and dramatization activities were considered more effective in 3D group than FtF group. The reason was that in FtF group participants were feeling shy to act. The second difference was motivation and control factors for doing homework exercises. In 3D group, these exercises were always available in the virtual environment and members could see other members' status of the exercise. This was a significant motivational factor to do homework exercise. One member of FtF group commented about the need of a similar mechanism in FtF:

FtFMember9: It would be good to have a system that we could track each other. At least for achieving the goals... it would be better for communication, as a means of control mechanism it would be more effective for group to control itself ... If our actions were seen by the group, we could be more motivated.

FtFMember9: Birbirimizi takip edebileceğimiz bir sistem olsaydı iyi olurdu. En azından hedef gerçekleştirme adına. ... iletişim için daha iyi olabilir, kontrol mekanizması açısından grubun kendini kontrol etmesi açısından da verimli olabilir... Attığımız adımlar grup tarafından görülürse, biz bununla daha çok motive olabiliriz.

#### 4.5.2 Content

Participants' expectations and satisfaction in terms of the content of the program was investigated. Results showed that in both groups they considered the content effective and satisfactory. One member in 3D group underlined the importance of balance between theoretical and practical information and he considered this group as effective.

3DMember6: There was more theoretical information towards the end ... In think the content covered sufficient theoretical and practical information. It was not boring. If it was filled with more theoretical information, I think it would be boring.

3DMember6: Sonlara doğru teorik bilgiler daha arttı. ... İçerik bence yeteri kadar teorik, yeteri kadar da pratik içeriyordu. Sıkıcı değildi yani. Daha fazla teorik bilgi ile doldurulursa, sıkıcı olacağımı düşünüyorum.

Although most of the participants in both groups shared similar opinions, some of them noted weakness as well. The first highlighted dissatisfaction was related to limited practical techniques to deal with procrastination. Their expectations were to learn more

techniques and strategies. This dissatisfaction was expressed especially by members who had more awareness before the program. For instance, 3DMember6 and FtFMember3 expressed their expectations in this respect:

FtFMember3: For example, that 2-3 weeks we talked about the reasons. That could be reduced, instead we could focus more on what can be done.

FtFMember3: Mesela o 2-3 hafta konuştuk ya işte sebepleri ile alakalı. O mesela az tutulup, ne yapılacağı hakkında daha çok böyle üzerinde gidebilirdi.

3DMember2: There was only pomodoro method, which does not fit me. I meant this in terms of the content. Maybe there could be more solution methods, at least various methods can be showed. At least we could have option to choose. It was weak in that sense.

3DMember2: Sadece pomodoro yöntemi vardı, o da bana uymuyor. İçerik olarak bunu kastetmişim aslında. Belki daha çok çözüm yöntemi, en azından farklı çözüm yöntemleri gösterilebilir. En azından seçim olanağımız olabilirdi. O anlamda biraz eksikti.

Participants' general suggestion about this was to shorten the first weeks of the program and focus more on the coping strategies. This view was underlined especially in 3D group. The initial stage activities' goal is to establish trust among members and introduce them to each other. This finding indicates that in 3D group initial stage activities need to be kept short.

The final finding was related to presentation of the information. In 3D group all members were satisfied and considered information presentation as effective. On the other hand, in FtF group five participants noted the lack of interaction in the format information presentation.

FtFMember4: It is not enough to support only verbally, I think visual materials could be used. It would be more interactive, we could watch video, or images could be shown.

FtFMember4: Sadece sözlü desteklenmiyor, bence görsel materyaller kullanılmalıydı. Daha interaktif olabilirdi, biz video izleyebilirdik, yada işte resimler gösterilebilirdi.

FtFMember5: They need to state what is written in a different way than reading. Not that we read but that we see ...

FtFMember5: Ya orda yazanları bize okumaktan farklı bir şekilde ifade etmeleri lazım. Okumamız değil de, görmemiz...

### 4.5.3 Counselors' Instructional Experiences and Suggestions

Instructional aspects of the psychoeducational group were investigated based on group leaders' experiences. Presenting their perspective is essential in order to better understand the process in both cases. The fact that same counselors had led the groups starting from the pilot study was invaluable for the findings of the study.

Analysis of counselors' responses revealed four main categories in terms of similarities and differences between group process and instructional strategies in 3D group and FtF group. These categories were; planning group, managing group and instructional activities.

#### Planning Group Process

Planning a counseling group is the essential stage that need special consideration. Although literature has extensive guidelines for traditional practices, there is limited information about online groups. Therefore, in this section, findings related to similarities and difference of planning a psychoeducational group in two settings are discussed.

*Competency.* The first planning factors noted by counselors was the importance of competency. They suggested that counselors who want to organize counseling in 3D environment should be competent and understand the technical aspects of the environment. Leader1 stressed the importance of technical competency and expressed that counselors should have a backup plan in case of technical issues and they should be cautions about privacy.

Leader1: Firstly, they [counselors] need to learn program well, because it is important. That really makes you feel comfortable ... They need to consider privacy issue; indeed it is important for both [environments] ... And they need to consider the technical structure while preparing something.

Leader1: Bir kere programı bir güzel öğrenmeliler, çünkü önemli. O kendini rahat hissettiriyor hakikaten ... Gizlilik kısmını önemsemesi gerekiyor, gerçi her ikisinde de öyle ... Birde 3D'deki teknik yapıyı göz önüne alıp ona bir şeyler hazırlamalılar.

The second competency was the knowledge of the counseling topic. Both counselors stated that in virtual environment group leaders need to be competent in terms of theoretical and practical knowledge. Leader1 compared both cases, in terms of

competency, and underline that leaders need to speak more and spend more effort in 3D environment.

Leader1: It is important to be competent about topic. I mean, no matter what they want to do by using this program [3D VW], it is important to be competent in information and repertoire about the topic. Because, as speaker leaders have more responsibility compared to face-to-face. Therefore, they need to start off from a topic that they know well or they feel confident about. For example, now I can conduct procrastination group again but for a romantic relationship psychoeducation... I would stop and think about it.

Leader1: Konuya bence iyi hakim olmak önemli. Yani bu programı kullanarak ne yapmak istiyorlarsa istesinler, bilgi ve dağarcık olarak o konuya iyi hakim olmak önemli. Çünkü konuşmacı olarak yüz yüzeden daha fazla rol düşüyor liderlere. Çünkü daha fazla konuşman gerekiyor daha fazla efor sarf etmen gerekiyor. O yüzden bildikleri bir konuda ya da kendilerinden emin oldukları bir konudan yola çıksınlar. Mesela şu an ertelemeyi tekrar yapabilirim ama bir romantik ilişki için bir psikoeğitim... bir durur düşünürüm yani.

*Participant Selection and Informing Participants.* The screening and training process while selecting participants was considered as an essential phase. Counselors highlighted the importance of providing appropriate training to participants in order to use the environment effectively. Moreover, they expressed that participants need to be informed about the process in advance as in virtual environment participants may have difficulties understanding the process.

Leader2: They [counselors] should inform members well about the group and what it is. Because, it can be difficult to control some who does not know group process in virtual environment. In order to familiarize with group, they definitely should get the training you [researcher] provided.

Leader2: Üyelere grubu çok iyi anlatmalılar ne olduğunu. Çünkü grup sürecini bilmeyen birini sanalda kontrol etmek çok zor olabiliyor. Grubu belki tanıtmaya anlamında, senin verdiğim eğitimden, kesin geçirmesi lazım.

*Importance of Pilot Study.* The final aspect of planning was the pilot study and its necessity. Both of the group leaders underlined the importance of pilot study for the 3D group.

Leader2: And definitely pilot study should be conducted. For example, we changed a lot of activities after the pilot. It helped us a lot in terms of the time.

Leader2: Ve kesinlikle pilot uygulaması yapılması lazım. Biz mesela pilot uygulamadan sonra çok etkinlik değiştirdik. Zaman açısından da bize çok yardımcı oldu.

Leader1: It is very good to conduct the pilot study. It was important in terms of getting used to it, learning the system, and for the preparation stage.

Leader1: Pilotu yapmamız çok iyi idi. hem bizim alışmamız açısından, sistemi görmemiz açısından hem de işte bu dediğim hazırlık aşaması açısından önemli idi.

## **Group Management**

One of the major difference between online counseling and traditional counseling is the group environment. This difference has important implications for group management. Both environment has its advantages and challenges for counselors.

*Time Management.* One of the raised group management aspects was the time management. Counselors underlined the importance of time management and asserted that there was not much difference between both cases. As highlighted by counselors too, it is important to plan and allocate some time for technical controls in virtual environment. It should be noted that the duration of sessions was increased after the pilot study. Furthermore, although not stated by counselors, participants considered time management issues as a weakness of counselors in FtF group.

*Promoting Participation and Managing Discussions.* Counselors' responses showed that they faced with different challenges in two settings. In FtF group, the main challenge was to control some members and eliminate undesired interactions among them. One previously discussed finding that should be emphasized here is that, in FtF environment negative attitudes among members was considered a challenge and it was a demotivating factor for some participants. Leader2 compared both groups in terms of this issue as follow:

Leader2: You should have much control in face-to-face group and group should be suitable for it. There were members who were like "I will speak always, and listen to me", and we tried to suppress this. In some groups, there are members who always try to draw attention to others and come up with conflicts like "what you are saying is always wrong... one second this is not like that...". These are very difficult. The goal of doing that is to be known and become popular. In virtual environment, there is not such a thing, nobody knows him/her; therefore, this can be virtual's one advantage.

Leader2: Yüz yüze grubu için daha kontrolcü olmak lazım ve grubun ona müsait olması lazım. İşte "hep ben anlatayım beni dinleyin", bizde bunu bastırmaya çalıştığımız üye vardı. Bazı gruplarda sürekli birilerine şey atarak ortaya çıkan üyeler oluyor mesela; "ama her şeyi yanlış söylüyorsun... bir saniye o konu öyle değil..." diye zıtlıklarla gelenler. Bunlar çok zor. Onu yapma amacı zaten beni tanısinlar, popüler olayım amacı var. Sanal tarafta öyle bir olay yok, zaten tanımıyor ve kim olduğunu bilmiyor. dolayısıyla o sanalın bir avantajı olabilir.

In the 3D group, the major challenge for counselors was controlling members' participation. The fact that counselors did not see members, it was difficult for them

to make sure they are active and following. Leader1 shared her experiences about this issue and recommended some strategies, especially to pay attention to the avatars' status ("Away" text is shown above the head of avatars when they stay inactive for a certain time):

Leader1: [A counselor] should be careful about participants not to break off, s/he should be able to manage that. For example, in face-to-face you see that, you notice the member who is silent right away. But you don't have that opportunity in virtual environment. They [counselors] can follow those "aways", which I think are important indicators. When seeing an "away", s/he can engage them back to the conversation with a question. It is important to get him/her back to there.

Leader1: Katılımcıların kopmamasına dikkat etmesi lazım, onu iyi kontrol edebilmeleri lazım. Mesela yüz yüze de görüyorsun, sessiz kalan üyeyi fark edebiliyorsun o anda. Ama sanal ortamda öyle bir şansın yok. O awayları takip edebilirler, bence o önemli bir uyarıcı. Mesela hemen away gördüğü birini bir soru ile sohbete katabilir. Tekrar oraya döndürmek açısından o önemli.

The other aspect of not seeing members is the question of how this affects counselors. Both counselors stated that at the beginning of the process they were feeling bad because they could not make sure whether participants were listening or not. Leader2 pointed the importance of counselor to isolate him/her from such suspicion which could negatively affect the counseling process:

Leader2: I was acting based this assumption; they can be following or not. If I had concern that they were not following, this was something to affect the process very much ... I never left the screen except for the time looking at the presentations and I was acting based on the assumption that they did the same. If I did not, that would be a very bad feeling.

Leader2: Şöyle bir varsayımla hareket ettiğim; orda olabilir olmayabilir. Eğer ben takip etmeme kaygıyı taşıyor olsaydım, bu süreci çok etkileyecek bir şey ... Ben nasıl ki hiçbir zaman sunumlara bakmak dışında o ekran görüntüsünden hiç kopmadım, onların böyle yaptığını varsayarak hareket ediyordum. Eğer etmezsem o çok kötü bir his.

*Communication with Co-leader.* In situations where two counselors lead the group, as in this study, the communication between them is a point of interest. Counselors expressed that in FtF environment it was easier for them to communicate with just body language which allowed them to make spontaneous decisions based on the participant's verbal or non-verbal feedbacks. On the other hand, in 3D group, private chat or messaging applications were used for this purpose. Leader1 considered this form of communication as a challenge while Leader2 thought the opposite. This difference was due to the fact that one of them responded in terms of managing the

process, while the later responded in terms of the technological barrier. Both views are presented below:

Leader2: There was something I just said, in face-to-face group there were things that we decided to do or not to do just with eye contact. It was like this in virtual; sometimes I wrote [in chat] sometimes I texted, “should we do like this or like that”. But you cannot do this in face-to-face; for example, you cannot ask co-leader as “what we should do, should we cancel this”. Therefore, virtual group was very comfortable in that sense, it is more stressed in face-to-face.

Leader2: Biraz önce söylediğim şey vardı, yüz yüze de göz ile iletişim ile yapıp yapmamaya karar verdiğimiz şeyler. Sanalda şöyle oldu; bazen kendim yazdım bazen telefondan yazdım, işte “böyle böyle yapalım mı, şöyle şöyle yapalım mı”. Ama yüz yüze grupta bunu yapamıyorsun, mesela diğer lidere “ne yapsak bu etkinliği, yapmasak mı”, diyemiyorsun. O yüzden sanal grup çok rahattı o anlamda, ya yüz yüze hep daha gergin.

Leader1: It was a good thing in face-to-face to be able to communicate with Leader2 just with eye contact. In 3D, when connecting from home, I was texting from cellphone. It could be difficult sometimes.

Leader1: Yüz yüze de Leader2 ile göz göze iletişim kurabiliyor olmakta iyi bir şey idi. 3D’de evden bağlandığım kısımlarda mesela telefondan yazıyordum. O bazen zorlayıcı olabiliyordu.

## **Instructional Activities**

Activities are essential components of the psychoeducational groups to teach and facilitate groups. Games, role-playing and various exercises are some the common techniques that can improve learning and retention (Brown, 2004). Counselors’ one responsibility is to choose the appropriate activity for the type and stage of the group. Therefore, counselors’ perceived similarities and differences between groups, and their suggestions are discussed in this section.

### *Choosing Activities*

The first major issue that counselors experienced was related to choosing right activity for 3D environment. Although they had theoretical and practical knowledge of group activities for traditional setting, the virtual environment was challenging for them. The reason is that there are not guidelines or best practices conducting activities in 3D environment. Leader2 shared challenges they faced with during the process of organizing activities.



Leader2: I think the part that we had most difficulty was this; you decide about an activity, then you start thinking about how it will be in virtual environment. Besides, you think about the method to conduct that activity ... Because, group activities that we have or that we implement or that have been practiced for us were all designed for face-to-face groups. Thus, for each activity we rethink about how it will be in virtual. That part was difficult.

Leader2: Bence bizim en zorlandığımız kısım burası idi; etkinlik olarak bir şeye karar veriyorsun sonra o sanal ortamda nasıl olur acaba diye düşünüyorsun. Birde o etkinliği yapmak için yöntem düşünüyorsun.... Çünkü bizim elimizdeki grup etkinliklerinin yada bizim kendi uyguladığımız yada bize uygulanan grup etkinlikleri yüz yüze gruplarda tasarlanmıştı. O yüzden her etkinlikte durup sanalda nasıl olur diye düşündük. O kısmı zor idi.

### *Structure and Organization*

Counselors suggested that in 3D environment activities should be well organized and more structured compared to face-to-face. In FtF environment it can be easier for members to understand instructions. Leader2's comment presents the suggested strategy:

Leader2: For example, you explain the activity and tell them to discuss together. It needs to be more structured and guide them right away. You need to organize [the activity] in advance.

Leader2: Mesela etkinliği anlatıyorsun siz beraber görüşün diyorsun. Onları yönlendirmek ve daha structured olmak zorundasın hemen. Önden organize etmek zorundasın.

The other finding was related to ice-breaking activities; counselors expressed that in 3D environment there is no need to organize many ice-breaking activities compared to traditional setting. The comment below presents Leader2's recommendation:

Leader2: Pilot study showed us this; virtual groups do not need to get warm to start. We did ice-breaking activities in the first and second week, then we took them out. Because it was taking too much time needlessly.

Researcher: There is no need for ice-breaking activities?

Leader2: Yes. Maybe one or two weeks. Just first two weeks, other than that there is no need. Maybe there is no need for psychoeducational group.

Lider2: Pilot uygulama bize şunu söyledi, sanal grupların ortama ısınmaya ihtiyacı yok dedi. Biz 1. hafta yaptık 2. haftada yaptık sonra kaldırdık bütün ısınma etkinliklerini. Çünkü baktık çok vakit alıyor gereksiz yere.

Araştırmacı: Sanalda ısınma etkinliklerine ihtiyaç mı yok?

Lider2: Evet. Belki bir hafta belki 2 hafta. Yani ilk 2 hafta, onun dışında gerek yok. Yada psikoeğitim grubu için gerek yok belki de.

### *Role Playing and Dramatization Activities*

Counselors considered role-playing activities as a more effective instructional method in virtual environment. The social anxiety in face-to-face setting decreases the effectiveness of these activities. Although participants did not perform the role playing physically, they felt the emotions and received the instructional messages. Leader2 said that “I found virtual group very successful in role playing. They performed much better than I expected.” Moreover, she explained details of activity and the outcome differences between both groups:

Leader2: That irony exercise received its goal more in virtual, I think. Face-to-face lead to a fun environment. It addressed different goals. Therefore, I think we reached our goal more in virtual.

Leader2: O ironi egzersizi bence sanal da amacına daha çok ulaştı. Yüz yüze de daha çok eğlenceli ortam oluştu. Farklı amaçlara hitap etti. O yüzden bence sanal da daha çok ulaştık oradaki amacımıza.

Similarly, Leader1 explained her opinions about the reason of this difference between two settings.

Leader1: I think this is related to social anxiety. Because here ... they need to present a performance, and it high chance to screw up. They can talk nonsense when acting for example. Simply, they can stumble while speaking. Because they did not want to risk this, they found such exercises difficult.

Leader1: Bence bu sosyal kaygı ile alakalı işte. Burada çünkü ... bir performans göstermeleri gerekiyor ya, rezil olma ihtimalleri çok yüksek. Saçmalayabilir mesela rol yaparken. En basitinden, dili sürçebilir. Bence bunu göze alamadıkları için, bu tarz etkinlikler onlara zor geliyor.

### *Interactive Group Activities*

It was clear that keeping participants active during the sessions was critical for the group process in virtual environment. Counselors recommended that activities should keep participants active in order to increase their feeling of presence. This issue was expressed by Leader1.

Leader1: In virtual group, they [counselors] need to use activities that group members are more active. For example, in face-to-face, ... leader’s role can be longer but in 3D this can cause boringness. Therefore, in 3D, even if it is psychoeducational group, the active ones should always be the members.

Leader1: Grup üyelerinin daha çok aktif olacakları etkinlikleri kullanmaları gerekiyor sanal grupta. Mesela yüz yüze de ... liderin rolü daha uzun kalabiliyor, ama bu 3D de sıkıcılığa yol açabiliyor. O yüzden 3D de aktif olanlar, psikoeğitim grubu da olsa, hep üyeler aktif olmalı.

As expressed by counselors, two methods can be effective to keep members active and engaged. The first method is to leverage the 3D environment and create interactive activities. Leader2 stated that different environments can be designed and interactive exercises can be integrated in order to increase their social presence. The second method was to organize group activities which members can work together to create an outcome. Leader2 recommended that interactive group activities should be used for effective instruction.

Leader2: The activities that they [members] worked together yield better results always. Definitely, there should be something interactive or activities that they can produce a product together. For example, we admired the ideas that 3D Member5 or a more silent member came up with. Therefore, they should be together because they don't see each other face-to-face and it is not effective to place people alone.

Leader2: Bir araya gelip çalıştıkları etkinlikler hep daha iyi sonuç verdi. Kesinlikle interactionları olan bir şey veya birlikte bir ürün çıkaracakları etkinlikler olması lazım. Mesela biz 3D Member5 gibi bir üyenin ya da daha sessiz bir üyenin çıkardığı fikirlere hayranlıkla baktık. O yüzden bir arada olmaları lazım çünkü zaten yüz yüze görmüyorlar ve tek başına insanları oturtunca da etkili olmuyor.

### *Control and Responsibility of Homeworks*

One interesting finding was the difference between cases in terms of the responsibility and rate of doing homework. In 3D, all homework exercises were seen by other members and leader. Leaders could check their status. This was a motivation factor for responsibility of the activities. Leader1 shared her observations about this difference:

Leader1: One of my observation is this; in virtual they conformed more to homework exercises, they completed more, cared more. It was not that much in face-to-face. For example, this was one of things that made me to feel good in virtual. They were more conscious and responsible in terms of tasks.

Leader1: Bir gözlemim de şu; canal da ev ödevlerine daha fazla riayet ettiler, daha fazla yaptılar, daha fazla özendiler. Yüz yüze grup o kadar değildi. Mesela bu da sanal da iyi hissetmeme neden olan şeylerden biri idi ... Görevler ile ilgili daha bilinçli ve sorumlu idiler.

## **4.6 Motivation (R.Q. 6)**

The sixth research question of the study was “*What are the factors affecting the motivation of group members in 3D VWs and how do these factors differ from face-to-*

*face group?*”. In order answer this question, participants were asked about their primary motivation of attending the program during the interviews. Results of interviews after the group process revealed various factor that had influence on members’ motivation. As presented in Table 4.8, patterns of motivating and demotivating factors were quite similar for both cases. It is important to note that both groups had some unique factors as well. In this sections, these common and non-common elements are discussed in details.

Table 4.8 – *Frequencies of motivating and demotivating factors*

<b>3D Group (N = 9)</b>			<b>FtF Group (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>Motivating Factors</b>					
Desire to Overcome Procrastination	5	11	Having Fun	6	8
Applying What is Learnt	4	7	Awareness	4	7
Group Environment	4	6	<i>Relax / Relief</i>	4	7
<i>3D Environment / Experience</i>	4	5	Group Environment	5	7
<i>Learning Opportunity</i>	3	3	Desire to Overcome Procrastination	5	5
Awareness	3	3	Group Leaders	3	5
Having Fun	2	3	Applying What is Learnt	3	3
Group Leaders	2	2	<i>Personal Goals / Interests</i>	3	3
<b>Demotivating Factors</b>					
External Factors	7	9	External Factors	4	5
<i>Technical Problems</i>	2	5	<i>Attitudes Among Members</i>	4	4
Less Focus on Solutions	3	3	Less Focus on Solutions	2	2

*f* = Code frequency

#### 4.6.1 Motivating Factors

Results revealed that motivating factors showed similar pattern in both cases. *Desire to solve problem, applying what is learnt, group environment, awareness, having fun,* and *group leaders* were common motivating factors. There also were distinct factors;

in 3D group *3D environment/experience* and *learning opportunity* were unique motivating factors, whilst in FtF group *relax/relief* and *personal goals and interests* were unique motivating factors.

### **Desire to Overcome Procrastination**

The first, and expected, motivational factor was participants' desire to overcome procrastination behavior. Five members of each group state that this factor was a major driver for them to attend the group counseling sessions.

3DMember4: I want to continue attending the program because I really wanted to solve my problem.

3DMember4: Kendi sorunumu gerçekten çözmek istediğim için programa devam etmek istedim.

FtFMember2: My personal motivation was to get rid of procrastination behavior.

FtFMember2: Benim bireysel motivasyonum işte erteleme davranışından kurtulmak idi.

### **Applying What is Learnt**

Results showed that when participants applied the methods that they learnt, they felt more motivated to attend the group. Four participants in 3D group, and three participants in FtF group mentioned about this aspect. 3DMember4 shared her feeling after completing a task activity in 3D environment, which also shows the importance of activities and 3D environment's affordances:

3DMember4: That task activity ... I felt very motivated to attend because I finished both tasks. Because I did it... in order to say that I accomplished.

3DMember4: O ödev etkinliği .. iki ödevi de tamamladığım için o zaman motivasyoncum yüksekti katılmak için! Yaptım çünkü... başardım diyebilmek için.

### **Group Environment**

Group environment was another emerged factor in both cases; four participants of each group expressed that group cohesion was a motivational factor. This result is interesting as participants of 3D group was motivated by group environment even though they were connected from distance and did not know each other's identity. Comments of both cases were similar regarding the group environment.

3DMember8: Friendly conversations and talk of people there were attractive and this increased my motivation very much.

3DMember8: Oradaki insanların muhabbetleri, sohbetleri gerçekten çekici idi, ve bu motivasyonumu çok yükseltti.

## **Awareness**

Results showed that awareness of the procrastination behavior and self-awareness was a common motivating factor for both cases. Three participants in 3D case and four participants in FtF case considered this factor. For instance, one member explained one of these awareness moments as:

FtFMember2: Motivation peaked in 1-2 weeks especially. It was really when we found the answer of what is our problem ... and look this is the clear and simply prescription... motivation peaked for everyone immediately.

FtFMember2: Motivasyon 1-2 hafta özellikle çok peak yaptı. O da hakikatten işte bizim sorunumuz nedir cevabını bulduğumuzda ... bak bu da en net şekilde en basit reçetesi... bir anda motivasyon herkeste zirve oldu.

## **Having Fun**

Having fun was another motivating factor for both cases; however, more participants in FtF group mentioned this. While six participants considered this factor in FtF group, only two participants mentioned this in 3D group. It should be noted that similar results were revealed in quantitative data; there was a significant difference between enjoyment scores groups, in favor of FtF.

FtFMember4: If we had a very fun session, I came very motivated the week after.

FtFMember4: Eğer çok keyifli bir oturum yaptıysak, gelecek hafta çok yüksek motive ile geldim.

## **Group Leaders**

The final common motivating factor was group leaders. Two participants in 3D group and three participants in FtF group highlighted that group leaders' attitudes and skills were a motivating factor from them during the counseling program.

## **3D Environment / Experience**

3D environment was one of the unique motivational factor in 3D group. Four participants stated that the attractiveness of this environment was motivating them. For

instance, 3DMember9 expressed that visually design and interactiveness of environment was a motivational factor for him. Moreover, 3DMember4 shared another aspect of 3D environment which motivated her:

3DMember4: The environment affected my motivation ... As I said, I wanted to isolate from real world as it [3D environment] created a feeling of different world for me.

3DMember4: Yani mekan etkiledi motivasyonumu ... dediğim gibi değişik bir dünya hissi yarattığı için gerçekten dünyadan kopmak istedim bundan dolayı.

### **Learning Opportunity**

Three participants of 3D group stated that one of the motivation for them was that they did not want to miss content and activities. These comments were defined as learning opportunity and it was emerged only in 3D group.

### **Relief / Relax**

This factor was emerged in FtF group only and it was identified as motivating by four participants. These participants perceived counseling group as place for relief and relaxation. FtFMember5 expressed this as “my motivation was that coming here was relaxing and escaping from problems”. Another member commented in similar tone:

FtFMember9: My motivation to attend the group, it was aimed to relief a bit. Coming here, I was finding a place to express myself during 1.5 hour. This motivated me some how as well.

FtFMember9: Gruba katılma motivasyonum, biraz rahatlama amacı taşıyordu. Ben buraya gelip kendime 1.5 saat boyunca ifade edebileceğim bir ortam buluyordum. Bu da beni biraz motive etti.

### **Personal Goals and Interests**

This factor was emerged in FtF group only which was noted by three participants. They expressed that their personal interest in self-help topics was a motivational factor for them.

#### **4.6.2 Demotivating Factors**

Participants’ interview responses showed that *external factors* and *less focus on solutions* were the two demotivating factors in both cases. On the other hand, *technical problems* were a demotivating factor specific to 3D group, and *attitudes among*

*members* was a demotivating factor specific to FtF group. The factors along with participants' responses presented in the following sections.

### **External Factors**

The major demotivating factor for both groups was external factors. Seven members of 3D group and four members of FtF group commented about such factors. School related problem, family related problems and personal problems were the external factors that decreased motivation of participants.

### **Technical Problems**

Two participants in 3D group considered that technical problems were a demotivating factor. 3DMember8 said that "technical problems were demotivating for me". Another member, 3DMember4, underlined the effect of other group members' technical issues on her motivation as "sometimes my motivation was decreasing because of friends' technical problems".

### **Less Focus on Solutions**

The only common factor, except for external factors, that emerged in both groups was participants' concerns about solutions. Three participants of 3D group and two participants of FtF group commented about this factor. Comments of participants in both cases were quite parallel:

3DMember7: I was kind of more motivated at the beginning of the program. I think that it took much time to get to solutions, this decreased my motivation a bit, I think.

3DMember7: Başlangıçta daha motive idim sanki program ile ilgili. Çözümüne gelmenin çok uzadığını düşünüyorum, bu benim biraz motivasyonumu düşürdü diye düşünüyorum.

FtFMember2: For example, 1 week I only talked about the problem, no talking about solutions. Yes, this decreased my motivation to some extend.

FtFMember2: Mesela 1 hafta sadece sorunun üzerinden konuşmuştuk, çözüm konuşmamıştık. Öyle olunca motivasyonun belli bir düşüklük oldu evet.

### **Attitudes Among Members**

Results showed that attitudes among group members was a demotivating factor in FtF case. This factor was emerged in FtF case only and four of the participants shared this opinion. FtFMember5 shared his negative feelings about another member and stated



that this was demoting for him sometimes. FtFMember2 shared a similar feeling about some group members:

FtFMember2: When someone in the group behaved insincere or showed that s/he does not feel part of group, my motivation decreased ... It happened couple times during the course of the program.

FtFMember2: Grupta birisi samimiyetsiz davrandığı anda ya da o grubun bir parçası hissetmediğini gösterdiği anda, benim motivasyonum düştü ... Bir kaç defa oldu böyle program süresi içerisinde.

#### **4.7 Satisfaction (R.Q. 7)**

The last research question of this study was addressing the satisfaction aspect and it was stated as “*What are the factors affecting the satisfaction of group members in 3D VWs and how do these factors differ from face-to-face group?*”. In order to answer this research questions, participants’ satisfaction was assessed using both quantitative and qualitative data. While answers to questionnaires provided an overview of the satisfaction in both cases, interview data revealed the aspects that participants were most satisfied and least satisfied.

In member perception survey, satisfaction was investigated in terms of participants’ counseling and learning related satisfaction. Descriptive results of responses for client satisfaction are presented in Table 4.9. As this table shows, participants in both groups were quite satisfied about the counseling service they experienced. In FtF group, item related duration of the group (item 4) is considered as least satisfactory.

Table 4.9 – *Client satisfaction scores*

	3D Group		FtF Group	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Bu programda arzuladığım gibi bir destek aldım.	4.00	1.22	3.89	0.78
2. Bu program ihtiyaçlarımı karşıladı.	3.67	1.00	3.78	0.83
3. Bir arkadaşım benzer bir yardıma ihtiyaç duyduğunda bu programı öneririm.	4.33	0.50	4.67	0.50
4. Bu programın süresi beni tatmin etti.	3.67	1.12	3.11	1.54
5. Bu program erteleme davranışımıla baş etme konusunda bana yardımcı oldu.	3.78	0.83	3.89	1.05
6. Eğer bir daha yardıma ihtiyacım olursa bu tarz bir programa katılırım.	3.78	1.30	4.56	0.53
<b>Total</b>	<b>3.87</b>	<b>0.87</b>	<b>3.98</b>	<b>0.66</b>

Results of learning satisfaction questionnaire are presented in Table 4.10. This table shows that both cases were quite satisfied in terms of the learning satisfaction as well. Although both groups showed similar learning satisfaction pattern, FtF group has a bit higher overall score.

Table 4.10 – *Learning satisfaction scores*

	3D Group		FtF Group	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Bu programda sunulan içerik beklentilerimi karşıladı.	3.89	0.93	3.89	0.78
2. Grup liderleri ihtiyaçlarıma uygun öğretim ortamı sundu.	4.44	0.53	4.56	0.53
3. Bu öğrenme deneyimi beni memnun etti.	3.78	1.09	4.44	0.73
4. Konu ile ilgili aldığım bilgi beni tatmin etti.	3.78	0.83	4.22	0.97
5. Öğrenme ortamı beni memnun etti.	4.22	0.67	4.33	0.71
6. Grupta yapılan etkinlikler ihtiyaçlarıma uygundu.	3.67	1.32	4.00	0.87
7. Kullanılan öğretim materyalleri beklentilerimi karşıladı.	4.11	0.78	4.22	0.83
8. Genel olarak, benim için etkili bir öğrenme deneyimi oldu.	3.78	1.20	3.89	0.78
<b>Total</b>	<b>3.96</b>	<b>0.74</b>	<b>4.19</b>	<b>0.58</b>

In addition to questionnaire results, interview responses revealed the most satisfied and least satisfied aspects of the psychoeducational counseling group. Frequencies of most and least satisfied are presented in Table 4.11. This table is quite revealing in several ways. First, both groups had similar patterns of satisfactory factors. However, due to the cases' setting difference, most satisfactory aspects related to setting were different. In 3D group, 3D environment was considered as most satisfactory, while socialization and relationship among members was a unique factor in FtF group. Another important finding was that in both cases some activities were considered as unsatisfactory. Furthermore, participants of both cases were not satisfied with amount of practical methods to deal with procrastination behavior. In the following sections, these factors are presented along with detailed responses.

Table 4.11 – *Frequencies of most satisfied and least satisfied factors*

<b>3D Group (N = 9)</b>			<b>FtF Group (N = 9)</b>		
	<i>N</i>	<i>f</i>		<i>N</i>	<i>f</i>
<b>Most Satisfied</b>					
<i>3D Environment</i>	9	20	Group Environment	8	15
Content and Activities	7	9	Content and Activities	7	10
Learning Outcomes	5	6	<i>Members Relationships and Socialization</i>	5	6
Group Environment	2	2	Learning Outcomes	5	6
<b>Least Satisfied</b>					
Limited Practical Methods and Behavior Change	4	6	Less Effective Activities and Content	4	10
Less Effective Activities and Content	4	5	Limited Practical Methods and Behavior Change	5	5
<i>Technical Aspects</i>	1	2	<i>Physical Environment</i>	2	2
			<i>Self-Disclosure Difficulty</i>	1	2

*f* = Code frequency

#### 4.7.1 Most Satisfied Factors

Analysis of participant interviews revealed that both cases were most satisfied with the *activities, content, learning outcomes* and *group environment*. Furthermore, in 3D

group 3D environment was mostly satisfied, while in FtF *members' characteristics and social environment* was a unique emerged factor.

### **3D Environment**

In 3D group, interactive 3D environment was the most satisfied aspect of the group process. All of the participants responded that the environment exceeded their expectations. 3DMember9 said that “I liked it very very much. If there were others things in this environment, I would love to join them too.” Similarly, 3DMember2 admitted that he was expecting a boring environment while it exceeded his expectations.

3DMember2: Actually, I was expecting something unproductive. Because it was just a procrastination program, I thought a couple classrooms would be enough. Later I saw that there were different classrooms, different areas, were going the island, doing activities... it was beyond my expectations in that sense.

3DMember2: Aslında daha kısır bir şey bekliyordum. Sadece erteleme programı olduğu için, bir kaç sınıf yeter diye düşünüyordum. Ondan sonra baktım işte sınıflar farklı alanlar var, başka bir adaya gidiyoruz, etkinlik yapıyoruz... o anlamda beklentilerin üzerinde idi.

### **Group Environment**

Results showed that group environment was another common satisfactory factor for both groups. The interesting finding was the difference between number of participants. While eight participants considered it satisfactory in FtF group, only two participants in 3D group responded the same way. Group cohesion, more specifically intimacy, being open to share and respect were the main reasons for being satisfied. FtFMember6 underlined the importance of honest sharing and stated that “people are coming here and honestly sharing their experiences... it met my expectations from this respect”. FtFMember1 expressed that she enjoyed the group which exceeded her expectations. Finally, FtFMember4 evaluated the overall group environment and stated that:

FtFMember9: Group environment was a very good experience, it was beyond my expectations, and it was something I have not done before. From now on, I consider such thing very positive and will like to participate.

FtFMember4: Grup ortamı güzel bir deneyimdi, beklentilerimin üzerinde idi, ve daha önce hiç yaptığım bir şey değildi. Artık çok pozitif bakacağım bu tarz bir şeye ve katılmak isteyeceğim.

## **Content and Activities**

In both cases, information presented and activities were recognized as satisfactory by most of the members. They expressed that the balance between theoretical information and practical activities were effective. However, it is important to note that there were different opinions among participants. For instance, while some participants considered theoretical information effective, some of them considered it boring or unnecessary. Such differences were emerged as a category under the least satisfactory factors. Participants responses were as follow:

FtFMember2: I think content and activities were effective. Almost all of them were appropriate materials.

FtFMember2: Bence içerik ve etkinlikler etkili idi. Hemen hemen hepsi yerinde materyaller idi.

3DMember6: I really enjoyed all of them. I never said “what we are doing here?” for any of them. They were good and I enjoyed; therefore, I believe they met my expectations.

3DMember6: Keyif aldım hepsinden gerçekten. “Ya ne yapıyoruz burada” demedim hiçbirinde. Hoştu hepsi ve keyif aldım o yüzden beklentilerimi de karşıladığımı düşünüyorum.

## **Learning Outcomes**

Learning satisfaction survey results showed that members of both groups considered that counseling group met their exceptions. The same pattern was emerged from qualitative data; five participants from each group considered learning outcomes as satisfactory factor. However, awareness was the only dimension of this factor. In other words, participants considered it satisfactory only in terms of increased awareness. For example, 3DMember6 said “it really created a very good awareness. In terms of awareness, it exceeded my exceptions.” FtFMember9 responded in the same vein; “I did not have high expectations, but it was beyond my expectations in terms of awareness.”

## **Member Relationships and Socialization**

This category was emerged in FtF group only. Five participants considered the interaction among members, feedbacks and socialization as a satisfactory. FtFMember4 explained her social expectations as “My social expectations were met. I wanted a social network and now we keep in touch with them”. Another participant,

FtFMember8, stated that “they were all like me. I really felt them close to myself and this was not something that had expected”.

#### **4.7.2 Least Satisfied Factors**

Results indicated that less satisfied factors were quite similar in both cases. *Limited practical methods and techniques*, and *less effective activities and content* were the major common factors.

#### **Limited Practical Methods and Behavior Change**

Results showed that a major dissatisfaction for both cases was the limited methods to cope with procrastination. Four participants in 3D group and five participants in FtF group were not satisfied in this manner. Furthermore, limited behavioral change was also another aspect of this factor. Their exception was to learn about many practical methods and achieve behavioral change in terms of procrastination. 3DMember2 complained about the lack of methods which did not meet his expectations. Another member, FtFMember7 expressed how he was disappointed in terms of the behavioral change.

3DMember2: In fact, I had very high expectations. I was expecting that they would present many methods and I would choose. It did not meet my expectations in that sense; I learned only one method.

3DMember2: Aslında beklentim çok yüksek idi. Birden çok yöntem sunacaklar, bizde birisini seçeceğiz kendimize bekliyordum. O anlamda beklentimi pek karşılayamadı; tek yöntem öğrendim.

FtFMember7: I was a bit disappointed after the process. Because, I was still going procrastination behavior. But there is nothing else to do, they thought us, the rest is up to us.

FtFMember7: Süreçten sonra biraz hayal kırıklığına uğradım. Çünkü hala devam ediyordum erteleme davranışına. Ama zaten yapılacak başkada bir şey yok, sonuçta öğrettiler, gerisi bize kalmış.

#### **Less Effective Activities and Content**

The second major dissatisfaction was related to some activities and content. The same pattern was emerged for both cases; four members of each group noted this factor. However, there was not a clear pattern about the dissatisfaction; while some of the participants expected more theoretical information some were against it. The only

clear pattern was that some of them did not like activities and content of initial stage, instead they recommend for more group activities. For example, 3DMember1 considered some initial activities unnecessary and FtFMember1 shared similar concerns for initial topics. Their comments were as follow:

3DMember1: Frankly, I think we lost too much time in the first weeks. The first week is ok, it was meeting and cohesion. It should be more condensed after the second week. I considered some of the initial activities unnecessary.

3DMember1: İlk haftalar açıkçası çok vakit kaybettiğimizi düşünüyorum. Hadi ilk hafta tamam, tanışma kaynaşma oldu. İkinci haftadan itibaren bence yoğunlaşmalıydı. Baştaki bazı etkinlikler gereksiz geldi bana.

FtFMember8: The initial definitions etc. were need, of course, for more awareness. But those parts could be shorter.

FtFMember8: İlk baştaki tanımlar vs. tabii biraz daha bilinçlenmemiz için gerekli idi. Ama o kısımlar biraz daha kısa olabilirdi.





## CHAPTER 5

### DISCUSSION AND CONCLUSION

This chapter presents the discussion and interpretation of the findings in the light of previous literature. It mainly covers the psychoeducational group counseling process in 3D VWs and its similarities and differences compared to face-to-face groups. Discussions in this chapter are organized according to research questions. Firstly, affordances and hindrances of 3D VWs for psychoeducational group counseling from group members' and group leaders' perspective are discussed. Then, unique characteristics of 3D VWs and their influences on counseling process are presented. As an answer to the third research question, group process and outcomes of both environments are reviewed. Next, instructional strategies for an effective counseling process in 3D VWs are discussed. Answering the last research questions, motivation and satisfaction factors of both settings are presented. Finally, the implications of findings for practice and recommendations for further research are presented.

#### **5.1 Affordances and Challenges of 3D VWs**

The first research question and one of the primary goal of this study was to identify the affordances and challenges of 3D VWs for group counseling. A considerable amount of theoretical and empirical literature has been published on affordances and liabilities of online counseling (Baker & Ray, 2011; Barnett, 2005; Mallen, Vogel, Rochlen, et al., 2005; Rochlen et al., 2004). Furthermore, some scholars (Fenichel et al., 2002) have discussed the myths and misconceptions related to the Internet based therapy. This extensive body of research has only focused on the traditional communication technologies such email, web pages, forums, and video conferencing. Therefore, the results of this study are valuable to identify affordances and challenges

of 3D VWs for group counseling services and to compare them with other technologies.

In this section, firstly, revealed affordances will be discussed from both clients' and counselors' perspective. Later, challenges will be discussed in the same manner. Before interpreting the results, the reader should be aware that in 3D group these factors were based on experience, while in FtF group, they were perceived factors by clients.

### **5.1.1 Affordances of 3D VWs**

Affordances revealed in this study seem to be consistent with the previous work in online counseling field. Self-disclosure, convenience, anonymity, interactive environment and accessible content have been identified in previous studies. Another unanticipated finding was that perceived affordances in FtF group were very similar to 3D group.

#### *Self-Disclosure*

The first major affordance was comfort of self-disclosure and sharing. It has been discussed that people feel more comfortable in revealing their thoughts, emotions, feelings and concerns in online communication. Suler (2004, 2005) coined the term "disinhibition effect" for this phenomenon in virtual communication. All participants of the 3D group identified this factor. Especially shy or timid members benefitted from this characteristic of the virtual environment. Some of the participants shared their experiences in terms of comfort of self-disclosure during the counseling process that they would not share in face-to-face setting. It is worth mentioning that participants who stated that they would feel the same comfort level in face-to-face environment mentioned this affordance as well. It is somewhat surprising that the number of FtF group participants who perceived this factor was quite high. This factor has crucial implications for counseling process as comfort of self-disclosure can establish an honest and more expressive communication between counselors and clients. Nevertheless, comfort and level of self-disclosure is not only related to virtual environment. As expressed by Nguyen, Bin, and Campbell (2012) context of the interaction and relationship between parties affect this as well. Further findings

support this idea as group environment and its therapeutic effects were also influencing self-disclosure level in both settings.

### *Anonymity*

Anonymity was the second major affordance of 3D VWs. It was identified by almost all of the 3D group members. Surprisingly, anonymity was perceived by majority of FtF group as well even though they did not experience the anonymous counseling process. The level of anonymity depends on the communication medium and structure of the system; in this study, participants were represented with a nickname and avatar which ensured their both identity anonymity and physical anonymity. An interesting result was that visual anonymity came into prominence more than identity anonymity. Participants found anonymity beneficial as it decreased their anxiety level, made them feel safer and eliminated possible prejudices. Firstly, this finding corroborates the arguments of Richards and Viganó (2013) who stated that visual anonymity allows clients to feel safer and express themselves more freely due to the lack of cues indicating disapproval or judgment. Furthermore, two participants of 3D group, who characterized themselves as shy and anxious in social environment, expressed that they felt very comfortable thanks to the anonymity in virtual environment. Similarly, one member in FtF expressed his concerns about shyness and noted that he would benefit more in virtual environment. A possible explanation of this is argued by Suler (2011) stating that participants suffering from social anxiety, shame or stigma can benefit from visual anonymity of online communication. Corroborating Miller and Gergen (1998)'s arguments, some of the participants highlighted the benefits of visual anonymity for eliminating possible prejudice due to lack of social markers, especially physical condition. Finally, psychological anonymity was beneficial to isolate negative feelings and situations from group environment.

Findings of current study and previous literature show that anonymity and self-disclosure are strongly interrelated. Whilst discussing these components of counseling, there are two crucial aspects that need to be discussed; group environment and socio-cultural factors. Group environment has unique characteristics; it is highly influenced by group dynamics and attitudes among members. In this setting, issues of privacy and confidentiality have great importance. As discussed by Kincaid and Kalodner (2004),

in university environment, these issues can create problems and complications as participants are more likely to know each other, attend to classes together or be a part of same organization/club. Furthermore, students are particularly sensitive to peer opinions and approval. Indeed, this was also underlined by group counseling leaders; it was stated that members in 3D group were more comfortable and honest in expressing themselves as they did not care about being accepted or approved. Counselors further stated that in FtF group they need to spent more effort to establish a positive group climate due to attitudes among members and group's sub-dynamics. Therefore, the findings provide evidence to conclude that 3D VWs can be effective; to eliminate privacy and confidentiality concerns; to eliminate negative attitudes among members; and to increase the comfort and level of self-disclosure.

The relationship between socio-cultural factors and comfort of attending counseling services need special consideration. Two participants of the FtF group in current study shared their concerns and effort to hide their attendance of psychoeducational group. The reason was that their friends would make fun of them or label them “weak” if they knew about it. Although anonymity was ensured in 3D group, one of the members stated her concerns that somebody could identify her from her voice. However, from participant responses it was clear that in 3D environment such concerns were much less. This finding was inline with the previous studies investigating the attitudes towards help-seeking and barriers of counseling services in Turkish context which have showed that there is stigma attached to psychological help (Güneri, 2006; Koydemir et al., 2010). In their study, Koydemir and colleagues (2010) found that university students in Turkey associated psychological help with “sickness” and they perceived it as a sign of weakness which can be socially unacceptable. They further found that socio-cultural factors led students to deal with problems by themselves while seeking for professional help was the least popular, option after friends and parents. Interestingly, few students expressed that they would not feel comfortable disclosing to a counselor. In light of these findings, physical and identity anonymity of 3D VWs can be valuable for counseling practice in cultures where prejudices exist towards psychological help services. However, this affordance should be approached carefully; in a previous study comparing social norms of avatars and real-world identities Adams and colleagues (2011) found that physical word identities and social

norms were directly translated into virtual environment and they were observed during social interactions. Similarly, Yee et al. (2007) concluded that people behave according to social norms of physical world in virtual environment. Therefore, counselors and researcher should be cautious about existence and role of social norms and beliefs in virtual environment as in face-to-face.

### *Interactive 3D Environment*

The results indicated that rich and interactive 3D environment of 3D VW was considered as a major affordance for counseling practice. Almost all of the participants who experienced this environment concurred on this opinion. It is somewhat surprising that more than half of the FtF participants also noted this affordance even though they did not have any experience in the environment. However, the details of the responses showed that FtF participants only expressed this affordance in terms of content presentation such as using interactive slides, images and videos. On the other side, 3D participants expressed that in addition to interactivity of content presentation, this environment has great potential in terms of interactive activities, flexibility of the environment and attractiveness of the environment.

As mentioned in the literature review, the ability of providing multimedia rich and interactive content has been considered as an advantage of online counseling (Mallen & Vogel, 2005). However, it is important to note that this level of interactivity and possible affordances are dependent on the used technological medium. For instance, Rochlen et al. (2004) highlight this affordance in terms of content that can easily contain and be linked to various online resources such as websites, blogs, video clips, pictures, documents, surveys etc. 3D VWs differ from other traditional CMC tools regarding the level of interactivity and flexibility. These findings suggest that interactive 3D environment can be used as leverage to organize effective group activities and enhance the learning experience in psychoeducational counseling groups.

## *Convenience*

There is no question that convenience is one of the most important advantage of technology. In fact, as asserted by Rochlen, Zack and Speyer (2004), convenience is one of the most frequently cited affordance of online counseling as it facilitates the access of clients and counselors. The results of current study showed that all of the participants in 3D group noted the convenience as an affordance of 3D VWs. Quite expectedly, it was the mostly perceived affordance factor in FtF group as well. Participants considered 3D VW as convenient due to time related flexibility, ability to connect from anyplace where technical requirements are met, and comfort of connected place. These findings support previous research which found the convenience as a major factor of online counseling (Chester & Glass, 2006; Griffiths et al., 2006; Rochlen et al., 2004).

The first aspect of convenience was the flexibility of the schedule. Unlike traditional counseling services which usually need to be arranged during regular office hours, online counseling services can be extended to any time on demand. Previous studies (Chang, Yeh, & Krumboltz, 2001; Richards, 2009) showed that majority of the online counseling submissions were received outside of regular office hours. In this study, the number of applicants for 3D group was higher than FtF group and most of them noted convenience as preference factor. Flexible service provision need to be considered even more in university context, as students have tight schedules (Kincade & Kalodner, 2004). Transportation was another aspect of convenience; the fact participants do not need to re-locate for session was considered a great affordance in terms of time and effort. The third aspect was the comfort of their attending session from their own room and own space. Ability to eat or drink during online sessions was also considered as flexibility. The final aspect of convenience was increased attendance to the sessions. Some participants of 3D group stated that they attended to session more than it would be in face-to-face. For instance, one of them connected while he was on vacation, and another one stated that he connected right after the exam by plugging in his computer to wending machine socket.

Group leaders' opinions about convenience were similar; they considered this environment convenient in terms of flexibility, on demand access and no need of

transportation. Furthermore, they highlighted the importance of convenience in university setting. The fact that most students have courses or exams during the day, it is invaluable to have an alternative which can be accessed after the regular office hours. Like members, they were also connecting to sessions from their home.

### *3D VWs Affordances for Challenges in Traditional Environment*

In addition to directly stated affordances of the virtual environment, 3D VWs can be utilized to address emerged hindrances of FtF. The first and mostly noted challenge was physical environment related limitations. In fact, logistical challenges have been found to be a major issue of counseling services in school and university setting (Güneri, 2006; Riva & Haub, 2004). Güneri (2006) states that physical facilities of counseling services in Turkey do not meet the guidelines and best practices suggested in the literature. Similar results are found in another recent study (Erkan et al., 2011); physical condition is identified as one of the major weakness of university counseling services. The results of the same study show that most counseling services have only one individual counseling room, while most of them do not have any group counseling room. The second emerged challenge of FtF environment was technology integration issue. This was mainly due to physical conditions and logistical limitations. In FtF group, more than half of the participants shared their concerns about this issue. As expressed by counselors of current study, flexibility and interactivity of 3D VWs creates a great opportunity for group counseling practices, which is difficult to achieve in physical environment. For instance, each session can be organized in specially designed and furnished rooms (or outdoors) with creative ambiance in virtual. Furthermore, due to limitless space of the virtual environment, groups counseling can be sustainable and it is much more easy to change the size of group environment based on the number of group members. These findings support the idea that 3D VWs can be considered as alternative medium of delivering group counseling, when physical facilities are not adequate.

Interaction issues and attitudes among members were other challenges of FtF environment. Participants characteristics were important; those who were talking too much or shy made the interaction difficult. Moreover, group dynamics caused members to have negative attitudes towards each other. It was interesting to find that

one group member even had such opinions against group counseling leaders. On the other hand, such issues did not emerge in virtual environment due to physical anonymity and less concerns about social interactions. Counselors' opinions were supporting this statement; comparing their group management experience in both settings, they found management of FtF group more difficult. This difference was due to required effort and need of immediacy for preventing undesired member behaviors.

#### *On Demand Access of Environment and Content*

Accessing to online environment is always open as long as the user has Internet access. Users have more control and flexibility of accessing the virtual environment. This affordance was noticed by three participants in each case. In 3D group, some of members were accessing the environment after the session in case of missing something. Some participants of FtF group responded in the same way; they expressed the immediacy of sessions in FtF and considered virtual environment's on demand access as a benefit. Therefore, this affordance is important for psychoeducational programs, too as clients can reach the content and activities on time and on demand.

#### *Other Affordances*

In addition to affordances discussed so far, there were some affordances noted by group leaders. The first one was accessibility of environment for individuals with mobility limitations due to physical or mental challenges. One of the counselors stated that it was more difficult to provide counseling services for physically disable students in university due to physical limitations and pointed to the virtual environment's implications for these individuals. In fact, opportunity of making services more accessible has been one of the most powerful arguments of delivering counseling services online (Baker & Ray, 2011; Barnett, 2005; Colon & Stren, 2011). It has been argued that counselors can provide services to geographically remote areas (Chester & Glass, 2006), rural and underserved areas where counseling services are not available (Colon & Stren, 2011), isolated groups (Griffiths et al., 2006), and individuals with disabilities (Mallen, Vogel, Rochlen, et al., 2005; Rochlen et al., 2004) and those with mental health difficulties such as agoraphobia (Barnett, 2005). Another benefit of 3D VWs noted by counselors was ease of managing group



environment. Counselors compared their group management experience of both cases and noted that in face-to-face setting it was more difficult to prevent undesired member behaviors. Immediacy of intervention was important in FtF group in order to prevent negative attitudes among members. This finding can be further supported by the fact that group process is more organized in virtual environment and members may not develop negative attitudes against each other.

### **5.1.2 Challenges of 3D VWs**

The results of this study showed that some of the limitations are inline with the previous literature while others have contradicting results. Moreover, some challenges related to 3D environment, such as multitasking and environment's distraction, have not been previously described in the literature. Unlike affordance results, perceived challenges were quite different between two cases. For instance, technical issues were not mentioned by FtF group while lack of socialization and attitudes towards virtual were highlighted more.

#### *Technical Issues*

Implementing new technology brings various issues that researchers need to deal with. Compared to common forms of CMC tools, 3D VWs are expected to be less robust as they require better computer performance and Internet connection speed. In this study, technological issues emerged as a major challenge of delivering counseling services in 3D VWs. Internet connection problems, voice problems and computer performance issues were the most common technical challenges. Furthermore, some of the issues were related to campus wide Internet shortage, which was out of researcher's control. Similar to group members, counselors also noted technical limitations. Surprisingly, none of the participants in FtF group perceived technical issues as a challenge. A possible explanation for this might be that they responded by taking their daily used tools, which are more robust in terms of technical issues into consideration. Such kind of problems are critical for counseling process as suddenly disconnecting from session may cause client to feel abandoned, which can cause counselors to panic and interrupt the process (Mallen, Vogel, Rochlen, et al., 2005). In group counseling environment, technical problems are paramount importance as any member's difficulty may affect

other members. In this study, some of the participants stated that technical problems decreased their motivation and satisfaction. Therefore, it is crucial that counselors be prepared to deal with unexpected situations and address concerns of disconnected members, concerns of remaining members, and possible effects on group's process (Page, 2004; Suler, 2011). Another important finding was the importance of technical support; group members and leaders expressed that availability of technical support (which was provided by researcher) was a big advantage and it decreased their anxiety in case of any technical issue. This result indicates that delivering counseling in 3D VWs requires technical support and training of group leaders to be more cognizant of possible disruptions.

#### *Lack of Non-Verbal Cues and Interaction Issues*

Lack of non-verbal cues is one of the most commonly discussed challenges in the online counseling literature (Barak et al., 2008; Fenichel, 2011; Mallen & Vogel, 2005; Suler, 2011). Brown (2004) uses term 'metacommunication' for postures, gestures and other forms of non-verbal signals, and she underlines the importance of these factors in counseling experience. The researcher asserts that metacommunication signals are essential for client conversation as they reflect a more accurate internal state of a person. The results of the current study are consistent with the current literature; by showing that lack of non-verbal cues was a major challenge of 3D VWs.

Bente, Rüggenberg, Krämer, and Eschenburg (2008) list three major functions of non-verbal behaviors; discourse functions, dialogue functions, socio-emotional functions. Authors explain role of these functions as; (a) discourse functions are important for effective conversation and understanding; (b) dialogue functions are related to turn-taking and flow of conversation; (c) socio-emotional functions are related perceptions, impressions, emotions and interpersonal attitudes. The factors emerged in this study were consistent with Bente et al. (2008)'s categorization. It is important to note that in 3D group interaction issues, corresponding dialogue function was identified by almost all of the participants. On the other hand, dialogue function was identified by half of the participants. Another interesting finding was that in FtF group received challenges were mainly about discourse and socio-emotional functions. These findings suggest that lack of non-verbal cues are mostly affecting the turn-taking and flow of

conversation in 3D VWs. Indeed, similar findings have been reported by Witt (2011) and Delmonico et al. (2000). In addition to these factors, ambiguity was another issue related to lack of gestures and mimics which was particularly underlined by group leaders. Especially in the beginning of the program, they worried about uncertainty as they could not make sure whether group members were listening and understanding what they were talking about. Suler (2011) points out that such ambiguity might activate anxieties and false expectations.

There is no question that virtual communication has some challenges compared to FtF counterpart. However, the overall findings of this study have important implications of use 3D VWs for psychoeducational groups. When compared to other communication mediums, interaction with avatars is more effective in terms of non-verbal cues. Both group members and leaders interpreted avatar's gaze and proximity as a form non-verbal signal. For instance, they were trying to get close to each other and adjusted avatar's gaze to face each other during the conversations. In a recent study, Anderson (2011) concluded that avatar gestures and voice chat in SecondLife helped instructors to convey non-verbal immediacy similar to face-to-face interactions. Therefore, considering the importance of nonverbal immediacy in terms of motivation and instructional outcomes (Anderson, 2009), 3D VWs can be considered as a more effective medium for online counseling. Finally, group leaders' voice and use of tones was considered as important form non-verbal signal. All of the participants in 3D group stated that their voice was motivating and encouraging. It seems that lack of physical appearance increases the importance of voice as it is the only characteristics directly transferred from physical work to virtual world. This indicates that paralinguistic cues during voice communication are crucial during counseling sessions, which need to be considered by counselors.

Participants' suggestions showed that some features of avatars can be enhanced to reduce the limitations due to lack non-verbal signals. Firstly, it was expressed that avatar gestures and animations should be easier to use. Users should be able to click just one button and play the animation and gesture. Although in this study a convenient tool was developed for this purpose, technical limitations of OpenSim did not allow to utilize this tool effectively. Some participants suggested that emoji characters can be

integrated to the text-based chat. The second recommendation was related to transferring facial expressions and gestures directly from physical world to avatar. Although advanced technology allows such features, it is difficult to implement them for OpenSim. Future virtual environments can integrate such features to enhance the effectiveness of communication and interaction among users.

### *Lack of Socialization*

In 3D group, lack of socialization was noted by half of the participants. Similarly, it was perceived as a major challenge in FtF group. Although socialization is not the primary goal of psychoeducational groups, some participants in FtF group stated that socialization and making friends was of their expectations from the group. This explains that socialization is an important aspect for FtF group. In 3D environment, participants used avatars and nicknames during the program. It is clear that distance communication over a technological medium is quite different than face-to-face communication. Although socialization with anonymous identity has been constructed in some virtual worlds, in this group, this was not constructed. The difference in 3D group was that participants did have socialization expectations in the beginning of the group. Whilst some participants, particularly those who had previous counseling experience and did not have any anonymity concerns, expressed their desire to meet with other group members, others did not want this due to anonymity and privacy concerns. These findings indicate that expectation related to socialization depends on the previous counseling experience and the level of comfort. In addition, lack of socialization can affect participants' satisfaction of the 3D VWs experience.

### *Trust Concerns*

Despite not being a major factor, trust concerns were considered as a challenge of virtual environment. Anonymity of virtual communication led participants to have skepticisms in the beginning of the process. Scholars' arguments about relationship between anonymity and trust do not show a consensus. For instance, whilst Barak et al. (2008) assert that anonymity of online communication fosters trust and intimacy, Suler (2011) states exactly the opposite; he argues that the lack of place presence might reduce trust, intimacy and effectiveness of therapeutic relationship. In an empirical

study Erdost (2004) found that trust and intimacy scores of people in computer mediated communication environment were significantly lower than face-to-face communication. The findings of this study were inline with Suler (2011)'s argument in terms of decreased trust and intimacy; however, as stated by participants such concerns were present in the beginning of the group process and they diminished after group cohesion was established.

#### *Negative Attitudes towards Online Counseling and Level of Dedication*

Attitudes and dedication concerns were the two perceived challenges that emerged only in FtF group. Although they were not major factors, it is important to further discuss them.

Almost half of participants in FtF group expressed the presence of negative attitudes towards online counseling. In fact, one member of 3D group expressed that she did not believe that online counseling would be effective and after experiencing the virtual group she changed her mind. Although it is difficult to explain main reasons of negative attitudes, it might be related to participants' prior experiences. The fact that none of the participants in both cases had prior experience of online education and only two of them had experience in 3D VWs might be the reason of negative attitudes. Previous research shows that college students are more favorable toward FtF counseling services than online forms (Bathje, Kim, Rau, Bassiouny, & Kim, 2014; Rochlen et al., 2004). On the contrary, some research has shown that college students have positive attitudes towards online counseling (Bathje et al., 2014; Travers & Benton, 2014). A similar pattern was found for counselors too (Tanrikulu, 2009); although they preferred delivering counseling services in FtF, online counseling was considered valuable as an adjunct method. More research, particularly in cultural context of this study, on this topic needs to be undertaken to better understand these findings better.

Dedication was another perceived challenge; some members of FtF group expressed that they would dedicate less effort to attend the online environment as they would feel less responsibility. In group setting, defusion of individual responsibility is another potential limitation (Gladding, 2004). Furthermore, Kincade and Kalodner (2004)

argue that college students might perform less commitment for group counseling. In contrast to these arguments and FtF participants' concerns, however, dedication was not observed a challenge in 3D group. In fact, group participants' effort and counselors' statements showed that they were acting even more responsible and dedicated in 3D group.

### *Connected Place*

Appropriateness of the connected place was expressed as a challenge by half of the 3D group's members. Not being a major perceived challenge, it was identified by some members of FtF group as well. In this study, participants were connecting to the virtual environment from two places; dormitories and homes. The members who had private rooms did not mention about any issue; however, those, who connected from shared places either with friends, parents or siblings, experienced some problems. Participants' responses revealed two aspects of connected place; distraction and privacy. Firstly, during the sessions, it is important for clients not to be distracted. Thus, in shared spaces participants feel difficult to focus on virtual communication. The second and relatively much important aspect is the privacy. Although psychoeducational counseling does not require high level of self-disclosure, it is important for participants to have a private space during the sessions. Some participants in both cases expressed their concerns about the privacy of the program; they stated that they would not talk about this program with their friends or families because their friends would make fun of them or their families would be worried about their psychological well-being. As a cultural aspect some people can be afraid of being labeled by people as "ill". Therefore, for clients, it is crucial to have private place while participating sessions. One of the issues that emerges from these findings is that participant screening process of counseling in 3D VWs should include criteria related to connected place.

### *Multitasking and 3D Environment*

Computer environment has various distractions for users. Unlike individual counseling, in group sessions, the focus is not always on the counselee, which is valid for online group programs as well. Thus, group members may tend to multitask during

the counseling sessions. Almost half of the participants in each group noted about the issue of multitasking during online sessions. The fact that all participants had procrastination behavior makes multitasking a paramount challenge in this study. Although participants noted the low frequency of multitasking activities, checking social media accounts was the major multitasking activity. Furthermore, one member shared that she associated computer environment with gaming, which led her playing games once time during the session. Another interesting finding was related to 3D environment and its immersiveness. Three participants stated that they were immersed too much in environment. Whilst two of them stated that they used environment for gaming and as a medium of procrastination, one member stated he was immersed in the environment too much that he lost focus of the subject. One of the issues that emerges from these findings is that 3D environment might not be appropriate for clients who lack self-control, particularly for members who are tend to procrastinate. Many scholars have noted the limited research in terms of determining the appropriate client characteristics for the type of online counseling (Barak et al., 2009; Barnett, 2005; Mallen & Vogel, 2005; Richards & Viganó, 2013). Therefore, these findings indicate that client's multitasking tendency and especially gaming addiction should be considered while selecting participants for services in 3D VWs.

### *Other Challenges*

In addition to challenges discussed so far, there were two other issues expressed by counselors. The first issue was suitability of 3D VWs for different types of interventions. One of the counselors expressed that online counseling, in general, may not be appropriate for individuals with more severe issues such as grief. They further assert that 3D VWs can be utilized for more structured counseling groups. On the other hand, they underlined that 3D VWs are appropriate to be used for psychoeducational groups. The question of who and what type of problems are suitable for online counseling is still a topic of debate in the literature. Some researchers argue that online counseling is not appropriate for populations who have more severe issues and require close attention (Chester & Glass, 2006; Finn & Barak, 2010; Richards & Viganó, 2013). In a study conducted with e-counselors, Finn and Barak (2010) reported that majority of participants considered online counseling suitable for social and

interpersonal issues; however, there was less agreement about more serious issues such as suicidal ideation, substance abuse etc. In another study, Tanrikulu (2009) interviewed graduate students in counseling department and it was found that almost all of them considered online intervention inappropriate for severe problems. On the contrary, Fenichel et al. (2002) consider this argument as a myth of online counseling and they argue that this medium can be effective to address even most serious disorders and crisis interventions. Despite the ongoing arguments, there is no question that much research is needed in this area and counselors should develop online interventions with caution (Barnett, 2005; European Federation of Psychological Associates, 2001; Ohio Psychological Association, 2009; Richards & Viganó, 2013).

The second issue was lack of counselor training for online counseling. In this study, counselors underlined that virtual experience was very different than traditional environment. Therefore, they urged prospective 3D VWs counselors to learn about the environment and have enough practice before the actual process. Some researchers have highlighted that intervention process in online environment is quite different than face-to-face; therefore, a counselor need special training before delivering services online even s/he experienced in face-to-face (Barak et al., 2009; Fenichel et al., 2002). In his study, Tanrikulu (2009) reported that none of counselors-in-training students have any formal education or training for online counseling; yet, they were willing to learn about it.

## **5.2 Features of 3D VWs and Implications for Psychoeducational Groups**

### **Use of OpenSim**

User's level of comfort and willingness to use is important for effectiveness of any technology. In 3D VWs, controlling avatar movements, changing avatar appearance, and mastering communication tools and gestures may be extremely daunting for some users. The results of the survey showed that participants perceived the use of OpenSim very easy; they were able to use software's user interface and interact with 3D environment easily. Furthermore, this finding was supported with their responses during interviews. Participants expressed that they did not experience any major issue for using OpenSim and they found user-interface simple and easy to use. Another important finding was the relationship between prior expertise with computers and 3D



gaming; those who had experience of 3D games expressed that they felt very comfortable while moving their avatars and interacting with environment. The reason was that they found OpenSim very similar to 3D games in terms of movements and user interaction. Finally, some users experienced minor difficulties; they found inventory structure as complex.

### **Communication Tools**

In OpenSim, two synchronous communication modalities are available; text and audio. In this study, audio mode was extensively used during the sessions instead of text mode as it was quicker and easier for participants to express themselves. Availability of both forms of communication was considered as an advantage; text-based chat was used in case of voice problems. Furthermore, counselors could communicate with each other or with members in the background without disturbing others, which was quite effective while organizing activities. All group members and leaders found communication modalities effective.

### **Design of 3D Environment**

3D environment is more interactive and complex compared to 2D environments. Environment design is crucial as it has various implications for user's sense of presence, satisfaction and learning. Therefore, effectiveness of different areas in the virtual environment were investigated based on their design. Furthermore, effective design can contribute to counseling process as a therapeutic factor.

The first factor was the overall design of the environment. All of the participants considered it effective and found it satisfactory. In addition, having various zones such as activity area, discussion halls and shopping center was considered as an advantage of the environment. Another important finding was that participants found environment effective in terms of reminding the university campus in physical world. Adams et al. (2011) suggest that virtual learning environments should be designed with caution and participants real world preferences should be considered.

The second design factor was the design and organization of the rooms. Various classroom designs were developed based on session's topic and activities. This

flexibility of room design was considered a great benefit of virtual environment. Participants noticed different designs and they expressed that design of the environment had influence on their behaviors and gave clues about the session. For instance, when their avatars were sitting on the floor they stated that it was more comfortable and they expected more informal conversations and sharing their experience. On the other hand, in more structured classrooms with table and chairs, they expected information presentation and more formal discussions. As discussed by DeLucia-Waack (2011), various sitting plans are suggested in traditional setting; however, it is not that much flexible and some elements can be barrier for effective communication. Therefore, counselors can take advantage of flexibility in the 3D VWs to provide unique experience based on the intervention type and topic.

Third and final aspect of 3D virtual environment was its effect on the user's feelings. In this study, a tropical island was designed and some of the activities were conducted on the island instead of regular classroom environment. All group members and counselors preferred meeting on the island as they expressed that they were feeling more relaxed in the environment. This feeling of immersion in virtual environment has an effect on their feelings. Aas (2012) claims that virtual reality can be utilized for psychological interventions like reducing phobias, applying relaxation techniques and training social skills. Witt (2011) interviewed counselors who provide services in SecondLife and it was concluded that immersive sensory experience was much more effective than audiovisual simulations, and some counselors took advantage of virtual environment designing nice views and using sound for meditation and relaxation activities. A large and growing body of literature have reported the effectiveness of virtual reality as a therapeutic tool for treatment of various disorders (Gorini et al., 2008; Loomis et al., 1999). An implication of these findings, along with virtual reality literature, is the possibility that counselors can benefit from immersiveness of 3D VWs and increase the effectiveness of the psychoeducational interventions.

### **Non-player Characters (NPCs)**

In this study, NPCs, or bots, were used in two activities; for demonstrating procrastination cycle, and for telling stories about procrastination and emotional results. Majority of the participants found NPCs ineffective due to technical limitations

and they expressed that NPCs did not have any contributions for counseling. The main reason of technical difficulty was some of them experienced audio synchronization problem and lagging between bot's actions. On the other hand, three members noted that NPCs can be used for counseling; one of them stated that bots can be used to symbolize counselee in case of conditions that s/he does not want to accept the condition. Although these results are not much encouraging, researcher argues that NPCs have great potential to be used in counseling practices with appropriate technical tools. Several studies have investigated different aspects of using bots in 3D VWs; pre-service teacher education (Reiners, Sue, & Knox, 2016), medical education and training (Danforth, Procter, Heller, Chen, & Johnson, 2009) and emotionally responsive bots (S. Slater & Burden, 2009). Current empirical evidences are limited; therefore, further researcher is need to investigate use of NPCs for counseling purposes.

### **Anonymous Identity**

All of the participants used nicknames while joining the sessions in virtual environment. The first major advantage of using nicknames was increased privacy and comfort of self-disclosure. The second noted advantage was that nicknames reflected person's characteristics and help others to know about him/her. Especially this was considered as a benefit by counselors as nicknames were a way of expressing self and gave clues about each person's interest. Despite the benefits, some of the members mentioned that using nicknames had some limitations as they could not contact after the program. Another member shared that using nicknames felt him "criminalized". Moreover, participants' preference of using nicknames revealed interesting result; whilst more than half of them stated that using nicknames was an effective method for counseling process, three of them thought that using nickname was not a big difference for them and using real names would not be a problem. On interesting finding was that these three participants had previous individual or group counseling experience. Participants who did not have privacy concerns expressed that it would be much better to leave using nickname optional as some people may feel better using their real name. One of the issues that emerges from these findings is that nickname preference should

be optional. Another implication is that previous counseling experience seems to be an important indicator of anonymity preference.

Group leaders used their real names instead of the nicknames in the program. In order to ensure ethical guidelines for online counseling, counselors' identity and all background information were provided to participants as suggested by American Mental Health Counselors Association (2000). Still, participants were asked about their preference for leaders' identity or usage of nicknames even if leaders' identity is known. All participants preferred leaders to use their real name instead of nicknames no matter what. The main reasons of this preference were; (1) ensuring formal relationship, (2) easy to identify, and (3) ability to contact. This finding shows that it is important for counselor to use their real names in any case.

### **Avatar Representation**

One of the unique features of the 3D VWs is the avatar representation, which distinguishes these environments from other communication technologies. Being represented with avatars, users have physical anonymity in the environment and they have the chance of creating their own appearance. As discussed in beginning of this chapter, physical anonymity has important benefits for counseling practices in terms of increased self-disclosure, comfort and safety feeling. It was further investigated to better understand other aspects of avatar representation. Firstly, all of the participants perceived avatars as easy to use. They expressed their satisfaction in terms of flexibility to customize avatars and easy to control them. Second, it was found that most of the participants created avatars that closely resembled themselves, whereas only two of them preferred fantasy style characters. Furthermore, all of the participants preferred human characters as they considered non-human characters less-serious and non appropriate for counseling. These findings accord with earlier observations of Delmonico et al. (2000) who conducted group counseling study with five doctoral students in a primitive virtual environment. Third finding was related to perceived benefits of avatar representation compared to other forms of communication. The benefits noted by participants were feeling of present and live, group feeling, symbolizing and reflecting person. They further stated that avatars were motivating and more fun compared to non-avatar mediums.

The presence related affordance seems to be consistent with other research which found that avatar based platform was superior to text, audio and video modalities in terms of co-presence (Bente et al., 2008). According to the authors, avatar representation offers better opportunity than audio and video communication modes in terms of contextualizing social interaction. Additionally, avatar representation as projection of a person has great potential in such a way that clients can communicate and interact with each other in a more personal way (Morie et al., 2012). Another aspect of the avatar representation is that avatar appearance has an effect on user's behaviors in virtual environment while interacting with other avatars. Yee and Bailenson (2007) coined the term "Proteus Effect" to describe this phenomenon. However, in this study, there was not enough evidence to discuss this effect.

### **Sense of Presence**

As discussed in prior literature, sense of presence is a key feature of 3D VWs that distinguishes it from other communication systems (Aas, 2012; Riva, 2005). In this study, the level of presence was measured in terms of place presence and social presence. Survey results yielded moderate level of place presence and high level of social presence. A possible explanation of this difference might be related to nature of group counseling; group members are mostly active during the process and the level of social interaction is high during the sessions. Therefore, participants might felt more social presence than place presence.

In addition to survey results, qualitative data revealed the factors that influenced the sense of presence for clients and counselors. It was found that five factors were important in terms of increasing sense of place presence. These factors were realism of the environment, meaningful and interesting activities, speaking condition, active condition, and adopting to the environment. Furthermore, distraction factors in physical world, technical issues, being passive for a long time, less meaningful activities and initial stages of adopting environment were the factors that decreased sense of place presence. These findings are consistent with presence factors suggested by Witmer and Singer (1998) who categorized factors affecting sense of presence as sensory factors, control factors, distraction factors, and realism factors. It is important to note that meaningfulness of content and activities was emerged as a major factor

which was not included in Witmer and Singer (1998)'s proposed factors. Turning now to the factors affecting social presence; technical issues, initial adaptation and limited interaction with members were the hindering factors. Additionally, it was found that interaction among members, group cohesion and interactive activities (such as group activities and role playing activities) were promoting sense of social presence.

Importance of presence for online counseling interventions and its implications has been investigated by some scholars (Gorini et al., 2008; Kang & Gratch, 2010; Riva, 2005). Suler (2011) argues that the lack of place presence in online counseling may cause problems in the therapeutic relationship such as decreased commitment, intimacy and trust. Looking from instructional aspect, Aragon (2003) highlights the challenges of online learning environments due to limited interpersonal contact between instructors and participants. Therefore, it can be argued that in online psychoeducational groups, the sense of presence is crucial for effective learning and therapeutic relationship. Aragon (2003) expresses that social presence is one of the most significant factor in terms of improving instructional effectiveness and building a sense of community. In like manner, Riva (2005) asserts that the sense of presence can be used as leverage to deliver real-like counseling experience. In the light of previous literature, findings of current study have important implications for developing effective psychoeducational groups in 3D VWs. Firstly, environment should be designed carefully to reflect realism, consistency and meaningful experience. Secondly, activities should be interactive, fun and more importantly meaningful for participants. Moreover, participants should be kept active during the sessions and counselors should manage the environment so that all participants have the chance to join the group conversations. Finally, technical issues should be eliminated and enough training should be provided to reduce user's initial stage of adapting the virtual environment.

### **5.3 Self-disclosure and Factors Affecting It**

As discussed in the beginning of this chapter, comfort and increased level of self-disclosure was defined as a major affordance of the virtual environment. In contrast to this finding; however, the scores of self-disclosure questions were close in 3D group and FtF group. Although this seems to be contradicting at the first view, further results

about self-disclosure change over time help to understand this. Some members of 3D group stated that they started to disclose comfortably, share their information and join conversations in the very beginning of the process, while FtF members, especially those who were shy, started to feel similar comfort later. In FtF group, the threshold of this comfort was around fourth week. The minor difference between scores of both groups can be explained with this argument; since the questionnaire was filled at the end of group process, both cases might have reached the same level of comfort at the end of group process. The present findings seem to be consistent with previous research which found that self-disclosure took place rather early and right to the point in online counseling groups (Chang et al., 2001; Rochlen et al., 2004).

In addition to level of self-disclosure, factors promoting and preventing self-disclosure during the counseling process were investigated. Identifying these factors and case-based comparison can provide invaluable insights. Results revealed that self-disclosure promoting factors emerged in similar patterns; group cohesion, leaders' role, group members' encouraging characteristics and having same problem were the common factors. On the other hand, in 3D group virtual environment and its characteristics was unique factor, while in FtF group personal characteristics was unique. Based on these results two conclusions can be drawn; (1) group members' effect on self-disclosure is much stronger in traditional setting; (2) virtual environment's characteristics, more specifically visual and physical anonymity, are the major promoting factors in 3D VWs.

In regard to self-disclosure preventing factors, group cases differed greatly; the only common factor was personal characteristics. However, individual characteristics were different as well. For instance, in 3D group some participants expressed their discomfort due to virtual communication. Quite differently, participants of other group found it difficult to disclose and join the group conversations due to shyness and negative self-perception. Furthermore, results showed that technical concerns and interaction issues were other challenges to self-disclose in virtual environment. For FtF group, quite different factors were emerged; concerns of being judged, negative attitudes among members and privacy concerns were preventive aspects. These findings show that whilst technical issues have effect on self-disclosure in 3D VWs,

participants' concerns and attitudes towards each other are playing a role in face-to-face setting.

#### **5.4 Outcomes**

Counseling aims to improve the overall psychological wellbeing of counselee by relieving his/her stress, anxiety or concerns. Although there is no question that counselor-client relationship and counseling process differs greatly when this service is provided in online environment, its main goal is the same. Therefore, in addition to other aspects, it is important to assess the effectiveness of online counseling (Mallen, Vogel, Rochlen, et al., 2005). In this study, the effectiveness of both groups was examined with quantitative and qualitative evidences. As suggested by Brown (2004), outcome evaluation of psychoeducational groups covered cognitive, emotional and behavioral changes. Therefore, in addition to procrastination scale, qualitative data was utilized to further understand the cognitive and emotional aspects of outcome of the group process.

By using Tuckman Procrastination Scale (Uzun Özer et al., 2013), participants' procrastination scores were measured three times as pre-test, post-test and follow-up test. The results of questionnaire showed a declining trend of procrastination scores for majority of 3D and FtF participants. However, this decline was not statistically significant for both groups. The findings of qualitative data supported the survey results; majority of the participants, in both groups, stated that they experienced limited or no change in terms of behaviors. However, it is important to note that almost all of the participants practiced the methods that were thought during the program. Whilst a few participants expressed that using these techniques and other information they had learnt helped them to significantly alleviate procrastination behavior, the majority stated that they did not overcome this behavior. There are several possible explanations for this finding.

The findings of cognitive outcomes indicated that this intervention increased the awareness of participants about the procrastination. In both groups, they highlighted improvement in terms of self-awareness, awareness of problem and solutions, and awareness of the irrational thoughts. The only notable minor difference between both



groups was the belief in overcoming; in FtF group, this outcome was expressed by more participants.

When it comes to emotional outcomes, both groups' participants shared that they felt less anxious; they did not feel alone anymore; they stopped blaming themselves; and they hope more to overcome the issue. In addition, two factors were different between the two groups; in 3D group participants expressed their feeling of responsibility while in FtF they distinctly noted the improved self-confidence.

These findings indicated that similar patterns were emerged in both groups. It is important to mention that there were few differentiating factors. One possible explanation of this difference might be the social environment. In fact, social outcomes were a major indirect outcome of the group. In FtF group participants expressed "belief", "hope" and "self-confidence" more, which could be affected from other members. Interestingly, this dynamic was noted by one of the group leaders and she warned about interpreting this with caution as in FtF environment, participants tend to inflate the effects of the program to be accepted and approved by others. Another important implication of these findings is that in both groups group counseling related therapeutic factors (Brown, 2004; Yalom & Leszcz, 2005) were emerge. Universality, hope, optimism and group choosiness were factors observed in both groups. Furthermore, modeling factors were mentioned by few people in FtF group but it did not emerge as a major outcome.

Although program's effectiveness in terms of behavioral change was not very encouraging, cognitive and emotional outcomes worth attention. Furthermore, cognitive, emotional and behavioral outcomes showed similar pattern for 3D group and FtF group. It is somewhat surprising to see that therapeutic factors were constructed in 3D environment as well, despite the virtual communication and anonymity of the participants. This combination of findings provides support for effectiveness of 3D VWs for psychoeducational group counseling. It can thus be suggested that despite some major challenges of virtual communication, counseling in 3D VWs yields promising outcomes.

## **5.5 Instructional Strategies for Counseling in 3D VWs**

The primary focus of psychoeducational counseling groups is to educate individuals about a psychological topic (Gladding, 2004) and they “have a significant educational component in addition to the psychological component” (Brown, 2004, p. 5). In this study, the instructional aspects were investigated in terms of the content, activities and strategies for counselors.

Firstly, participants in both cases found content and presentation of the content satisfactory except for the lack of practical strategies. They, especially those who had higher awareness about procrastination, recommended that more practical techniques to deal with procrastination should be integrated into the program. One important finding was that in 3D group, participants expressed that initial stage activities, which aimed to establish trust among members and introduce them to each other, need to be kept short. This finding suggests that counselors should be cautious in developing group program; as highlighted by DiStefano and colleagues (2013), it is important to consider participants’ readiness for self-disclose and possible level of anxiety while designing the group curriculum. Therefore, in virtual groups, the initial stage activities should be short and counselors might spend less time for establishing group interaction. Another difference between two cases was the presentation of the content; participants found information presentation in 3D environment more interactive and engaging. This difference can be explained by the fact that in 3D environment using various multimedia elements and creating interactive presentations is much easier. This finding provides some support for the premise that 3D VWs enable more interactive and engaging information presentation.

The second investigated instructional aspect was the activities. Brown (2004) asserts that activities are vital for psychoeducational groups as they promote learning and retention, they encourage active involvement, and some activities can be utilized for personalized learning. In current study, participants of both cases found activities particularly effective as they were motivating, they increased awareness, and they promoted interaction among members. One noteworthy difference between both cases was that role playing and dramatization activities were considered more effective in 3D group than FtF group. As noted by participants and counselors, the reason was that

in FtF group participants were feeling shy to act. The second noteworthy finding was that participants were more motivated to complete activities, particularly homework exercise in virtual environment. In 3D group, exercises were always available in the virtual environment and members could see other members' status of the exercise, which was a significant motivator for them. Furthermore, the importance of this feature of 3D VWs was noted by counselors as well; it was easier for them to track the progress of the participants and provide them instant feedback. Although these findings highlight the affordances of 3D VWs for activities, some challenges were pointed by counselors. Activities in 3D environment should be well organized and they require to be more structured than FtF environment. Furthermore, activity instruction should be clear to prevent any confusion.

The third examined instructional aspect was the strategies for counselors. Firstly, participant selection, training them and informing them about process was vital in virtual environment. Compared to FtF environment, in virtual environment, participants experience difficulties to understand the goal and process of activities. Secondly, it is crucial to promote group members' participation and establish a constructive discussion in group environment which should encourage them to share and discuss their experience. In virtual environment, it can be difficult for members to focus when they stay inactive for a long time. Therefore, presentations should be kept short and counselors should spend effort to engage all members. It was found that when participants were active or moving in the environment, they tend to be more engaged and concentrated. Third, in 3D VWs counselors need to allocate time for possible technical difficulties and there should be a back-up plan for such circumstances. Fourth, lack of non-verbal cues in virtual environment, particularly in the beginning of the group process, might lead group leaders to feel as nobody is listening to them., which can negatively affect the counseling process. Therefore, group leaders should be aware of this in 3D VWs and they should increase their interaction with group members.

Another finding of the current study was that counselors did not learn much theoretical and practical information about counseling in virtual environments during their formal education. This issue was reported in previous studies (Finn & Barak, 2010; Tanrikulu,

2009). The fact that intervention in virtual environment is quite different than face-to-face require special training and experience (Barak et al., 2009; Fenichel et al., 2002). One of the issues that emerges from this finding is that counselor education need to incorporate more information about online counseling and provide training. Finally, although various books (Erkan, 2013; Voltan-Acar, 2004) have been published to guide practitioners for group counseling activities, no information is available about online group activities. In this study, activities in 3D environment were based on face-to-face activities. It was found that some type of activities, such as dramatization and simulations, were very effective, while some types, such as those require physical contact, were not appropriate. Therefore, further studies should be conducted to address which activities might be effective for online environment and guidelines need to be developed for practitioners.

## **5.6 Motivation and Factors Affecting It**

Motivation is an essential component of any educational program. It is important to understand factors that increase and decrease motivation of learners. Therefore, these factors were investigated for psychoeducational counseling groups in this study. Participants' responses showed that in 3D group the only motivation of applying the program was desire to deal with procrastination. In addition to this factor, in FtF group, some participants considered socialization and meeting new people as a motivational factor as well. Qualitative data revealed interesting results in terms of motivating and demotivating factors during counseling intervention. Desire to overcome procrastination, group environment, group leaders, increased awareness and learnt methods were emerged motivating factors in both groups. In 3D group, experience of 3D environment was also motivating. In FtF group, relaxation and relief was considered as a major motivating factor. These findings show that although most of the motivating elements were common for two cases, there were interesting pattern. In 3D group, motivation to learn and solve the problem was prominent, while having fun and group related motivational factors had less influence. The pattern in FtF group was quite the different; they considered social aspects such as having fun, relief during the session and group environment as the major motivators. This might guide us to think that psychoeducational groups in 3D environment are more to the point while face to

face has social concerns as well. That is, psychoeducational groups can be effectively used in 3D VWs.

Turning now to the demotivating factors, a similar pattern emerged. External factors and limited focus on solutions were common demotivators. On the other hand, both cases were diverging in terms of technical problems and attitudes among members. Although it was not considered as a major issue, technical problems decreased motivation of two participants in 3D group. The interesting finding was that attitudes among members negatively affected the motivation almost half of FtF group.

Satisfaction and motivation related findings have important implications for developing counseling practices in 3D VWs. Firstly, both groups showed similar patterns in terms of client satisfaction, learning satisfaction and motivation. Despite the great difference between environment characteristics, communication form and relationship among clients and counselors, these findings support that 3D VWs can be utilized as an effective medium for delivering counseling services. Secondly, difference between two settings can help researchers and practitioners to increase the effectiveness of counseling practices in virtual environments. Technical issues have impact on the motivation and satisfaction of clients; therefore, much effort should be devoted to eliminate them. Furthermore, the fact that experience of 3D environment can be motivating for some participants makes it important to design attractive and effective virtual environments. Finally, lack of practical methods for dealing with procrastination and limited focus on solutions show the need of considering them while planning a procrastination group.

### **5.7 Satisfaction and Factors Affecting It**

Participants' satisfaction of prevention was assessed with survey and quantitative results helped to further understand most and least satisfied aspects. Satisfaction scores revealed that FtF group was slightly more satisfied than 3D group in terms of client satisfaction and learning satisfaction; however, the difference between scores was not major. Client satisfaction scores showed that two cases were quite similar. Similarly, there was not much difference between learning satisfaction scores. Previous studies have found contradicting results in terms of client satisfaction of online counseling. In

a study by Murphy et al. (2009), no significant difference was found in satisfaction scores of face-to-face and online clients. In amore recent qualitative study, Zeren (2015) reported similar pattern of satisfaction in face-to-face and online. Leibert et al. (2006) found a contradicting result; a sample of 81 participants had moderate level of satisfaction in online environment, and when benchmarked with face-to-face, authors reported that it was less than face-to-face counseling. Based on these findings, it can be concluded that findings of this study corroborate Murphy et al. (2009) and Zeren (2015)'s findings; participants were satisfied in terms of counseling experience and learning experience and found both types of interventions as acceptable.

Qualitative analysis of participant interviews revealed different group counseling aspects that were most and least satisfactory. Content, activities, group environment, group leaders and learning outcomes were the common satisfactory elements that emerged in both cases. Beside the commonalities, there were unique satisfactory factors in each group. In 3D group, 3D virtual environment was considered as the most satisfactory factor while member characteristics and social environment had an effect on the satisfaction in FtF group. A comparison of less satisfactory factors revealed that both cases were similar. Limited practical methods and ineffective activities/content were considered as major non-satisfactory aspects of both intervention forms. Furthermore, technical issues in 3D group, physical environment and self-disclosure difficulty in FtF group were minor factors. This combination of findings provides some support to argue that learning related aspects of satisfaction were similar in both groups. On the other hand, technical aspects and social environment related aspects were the differentiating factors between cases.

## **5.8 Implications of the Findings**

The findings of the current study have a number of practical implications for practitioners and researchers. The main implication is that 3D VWs can be an effective medium for providing psychoeducational groups. On the other hand, some of the challenges should be considered before making a decision about this form of counseling.

- Counseling centers in higher education can incorporate 3D VWs to their services.

Particularly this environment can benefit most for centers that lack physical facilities. However, they need to consider the issues related technical infrastructure and technical support. Participants found OpenSim easy to use; however, computer performance and Internet connection issues can affect their motivation.

- 3D VWs have similar affordances as other communication tools. In addition, it is vital note that interactive 3D environment provides a unique space which can be utilized to organize effective group activities and increase the group interaction. Furthermore, the immersive sensory experience can be used a therapeutic tool.
- Anonymity, especially physical anonymity, might increase access to professional help among college students. This can be an important affordance in socio-cultural context where stigma attached to psychological help. As found in this study, shy participants and those who have concerns about privacy or concern of being judged tend to disclose self quicker in virtual environment. Moreover, this mode of counseling can be a gateway for other forms of counseling.
- Convenience of 3D VWs makes this form of counseling an option for practitioners who want to reach clients who do not have access to regular services.
- It was found that socialization was very limited in virtual environment. Therefore, individuals who have socialization expectations may not adopt this form of counseling.
- Practitioners should be careful during the participant selection process. Participants should have a private place for connecting online session. Furthermore, individuals who have low self-regulation or game addiction tendency might experience difficulties to focus.
- Development of online counseling has strong relationship with counselor's training. Counselor education should involve theoretical and practical knowledge about various types of online counseling.
- Although some participants considered physical anonymity as an affordance, lack of non-verbal cues was considered a major challenge. However, this challenge was related to limitation of expressing emotions. Such environment should incorporate easy-to-use tools so that avatars can easily perform animations, gestures etc. Emerging technologies in virtual reality might enable such

interaction similar to real-life which would have great implications for counseling in 3D VWs as well.

## **5.9 Recommendations for Further Research**

Current study touched one major aspect of online psychoeducational group counseling; however, counseling is a complex process and needs further investigation. Based on the findings of current study and researcher's overall experience several research topics are recommended for future studies.

- This study investigated the process of procrastination group. 3D VWs can be utilized for different topics as they might reveal different results. For instance, further research should investigate whether avatar-based counseling is appropriate for therapy groups.
- Further research is needed to investigate attitudes towards online counseling. Furthermore, key characteristics of clients that are appropriate for various medium of online counseling need to be examined. Such findings will provide invaluable information to practitioners during the participant selection process.
- Online group process in 3D VWs can be compared with other CMC tools as each medium has different affordances and challenges. Such studies can provide invaluable insights for practitioners and administrator for making decisions about technology to use.
- Similar studies can be conducted with different demographics such as high school students.
- Similar studies can be conducted with people who need counseling services but do not have that chance due to limited resources, geographical constraints or physical disabilities.
- No information is available for group activities in online counseling. Therefore, further researcher should examine effectiveness of various activities and provide guidelines that can be used by practitioners.
- Results of these study were only descriptive. Small sample size and questionnaires' limitations in terms of reliability and validity were clear limitations of the study. However, employed instruments and revealed dimensions might be helpful for researcher who conduct studies with large samples.



- Future studies might incorporate emerging virtual reality technologies along with 3D VWs and investigate their affordances and challenges for psychoeducational groups.



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## APPENDIX A

### IBR APPROVAL FROM MIDDLE EAST TECHNICAL UNIVERSITY

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ  
APPLIED ETHICS RESEARCH CENTER

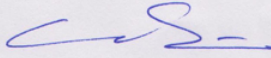
ORTA DOĞU TEKNİK ÜNİVERSİTESİ  
MIDDLE EAST TECHNICAL UNIVERSITY

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02.03.2015

Gönderilen : Y.Doç. Dr. Tuğba TOKEL  
Bilgisayar ve Öğretim Teknolojileri Eğitimi

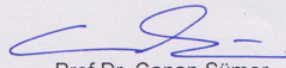
Gönderen : Prof. Dr. Canan Sümer   
IAK Başkan Vekili

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Bilgisayar ve Öğretim Teknolojileri Eğitim Bölümü öğrencisi Abdülmenaf Gül'ün " Using 3d Virtual Worlds for Psychoeducational Group Counseling: A Case Study " isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı  
Uygundur  
02/03/2015

  
Prof.Dr. Canan Sümer  
Uygulamalı Etik Araştırma Merkezi  
( UEAM ) Başkan Vekili  
ODTÜ 06531 ANKARA



## APPENDIX B

### INFORMED CONSENT

#### Gönüllü Katılım Formu

Bu çalışma Yrd. Doç. Dr. S. Tuğba TOKEL danışmanlığında, Arş. Gör. Abdülmenaf GÜL tarafından yürütülmektedir. Çalışmanın ana amacı, 3 Boyutlu sanal dünyaların psiko-eğitsel grup danışmanlığında kullanımı ve bu ortamın etkinliğinin incelenmesidir. Bu amaç doğrultusunda hem grup danışmanlarının hem de grup üyelerinin sunulacak hizmet sürecindeki deneyimleri incelenecektir. Ayrıca, program sürecinde kullanılan aktivitelerin etkinliği, ortamın sağladığı avantajlar/dezavantajlar ve karşılaşılan problemler bu çalışmanın cevaplamaya çalıştığı noktalardır.

Çalışmaya katılım gönüllülük esasına dayanmaktadır. Program boyunca yapılan görüşmeler, gözlemler ve diğer kişisel bilgiler tamamen gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Elde edilecek bilgiler sadece bilimsel amaçlı kullanılacaktır. Program sürecinde genel olarak kişisel rahatsızlık verecek hiçbir etkinlik içermemektedir. Ancak, program sürecinde yapılan etkinliklerden herhangi nedenden ötürü kendinizi rahatsız hissederseniz programı yarıda bırakabilirsiniz. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Arş. Gör. Abdülmenaf GÜL (Tel: (312) 210 4183; e-posta: agul@metu.edu.tr) ile iletişim kurabilirsiniz.

***Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman programı bırakabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.***

Adı-Soyadı :

Tarih : ----/----/-----

İmza :



## APPENDIX C

### NEED ANALYSIS INTERVIEW PROTOCOL

**Tarih:** \_\_\_\_\_

Merhaba,

Orta Doğu Teknik Üniversitesi (ODTÜ) Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü doktora öğrencisiyim. ODTÜ OGEB ile beraber yürüttüğümüz 3D Sanal Dünya ortamında Psiko-eğitsel Erteleme Gurubunu projesi kapsamında size yüz yüze danışmanlık deneyimleriniz hakkında bir kaç soru sormak istiyorum. Zaman ayırıp bu görüşmeye katıldığınız için de teşekkür ederim.

Görüşme yaklaşık 30 dakika sürecek. Eğer izin verirsen bu görüşmeyi kaydetmek istiyorum. Kaydetmek istemediğin kısımlar olursa bu kısımları silebiliriz. Vereceğiniz bilgiler kesinlikle gizli tutulacak ve iznin olmadan hiçbir çalışmada kullanılmayacaktır. Bu çalışmanın hiç bir yerinde kişisel bilgilerin direk veya dolaylı olarak yer almayacaktır.

Sormak isteğin bir şey var mı? Yoksa ve hazırsan başlayabilir miyiz?

#### **Mülakat Soruları:**

1. Danışmanlık deneyimi:
  - a. Kaç yıldır danışmanlık yapıyorsunuz?
  - b. Grup ile danışmanlık deneyiminiz oldu mu? Olduysa şimdiye kadar kaç grup ile danışman etkinliği yaptınız.
  - c. Bu gruplar hakkında biraz detay verebilir misiniz?
    - i. Amacı? Psiko-eğitsel gruplar oldu mu?
    - ii. Kişi sayısı
    - iii. Gün ve saat / Hafta içi hafta sonu, neden?
2. Grupla psikolojik danışmada en sık karşılaştığınız problemler nelerdir? Bu problemlerle baş etmek için ne yapıyorsunuz?
  - a. ....
  - b. ....
  - c. ....
  - d. ....
  - e. ....
  - f. [Eğer belirtilmediyse, sorulacak faktörler]

- i. Katılımcılar kendilerini rahatça ifade edebiliyorlar mı?
  - ii. Grup ortamından kaynaklı kaygılar var mıdır?
  - iii. Zaman, gün içi, olması problem oluyor mu?
  - iv. Grubun yapıldığı yere gelmeleri problem oluyor mu?
3. Daha önce uzak eğitim deneyiminiz oldu mu? Olduysa nasıl bir deneyiminiz oldu?
4. Çevrimiçi Danışmanlık (Online Counseling) yöntemleri;
  - a. Bu hakkında neler düşünüyorsunuz?
    - i. Avantajları neler olabilir?
    - ii. Dezavantajları neler olabilir?
  - b. Daha önce deneyiminiz oldu mu?
  - c. Avatarların kullanımını hakkında neler düşünüyorsunuz?
5. Çevrimiçi Danışmanlık (Online Counseling) başlangıçta belirttiğiniz grupla psikolojik danışma problemlerinin çözümünde ne tür katkılar sağlayabilir?



## APPENDIX D

### 3D VIRTUAL GROUP MEMBERS INTERVIEW PROTOCOL

**Tarih:** \_\_\_\_\_

Merhaba .....,

Bu çalışmaya katılmayı kabul ettiğin ve bu görüşmeye zaman ayırdığın teşekkür ederim. Bildiğin üzere, 3 boyutlu sanal ortamda 8 seanslık bir Erteleme Gurubu programını tamamladık. Bu görüşmede katılımcı olarak program hakkındaki genel fikirlerini öğrenmek program sürecindeki deneyimin dinlemek istiyorum.

Bu çerçevede sana bazı sorular yönelteceğim. Bu soruların doğru ya da yanlış cevapları olmadığı gibi istediğin soruyu cevaplamadan da geçebiliriz. Bu görüşmede önemli olan program hakkındaki düşüncelerin ve deneyimlerin olduğu için samimi ve net cevaplar verirsen sevinirim. Senin de soruların olursa çekinmeden bana sorabilirsin.

Görüşme yaklaşık 1 saat sürecek. Eğer izin verirsen bu görüşmeyi kaydetmek istiyorum. Kaydetmek istemediğin kısımlar olursa bu kısımları silebiliriz. Vereceğin cevaplar kesinlikle gizli tutulacak ve iznin olmadan hiçbir çalışmada kullanılmayacaktır. Bu çalışmanın hiç bir yerinde kişisel bilgilerin direk veya dolaylı olarak yer almayacaktır.

Sormak isteğin bir şey var mı? Yoksa ve hazırsan başlayabilir miyiz?

#### **Mülakat Soruları:**

1. Bu programa katılım ve önceki deneyimlerin ile ilgili olarak;
  - a. Program hakkında bilgiye nerden ulaştın?
  - b. Programa katılma isteğini ve motivasyonunu açıklayabilir misin?
  - c. Daha önce grupla psiko-eğitsel danışma deneyimin oldu mu? Kaç kez, ne kadar süre ile, hangi konuda?
  - d. Daha önce bir uzaktan eğitim programına ya da sanal ortamda psiko-eğitsel bir etkinliğe katıldın mı? [VARSA], Ne tür programlara katıldın? Katıldığın programların olumlu ve olumsuz bulduğun yönleri nelerdi? Örneklerle açıklayabilir misin?

- e. Program dahilinde yapılan gruplardan birinin 3 boyutlu sanal ortamda ve uzaktan eğitim formatında olduğunu öğrendiğinde tepkin ne oldu, açıklayabilir misin?
- f. Programın 3-boyutlu sanal ortamda yapılanı **seçmenin sebepleri** nelerdir?
- g. Bilgisayar kullanma amaçların ve bilgisayar oyunları ile ilgili deneyimlerin

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şeklinde belirtmişsin. Buna göre;

- i. Bilgisayar oyunları ile ilgili deneyim ve düşüncelerini açıklar mısın? Ne tür oyunlar ve ne sıklıkta oynarsın? Neden .... tür oyunları oynuyorsun, açıklayabilir misin?
  - ii. Bilgisayar kullanımı ile ilgili önceki deneyimlerinin 3D sanal eğitim grubunu seçmen üzerindeki etkisi ne oldu?
  - iii. Daha önce bu tarz bir 3D ortamda eğitim deneyimin oldu mu? (Olduysa) Nasıldı, detaylarını anlatabilir misin?
2. Virtual OGEB adasında **ilk izlenimlerin** ile ilgi olarak;
- a. Kendi avatarın hakkında neler hissettin? Neden? Örnek verebilir misin?
  - b. Çevrendeki objeler (bina, ağaç, mobilya) için neler hissettin? Neden? Örnek verebilir misin?
  - c. Diğer avatarları görünce neler hissettin? Neden? Örnek verebilir misin?
  - d. Uçma, koşma, dans ve kıyafet değiştirme gibi özellikler sana ne hissettirdi? Neden? Örnek verebilir misin?
  - e. İlk oturumdan sonra genel grup ortamı ile ilgili duygu ve düşüncelerin nelerdi? Beklentilerini karşıladı mı?

*Bu ilk izlenimlerini dinledikten sonra istersen genel olarak program ile ilgili sorulara geçmek istiyorum.*

3. **Ortamda var olma hissini** \_\_\_\_\_ şeklinde açıklamışsın. 3-boyutlu sanal ortamının bu yönünü düşündüğünde;
- a. Kendini ordaymışsın gibi hissettiğin zamanlar oldu mu?
    - i. **En çok** ne zaman ve nerelerde böyle hissettin? Bunu neler etkiledi, örnekler vererek açıklayabilir misin?
    - ii. **En az** nerde ve ne zaman hissettin? Bunu neler etkiledi, örnekler vererek açıklayabilir misin?
  - iii. Ordaymışsın gibi hissetmen konusunda **zamanla değişim** oldu mu? Neden?
  - iv. Sanki ordaymışsın gibi **hissetmek veya hissetmemek** bu programdaki deneyimin üzerinde ne tür **etkileri** oldu? Örnek vererek açıklayabilir misin?
- b. Diğer avatarlarla aynı yerdeymişsin gibi hissettiğin oldu mu? Diğer avatarların seni izlediğini ve senin orda olduğunun farkında olduklarını hissettin mi?
- i. **En çok** ne zaman ve nerede hissettin? Neden?
  - ii. **En çok** ne zaman diğer avatarların **gerçekçi olmadığını** düşündün? Neden?
  - iii. Bu hissinde zamanla değişim oldu mu?,
  - iv. Kendini **gurubun bir parçası** olarak hissettin mi? Gurubun bir parçası olarak hissetmeni/hissetmemeni neler etkiledi?
- c. Sanal ortamı gözünde canlandırdığında;

- i. Ortamda gördüğün yerleri daha önce gördüğün bir yere benzettin mi? Nereye benzettin?
- ii. Ortamların birinde şimdi orada hareket ediyormuş gibi hayal edebiliyor musun?

*Bildiğin gibi programın başında gerçek kimliğinin yerine bir takma ad seçip avatar oluşturduğun ve programa oluşturduğun avatar ve takma adınla katıldın. Şimdi bununla ilgili konuşmak istiyorum.*

4. Program sürecinde **kimliğinin gizli tutulması** ve **takma ad** kullanımı nasıl bir deneyimdi? Sana neler hissettirdi?
  - a. Kimliğinin gizli olması bu süreçte nasıl bir deneyimdi? Sana neler hissettirdi?
  - b. Program başında sana bırakılsaydı, gerçek isminle mi yoksa yine takma ad kullanarak mı katılmak isterdin? Neden, açıklayabilir misin?
  - c. **Diğer grup üyelerinin** takma ad kullanması hakkında ne düşünüyorsun? Neden?
  - d. **Grup liderlerinin** gerçek isim kullanması hakkında neler düşünüyorsun? Neden?
5. 3-boyutlu sanal ortamda yapılan bu grupta kendini ifade etme konusunda ki deneyimlerinden biraz bahsedebilir misin?
  - a. Kendini ne düzeyde rahat ifade edebildin? Açıklayabilir misin?
  - b. Sanal ortamda kendini açmanı, paylaşımında bulunmanı neler **olumlu** etkiledi (Nedenleri ile açıklar mısın? Örnek verebilir misin?). Neler **olumsuz** etkiledi (Nedenleri ile açıklar mısın? Örnek verebilir misin?).
    - i. Bu grup süreci sırasında kendini ifade etmede **zorlandığın durumlar** oldu mu? [VARSA] Bunu neler etkiledi?
    - ii. Grup üyelerinin sana ve diğer grup üyelerine karşı tutumları ve paylaşımları hakkında neler düşünüyorsun? Bunlar, seni olumlu/olumsuz anlamda nasıl etkiledi?
    - iii. Senin grup süreci içinde ki paylaşımlarında **zamanla bir değişim** oldu mu?
    - iv. Diğer grup üyelerinin grup süreci içinde ki paylaşımlarında zamanla bir değişim oldu mu?
  - c. Kendini ifade etme ve özel bilgiler paylaşma konusunda **3-boyutlu sanal ortam ile fiziksel ortamı arasında** ne tür farklar olabilir? Örnek ile açıklayabilir misin?
  - d. **Sesli ve yazılı iletişim** araçları kendini ifade etmede beklentilerini ne düzeyde karşıladı? Olumlu ve olumsuz bulduğun yönleri nelerdi? Neden, açıklayabilir misin?
6. Ortamda kullandığın avatar ile kendini ne düzeyde özdeşleştirdin?
  - a. Avatarın sana benzeyip benzememesi önemli mi? Neden?
  - b. Avatarın görünümü hakkında ne düşünüyorsun?
    - i. Avatarının görünümünde değişiklik yaptın mı? Neden?
    - ii. Yapmadıysan, neden yapmadın?
  - c. Bu süreçte avatar ile temsil edilmek sana neler hissettirdi?
  - d. Avatarının en çok neyini beğendin? Nelerini değiştirmek isterdin?

3D Virtual OGEB ortamda farklı iletişim araçları ve ortamlar kullandık. Şimdi bunlarla ilgili düşüncelerini öğrenmek istiyorum.

7. 3D Sanal ortam ile ilgili olarak;
  - a. Ortamda kullanılan **farklı alanların** (sınıflar, amfi, alış-veriş yeri, ıssız ada) etkili olduğunu düşünüyor musun? Neden? Örnekle açıklayabilir misin?
  - b. Oturumlardaki farklı **sınıf düzenlerinden** hangilerinin etkili olduğunu düşünüyorsun? Neden?
  - c. Sunumlarda ve etkinliklerde kullandığımız '**board**'lar, **etkinlik ekranları**, görev butonları hakkında ne düşünüyorsun? Etkili olan/olmayan yönleri nelerdi?
  - d. **Role oynama ve duygu konuşturma** etkinliklerinin etkili olan/olmayan yönleri nelerdi?
  - e. **Canlandırma karakterleri (NPC)** etkili olan/olmayan yönleri nelerdi?
8. Bu tür sanal ortamların grupla rehberlik ve psikolojik danışma amaçlı kullanılması hakkında neler düşünüyorsun?
  - a. Bu tür danışma etkinliklerinde 3-boyutlu sanal ortamın fiziksel ortamdaki **avantajlı** olduğunu düşündüğün yönleri nelerdir? Neden?
  - b. Bu tür danışma etkinliklerinde 3-boyutlu sanal ortamın fiziksel ortamdaki **dezavantajlı** olduğu yönleri nelerdir? Neden?
9. Program sürecinde karşılaştığın problemler ile ilgili olarak;
  - a. Programın **ara yüzü** ve kullanımı ile ilgili ne tür problemlerle karşılaştın?
  - b. Programda **teknik** (internet bağlantısı, bilgisayar performansı vs) olarak ne tür problemlerle karşılaştın?
  - c. Bağlandığın **yer ve grup oturumlarının zamanı, süresi** ile ilgili ne tür problemlerle karşılaştın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
  - d. Program **içeriği ve etkinlikler** ile ilgili ne tür problemler yaşadın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
  - e. **Başka** ne tür problemler yaşadın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
10. Program süresince, **programa devam etme ve gruba katılma isteğini ya da motivasyonunu** neler etkiledi?
  - a. En çok hangi zamanlarda gruba katılma ve devam etme istediğin ya da motivasyonun **yüksek** olduğunu hissettin? Örnek vererek açıklar mısın?
  - b. En çok hangi zamanlarda veya neden bu isteğin, motivasyonun **düştü**? Nedenleri ile açıklar mısın?
11. Bu program ile ilgili **beklentilerin** nelerdi? Bu beklentilerini ne düzeyde karşıladığını düşünüyorsun?
  - a. Psiko-eğitim grubunun 3-boyutlu sanal ortamda yapılması beklentilerine ne düzeyde katkı sağladı?
    - i. Bu 3-boyutlu sanal ortamın en çok hangi özellikleri seni **tatmin etti**?
    - ii. En çok hangi özellikleri seni **tatmin etmedi**?
  - b. **Etkinlikler** beklentilerini ne düzeyde karşıladı?
    - i. **Faydalı** olduğunu düşündüğün etkinlikler nelerdi? Neden?
    - ii. **Faydalı olmadığını** düşündüğün etkinlikler nelerdi? Neden?
  - c. **Grup liderleri** ile ilgili görüşlerin neler?
    - i. Grup liderlerinin sürece katkılarını nasıl değerlendirirsin?

- ii. Grup liderlerinin **güçlü yönleri** nelerdi? Neden?
  - iii. Grup liderlerinin **zayıf yönleri** nelerdi? Neden?
  - iv. Bu programın iyileştirilmesine yönelik olarak grup liderlerine ne gibi önerilerde bulunmak istersin?
- d. Bu programın senin için ne gibi  **faydaları** oldu? Bu programa katılmakla ne gibi **kazanımlar** elde ettin?
12. Bu programın **erteleme davranışın üzerindeki etkileri** neler oldu?
- a. **Düşüncelerinde** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
  - b. **Duygularında** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
  - c. **Davranışlarında** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
13. Program sürecindeki genel duygu ve düşüncelerin ile olarak;
- a. Program **başında** neler düşündün? Neler hissettin?
  - b. Programın **ortalarda** neler düşündün? Neler hissettin?
  - c. Programın **sonunda** neler düşündün? Neler hissettin?
14. Bu grupla danışma programını genel olarak düşündüğünde,
- a. Programın tüm boyutları (*3-boyutlu sanal ortam, avatar ve takma ad kullanımı, içerik, içeriğin sunumu-paylaşım biçimi, liderlerin grup üyeleri ile iletişimi, grup üyelerinin birbiri ile iletişimi, üyelerin paylaşımı, birbirlerine ve liderlere yönelik tutumları, gruba katılım düzeyleri*) ile nasıl değerlendirirsin?
  - b. Bu program 3-boyutlu sanal ortam yerine, yüz yüze grup ortamında olsaydı, sence tüm boyutları (*3-boyutlu sanal ortam, avatar ve takma ad kullanımı, içeriğin sunumu-paylaşım biçimi, liderlerin grup üyeleri ile iletişimi, grup üyelerinin birbiri ile iletişimi, üyelerin paylaşımı, birbirlerine ve liderlere yönelik tutumları, gruba katılım düzeyleri*) ile bu tür bir uygulamadan nasıl etkilenirdi?
  - c. Benzer yardıma ihtiyacı olan bir arkadaşına bu programı tavsiye eder misin?
  - d. İleride bu program ile ilgili en çok neyi hatırlayacağımı düşünüyorsun?
  - e. Yaşadığın bu 3-boyutlu sanal grup deneyimini bir şeye benzetmeni istesem ya da bu deneyimi tarif eden bir metafor bulmanı istesem bu ne olurdu?

Sorularım bitti. Eğer sormak isteğin bir şey varsa sorabilirsin.

Katılımın ve zaman ayırdığın için çok teşekkür ederim.



## APPENDIX E

### FACE-TO-FACE GROUP MEMBERS INTERVIEW PROTOCOL

**Tarih:** \_\_\_\_\_

Merhaba .....,

Bu çalışmaya katılmayı kabul ettiğin ve bu görüşmeye zaman ayırdığın teşekkür ederim. Bildiğin üzere yüz yüze gerçekleştirilen 8 seanslık bir Erteleme Gurubu programını tamamladık. Bu görüşmede katılımcı olarak program hakkındaki genel fikirlerini öğrenmek program sürecindeki deneyimin dinlemek istiyorum.

Bu çerçevede sana bazı sorular yönelteceğim. Bu soruların doğru yada yanlış cevapları olmadığı gibi istediğin soruyu cevaplama da geçebiliriz. Bu görüşmede önemli olan program hakkındaki düşüncelerin ve deneyimlerin olduğu için samimi ve net cevaplar verirsen sevinirim. Senin de soruların olursa çekinmeden bana sorabilirsin.

Görüşme yaklaşık 1 saat sürecek. Eğer izin verirsen bu görüşmeyi kaydetmek istiyorum. Kaydetmek istemediğin kısımlar olursa bu kısımları silebiliriz. Vereceğin cevaplar kesinlikle gizli tutulacak ve iznin olmadan hiçbir çalışmada kullanılmayacaktır. Bu çalışmanın hiç bir yerinde kişisel bilgilerin direk veya dolaylı olarak yer almayacaktır.

Sormak isteğin bir şey var mı? Yoksa ve hazırsan başlayabilir miyiz?

#### **Mülakat Soruları:**

1. Bu programa katılım ve önceki deneyimlerin ile ilgili olarak;
  - a. Program hakkında bilgiye nerden ulaştın?
  - b. Programa katılma isteğini ve motivasyonunu açıklayabilir misin?
  - c. Daha önce grupla psiko-eğitsel danışma deneyimin oldu mu? Kaç kez, ne kadar süre ile, hangi konuda?
  - d. Daha önce bir uzaktan eğitim programına ya da sanal ortamda psiko-eğitsel bir etkinliğe katıldın mı? [VARSA], Ne tür programlara katıldın?

- Katıldığın programların **olumlu ve olumsuz** bulduğun yönleri nelerdi? Örneklerle açıklayabilir misin?
- 3-boyutlu sanal dünyaları daha önce duydun mu? [VARSA], Hangileri ve haklarında ne düşünüyorsun?
  - Programın yüz yüze olanını seçmenin sebepleri nelerdir? Sanal grubu seçmemenin sebepleri nelerdir?
- İlk oturumdan sonra genel grup ortamı ile ilgili duygu ve düşüncelerin nelerdi? Beklentilerini karşıladı mı?
  - Yüz yüze yapılan bu grup ortamında **kendini ifade etme** konusunda ki deneyimlerinden biraz bahsedebilir misin?
    - Kendini ne düzeyde **rahat ifade edebildin**? Açıklayabilir misin?
    - Yüz yüze ortamda kendini açmanı, paylaşımında bulunmanı neler **olumlu** etkiledi (Nedenleri ile açıklar mısın? Örnek verebilir misin?). Neler **olumsuz** etkiledi (Nedenleri ile açıklar mısın? Örnek verebilir misin?).
      - Bu grup süreci sırasında kendini **ifade etmede zorlandığın** durumlar oldu mu? [VARSA] Bunu neler etkiledi?
      - Grup üyelerinin sana ve diğer grup üyelerine karşı tutumları ve paylaşımları hakkında neler düşünüyorsun? Bunlar, seni **olumlu/olumsuz** anlamda nasıl etkiledi?
      - Senin grup süreci içinde ki paylaşımlarında **zamanla bir değişim** oldu mu?
      - Diğer grup üyelerinin grup süreci içinde ki paylaşımlarında zamanla bir değişim oldu mu?
  - Kendini grupta nasıl hissettin?** (Örneğin, kendini gurubun bir parçası olarak hissettin mi? Gurubun bir parçası olarak hissetmeni veya hissetmemeni neler etkiledi?)

*Grup etkinliklerinde bazı materyaller kullandık. Şimdi bunlarla ilgili ve genel olarak grubun yapıldığı ortam ile ilgili düşüncelerini öğrenmek istiyorum.*

- Grubun yapıldığı yer ve etkinlikler ile ilgili olarak;
  - Grup görüşmelerinin yapıldığı fiziksel ortam hakkındaki düşüncelerin neler? Olumlu ve olumsuz bulduğun yönler neler?
  - Grup oturumlarında **paylaşılan bilgilerin sunum şekli** hakkındaki görüşlerin neler? Hangi yönlerden etkili buldun? Hangi yönlerden etkili olmadığını düşündün?
  - Etkinlik ve ödevlerde verilen **materyallerin** (anket, notlar vs) etkililiği hakkında neler düşünüyorsun? Neden?
- Program sürecinde karşılaştığın problemler ile ilgili olarak;
  - Yer ve grup oturumlarının zamanı, süresi** ile ilgili ne tür problemlerle karşılaştın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
  - Programın **içeriği ve etkinlikler** ile ilgili ne tür problemler yaşadın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
  - Başka** ne tür problemler yaşadın? Bu problemlerin giderilmesine yönelik önerilerin nelerdir?
- Program süresince, programa devam etme ve **gruba katılma isteğini** ya da **motivasyonunu** neler etkiledi?
  - En çok hangi zamanlarda gruba katılma ve devam etme istediğin ya da motivasyonun **yüksek** olduğunu hissettin? Örnek vererek açıklar mısın?



- b. En çok hangi zamanlarda veya neden bu isteğin, **motivasyonun düştü**? Nedenleri ile açıklar mısın?
8. Bu program ile ilgili beklentilerin nelerdi? Bu beklentilerini ne düzeyde karşıladığını düşünüyorsun?
- a. Psiko-eğitim grubunun **yüz yüze ortamda** yapılması beklentilerine ne düzeyde katkı sağladı?
- i. Bu yüz yüze ortamın en çok hangi özellikleri seni tatmin etti?
- ii. En çok hangi özellikleri seni tatmin etmedi?
- b. **Etkinlikler** beklentilerini ne düzeyde karşıladı?
- i. Faydalı olduğunu düşündüğün etkinlikler nelerdi? Neden?
- ii. Faydalı olmadığını düşündüğün etkinlikler nelerdi? Neden?
- c. **Grup liderleri** ile ilgili görüşlerin neler?
- i. Grup liderlerinin sürece katkılarını nasıl değerlendirirsin?
- ii. Grup liderlerinin güçlü yönleri nelerdi? Neden?
- iii. Grup liderlerinin zayıf yönleri nelerdi? Neden?
- iv. Bu programın iyileştirilmesine yönelik olarak grup liderlerine ne gibi önerilerde bulunmak istersin?
- d. Bu programın senin için ne gibi faydaları oldu? Bu programa katılmakla ne gibi kazanımlar elde ettin?
9. Bu programın erteleme davranışın üzerindeki etkileri neler oldu?
- a. **Düşüncelerinde** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
- b. **Duygularında** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
- c. **Davranışlarında** ne gibi değişiklikler oldu? Nedenleriyle ve örneklerle açıklayabilir misin?
10. Program sürecindeki genel duygu ve düşüncelerin ile ilgili olarak;
- a. Program **başında** neler düşündün? Neler hissettin?
- b. Programın **ortalarında** neler düşündün? Neler hissettin?
- c. Programın **sonunda** neler düşündün? Neler hissettin?
11. Bu grupta danışma programını genel olarak düşündüğünde,
- a. Bu program yüz yüze yerine, 3D sanal ortamda yada web ortamında uygulandığında, sence bu ortam tüm boyutları (*içeriğin sunumu-paylaşım biçimi, liderlerin grup üyeleri ile iletişimi, grup üyelerinin birbiri ile iletişimi, üyelerin paylaşımı, birbirlerine ve liderlere yönelik tutumları, gruba katılım düzeyleri*) ile bu tür bir uygulamadan nasıl etkilenirdi?
- b. Benzer yardıma ihtiyacı olan bir arkadaşına bu programı tavsiye eder misin? Bu programı nasıl anlatırsın?
- c. İleride bu program ile ilgili en çok neyi hatırlayacağını düşünüyorsun?
- d. Yaşadığın bu yüz yüze grup deneyimini bir şeye benzetmeni istesem ya da bu deneyimi tarif eden bir metafor bulmanı istesem bu ne olurdu?

Sorularım bitti. Eğer sormak isteğin bir şey varsa sorabilirsin. Katılımın ve zaman ayırdığın için çok teşekkür ederim.



## APPENDIX F

### GROUP LEADERS INTERVIEW PROTOCOL

Tarih : \_\_\_\_\_

Merhaba .....

Öncelikle programın geliştirilmesi ve uygulanması sürecindeki katkınız için teşekkür etmek istiyorum. Ayrıca zaman ayırıp bu görüşmeye katıldığınız için de teşekkür ederim. 8 seanslık ve iki ayrı ortamda paralel yapılan bir Psiko-eğitsel Erteleme Gurubunu tamamladık. Bu görüşmede grup lideri/eş-lider olarak program hakkındaki genel fikirlerini öğrenmek program sürecindeki deneyimin dinlemek istiyorum.

Bu çerçevede sana bazı sorular yönelteceğim. Bu soruların doğru yada yanlış cevapları olmadığı gibi istediğin soruyu cevaplama da geçebiliriz. Bu görüşmede önemli olan program hakkındaki düşüncelerin ve deneyimlerin olduğu için samimi ve net cevaplar verirsen sevinirim. Senin de soruların olursa çekinmeden bana sorabilirsin.

Görüşme yaklaşık 1 saat sürecek. Eğer izin verirsen bu görüşmeyi kaydetmek istiyorum. Kaydetmek istemediğin kısımlar olursa bu kısımları söylebiliriz. Vereceğin cevaplar kesinlikle gizli tutulacak ve iznin olmadan hiçbir çalışmada kullanılmayacaktır. Bu çalışmanın hiç bir yerinde kişisel bilgilerin direk veya dolaylı olarak yer almayacaktır.

Sormak istediğin bir şey var mı? Yoksa ve hazırsan başlayabilir miyiz?

#### Mülakat Soruları:

1. Psikolojik danışma ile ilgili deneyimlerini açıklayabilir misin?
  - a. Ne kadar süredir danışmanlık yapıyorsun? Hangi alanda danışmanlık yapıyorsun?
  - b. Psiko-eğitsel grup danışmalarına lider veya eş-lider olarak daha önceki deneyimlerin nelerdir?

2. Bu programın bilgisayar ortamında ve uzaktan eğitim formatında tasarlanacağını duyunca ne düşündün?
  - a. 3-boyutlu sanal ortamda yapılmasıyla ilgili ne düşündün?
  - b. Daha önce bir uzaktan eğitim programına ya da sanal ortamda psiko-eğitsel bir etkinliğe katıldın mı? [VARSA], Ne tür programlara katıldın? Katıldığın programların olumlu ve olumsuz bulduğun yönleri nelerdi? Örneklerle açıklayabilir misin?
3. Bilgisayar kullanım amaçların ve bilgisayar oyunları ile ilgili olarak;
  - a. Bilgisayarı en çok ne amaçlar için kullanırsın?
  - b. Bilgisayar oyunları ile ilgili deneyim ve düşüncelerini açıklar mısın? Ne tür oyunlar ve ne sıklıkta oynarsın? Neden bu tür oyunları oynuyorsun, açıklayabilir misin?
  - c. Bilgisayar kullanımı ve önceki oyun deneyiminin, 3-boyutlu sanal ortam deneyiminin üzerindeki etkisi neler oldu?
4. Virtual OGEB adasına ilk izlenimlerini anlatır mısın?
  - a. Kendi avatarın hakkında neler hissettin? Neden? Örnek verebilir misin?
  - b. Çevrendeki objeler (bina, ağaç, mobilya) için neler hissettin? Neden? Örnek verebilir misin?
  - c. Diğer avatarları görünce neler hissettin? Neden? Örnek verebilir misin?
  - d. Uçma, koşma, dans gibi hareketler seni nasıl hissettirdi? Neden? Örnek verebilir misin?

*Bu ilk izlenimlerini dinledikten sonra istersen genel olarak program ile ilgili sorulara geçmek istiyorum.*

5. Programın sanal ortamda tasarlanması aşamasındaki deneyimlerin ile ilgili olarak;
  - a. Program içeriği ve etkinlikler hazırlamak konusunda sanal ortam ile yüz yüze ortam süreçlerinin farklılıkları nelerdir?
  - b. Programın hazırlanması aşamasında bu iki ortam arasında başka ne tür farklılıklar vardır? Örnek ile açıklayabilir misin?
6. 3-boyutlu sanal ortamın **ortamda var olma hissini** yönünü düşündüğünde;
  - a. Kendini ordaymışsın gibi hissettiğin zamanlar oldu mu?
    - i. **En çok** ne zaman ve nerelerde böyle hissettin? Bunu neler etkiledi, örnekler vererek açıklayabilir misin?
    - ii. **En az** nerde ve ne zaman hissettin? Bunu neler etkiledi, örnekler vererek açıklayabilir misin?
    - iii. Ordaymışsın gibi hissetmen konusunda **zamanla değişim** oldu mu? Neden?
    - iv. Sanki ordaymışsın gibi **hissetmek veya hissetmemek** bu programdaki deneyimin üzerinde ne tür **etkileri** oldu? Örnek vererek açıklayabilir misin?
  - b. Diğer avatarlarla aynı yerdeymişsin gibi hissettiğin oldu mu? Diğer avatarların seni izlediğini ve senin orda olduğunun farkında olduklarını hissettin mi?
    - i. **En çok** ne zaman ve nerede hissettin? Neden?
    - ii. **En çok** ne zaman diğer avatarların **gerçekçi olmadığını** düşündün? Neden?
    - iii. Bu hissinde zamanla değişim oldu mu?,

- iv. Kendini **gurubun bir parçası** olarak hissettin mi? Gurubun bir parçası/lideri olarak hissetmeni/hissetmemeni neler etkiledi?
- c. Sanal ortamı gözünde canlandığında;
  - i. Ortamda gördüğün yerleri daha önce gördüğün bir yere benzettin mi? Nereye benzettin?
  - ii. Ortamların birinde şimdi orada hareket ediyormuş gibi hayal edebiliyor musun?

*Bildiğin gibi programın katılımcıları gerçek kimlikleri yerine bir takma ad seçip avatar oluşturduktan sonra onunla programa katılmışlardı, şimdi bununla ilgili konuşmak istiyorum.*

7. Program sürecinde grup üyelerinin kimliğinin gizli tutulması ve takma ad kullanımını hakkında ki düşüncelerin nelerdir?
  - a. Grup üyelerinin takma ad kullanması danışman sürecini nasıl etkiledi? Neden?
  - b. Yüz yüze grupla karşılaştırdığında bu yöntemin;
    - i. Olumlu yönleri nelerdir? Neden? Örnekle açıklayabilir misin?
    - ii. Olumsuz yönleri nelerdir? Neden? Örnekle açıklayabilir misin?
8. Ortamda kullandığın avatar ile kendini ne düzeyde özdeşleştirdin?
  - a. Avatarın sana benzeyip benzememesi önemli mi? Neden?
  - b. Avatarın görünümü hakkında ne düşünüyorsun?
    - i. Avatarının görünümünde değişiklik yaptın mı? Neden?
    - ii. Yapmadıysan, neden yapmadın?
  - c. Bu süreçte avatar ile temsil edilmek sana neler hissettirdi?
  - d. Avatarının en çok neyini beğendin? Nelerini değiştirmek isterdin?
9. 3D Sanal ortam ile ilgili olarak;
  - a. Ortamda kullanılan **farklı alanların** (sınıflar, amfi, alış-veriş yeri, ıssız ada) etkili olduğunu düşünüyor musun? Neden? Örnekle açıklayabilir misin?
  - b. Oturumlardaki farklı **sınıf düzenlerinden** hangilerinin etkili olduğunu düşünüyorsun? Neden?
  - c. Sunumlarda ve etkinliklerde kullandığımız **'board'lar, etkinlik ekranları,** görev butonları hakkında ne düşünüyorsun? Etkili olan/olmayan yönleri nelerdir?
  - d. **Role oynama ve duygu konuşturma** etkinliklerinin etkili olan/olmayan yönleri nelerdir?
  - e. **Canlandırma karakterleri (NPC)** etkili olan/olmayan yönleri nelerdir?
10. Grup lideri olarak bu süreçte;
  - a. **Grup üyeleri ile iletişimin** konusunda sanal grup ile yüz yüze grup arasındaki farklar nelerdir?
  - b. Program sürecinde **oturumları yönetmek** konusunda sanal grup ile yüz yüze grup arasındaki farklar nelerdir?
  - c. Üyeleri sürece katmak konusunda sanal grup ile yüz yüze grup arasındaki farklar nelerdir?
11. Bu tür sanal ortamların grupla rehberlik ve psikolojik danışma amaçlı kullanılması hakkında neler düşünüyorsun?
  - a. Bu tür danışma etkinliklerinde 3-boyutlu sanal ortamın fiziksel ortamdan **avantajlı** olduğunu düşündüğün yönleri nelerdir? Neden?

- b. Bu tür danışma etkinliklerinde 3-boyutlu sanal ortamın fiziksel ortamdaki **dezavantajlı** olduğu yönleri nelerdir? Neden?
12. Program sürecinde karşılaştığın problemler ile ilgili olarak;
- a. Sanal grupta ne tür problemler yaşadın? Örnek ile açıklayabilir misin? (Yazım arayüzü, teknik sorunlar, etkinlikler vs.)
- b. Yüz yüze grupta ne tür problemler yaşadın? Örnek ile açıklayabilir misin?
13. Program süresince motivasyonunuzu neler etkiledi [İKİ GRUP İÇİN AYRI AYRI]?
- a. En çok hangi zamanlarda **motivasyonun yüksek** olduğunu hissettin? Sebeplerinden biraz bahsedebilir misin?
- b. En çok hangi zamanlarda **motivasyonun düşük** olduğunu hissettin? Neden böyle hissettiğini biraz açıklar mısın?
14. Danışman olarak bu iki ortamın etkililiğini düşündüğünde;
- a. Sanal ortamda hangi etkinlikler etkili oldu? Yüz yüze gruptan farkı neler oldu?
- b. Sanal ortamda hangi etkinlikler etkili olmadı? Yüz yüze gruptan farkı neler oldu?
- c. Etkili bir psiko-eğitsel ortam için sanal ortamda ne tür öğretim stratejileri izlenebilir? Neden?
15. Program sürecindeki duygularını düşündüğünde [İKİ GRUP İÇİN AYRI AYRI];
- a. Program **başında** neler düşündün? Neler hissettin?
- b. Programın **ortalarında** neler düşündün? Neler hissettin?
- c. Programın **sonunda** neler düşündün? Neler hissettin?
16. Bu süreç sonucunda;
- a. Aynı ortamı kullanmak isteyen danışmanlara ne tür tavsiyelerde bulunursun?
- b. Bu ortamı başka hangi danışmanlık alanlarından kullanılabileceğini düşünüyorsun? Neden?
- c. Bu tür teknolojilerin grupla psikolojik ve psiko-eğitsel danışma süreçleri için kullanımı konusunda neler yapılabilir? Hangi yönleri geliştirilmelidir?
- d. İleride bu program ile ilgili en çok neyi hatırlayacağını düşünüyorsun?
- e. Yaşadığın bu iki grup deneyimini bir şeye benzetmeni istesem ya da bu deneyimi tarif eden bir metafor bulmanı istesem bu ne olurdu?

Sorularım bitti. Eğer sormak isteğin bir şey varsa sorabilirsin.

Katılımın ve zaman ayırdığın için çok teşekkür ederim.

## APPENDIX G

### GROUP OBSERVATION FORM

Tarih :  
Grup / Oturum :  
Katılımcılar :

Ortam ve Organizasyon:

Etkinlikler:

Karşılaşılan Problemler ve Çözüm Önerileri:

Genel Gözlemler:





## APPENDIX H

### 3D GROUP MEMBER QUESTIONNAIRE

Merhaba,

Bu ankette ÖGEB tarafından 3D sanal ortamda düzenlenen Erteleme Programı ile ilgili deneyimleriniz hakkında sorular vardır. Soruların doğru ya da yanlış cevabı olmayıp tamamen sizin kişisel deneyimleriniz ile ilgilidir. Anketin amacı sizin süreç içerisindeki deneyimleriniz ve program hakkındaki görüşleriniz hakkında bilgi almaktır.

Anketi doldurmak ortalama 5 dakikanızı alacaktır. Soruları dikkatlice okuduktan sonra cevap vermeniz bu çalışma için çok büyük önem arz etmektedir.

Verdiğiniz cevaplar kesinlikle gizli tutulacak ve sadece bilimsel çalışma için kullanılacaktır. Bu çalışma ile ilgili soru ve önerilerinizi [agul@metu.edu.tr](mailto:agul@metu.edu.tr) e-posta adresine iletebilirsiniz.

Ankete ayırdığınız zaman ve doldururken gösterdiğiniz özen için şimdiden çok teşekkür ederiz.

A) GENEL BİLGİLER	
1.	Avatar isminiz: .....
2.	Bölümünüz: .....
3.	Sınıfınız: .....
4.	İnternete genellikle nereden erişiyorsunuz? ( <i>Birden çok seçeneği işaretleyebilirsiniz</i> ) <input type="checkbox"/> Ev <input type="checkbox"/> Okul <input type="checkbox"/> İnternet kafe <input type="checkbox"/> Diğer ( <i>belirtiniz</i> ) .....

5.	Haftada ortalama kaç saat İnternet kullanıyorsunuz? <input type="checkbox"/> 1 saatten az <input type="checkbox"/> 1-5 saat <input type="checkbox"/> 6-10 saat <input type="checkbox"/> 11-15 saat <input type="checkbox"/> 16-20 saat <input type="checkbox"/> 20 saatten fazla
6.	İnterneti genellikle hangi amaçla kullanıyorsunuz? <input type="checkbox"/> Araştırma <input type="checkbox"/> Alış-veriş <input type="checkbox"/> Haber edinme <input type="checkbox"/> Müzik <input type="checkbox"/> Oyun <input type="checkbox"/> İletişim (e-mail) <input type="checkbox"/> Diğer (lütfen belirtiniz) .....
7.	Daha önce uzaktan eğitim programına katıldınız mı? <input type="checkbox"/> Hayır <input type="checkbox"/> Evet – .....(detaylarını belirtiniz)
7.	Bilgisayar veya video oyunu oynuyor musunuz? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır
8.	Ne kadar süredir bilgisayar ve video oyunları oynuyorsunuz? .....
9.	En çok oynadığınız üç oyunun adları nelerdir? .....
10.	Aşağıdaki sosyal iletişim ağlarından hangilerini kullanıyorsunuz? (Birden çok seçeneği işaretleyebilirsiniz) <input type="checkbox"/> Facebook <input type="checkbox"/> LinkedIn <input type="checkbox"/> Twitter <input type="checkbox"/> Youtube <input type="checkbox"/> Diğer (belirtiniz) .....
11.	Daha önce 3-boyutlu sanal platformları eğitim amaçlı kullandınız mı? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır
12.	Daha önce psiko-eğitsel bir programa katıldınız mı? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır .....(katıldıysanız, program ismini belirtiniz)

<b>B) 3D SANAL DÜNYA DENEYİMİ</b>								
<i>Aşağıdaki 3D OGEB platformu ile ilgili verilen ifadelere ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>								
<b>Asla</b>		←—————→				<b>Her zaman</b>		
1	2	3	4	5	6	7		
1.	3D sanal ortamda diğer kullanıcıların sizinle aynı ortamda olduğunu ne düzeyde hissettiniz?	①	②	③	④	⑤	⑥	⑦
2.	3D sanal ortamdaki grupla buluşma hissiniz fiziksel ortamdaki buluşmalara ne düzeyde benziyordu?	①	②	③	④	⑤	⑥	⑦
3.	3D sanal ortamı şuan düşündüğünüzde, kendinizi ne düzeyde diğer kişilerle aynı ortamdaymış gibi hayal edebilirsiniz?	①	②	③	④	⑤	⑥	⑦

4. 3D sanal ortamda ne düzeyde gerçek dünyayı unutup kendinizi sanal dünyanın gerçekliğine kaptırdınız?	①	②	③	④	⑤	⑥	⑦
5. 3D sanal ortamda bulunduğunuz yerleri gerçek hayatta daha önce gördüğünüz bir yere ne düzeyde benzettiniz?	①	②	③	④	⑤	⑥	⑦
6. 3D sanal ortamını zihninizde canlandırdığınızda, kendinizi ne düzeyde o ortamda hareket ediyormuş, gibi hayal edebilirsiniz?	①	②	③	④	⑤	⑥	⑦
7. 3D sanal ortamda, diğer katılımcılar ile aynı ortamda olduğumu hissettim.	①	②	③	④	⑤	⑥	⑦
8. 3D sanal ortamda, diğer katılımcıların beni izlediğini ve benim orada bulunduğumun farkında olduklarını hissettim.	①	②	③	④	⑤	⑥	⑦
9. 3D sanal ortamda, diğer katılımcıların gerçek kişiler olmadığı aklımdan çok defa geçti.	①	②	③	④	⑤	⑥	⑦
10. 3D sanal ortamda, diğer katılımcıları gerçek kişiler olarak değil de bilgisayar ortamındaki resimler olarak algıladım.	①	②	③	④	⑤	⑥	⑦
11. 3D sanal ortamda, kendimi bir grubun üyesi olarak hissettim.	①	②	③	④	⑤	⑥	⑦

<b>C) 3D SANAL DÜNYA KULLANIMI</b>	Kesinlikle Katılmıyorum	Kısmen katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
<i>Aşağıdaki 3D OGEB platformunun kullanımı ile ilgili verilen ifadelere ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>					
1. 3D sanal ortamı kullanmayı öğrenmek benim için kolaydı.	①	②	③	④	⑤
2. 3D sanal ortamı kullanma becerisini kazanmak benim için kolaydı.	①	②	③	④	⑤
3. 3D sanal ortamı kullanmayı kolay buldum.	①	②	③	④	⑤
4. 3D sanal ortamda yapmak istediklerimi gerçekleştirmek kolaydı.	①	②	③	④	⑤
5. 3D sanal ortamının ara yüzündeki öğelerin işlevleri açık ve anlaşılırdı.	①	②	③	④	⑤
6. 3D sanal ortamının ara yüzü esnekti.	①	②	③	④	⑤

<b>D) 3D PSİKO-EĞİTİM GRUBU MEMNUNİYETİ</b>	Kesinlikle Katılmıyorum	Kısmen katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
<i>3D OGEB platformunda katıldığınız psiko-eğitsel grup memnuniyeti ile ilgili verilen ifadelerle ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>					
1. Bu programda arzuladığım gibi bir destek aldım.	①	②	③	④	⑤
2. Bu program ihtiyaçlarımı karşıladı.	①	②	③	④	⑤
3. Bir arkadaşım benzer bir yardıma ihtiyaç duyduğunda bu programı öneririm.	①	②	③	④	⑤
4. Bu programın süresi beni tatmin etti.	①	②	③	④	⑤
5. Bu program erteleme davranışımıla başatme konusunda bana yardımcı oldu.	①	②	③	④	⑤
6. Eğer bir daha yardıma ihtiyacım olursa bu tarz bir programa katılırım.	①	②	③	④	⑤
7. Bu programda sunulan içerik beklentilerimi karşıladı.	①	②	③	④	⑤
8. Grup liderleri ihtiyaçlarıma uygun öğretim ortamı sundu.	①	②	③	④	⑤
9. Bu öğrenme deneyimi beni memnun etti.	①	②	③	④	⑤
10. Konu ile ilgili aldığım bilgi beni tatmin etti.	①	②	③	④	⑤
11. Öğrenme ortamı beni memnun etti.	①	②	③	④	⑤
12. Grupta yapılan etkinlikler ihtiyaçlarıma uygundu.	①	②	③	④	⑤

<b>E) 3D PSİKO-EĞİTİM GRUBUNDA PAYLAŞIM DENEYİMİ</b>	Kesinlikle Katılmıyorum	Kısmen katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
<i>3D OGEB platformunda katıldığınız psiko-eğitsel programı boyunca, ortamda yaptığınız kişisel paylaşımlar ilgili olarak verilen ifadelerle ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>					
1. 3D sanal ortamda kişisel konularda kendimi rahatça ifade edebildim.	①	②	③	④	⑤
2. 3D sanal ortamda iletişim kurmada daha açık olabildiğimi keşfettim.	①	②	③	④	⑤
3. 3D sanal ortamda iletişim kurarken utangaçlık duygusuna kapıldım.	①	②	③	④	⑤
4. 3D sanal ortamda ortamda kişisel konularda paylaşımında bulunurken kaygılı hissettim.	①	②	③	④	⑤
5. 3D sanal ortamda kişisel konuları paylaşırken çekingen davrandım.	①	②	③	④	⑤

## APPENDIX I

### FtF GROUP MEMBER QUESTIONNAIRE

Merhaba,

Bu ankette ÖGEB tarafından yüz yüze ortamda düzenlenen Erteleme Programı ile ilgili deneyimleriniz hakkında sorular vardır. Soruların doğru ya da yanlış cevabı olmayıp tamamen sizin kişisel deneyimleriniz ile ilgilidir. Anketin amacı sizin süreç içerisindeki deneyimleriniz ve program hakkındaki görüşleriniz hakkında bilgi almaktır.

Anketi doldurmak ortalama 5 dakikanızı alacaktır. Soruları dikkatlice okuduktan sonra cevap vermeniz bu çalışma için çok büyük önem arz etmektedir.

Verdiğiniz cevaplar kesinlikle gizli tutulacak ve sadece bilimsel çalışma için kullanılacaktır. Bu çalışma ile ilgili soru ve önerilerinizi agul@metu.edu.tr e-posta adresine iletebilirsiniz.

Ankete ayırdığınız zaman ve doldururken gösterdiğiniz özen için şimdiden çok teşekkür ederiz.

A) GENEL BİLGİLER	
1. Bölümünüz:	.....
2. Sınıfınız:	.....
3. İnternete genellikle nereden erişiyorsunuz? ( <i>Birden çok seçeneği işaretleyebilirsiniz</i> )	<input type="checkbox"/> Ev <input type="checkbox"/> Okul <input type="checkbox"/> İnternet kafe <input type="checkbox"/> Diğer ( <i>belirtiniz</i> ) .....

4. Haftada ortalama kaç saat İnternet kullanıyorsunuz? <input type="checkbox"/> 1 saatten az <input type="checkbox"/> 1-5 saat <input type="checkbox"/> 6-10 saat <input type="checkbox"/> 11-15 saat <input type="checkbox"/> 16-20 saat <input type="checkbox"/> 20 saatten fazla
5. İnterneti genellikle hangi amaçla kullanıyorsunuz? <input type="checkbox"/> Araştırma <input type="checkbox"/> Alış-veriş <input type="checkbox"/> Haber edinme <input type="checkbox"/> Müzik <input type="checkbox"/> Oyun <input type="checkbox"/> İletişim (e-mail) <input type="checkbox"/> Diğer ( <i>lütfen belirtiniz</i> ) .....
6. Daha önce uzaktan eğitim programına katıldınız mı? <input type="checkbox"/> Hayır <input type="checkbox"/> Evet – ..... ( <i>detaylarını belirtiniz</i> )
7. Bilgisayar veya video oyunu oynuyor musunuz? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır
8. Ne kadar süredir bilgisayar ve video oyunları oynuyorsunuz? .....
9. En çok oynadığınız üç oyunun adları nelerdir? .....
10. Aşağıdaki sosyal iletişim ağlarından hangilerini kullanıyorsunuz? ( <i>Birden çok seçeneği işaretleyebilirsiniz</i> ) <input type="checkbox"/> Facebook <input type="checkbox"/> LinkedIn <input type="checkbox"/> Twitter <input type="checkbox"/> Youtube <input type="checkbox"/> Diğer ( <i>belirtiniz</i> ) .....
11. Daha önce 3-boyutlu sanal platformları eğitim amaçlı kullandınız mı? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır
12. Daha önce psiko-eğitsel bir programa katıldınız mı? <input type="checkbox"/> Evet <input type="checkbox"/> Hayır ..... ( <i>katıldıysanız, program ismini belirtiniz</i> )

<b>B) 3D PSİKO-EĞİTİM GRUBU MEMNUNİYETİ</b>					
<i>3D OGEB platformunda katıldığınız psiko-eğitsel grup memnuniyeti ile ilgili verilen ifadelere ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>	<b>Kesinlikle Katılmıyorum</b>	<b>Kısmen katılmıyorum</b>	<b>Kararsızım</b>	<b>Katılıyorum</b>	<b>Kesinlikle katılıyorum</b>
1. Bu programda arzuladığım gibi bir destek aldım.	①	②	③	④	⑤
2. Bu program ihtiyaçlarımı karşıladı.	①	②	③	④	⑤
3. Bir arkadaşım benzer bir yardıma ihtiyaç duyduğunda bu programı öneririm.	①	②	③	④	⑤
4. Bu programın süresi beni tatmin etti.	①	②	③	④	⑤
5. Bu program erteleme davranışımınla başatme konusunda bana yardımcı oldu.	①	②	③	④	⑤

6. Eğer bir daha yardıma ihtiyacım olursa bu tarz bir programa katılırım.	①	②	③	④	⑤
7. Bu programda sunulan içerik beklentilerimi karşıladı.	①	②	③	④	⑤
8. Grup liderleri ihtiyaçlarıma uygun öğretim ortamı sundu.	①	②	③	④	⑤
9. Bu öğrenme deneyimi beni memnun etti.	①	②	③	④	⑤
10. Konu ile ilgili aldığım bilgi beni tatmin etti.	①	②	③	④	⑤
11. Öğrenme ortamı beni memnun etti.	①	②	③	④	⑤
12. Grupta yapılan etkinlikler ihtiyaçlarıma uygundu.	①	②	③	④	⑤

<b>C) 3D PSİKO-EĞİTİM GRUBUNDA PAYLAŞIM DENEYİMİ</b>					
<i>3D OGEB platformunda katıldığınız psiko-eğitsel programı boyunca, ortamda yaptığınız kişisel paylaşımlar ilgili olarak verilen ifadelere ne ölçüde katıldığınızı, size en uygun seçeneği işaretleyerek belirtiniz</i>	Kesinlikle Katılmıyorum	Kısmen katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1. Yüz yüze ortamda kişisel konularda kendimi rahatça ifade edebildim.	①	②	③	④	⑤
2. Yüz yüze ortamda iletişim kurmada daha açık olabildiğimi keşfettim.	①	②	③	④	⑤
3. Yüz yüze ortamda iletişim kurarken utangaçlık duygusuna kapıldım.	①	②	③	④	⑤
4. Yüz yüze ortamda ortamda kişisel konularda paylaşımda bulunurken kaygılı hissettim.	①	②	③	④	⑤
5. Yüz yüze ortamda kişisel konuları paylaşırken çekingen davrandım.	①	②	③	④	⑤





## APPENDIX J

### PROCRASTINATION PSCHOEDUCATIONAL GROUP PROGRAM

#### ERTELEME PSİKO-EĞİTİM GRUBU PROGRAMI

*Erteleme...Zaman Hırsızı!*

#### I. OTURUM

**Amaç:** Bu oturumda üyelerin ve grup liderlerinin birbirleriyle tanışması ve erteleme davranışına ilişkin grup üyelerine genel bir bilgi aktarmak amaçlanmaktadır.

**Yapılandırma:** Grup üyelerinin rumuz ile adlandırılması ve sürecin böyle devam edeceğinin konuşulması. Grubun en başında “Bugün ne yapacağız?” ve buna ilişkin içerik bilgisi vermek

**Süre:** 60 dakika

**Tanışma:** Üyelerin birbirleriyle tanışması için yapılacak bir etkinliktir. Bu etkinlikte her bir üyenin bir diğeri ile eşleşerek 2’li olarak gruplanması söz konusudur. Her bir grup kendi içinde birbirlerini tanımaya yönelik toplamda 6 dakikalık bir süreyi değerlendireceklerdir. Böylece tekrar bir grup formatına dönüldüğünde her bir kişi bir diğeri grubu tanıyacaktır. Böylece üyelerin birbirlerini tanıması sağlanacaktır.

#### **Buz Kırıcı (Birbirini Tanıtma):**

**Amaç:** Bu buz kırıcı aktivite, öğrencilerin birbirlerini hızlıca tanımalarını ve birbirleriyle ilgili bilgileri diğer grup üyelerine aktararak kaynaşmalarını amaçlamaktadır.

**Süre:** 10-15 dakika

**Prosedür ve gruba verilecek olan yönerge:** Herkes 2’li grup şeklinde eşleşir. Grup eşine özel olmayan sorular sorarak onu tanımaya çalışır. Ardından herkes bir araya gelir, her bir üye eşleştiği üyeye ilgili bilgileri arkadaşlarına anlatır. Sanal ortamda eşler farklı bölgelerde buluşup konuşacaklardır.

### **Buz Kırıcı (Kelime Bulma-Cümle Tamamlama):**

**Amaç:** Bu buz kırıcı aktivite, öğrencilerin 3D sanal ortamı tanınması ve programı kullanmaya alışmaları amacıyla yapılmaktadır.

**Süre:** 10-15 dakika

**Prosedür ve gruba verilecek olan yönerge:** Erteleme davranışıyla ilgili bir cümleyi oluşturan kelimeler sanal ortamda farklı yerlere yerleştirilmiştir. Grup üyelerinden her bir kelimeyi bularak cümleyi tamamlamaları istenir. Bunu yapabilmek için grup üyeleri sanal ortamı gezmek zorundadır.

“Bütün şartlar yerine gelinceye kadar erteleyen hiçbir iş yapamaz.”

### **Grupta Beklenti ve Amaçlar:**

Bu grupta amaç üyeler öncelikle erteleme davranışı hakkında farkındalık kazandırmak, ardından bu davranışa yönelik bütün boyutların ele alınmasını sağlamak ve davranışa geçme konusunda üyeleri cesaretlendirmektir. Böylece üyelerin bu davranış konusundaki bilgi dağarcıkları arttırılarak kişisel uyumlarının arttırılması amaçlanmaktadır. Bütün bunlar ışığında bu psiko-eğitsel grup üyelerin pasif davranışlardan uzaklaşarak aktif olarak potansiyellerini gerçekleştirebilecekleri bir hayata geçişlerini desteklemektedir.

- Bu gruptaki beklentileriniz, 8 hafta sonunda ne elde etmek istedikleri üzerine konuşma
- Genel amaç “Erteleme davranışı ile başa çıkabilmek” başlığı altında varsa danışanların özel amaçlarını belirleme

### **Grup Kuralları:**

#### **Üyelerin;**

1. Gruba gününde ve saatinde her hafta online olarak katılması
2. Gönüllülük ilkesine uyması
3. Süreçte samimi ve dürüst olması
4. Kendi adına konuşması
5. Verilen ev ödevlerini yapması
6. Birbirine saygı göstermesi
7. Birbirine hitap ederken “sen” demesi
8. Birbirleri hakkında kişisel yorumlamalarda bulunmaması
9. Grup süreci boyunca aktif olarak grubu takip etmesi

Grup kuralları sözleşmesi ön görüşme sırasında doldurularak bu sözleşmenin ne anlama geldiği ve böyle bir taahhütte bulunmanın sorumluluğunu almak üzerine kısa bir açıklama yapılacaktır.

### **Erteleme Davranışına Geçiş:**

Bu aşamada genel olarak erteleme davranışının ne olduğu, farklı kuramlarla nasıl açıklandığına ilişkin genel bilgiler verilecektir.

### **Kapanış:**

Bütün bunlardan sonra bütün üyelere oturumun nasıl geçtiğine dair genel bir değerlendirme alınarak ve grup liderlerinin de süreci değerlendirmesi ile oturum sonlandırılacaktır.

## **II. OTURUM**

**Amaç:** Erteleme davranışı ile ilgili detaylı bilgiler verilerek üyelerin bilgi dağarcıklarını genişletmek ve daha farklı bakış açılarıyla düşüncelerini desteklemek amaçlanmaktadır.

**Süre:** 60 Dakika

### **Buz Kırıcı (İssız Bir Adaya Düşseniz Yanınıza Alacağınız 3 Şey):**

Düşünün ki; bir yıl süreyle bir adada mahsur kaldınız. Zorunlu ihtiyaçların yanı sıra, yanınıza sadece bir müzik cd'si, bir kitap ve değerli bir eşyanızı alabiliyorsunuz. (Adayı terk etmek için bot yok!) Ne alırdınız ve neden onu alırdınız?

**Amaç:** Sanal ortamdaki adalar ile farklı bir ortama geçiş yapabilme fırsatı bulabileceklerdir. Ayrıca birbirlerini tanıma adına bilgi alışverişi yapabileceklerdir.

**Erteleme Sunusu-1.Bölüm:** Yaklaşık 30 dakika sürmesi planlanan bu interaktif sunuda erteleme davranışının tanımına, sıklığına, nedenlerine, boyutlarına yer verilecektir.

**Süreci Değerlendirme:** Erteleme ile ilgili sunudan sonra grup üyelerine bu sunudan ne elde ettikleri, nasıl değerlendirdikleri sorulur, her bir üyeden buna ilişkin bir cevap alınarak süreç değerlendirilir.

**Sonlandırma:** Oturumun genel bir değerlendirilmesi grup liderleri ve üyeler tarafından yapılarak gruba son verilir.

### III. OTURUM

**Amaç:** Bu oturumun amacı; erteleme döngüsü hakkında grup üyelerini bilgilendirmektir.

**Süre:** 60 dakika

**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılarak ev ödevine geçilir.

**Mizahla Davranışı Sesli İfade Etme:** Etkinliğin amacı üyelerin sıklıkla gösterdikleri erteleme davranışını sesli ifade ederek mizah yoluyla farkındalık yaratmaktır. Etkinlik için sanal ortam da amfi seçilmiştir. Grup üyelerinin örnek bir gösterim yapmasının ardından her bir üye sahneye çıkarak ertelediği bir davranışı söyler ve diğer grup üyeleri onu “Bravo, Çok iyi, Çok iyi yapmışsın” gibi ifadelerle ve alkışlarla destekler. Burada amaç davranışı sesli ifade ederek olumsuz bir davranışa olumlu tepki almanın farkındalık oluşturması ve üyeler birbirini tanımadığı için rahatça söyleyebilme imkanı bulmalarıdır.

**Erteleme Sunusu-2.Bölüm:** Erteleme döngüsünün yer aldığı 15 dakikalık bir sunu yapılacaktır.

**Erteleme Döngüsü Etkinliği:** Grup üyelerinden bu döngü açısından kendilerini değerlendirmeleri istenecektir. Döngünün hangi basamağında zorlandıkları, hangi basamağı hep yaşadıkları vb. konularda paylaşımında bulunmaları istenmiştir.

**Ev Ödevi:** Üyelerden kendileri için hazırlanan döngüleri grup sonrasında sanal ortama girerek çizmeleri istenir. Bu çizimi kendileri için hazırlanmış tahta üzerinden yapacaklardır. Önce üyelere örnek bir erteleme döngüsü çizimi gösterilecektir. Ardından her bir üyeden kutular üzerinde yazan erteleme döngülerini kendi erteleme davranış örüntülerini oluşturacak şekilde sıralamaları istenir. Her üyeye yaklaşık 5 dakika bir süre verilir. Sonrasında ise her bir üyenin gruba kendi döngüsünü göstermesi ve üzerinden anlatması istenecektir. Bu etkinliğin sonunda üyelerin neleri fark ettikleri konuşulacaktır.

**Sonlandırma:** Oturumun genel değerlendirmesi yapılarak sonlandırma yapılacaktır.

## IV. OTURUM

**Amaç:** Üyelerin erteleme alanlarından ilki olan akademik erteleme ele alınarak, üyelerin bu konu üzerinde farkındalık kazanmaları ve davranışa geçebilmeleri amaçlanmaktadır.

**Süre:** 60 dakika

**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılır.

**Buz Kırıcı (Akademik Erteleme Biçimlerini Keşfetme):**

Grup liderleri üyeleri 2’li gruplara ayırarak farklı salonlara gönderir. Burada üyelerden akademik erteleme konusunda neler yaptıklarını birbirleriyle paylaşmaları istenir: neyi erteliyor, nasıl erteliyor, sonrasında ne oluyor vb. Daha sonra gruba gelerek diğer üyelerle paylaşmaları sağlanır. Böylece akademik erteleme konusunda ortak kısımlar ortaya çıkar.

**Akademik Erteleme:**

- Akademik ertelemenin ne olduğu ile ilgili kısa bir bilgi verme. Ardından grup üyelerine akademik anlamda ertelediklerini sorma ve grup tartışması başlatma.
- Akademik ertelemede hedefsiz, amaçsız olmamanın önemini vurgulama. Amaçsızlığın kişiyi davranışlarını erteleyerek başarısızlığa götürebileceği bilgisi verilerek üyelerin amaç belirleme konusunda farkındalık sağlaması. Bunun için şöyle bir plan takip edilebilir:
  1. Amaç seçme.
  2. Net, ulaşılabilir, açık, somut, öz amaçlar
  3. Olumlu bir cümle olarak ifade etme (“Calculus dersinden kalmak istemiyorum” yerine “Calculus dersini geçmek istiyorum” demek gibi)
  4. Amaca ulaşmanızda ihtiyacınız olduğunu düşündüğünüz şeyleri belirleme
  5. Liste halinde sizin yapmanız gerekenleri sıralama.
  6. Amacınızı en yakın ne zaman gerçekleştirebilirsiniz?
  7. Amacınızı gerçekleştirdiğinizde nasıl hissedebileceğiniz?

## **Rol Oynama Etkinliđi:**

**Duygu Konuřturma Yöntemi:** Ařađıdaki senaryo katılımcılara anlatılır (Rüzgar isimli karakter görsel olarak, NPC řeklinde, tasarlanmıřtır) Senaryoda akademik ertelemeden kaynaklı kiřilerin duyabileceđi kızgınlık, yetersizlik hissi, umutsuzluk, mutsuzluk, başarısızlık hissi, kendini deđerersiz görme duyguları yer alacaktır (Grup üyesi sayısı kadar duygu yer almasına dikkat edilmeli). Senaryo tamamlandıktan sonra grup üyelerine senaryoda hangi duyguların yer aldıđı sorulacaktır. Çıkan duyguların hepsi konuřulduktan sonra üyelerden her birinin bir duyguyu seçmesi istenir. Her bir üyenin rolü belirlendikten sonra kendi rollerine hazırlanmaları için yaklaşık 5 dakika verilir, sonrasında her üye kendi canlandıracađı duygunun sandalyesine oturarak o duyguyu konuřtururlar. (Duyguların renkleri: Kırmızı: Öfke, mor: Utanç, Sarı: utanç gibi)

### Hikaye

Rüzgar iyi bir üniversitenin tatlı bir bölümünde okumaktadır. Ancak Rüzgar'ın hayatı bir süredir yolunda deđildir çünkü aldıđı 7 dersle dönemi çok yoğun geçmektedir. Ders çalıřmayı çeřitli bahanelerle sürekli erteleyen Rüzgar masanın başına oturmakta, derse gitmekte, gittiđi dersi dinlemekte, ders sorumluluklarını yerine getirmekte çok büyük güçlükler ve motivasyon düşüklüğü yaşamaktadır. Rüzgarın erteleme sebeplerinden biri de iyi bir bilgisayar oyuncusu olmasıdır. Zaman buldukça bilgisayarda oyun oynamakta ve vaktin nasıl geçtiđini anlamamaktadır. Her bir notu bir öncekinden düşük geliyordu. Notları düşüktüğe Rüzgar kendini kötü hissetmesi giderek artıyordu. Çünkü ne yaparsa yapsın artık notlarını toparlayamayacađını düşünmeye başlamıřtı. Dönem tekrarı yapmak onu çok fazla korkutuyordu çünkü ailesine karşı sorumlulukları vardı. Onlar tarafından başarısız bulunmak en büyük korkularından biriydi. Kendine iliřkin sıklıkla “Neden ben böyleyim? Yine yapamadım. Hep benim yüzümden!” diye düşünmektedir. Aynı zamanda arkadařlarıyla notlarını kıyaslamakta ve onların kendisinden daha başarılı olmasına üzölmektedir.

## **Sonlandırma**

### **Grubun özetlenmesi**

Ev Ödevi: “Erteledeđimiz Alanlar” ödevinin yapılması

Erteleme bahaneleri ve taktiklerinin yazılması

(Belli bir tarihe kadar sanal ortama girerek doldurulmasının istenmesi ve bu doğrultuda bir sonraki gruba gitmeden frekans alınması)

(Burada amaç ertelemeden bu davranışın yapılmasının sağlanması, üyeleri bu davranışla baş etme açısından davranışsal harekete geçirmek)

## V. OTURUM

**Amaç:** Üyelerin erteleme alanlarından diğer ikisi olan kişisel ve sosyal erteleme ele alınarak, üyelerin bu konu üzerinde farkındalık kazanmaları ve davranışa geçebilmeleri amaçlanmaktadır. Oturumun amacı “erteleme davranışını nasıl yeneriz?” konusunda farkındalık oluşturmaktır.

**Süre:** 60 dakika

**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılır. Ertelediğimiz alanlar ödevinin grup liderleri tarafından yapılan değerlendirmesi üyelerle paylaşılır.

**Kişisel ve Sosyal Erteleme:** Grup üyelerinin kişisel ve sosyal alanda erteledikleri davranışlar üzerinden konuşulur. Mümkün olursa grup tarafından en çok ertelenen 3 temel alan bütün davranışların frekansları alınarak belirlenmeye çalışılır. Ardından grupta beyin fırtınası kullanılarak bu davranışlar üzerinden konuşulur.

**Ertelemeyi Nasıl Yeneriz?:** Grup üyelerine ertelemeyi nasıl yeneriz ile ilgili ipuçları sunulacaktır. Özellikle zaman yöntemine vurgu yapılarak sunu şeklinde anlatılır. Ardından bu ipuçlarının hangilerinin kendileri için uygulanabilir olduğu sorulacak ve grupta bu ipuçları ve bunların yararlılığı üzerine konuşulacaktır. Sıralanan basamaklardan hangilerini yapabilecekleri, hangilerini zor olduğu, hangilerinin denenebileceği konusunda paylaşımlarda bulunulur.

### **Etkinlik:**

Erteleme davranışını azaltmada kullanılacak yöntemlerden 10 tane seçilir ve numaralandırılır. Her bir üye rastgele bir tane seçer ve bunu nasıl uygulayabileceği yönünde diğer üyelere rol yapma biçiminde gösterilir. Örneğin; “hayır diyebilmek” yöntemini seçen bir öğrenci kendisini arayan arkadaşına güzel bir dille ders çalıştığını ya da işi olduğunu ve o an katılamayacağını kesin bir dille ifade eder.

İpuçları:

1. Hayır diyebilme
2. Amaçları başkalarına söyleme
3. Detayla fazla uğraşmadan işe biran önce başlama (herhangi bir yerden başlayın, kolay kısımdan başlayın)
4. Öncelikleri belirleyin
5. Engelleri belirleyin
6. Küçük parçalara bölün ve liste yapın (somutlaştırma)
7. Grup çalışmasına/başkalarından yardım istemeye açık olun
8. Cümlelerinizi değiştirin
9. Kendinizi ödüllendirin
10. Kendinizi affedin ve yeniden deneyin

**Sonlandırma**

## VI. OTURUM

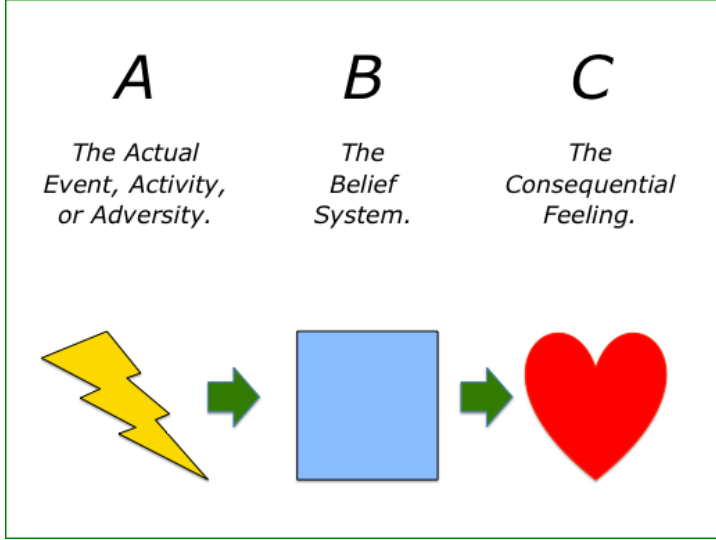
**Amaç:** Bu oturumda üyelerin erteleme davranışında kilit rol oynayan düşünceler sistemini tanımaları, keşfetmeleri ve sağlıklı düşüncelerini bulmaları amaçlanmaktadır.

**Süre:** 60 dakika

**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılır.



**Davranıştan Düşünceye Geçiş:** Baş etme yöntemlerinin sunulmasının ardından üyeleri davranış boyutundan alıp düşünce boyutuna getirmek için bir önceki hafta verilen ödev gündeme getirilerek konuşmaları sağlanır. Üyeler kendi erteleme bahanelerini ve taktiklerini söylerler. Kısa bir paylaşımın ardından ABC düşünce tekniği ile ilgili bilgi verilir.



**A-B-C Sisteminin Tanıtımı:** Öncelikle üyelere bilişsel davranışçı terapinin doğurgularından olan Olay-Düşünce-Duygu sistemi hakkında gerekli bilgiler sunu yoluyla veya sesli olarak verilir. Ardından öğrencilerin bu düşünce yapısından yola çıkarak erteleme davranışında altında yatan düşüncelerini keşfetmeleri için bir süre verilir (yaklaşık 5 dakika) (Neyi düşünerek erteliyorsunuz? Sorusuna cevap aranır) Ardından üyelerin sağlıksız düşünceleri tek tek alınarak üzerine konuşulur. Temelde düşünce değişmeden hissedeceğimiz duygu ve bulunacağımız davranışın değişmeyeceği vurgusu önemle yapılır.

Duygu-Düşünce-Davranış üzerine örnek akılcı olmayan düşünceler verilir. Daha sonra üyelere **Sağlıksız Düşünceler Kartı**'nı doldurmaları istenir. Bu kart üzerinde düşünce hatalarından en çok hangilerini yaptıklarını fark etmeleri sağlanır. Ardından yine grup genelinde en çok hangi düşünce hatasının fazla olduğu tespit edilir.

Grupta en sık hangi düşünce hatalarının olduğu belirlendikten sonra bu defa üyelere her bir düşünce hatasının adlandırıldığı sandalyelerden birini seçmeleri ve o düşünceyi konuşturmaları beklenir.

**Ev ödevi:** Düşünce sisteminin ardından ödev verilir ve üyeler ilk davranış ödevini alırlar. Kendi belirledikleri 2 gün ve saatte sisteme girerek kendileri için yapılmış butonu tıklayacaklar. Bu görevler kişinin belirlediği gün ve saatte sadece çalışacaktır. Bu şekilde birey kendi belirlediği bir zamanda ertelemeden ortama girip girmeyeceği

kontrol edilebilecektir. Görevi tamamladığında bireye eğlenceli müzik ve görsel efektler gösterilecektir.

## Sonlandırma

## VII. OTURUM

**Amaç:** Üyelerin bu oturumda erteleme davranışıyla nasıl baş edebilecekleri ve zaman yönetimi hakkında fikir sahibi olması, zamanlarını nasıl yönettiklerini keşfetmeleri ve zaman yönetimine ilişkin davranışa geçebilmesi amaçlanmaktadır.

**Süre:** 60 dakika

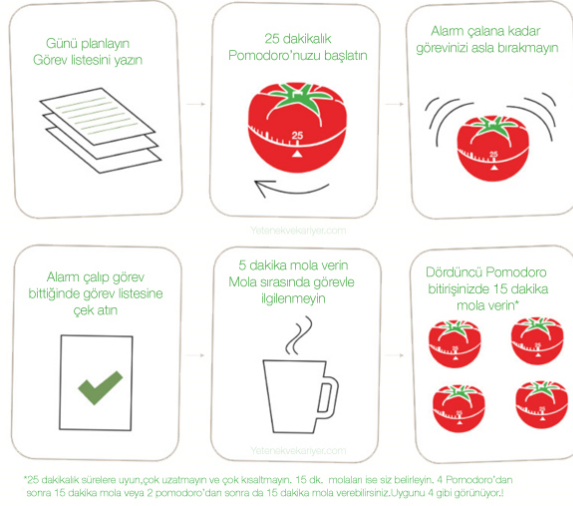
**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılır.

**Ev Ödevi Değerlendirmesi:** Bir önceki oturumda verilen butona basma ödevi değerlendirilir. Yapılma ve yapılamama sebepleri, zorlukları ve kolaylıkları konuşulur.

**Cümlelerin Değiştirme:** Bir önceki oturumda sağlıksız düşüncelerden bahsedilmiştir. Bu sağlıksız düşünceler hatırlatılarak “Cümleleri değiştirme” etkinliği yapılır. Üyeler 2’şerli gruplanıp birlikte kendilerine verilen her bir düşünce için (2 tane her bir grupta) 3 tane alternatif düşünce oluşturmaları istenir. Üyeler farklı salonlara giderek rahatça konuşma imkanı bulurlar ve alternatif düşünceleri Google Docs üzerinden yazarlar. Daha sonra ortak salonda görünen ekranda bunları grup arkadaşlarıyla paylaşırlar.

- Ya hep ya hiç
- -meli –malı
- Etiketleme
- Olumsuz Odaklanma
- Zihin Okuma
- Aşırı Genelleme

**Pomodoro Tekniği:** Düşünmeden başlamak zor olduğunda davranıştan başlamak isteyen üyeler için pomodoro tekniği anlatılır. Bu tekniğe göre kişiler belli zaman aralıklarında başka hiçbir şey yapmadan yalnızca belirledikleri işi yaparlar ve alam çaldığında ara vermek üzere bırakırlar. 15 dk telefon görüşmesi yapmak, ders çalışmak, temizlik yapmak gibi.



**Ev Ödevi:** 3 kere üst üste aynı konu için pomodoro yapmak ödev olarak verildi.

## Sonlandırma

## VIII. OTURUM

**Amaç:** Bu oturumda amaç; bütün bir psiko-eğitsel süreci değerlendirerek grubun genel amacına ne kadar ulaşıldığını ve grup üyelerinin bu süreçten kazanımlarının neler olduğunu belirlemektir.

**Süre:** 45 dakika

**Ev Ödevi Değerlendirmesi:** Pomodoro ödevi değerlendirilir. Hangi davranışlar için yapıldığı konuşulur.

**Bir Önceki Oturumun Özetlenmesi:** Grup liderleri tarafından bir önceki oturumda neler konuşulduğu, nelerin üzerinde durulduğu üzerinden kısa bir özetleme yapılır.

**Değerlendirme Formunun Uygulanması:** Araştırmacılar tarafından geliştirilen ve yaklaşık 10 sorunun yer aldığı değerlendirme formu hazırlanır. Üyelerden online doldurmaları istenir. Ayrıca üyelere genel olarak memnuniyetlerini ölçen aşağıdaki sorular yöneltilerek grup değerlendirmesi yapılır.

- Bu grup yaşantısı sonucunda davranışsal olarak neler kazandığınızı düşünüyorsunuz?
- Kazandığınız değişiklikler konusunda grup sana nasıl yardımcı oldu?
- Bu grupta hangi olaylar ve aktiviteler sana en az yardımcı oldu? Neden?
- Bu grupta hangi olaylar ve aktiviteler sana en çok yardımcı oldu? Nasıl?

- Liderin sana yardım etmek için müdahalede bulunduğu veya bulunmadığı zamanlar oldu mu? Ne zaman? Nasıl?
- Liderin müdahale etmemesi gerektiği zamanlar oldu mu? Ne zaman? Nasıl?

**Son-Test Uygulama:** Tuckman Erteleme Davranışı Ölçeği

**Kuyu Etkinliđi:** Üyelerden gruba ne verdikleri ve ne aldıklarını online yazdıkları kuyu etkinliđi yapılır. Üyeler gruba kattıklarını kuyuya atar ve kazanımlarını kuyudan çeker. Ardından herkesin duygu ve düşünceleri paylaşılır. Bu etkinlik için sanal ortamda bir kuyu tasarlanacak ve kişiler kuyuya atmak istedikleri şeyleri klavyeden yazdıktan sonra atabileceklerdir.

**Genel Özetleme:** Bütün bir sürecin en başından son oturuma kadar kısa bir özetlemesi yapılır. Kısa kısa tüm grup üyelerinden süreci değerlendirmeleri istenir. Gruptan ne aldıkları, gruba ne verdikleri sorulur.

**Sonlandırma Etkinliđi:** Fotoğraf çektirme, müzik eşliğinde dans etme. Bu etkinlik sanal ortamda avatarlar ile yapılacaktır. Kullanıcılar için ortamda müzik ve dans figürleri hazır olacaktır.

## APPENDIX K

### PROGRAM ANNOUNCEMENT POSTER



Öğrenme ve Öğrenci Gelişim Birimi (ÖGEB)  
Learning and Student Development Office



# ERTELE-ME

(Grupla Psikolojik Danışma)

**SON KAYIT TARİHİ**  
**20 MART**  
2015

Erteleme davranışı akademik, sosyal ve psikolojik anlamda zorlayıcı olabilir. Bu grup sayesinde farkındalığınızı arttırarak, erteleme davranışınızın altında yatan faktörleri bulabilir ve bunlarla nasıl baş edebileceğinizi keşfedebilirsiniz.

**Grup Seçenekleri ve Saatleri: (\*)**  
3D Sanal Grup : Her Çarşamba, 19:00 - 20:30 (90 Dak.)  
Yüz Yüze Grup : Her Perşembe, 14:00 - 15:30 (90 Dak.)

**KAYIT ADRESİ**  
[ogeb.metu.edu.tr](http://ogeb.metu.edu.tr)

(\*) Kayıt sayfasında grup tercihinizi yapabilirsiniz.  
Program 8 hafta sürecektir. En az 6 hafta sürece devam edenlere Katılım Sertifikası verilecektir.

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### PERSONAL INFORMATION

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### EDUCATION

Degree	Institution	Year of Graduation
BS	M.E.T.U, Computer Education and Instructional Technology	2008
High School	Mersin Atatürk Anadolu Teknik Lisesi	2003

### WORK EXPERIENCE

Year	Place	Enrollment
2011-	M.E.T.U, Computer Education and Instructional Technology, Ankara	Research Assistant
2009-2010	Interblock Studios, San Antonio, TX, US	Web Design & Developer
2008-2009	Simsoft Computer Technologies, Ankara	Instructional Designer
2005-2008	M.E.T.U, Computer Center, Ankara	Technical Support Assistant, Part-time

### FOREIGN LANGUAGE

Advanced English

### PRESENTATIONS IN INTERNATIONAL CONFERENCES

- **Gul, A.** & Kamali Arslantas, T. (2015). Revisiting Past, Current,& Future of Instructional Theory. In S. Carliner et al. (Eds.), Proceedings of World Conference on Educational Media and Technology 2015 (pp. 974-980). Association for the Advancement of Computing in Education (AACE).

- **Gul, A.**, Aydin, C. C., Uzun, C. & Teker, M. (2015, May). Mixed Method Research Trend in Instructional Technology: A Content Analysis. Paper presented at the meeting of ICITS-2015, Eskisehir, Turkey.
- Kamali Arslantas, T. & **Gul, A.** (2015, August). Potential Opportunities OpenSim Virtual World Offer for CALL. Paper presented at the meeting of EUROCALL-2015, Padova, Italy.
- **Gul, A.**, Tokel, T., Cevizci, E., & Ergoren. B. (2014, November). In-service Teachers' Attitudes towards Using 3D Virtual Worlds as Learning Spaces. Paper presented at the meeting of AECT-2014, Jacksonville, FL, US.