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Tools to Support Professional Couples Counseling and Help Maintain Healthy and Robust Relationships

RAN ZHANG
Syracuse University

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Abstract

Given the high divorce rate in America, the purpose of this thesis is to explore and design tools for newlyweds, unmarried, and married couples which focus on how to maintain a healthy and stable relationship by receiving professional counseling; all the while increasing the awareness of damaging unnoticed variables and issues that lead to an unhealthy relationship between couples. Through a literature review, Dr. Gottman's *The Seven Principles for Making Marriage Work* method and other research has shown that relationship satisfaction has a massive impact on health and happiness between the partners, and their relationship can be strengthened. Moreover, when people have relationship issues, the best choice is to seek professional help at the very beginning. Timing is an essential aspect of couples counseling. Content analysis indicates there are few if any existing tools that combine both professional counseling and relationship coaching for couples. By conducting consultations with experts, focus groups, and user testing, this paper demonstrates that professional counseling is necessary for maintaining stable and healthy relationships, especially in the early stages of issues and conflicts amongst couples.

TOOLS TO SUPPORT PROFESSIONAL COUPLES COUNSELING AND

HELP MAINTAIN HEALTHY AND ROBUST RELATIONSHIPS

by

Ran Zhang

B.S., SUNY Plattsburgh, 2013

Thesis
Submitted in partial fulfillment of the requirements for the degree of
Master of Fine Arts in Design.

Syracuse University
May 2020

Acknowledgments

Thank you to the staff and faculty at VPA School of Design, mainly my advisor Prof. Don Carr, as well as Dr. Jody Nyboer and Dr. Isabel Prochner. They dedicated themselves to my thesis topic. Thank you to my Thesis Committee for your dedication to excellence and for pushing me to find the best possible solution to my thesis problem.

Thank you to all of the nation's leading marriage and relationship researchers, especially Dr. John Gottman, Susan S. Hendrick, Dicke, A., & Hendrick, C., Vaughn, M. J., & Baier, M. E. M.

Thank you to all of the experts that Collaborated on my design project.

Dr. Merril Silverstein, Dr. Brittany Jakubiak, Gamification Designer - Prof. Danny Godin, Dr. Henry Zhane Li, Life Coach, and ASAC - Diane Malikow, LCSW and Therapist - Linda D. Hatz, Intern Therapist - Yusai Su,

A big thanks to my family, especially my mother, Hong, and father, Wei. It is your patience and support that gives me the courage to start over and keep pursuing my bigger dreams and strive to be the best version of myself.

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Preface

1.1Introdcution

Many people have asked, "why are you interested in this topic?" "Are you a

professional couples therapist yourself?" Therefore, I would like to explain the design

project vision first.

I grew up watching the divorce process of several relatives. In the beginning, all of

them were happily married, then they started to fight over trifles. Since then, I always

ask myself if there is a way to learn how to get along with their partners; they may

maintain a more healthy marriage and relationship. And recently, I found that many of

my friends have relationships that are in crisis. To my surprise, there is such a high

divorce rate among people I know. For those who have been through a divorce

experience, they told me that they were more willing to consult strangers or people

who could not see their faces for an emotional crisis but did not want to do

professional psychological counseling.

I've talked about this with my friend in relationship psychology, Dr. Li. For one thing,

he said many people are more willing to confide in strangers about their psychological

issues. Second, he told me that most people don't know that relationships need to be

learned when facing emotional problems. Finally, he recommended that I read Dr.

Gottman's *The Seven Principles for Making Marriage Work*.

Meanwhile, I have many American friends who are having trouble finding the right

partner. They keep using dating apps but cannot find a way to determine if that person

is right for them. It wastes a lot of time, money, and emotion to engage in

inappropriate emotional relation based experiences, over and over again.

That is why I wanted to do this project, and I think it's essential to identify early on what

problems might exist or whether one's current partner is a good fit in one's emotional

life. At last, I thought if relationships can be improved through scientific learning, why

don't I create a tool that allows couples to learn how to enhance daily relationships?

Therefore, I undertook an exploration of related identifying and learning tools for

couples' relationships.

1.2 Background

In general, romantic relationships between two individuals (couples) are not always in harmony, and as a result, these relationships can find themselves in crisis. In America, couples in relationships have been increasingly finding themselves in an irreversible conflict, which has led to the relationship ultimately ending.

An analysis of U.S. marital status from 2000 to 2017 is shown in the following chart.

Provisional number of divorces and annulments and rate: United States, 2000-2017

Year	Divorces & annulments	Population	Rate per 1,000 total population
2017 [1]	787,251	270,423,493	2.9
2016 [2]	776,288	257,904,548	3.0
2015 [3]	800,909	258,518,265	3.1
2014 [3]	813,862	256,483,624	3.2
2013 [3]	832,157	254,408,815	3.3
2012 [4]	851,000	248,041,986	3.4
2011 [4]	877,000	246,273,366	3.6
2010 [4]	872,000	244,122,529	3.6
2009 [4]	840,000	242,610,561	3.5
2008 [4]	844,000	240,545,163	3.5
2007 [4]	856,000	238,352,850	3.6
2006 [4]	872,000	236,094,277	3.7
2005 [4]	847,000	233,495,163	3.6
2004 [5]	879,000	236,402,656	3.7
2003 [6]	927,000	243,902,090	3.8
2002 [7]	955,000	243,108,303	3.9
2001 [8]	940,000	236,416,762	4.0
2000 [8]	944,000	233,550,143	4.0

Figure 1 Provisional number of divorces and annulments and rate ("NVSS - Marriages and Divorces", 2019)

National Marriage and Divorce Rate Trends data shows that the divorce rate from 2000

to 2017 seems to be decreasing year by year, but the marriage rate from 2000 to 2017

also declined year by year ("NVSS - Marriages and Divorces," 2019).

Provisional number of marriages and marriage rate: United States, 2000-2017

Year	Marriages	Population	Rate per 1,000 total population
2017	2,236,496	325,719,178	6.9
2016	2,251,411	323,127,513	7.0
2015	2,221,579	321,418,820	6.9
2014 [1]	2,140,272	308,759,713	6.9
2013 [1]	2,081,301	306,136,672	6.8
2012	2,131,000	313,914,040	6.8
2011	2,118,000	311,591,917	6.8
2010	2,096,000	308,745,538	6.8
2009	2,080,000	306,771,529	6.8
2008	2,157,000	304,093,966	7.1
2007	2,197,000	301,231,207	7.3
2006 [2]	2,193,000	294,077,247	7.5
2005	2,249,000	295,516,599	7.6
2004	2,279,000	292,805,298	7.8
2003	2,245,000	290,107,933	7.7
2002	2,290,000	287,625,193	8.0
2001	2,326,000	284,968,955	8.2
2000	2,315,000	281,421,906	8.2

Figure 2 Provisional number of marriages and marriage rate ("NVSS - Marriages and Divorces", 2019)

By dividing the divorce rate by the marriage rate, we find that there seem to be fewer divorces; however, there are also fewer marriages. In 2017, the rate was 42.0%; In 2000, this rate was 48.8%. Divorced couples constitute almost half of all marriages, and over the past 17 years, that has not changed much. Therefore, what kinds of tools can help couples maintain a healthy and robust relationship in the face of problems then turn into more profound issues.

In order to further understand the theory of the relationship in couples, I read much literature to provide directions for my subsequent research.

1.3 Literature Review

a. The role of relationship satisfaction

Research shows that both the benefits of marriage and the negative consequences of divorce are much higher than previously thought. A satisfying marriage affects mental health, physical health, and work productivity in many ways (Claxton & Perry-Jenkins, 2008). Therefore, relationship satisfaction has a massive impact on a health and happiness relationship and the bond between the individual. Consequently, improving relationship satisfaction is quite crucial for building up a healthy and robust relationship. Gottman and Silver (2015) pointed out that if a relationship is not going well, it can be saved; if a relationship is going well, it can be improved.

Factors that influence relationship satisfaction as follows:

Aron et al. (2000) describe that time spent together is indeed correlated with relationship quality and efficacy. Couples participating together in a novel and arousing activity will improve the efficacy in a couple's relationship. So time spent together, perhaps engaged in an activity, is needful for improving relationship satisfaction. Moreover, Gable & Reis (2010) mentioned that actual events sharing are essential. Clavel (2017) mentioned that Shared emotional experiences determine how much day-to-day negative emotions undermine the quality of social support. So daily sharing of decisive moments and less regular sharing of negative emotions or experiences can help improve relationship satisfaction.

Walsh et al. (2017) also claim that positive shared activities and events over time between partners help maintain a relationship efficacy.

Accordingly, to improve relationship satisfaction among couples, couples engaged in counseling have been encouraged to participate in more mutual events/activities. Also, Devoldre et al. (2010) acknowledge that partner support in couples' relationships includes the relationship's length and depth, personal pressure, support behavior, and, most important - Empathy. The individual differences in empathy capacity are still significant in predicting the impact of predictive relationship support.

As a consequence, partner support and empathy are indispensable for improving relationship satisfaction.

b. The role of professional counseling in the early stages of couples' relationships

Accordingly, Terry Gaspard, who is a Licensed Clinical Social Worker, and a college instructor, explained that therapists that specialize in couple's relationships (Marriage or Families) provide tools and strategies to help couples learn how to identify and resolve internal and external conflicts and improve the way they communicate. Moreover, couples counselors are mutual mediators and facilitators to help couples reach consensus and solve severe problems with support, inquiry strategies, and behaviors. She also pointed out that timing is a vital aspect of couples counseling.

Moreover, according to Gespard (2015, para. 1), "Marriage counseling is hard work, and there are no guarantees. However, you are wise to invest the time to find out if your marriage can be improved." Verhofstadt, et al., (2012) note that if the couples are distressed, they have lower levels of positive support-seeking and instrumental support-provision reaction, and also have higher levels of negative support-seeking and provision behavior. If couples with non-distressed, they have higher levels of positive support-seeking and emotional support-provision behavior and also have

lower levels of negative support-seeking and provision behavior. Over time, a vicious circle will be formed.

What is more, strategies for strengthening the bond and quality of marriages (e.g., marital counseling), are those that help couples cope with underlying problems (Marinescu, 2016). Research shows that couples wait an average of six years before seeking couples counseling. As a result, most couples who come to counseling are in so much pain, and their relationships are so challenging that therapy can be painful (Guitard, Ferland & Dutil, 2005). This means by identifying the harmful relationship patterns early and building consensus, the client can begin to change/correct them early; as a result, couples have shown to have a more harmonious and satisfying relationship.

Therefore, professional counseling is a necessity in the early stages of issues and conflicts amongst couples.

c. The role of relationship assessment (self-report) in professional counseling

The marital dyadic adjustment measure is used to measure different aspects of the marriage adjustment process. In particular, Hunt (1978) pointed out that the marital dyadic adjustment measure, as a projective device, can best be appreciated and

utilized to allow respondents to map their subjective values and evaluations of their

relationship to others by presenting open expression and expectations. A couples'

happiness degree is based on subjective evaluation of emotions. Therefore, this

method is a way of self-reporting. Verhofstadt et. Al (2007) mentioned that self-

reporting was used in both partners' support behavior and perceived support.

Relationship assessment (self-report) is a quick and useful way to help therapists build

up a couple's profile and understand their relationship status. Therefore, this measure

is usually used at the very beginning of psychological therapy by a couple's therapist.

Possible effects by using this measure:

Even though widely used Relationship Assessment (Self-Report) may create some

negative emotion, expressing negative emotions is necessary for a relationship. As Dr.

Gottman mentioned in "Assessing the role of emotion in marriage," positive emotions

are not an indicator of whether or not the partners are satisfied with the relationship.

Negative emotion is useful in analyzing the variable aspects of the relationship

(Gottman & Levenson, 1986).

As a consequence, to be noticed that the results of these relationship assessments may

not share with partners, that is why these kinds of evaluations are so-called Self-Report.

Therefore, when I design a tool to support professional counseling, I should consider

how to reduce the possible negative impact on the couple while maximizing the professionalism of the device. Which also be pointed out by Dr. Prochner, and Pro. McCaffrey in the feedback during the exploring tools.

Some widely used relationship assessment methods：

Researchers study it on a different theoretical basis, either focusing on marriage satisfaction, marriage adjustment, or overall marriage quality. They do not agree on the conceptual hypothesis, so they have different choices in operational definition and measurement indicators. In addition to the methods mentioned above, the MDAM(Marital Dyadic Adjustment Measure), The ECR(Experiences in Close Relationships Inventory), and the RAS (Relationship Assessment Scale) are used as the standard Relationship Assessment (self-report) principles or instructions.

Although a couple's profile requires a more detailed profile and a long-term relationship satisfaction index, for therapists, they usually only want to make a rough estimate of a person's relationship satisfaction, mainly to understand the couple's personal subjective opinion of relationship satisfaction(Hendrick, 1988).

Generally, ECR (Experiences in Close Relationships Inventory) is currently the most widely used measure of adult attachment style in laboratory-based attachment and

emotion research and is also used in psychotherapy research. It has excellent

psychometric characteristics and is consistent among patients, non-clinical, and trained

clinicians. As the figure 3 shows, the dimensions of avoidance and anxiety in the ECR

can also be combined into four linear combinations to measure four specific

attachment patterns: security (low anxiety, low avoidance), focus (high anxiety, low

avoidance), avoidance (low anxiety, high avoidance) and fear (high anxiety, high

avoidance) (Ackerman, 2017). Therefore, the most significant weight on results deriving

from multi-item dimensional measures was placed because they have demonstrated

the most excellent precision and validity (Brennan et al., 1998; Fraley & Waller, 1998).
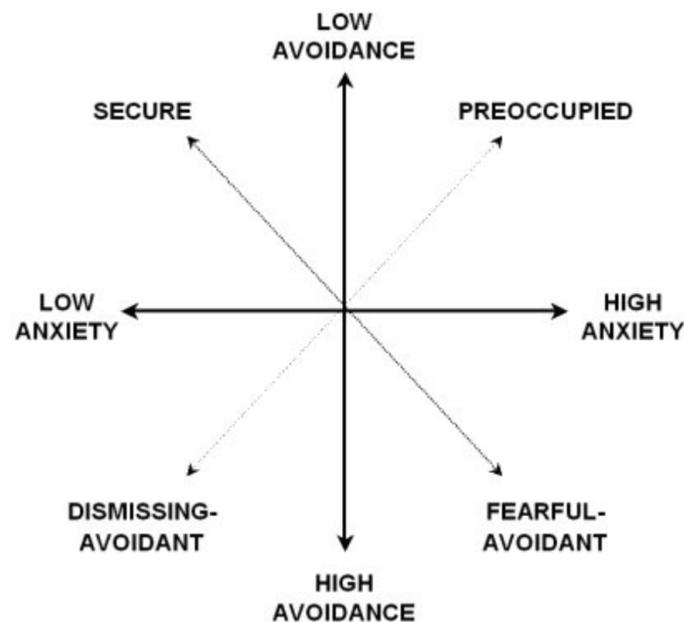
Figure 3 ECR (Brennan, Clark & Shaver, 1998)

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Furthermore, the RAS (Relationship Assessment Scale) is a universal measure of relationship satisfaction that touches on several relationship dimensions (e.g., love, problems, expectations). It is universal enough for married couples, cohabiting couples, dating partners, gay couples, and changes very little, even for friendships (Hendrick, 1988).

Therefore, I would like to incorporate the ECR (see Appendix – C) and the RAS (see Appendix - D) into the prototype to assess Relationship Assessment and Self-Reporting. It is precise and validates. Furthermore, to test the unique influence of attachment dimension on the interpersonal physiological response by controlling the relationship quality indicators to attempt analysis. The quality of the relationship is manipulated by examining the self-reported and observed emotional tone. The ECR and the RAS are used to test the self-reported. The emotional tone index is used to assess the frequency of respondents and usually experience 27 different emotions - which included 12 positives and 15 negative emotions with both emotional and less-intense feeling states represented - in their romantic relationship, using a level scale. As with the emotional tone index, the negative emotion score is subtracted from the positive emotion score to create an observed emotional tone index, possible values on the Emotional Tone Index range from 7 (effectively negative relationship) to 7

(effectively positive relationship), which are reflected in the face, voice, and body of each participant (Roisman, 2007).

Therefore, the emotional tone index can be used as the reference guide for designing further prototypes.

What needs to be explained is, even though the ECR and the RAS are widely used in the field of clinical psychology to test relationships, different therapists have different counseling and treatment options. These questionnaires can only be used as a reference if there are more doubts than one needs to get professional help from a suitable therapist. Also, these questionnaires can be changed and customized depending on different therapists' treatments.

e. The most effective principles to maintain a healthy and robust relationship

Dr. John Gottman, who is world-renowned for his work on marital stability and divorce prediction. He pointed out that research has confirmed that there is a clear pattern for building adequate and satisfying long-term marriage health. Each person, whether as an individual or in a group, is capable of compassion and learning (Gottman & Silver, 2015).

The book is called "the Seven Principles for Making Marriage Work – A Practical Guide from the Country's Foremost Relationship Expert" he wrote this in order to summarize his experience in couples' relationships through 40 years of continuous research and continuous improvement of clinical experiments. As figure 4 shows, these principles include: 1) Build Love Maps - Know one another's world; 2) Share Fondness and Admiration - Work to increase/recall/unearth positive emotions about each other; 3) Turn Towards Instead of Away - Give more social support/paying attention to user's partner. It allows the couple to stay connected, to build romance and connection beyond the cushioning of stresses and it happens daily starting with all the small and regular interactions; 4) Let Your Partner Influence You in the positive perspective - Sharing power and consider each other's perspective and feelings, expressing Empathy. To make decisions together and search out common ground; 5) Solve Your Solvable Problem - Learn how to do Solving and communication; 6) Overcoming Gridlock - Find out user's partners' dreams and work on them, taking an active part in them, find common ground and appreciate; 7)Create Shared Meaning - A togetherness between individuals that goes beyond the differences and arguments.

Why I believe these seven principles above will establish a healthy relationship:

Dr. John Gottman has conducted 40 years of breakthrough research with more than three thousand couples, which confirms that *"The Seven Principles For Making Marriage Work"* will work. Further, his research on marriage has been covered by many within the media. He claims that the seven principles could prevent tragedies in marriage, and couples will be on the way to improving their marriage forever by practicing these principles. (Gottman & Silver, 2015).
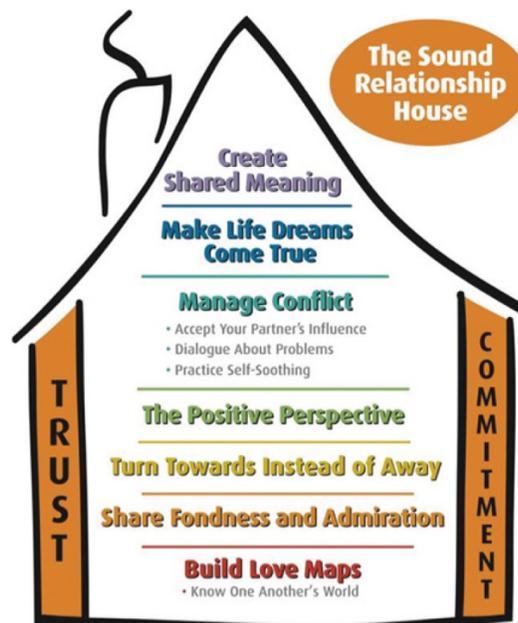
Figure 4 The Sound Relationship House (Gottman & Silver, 2015)

Garanzini et al. (2017) report the results of a non-controlled study of 106 gay and lesbian couples who underwent Gottman's Couple Therapy to change their relationship

satisfaction. After 11 sessions with gay and lesbian couples, the data showed significant increases in relationship satisfaction.

Moreover, Davoodvandi et al. (2018) confirm that researchers, therapists, and other authorities should pay special attention to Gottman's method because this method can be used as a useful therapy tool to improve a marital relationship, adjust and intimate relationship.

To sum up, research has shown that *"The Seven Principles for Making Marriage Work"* is an effective method to maintain a healthy and robust relationship for different kinds of couples. Therefore, I have elected to use the Seven Principles for Making Marriage Work an effective method as part of the prototype for couples to maintain a healthy and robust relationship.

f. How to engage people to maintain an environment of engagement and participation in existing relationship principles

The principles and techniques that help to maintain a healthy and stable relationship have been found in the literature review, and it has already been known that these principles can be improved through learning and practice. Other than using simple

questionnaires, the problem now is what else can be done to increase couples'

participation during the learning and practice process.

Claxton and Perry-Jenkins (2008) pointed out that more and more people put their

leisure time aside and think it is an extra activity. For many couples, leisure time is a

final priority because playing is seen as a reward but not a necessity. However, leisure

time is essential to a well-functioning marriage. The use of playing as a means of

treating adults to introduce and prescribe may be the beginning of the husband and

wife to recreate new relationship behavior and ultimately lead to growth and repair.

Through play, the level of development of each, the issues raised, and the tolerance for

treating intimate relationships are considered to be an additional focus on the

development and functional level of the couple (Gallo-Lopez & Schaefer, 2005).

Kaduson and Schaefer (2016) explained that gameplay is useful because it is non-

verbal and allows communication without language. Furthermore, the gameplay is a

non-threatening way of expressing emotions. Through game therapy, people develop,

practice, and hone new skills in a safe environment.

When couples are brought back to freedom and happiness, or when they create their

first game experience. In the case where both parties agree to each activity, couples

can choose to play games as a treatment tool to gain additional therapeutic benefits (Schaefer, 2003).

Play therapy also becomes therapeutic and can include: art therapy, dancing, storytelling, drama (role-playing), creative thinking, music. It should be noted here that on specific issues, a therapist may need to be responsible for controlling the rhythm of the game or the form of the conversation, thereby being sensitive to adult inhibition and preventing embarrassment or shame. Therapists use language to communicate and gain insight by encouraging individuals to take risks and use adult therapy developmental techniques. Game therapy can be a crucial point and can be used as a complementary model to help couples effectively achieve their goals.

Moreover, it offers an alternative way for engaged couples learning relationship skills in their spare time beyond playing candy crush or other games?

Over the past few years, researchers and designers have focused more on defining the environment if appropriate strategies are adopted to maintain students' motivation and participation than designing and developing more advanced technical solutions. Results show there is much experimental evidence that game-based learning and gamification may be a promising solution (Pesare, Roselli, Corriero & Rossano, 2016).

Gamification of game mechanics applied to non-game activities and processes is a robust and powerful strategy for influencing and motivating different groups. This concept has the potential to address a variety of barriers beyond the traditional business environment in areas such as health and wellness, education and training, and public policy and government (Bunchball, 2012).

Generally speaking, for many games with the significance of learning skills, the purpose is to learn new skills, so the designer incorporates relevant knowledge into the form of games, allowing participants to learn useful skills while having fun unknowingly. The gamification of learning approach can increase the enthusiasm of learners to participate. Most people choose a gamification learning way if they need to choose between traditional forms of learning skills vs. the gamification of learning skills.

Therefore, gamification is used to maintain an environment of engagement and participation in existing relationship principles, and it is vital in order for couples to have a higher motivation to participate in learning emotional skills.

g. The application of gamification

Bunchball (2012) explained that game mechanics are the necessary actions, processes, and control mechanisms that are used to "gamify" an activity. Moreover, game

mechanics include points, levels, challenges, virtual goods and spaces, leaderboards, and gifts, and charity. Pesare et al. (2016) pointed out that the game-based approach makes these relationship principles easier to implement and learn by focusing on the participants, using fun, engaging, and useful ways. In the application of gamification, motivation and participation need to continue through appropriate strategies, such as clear goals, assessments and rewards for achievement, providing regular feedback, active participation, and using educational methods for learners.

1.4 Statement of the Problem

A large percentage of couples are ill-equipped to deal with conflicts that stem from interpersonal relationships because they fail to seek assistance at the formative stage of conflict resulting in a high level of separation and devoice. Moreover, relationship challenges such as work-life balance, the small number of relationship counselors, and the time and expense required to address needs all contribute to the problem.

To sum up, the literature review helps to understand the importance of relationship satisfaction; how to improve couples' satisfaction; professional counseling and therapy is required at what stage of relationship development; why and how to conduct relationship assessment (self-report); the most useful relationship principles and applications. All of the contents mentioned are committed to maintaining a healthy

and robust relationship between couples. Therefore, this thesis aims to explore and design tools to manage healthy and robust relationships. These include helping users determine the stage of their relationship, helping to find professional couples counseling services, and using gamification design to help couples learn skills to improve their relationship satisfaction and prevent unhealthy relationships.

1.5 Limitations

It is important to acknowledge that couples theory and the design of any intervention to address interpersonal relationships is best explored over an extended period to assess impact honestly. Further, given the nature of such research, findings should be based on a significant data set, taking into consideration multiple variables.

This paper will explain the gap in knowledge, the significance, and related exploration of the tools. However, this article will also have certain limitations. First of all, the relevant materials and resources I've accessed are basically from the United States. Therefore, this project design is also based on the current situation in the United States to carry out, such as a background investigation, market research, user feedback. Secondly, because this is a tool of imagination and exploration, I might try something different. For example, I may analyze the market from the form of existing tools, such as a game, or it may be a simple questionnaire card, it may be some study CARDS or

books. I might fail many times, or I might succeed once. No matter how difficult it will be, I shall keep trying to find the way that I think is most suitable.

Methodology

In this section, by using content analysis, interviews with experts, focus groups, and user testing, as the methods for the information collecting to develop design iterations.

The purpose of interviewing experts is to determine the steps for seeking professional help. The purpose of using the content analysis method is to compare existing products on the market about couples' relationships. By using the focus group method and talking to experts, I could then collect useful information and feedback for developing different design iterations. User testing would help to identify additional insights for updating various design details.

2.1 Interview with professionals

Before conducting content analysis among existing designs on the market, I needed to confirm how these comparisons are classified. In order to acquire the knowledge of professional couples counseling head-on and identify what contents need to be analyzed, I interviewed three professionals.

The form of the first visit was carried out on the social platform. Since the three experts are all individuals that I know, I set up a four-way voice chat on my mobile phone. As the moderator, I asked each of the experts questions at the same time and they took turns and supplemented the answers. This informal four-way voice interview lasted about an hour and a half. I asked them if they had any experience with couples counseling, what kind of therapy they usually encounter with clients, what types of clients they might generally encounter, and most importantly, I determined what professional couples counseling procedures usually include. The goal was to determine what existing products needed to be compared.

By consulting Dr. Hery Zhane Li, who is a Counseling Psychologist and LMHC of NYC, and other two intern therapists in Syracuse, Yusai and Amanda, the professional couples counseling process has been indicated in three main steps as follows:
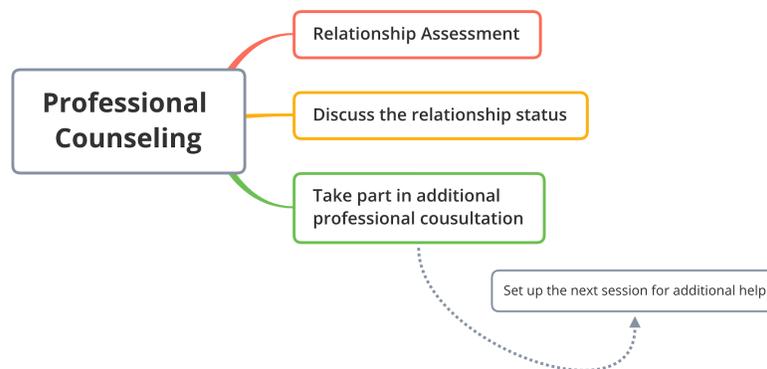
Figure 5 the process of professional counseling

With the expert's introduction and precise classification, I laid a foundation for further content analysis.

2.2 Content Analysis

Hypothesis:

Having identified the necessary steps of professional couples counseling, **I assume there are few tools on the market that combine professional couples counseling with a relationship coach gamification approach to learning.** With this in mind, I adopted content analysis, which is a class of research methods at the intersection of qualitative and quantitative traditions (Neuendorf, 2016). First of all, this method can obtain the required content without taking the form of a personal interview. Therefore, a large amount of relevant information can be obtained without being interfered with by the measurement action itself. Secondly, content analysis is theoretically inexpensive and affordable for students like me.

To verify my hypothesis, I tried to find all the tools on the market that were similar or related to my thesis. **These therapeutic tools can be formally divided into two categories: physical tools (games) and digital tools (apps).** Based on my observations, the previous literature review and the interviews with experts, I categorized the features which I expected to be provided in these tools as follows:

1)Relationship assessment:

Is it possible for users to determine the stage of their relationship by using this tool?

2)Sessions and Exercises to help couples learn skills to improve relationship satisfaction:

a. how well do you know your partner—how well did the users knowing their partners;

b. Increase positive emotions—Does this tool offers users tasks that will make themselves or their partner

happier;

c. Daily moments -- Perform couples' daily routines, such as morning kiss;

d. Expressing Empathy – Does this tool offer a way to show users' empathy to their partners?

e. Communication-- Good communication is the foundation of increasing affection; Will this tool will help

users facilitate communication with their partner;

f. Appreciation—Will this prompt tool users to thank their partners from time to time?

g. Create shared meaning-- Will this tool will help to create couples' own unique culture, such as going

to a first date restaurant every Friday night?

3) Professional Counseling:

a. Relationship coaching—Will this tool offer any relationship advice or tips in general?

b. Professional counseling—Will this tool offer any professional counseling services?

4) Level of game mechanics:

Does this tool have game-like playability?

5) Play with a partner:

If users must play with partners.

I selected **21 apps from the Apple App Store**, all of which are about couples'

relationships. For these other 20 games to be analyzed here, all of which are about

improving couples relationships, some of them are psychotherapeutic tools that they might use, which were info by my several therapists' friends; others are most popular and widely used on the market that can be found at Amazon.com and eBay.com. The current market of these tools is analyzed as below:

I gave scores to these features. On the scale of 0 -10, where a score of 0 means there is no such feature, and a score of 10 represents this feature is well-designed. The higher the score, the more relevant the tool and the content, and vice versa.

Ratings of those apps and games are based on the information collected online, Such as customers' online reviews, user experiences, and product descriptions at Apple App Store, Amazon.com, and eBay.com. Moreover, when the score of the product-related content item is 0, it means that the product does not support or provide knowledge or skills related to the content item. When the product-related content items are in the range of 1-5 scores, it means that the product provides some relevant knowledge or skills in the product description or instructions. When the product-related content is in the range of 6-10 scores, it means that the product has indicated relevant knowledge or skills in the product description or instructions for use, and the specific score will be assessed according to the feedback degree of users.

The content analysis of 21 apps and 20 games as follows:

Tools	The stage of relationship		Sessions and Exercises to help couples learn skills to improve relationship satisfaction						Professional Counseling		Playability	Participants
Apps	Relationship assessment (self-report)	how well do you know your partner	Increase Positive Emotions	Social Support (Daily Moments)	Expressing Empathy	Communication	Appreciation	Create Shared Meaning	Relationship Advice	Professional Counseling	Level of game mechanics	Play With Partner
Card Decks	0	10	10	10	10	7	10	7	0	0	6	5
My Love	0	0	0	5	0	0	0	0	5	0	1	0
Love n' Graph	5	3	5	0	0	0	0	0	0	0	3	2
Daily True love Calculator	0	5	5	5	0	5	0	10	0	0	5	0
Duelle	6	5	5	0	0	0	0	0	0	0	7	10
Between	0	5	7	0	0	8	5	0	0	0	5	10
Couple Game	0	7	8	0	0	8	0	7	5	0	6	10
Quizzes.net	5	0	0	0	0	0	0	0	0	0	5	10
Lasting	8	10	10	8	6	7	10	7	10	0	9	5
Talkspace	10	0	0	0	0	0	0	0	0	10	1	8
Happy Couple	0	10	0	0	0	8	0	6	0	0	8	8
Honi	0	10	7	7	0	7	0	8	8	0	8	10
Couple Love Test	6	3	8	3	0	0	0	0	5	0	6	0
LOVE LAB	6	5	7	0	0	0	0	0	7	0	6	0
Love Challenge	0	5	5	5	0	8	0	0	0	0	5	0
Love Quotes	0	0	0	0	0	0	0	0	5	0	2	0
Happy Love Life	0	0	0	0	0	4	0	3	5	0	3	0
iLove	5	5	7	3	0	0	0	0	7	0	5	2
Love Nudge	0	6	8	8	3	6	0	0	6	0	5	10
All Mending The Marriage	8	0	10	8	6	7	10	8	8	0	1	0
TherapyChat	10	0	0	0	0	0	0	0	0	10	2	0
Games	Relationship assessment (self-report)	how well do you know your partner	Increase Positive Emotions	Social Support (Daily Moments)	Expressing Empathy	Communication	Appreciation	Create Shared Meaning	Relationship Advice	Professional Counseling	Level of game mechanics	Play With Partner
Lolly Vibes	0	0	5	5	0	8	0	8	0	0	5	10
Our Moments Couples	0	0	7	5	5	7	0	8	0	0	6	10
Spouse-Ology	0	8	4	3	0	6	0	7	0	0	7	10
Vertellis Relationship Edition	0	6	5	5	0	7	0	8	0	0	5	10
The discovery Game	0	4	5	4	0	7	0	8	0	0	6	10
Bedroom Battle	0	4	6	6	0	7	4	5	0	0	7	10
Uncommon Questions	0	5	5	4	5	7	5	5	0	0	5	10
Routine Breaker	0	0	5	5	0	7	0	4	0	0	5	10
Couple's Kindle Cards	0	6	5	5	4	7	6	6	7	0	7	10
The Art of Couples' Conversation	0	4	4	4	0	7	0	5	0	0	5	10
Ungame	0	5	4	4	4	8	6	6	5	0	6	5
Cards For Couples 30 Days	0	4	4	4	4	8	4	7	4	0	6	10
Latztalk	0	5	5	6	4	8	5	0	4	0	6	10
Face to Face - Transition	0	5	3	3	3	5	5	0	5	0	5	5
GROK Relationship Games	0	6	6	5	6	8	7	5	5	0	6	5
Fog of Love	0	0	7	7	0	8	8	8	0	0	8	10
Coupons For Couples	0	0	7	7	0	5	2	5	0	0	2	5
88 Great Conversation Starters	0	5	5	5	4	7	5	4	0	0	6	10
Couples Retreat	0	0	8	8	0	8	0	8	0	0	9	10
Maritall Bliss	0	0	5	5	0	4	5	0	0	0	4	5

Figure 6 Content analysis (see Appendix F)

According to the above content analysis, there is generally a lack of "Relationship Assessment" function, physical tools, in particular, showed as follows:
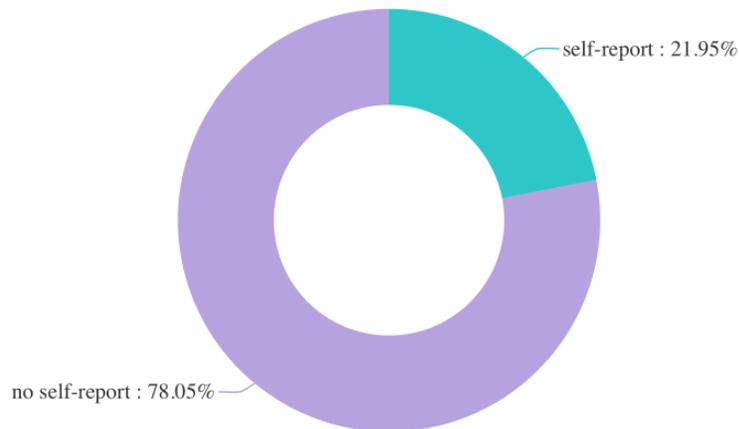

Figure 7 Percentage of tools of self-report vs. no self-report

The reason may be that physical tools are activities that require both partners to participate simultaneously. The analysis of these existing tools is all non-professional emotional therapy products in the self-help category. If users are in the "self-report" part, it is easy for couples to have emotional conflicts in the absence of third-party supervision.

Moreover, among the existing apps related to couples' relationships, only two apps provide professional counseling services, equivalent to online psychologists, which have barely any other function, shown as follows:
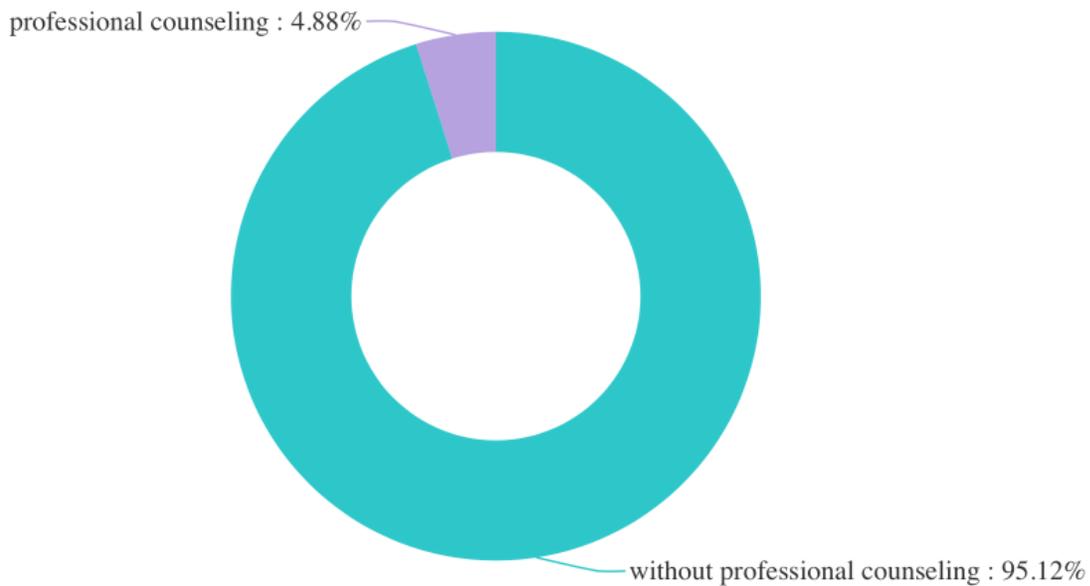
Figure 8 Percentage of tools with or without the function of professional counseling

Almost all of these products are focusing on improving relationship satisfaction and efficacy. And they do not have the full functions of simultaneously providing professional counseling services and improving relationships. Also, when I was trying every product by myself, I did not find any products that are specifically gamified to improve the skills of couples' relationships. They are not entirely attracted to users to play.

Therefore, my previous hypothesis that there are few tools on the market that combine professional couples counseling and relationship skills' learning system with a gamification approach has been confirmed.

In general, by the current analyzed market, the design gap becomes obvious, in which there are barely any existing tools that combine both professional counseling and relationship coaching in a gamification way for couples.

2.3 Interviews with experts

After summarizing the content analysis, I looked for some experts for interviews. Dr. Henry, Zhane Li in New York City, and the other two intern therapists Yusai and Amanda in Syracuse agreed to be interviewed again.

Dr. Henry, Zhane Li graduated from Columbia University with a Ph.D. in psychology and has a rich experience as a psychologist in marriage and family relationship fields. After I explained my general idea to him about how to explore tools that can support self-reporting and professional counseling, meanwhile, improve relationship satisfaction. He expressed that couples' issues may start with underlying/unresolved anger, which will make couples aware and think about divorce. He said that during face to face couples therapy, he usually provided different games to break the ice amongst all individuals facing deeper issues. We talked a little bit about how to go about exploring tools, and we thought we could start with a game-based probe to see if we could address the gap that I discovered.

Yusai and Amanda graduated from Syracuse University with a master's in psychology. They mentioned that when they were doing therapy for a couple, it was because of their lack of work experience. They prefer to advise in a step-by-step manner, so they use paper-based materials for relationship testing and recording. They thought my idea was unique and novel and encouraged me to move forward.

Also, Gallo-Lopez and Schaefer (2005) mentioned that for adults, play is often an integral aspect of courting behavior and contributes to the building and maintaining of intimacy. "I think using a game-based approach to collect information would be fun. And, it is a logical process as a start." Dr. Brittany Jakubiak, who is an assistant professor at the Department of Psychology at Syracuse University, also pointed out.

Based on the feedback I received from experts, the viability of this game has emerged. More design iterations and user testing are necessary, and then see if it ends up solving the problem as we expected.

2.4 Research Probes

Based on the previous research and feedback, I decided to create a research probe to learn more about this thesis topic.

The effort began as a physical artifact that was intended to make it easier and faster for users to embrace the idea of gamified consulting. As we know, face to face games such as Battleship have been globally successful so aspects of this game were incorporated.

Battleship is a board game played by two players, and it is simple and suitable for inexperienced players. Moreover, the rule set can be freely edited to enhance the variety and fun of the game (Silva & Vinhas, 2007). At the same time, to redesign a game that has been known and accepted by everyone, it's suitable for users to accept the play rules.

One thing to note is that I have loosely based the battleship game by simplifying and redefining the play rules on the relationship assessment feature of this probe. Therefore, this is a game-based device that gets couples to engage in a shared activity. My desire is to obtain a response to my research questions based on game creation and game-play concepts.

Creating the research probe

For the research probe, I focused on gamifying the relationship assessment session of professional counseling to break-the-ice between a couple in a fun way. The primary

function of this probe was to help users gain a better understanding of their current relationship status by playing the game.

Therefore, it should help users record their relationship status, give users a direct visualization of their current relationship, and communicate with each other after analysis of their answers. It should provide the functionality to users to gain a better understanding of couples' relationships, which include their views on marriage, values, and so on, as well as provide useful and accurate proofs for further counseling.

To achieve the effect of the battleship, I used plexiglass with a transparent texture and a relatively hard texture as the material of the physical game. For the relationship assessment session, users put the squares in the box from top to bottom and from left to right according to users' answers. Before they started playing the game, an opaque problem number board was placed between them. The board serves two functions: first, they put the answers to each question in sequence according to the number of questions on the board so that they would not make mistakes; Second, the board keeps them from interfering with each other's answers, so that they answer the test questions independently.

Therefore, when they finish the game, they can remove the blocking board to then

observe how many answers matched those of their partner. Thus, creating an

opportunity for further discussion and communication. At the same time, this approach
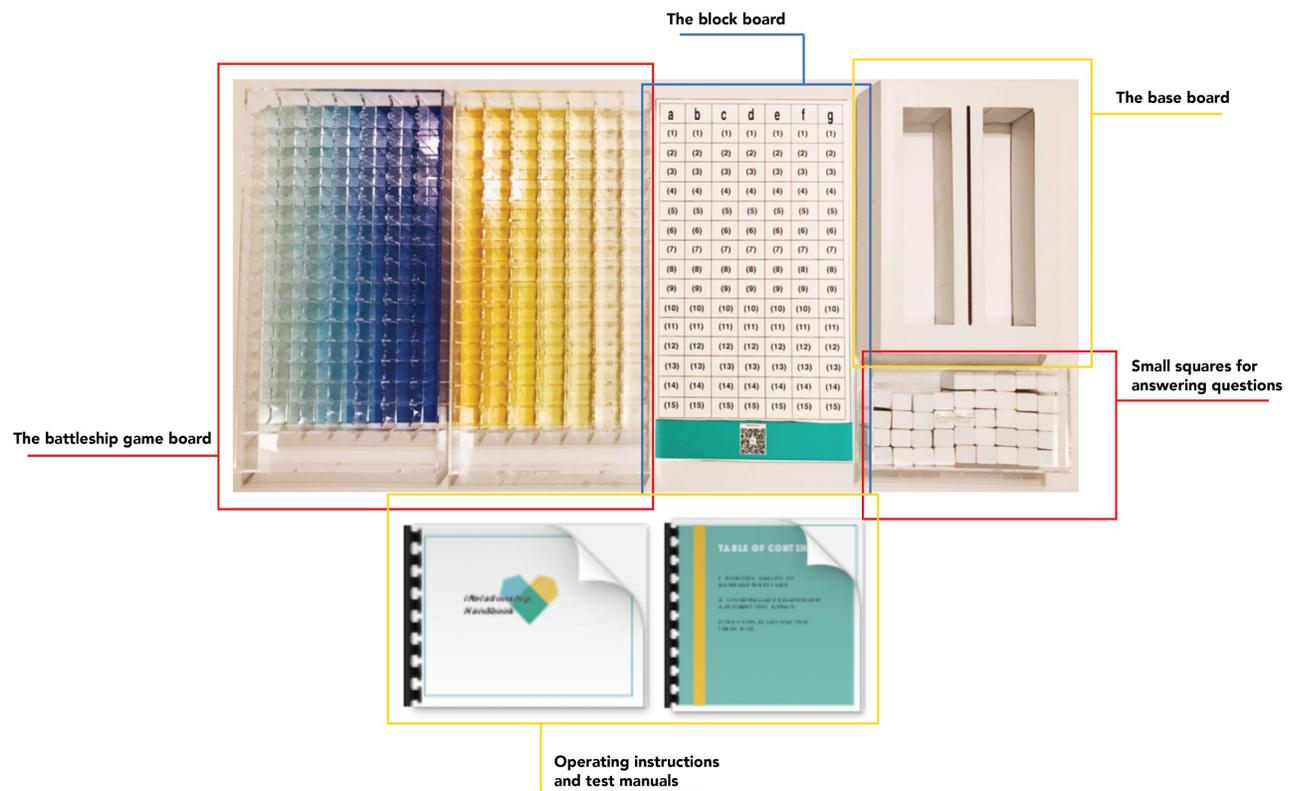
served to make data visualization feasible.

Figure 9 The research probe

User testing

The primary purpose of this user testing was to test how well couples know their

relationship status. Participants were selected using convenience sampling.

Convenience sampling is a non-probability sampling method that is used by a group of

people who are easily accessible or in contact. This sampling method does not require

the generation of simple random sampling because the only criterion is whether the

participants agree to participate (Saunders, Lewis & Thornhill, 2012). For this time, the

convenience sample was three different couples. Each of the three couples had at least

one partner that was a student at Syracuse University. They are between the ages of 23

and 36. Those couples included a couple of Chinese students, a couple that included

an international student and an American; The third couple was both American. When

selecting sampling objects, although it is convenient sampling, I also deliberately

controlled the selection of cultural backgrounds. The setting of questions for this game

is adapted from an Adjustment Test (LWRAT) (see Appendix - B). The LWRAT is the

gold-standard of public domain couples' satisfaction measures. Also, the scale focuses

on issues such as involvement in joint activities, demonstrations of affection, frequency

of martial complaints, level of loneliness and well-being, and partner agreement on

significant issues(Hunt,1978). I used this test not to collect data but rather to improve

my research methods and come up with the design outcomes.

Summary of user's feedback

My usability feedback from the couples was both positive and negative, however constructive suggestions from the couple's perspective have brought new insights into the project.

Users believed that this is a great catalyst for users to ponder questions they would not usually think of. However, after seeing the test results, it became clear that playing the game may cause unnecessary disputes. When couples react, they are prone to negative emotions if the test results do not match their expectations.

Based on the feedback, couples believed that this activity could help them think more deeply about their relationship. However, a recommendation was that it's necessary to have a professional third-party relationship expert present when revealing each other's answers.

Therefore, this enabled self-reporting needs to be done by undertaking this activity in a third-party monitoring environment. Since this probe should be used in professional couples therapy, it would be advisable to conduct additional research with a larger set of couples.

User testing

The primary purpose of this user testing was to test how well couples know their

relationship status under a professional third-party monitoring environment. For this

user testing, I worked with Diane M. Malikow, is an LCSW, an LMHC and an over-10-

years experienced life coach, and Dr. Malikow, the husband of Diane M. Malikow, is an

LCSW, an LMHC and a psychologist in Syracuse. They both agreed to conduct a

usability test for the research probe. I used this test not to collect data but to assess the

feasibility of the research probe.

Mrs. Malikow invited a refugee couple to play the game. Mrs. Malikow has two leading

roles in the game. The first is to explain words that are not easy to understand; The

second is to help pull out the barrier board when revealing the answer. Notably,

instead of analyzing the visualized data immediately, she would ask the couple if they

had anything to say to each other, primarily as listeners. The result was positive, based

on the observation of Mrs. Malikow. For this couple, they have a lot to talk about their

marriage. Therefore, this game-based probe serves as a good icebreaker.

Dr. Malikow invited a combative couple to play the game. Dr. Malikow did not say

anything but observe. As he pulled out the barrier board, he asked a series of

questions to avoid unnecessary conflict and to get the couple to talk slowly and deeply

about their marital problems. For this particular couple, it was understood at the outset that their results would not be positive, and the results say a great deal about their marriage.

Summary of user's feedback

The purpose of this user test was to test the feasibility of the prototype from a professional perspective.

Both Mr. and Mrs. Malikow were particularly positive about the project. With the participation of a third party, the test worked well. Further, they all thought it was an exciting way to do ancillary relationship testing. However, they did come up with a few points from a psychotherapist's point of view. First of all, while the game is stimulating, if it were to be translated into a final design it is not irreplaceable. Secondly, it can only be used as an adjuvant therapy tool within a therapy clinic for the relationship assessment.

Moreover, if the design outcomes based on the research were to become a physical game, it could be used as part of professional relationship counseling. The goal of the design outcomes should be to build up a learning system to maintain healthy and

robust relationships and also support professional couples counseling. This iteration did not quite meet the goal.

I could explore other physical game-like prototypes at this stage, however, each of these appears to lead to significant pain points for the couple.

As mentioned at the beginning of this paper, early-stage therapy would remain necessary for couples' relationships. However, couples offer other excuses such as don't have time, they feel that they can solve such issues by themselves, or sadly, they don't want to attempt to solve their problems at all.

Therefore, to reference back to the design gap - there are barely any existing tools that combine professional counseling and relationship coaching gamification. Based on user feedback, this exercise did help to build a deeper relationship, however additional features would need to be incorporated into the final design solution.

2.5 Pilot Study

Based on previous research and feedback, since the research probe was not entirely satisfactory to address the requirements of the design gap, I decided to design a prototype as a design proposal for the pilot study to learn more about this gap. This prototype would offer various features and benefits beyond what was explored with

the research probe. As part of the introduction to this paper, I mentioned that people would rather talk to strangers about their relationship status. Online counseling seems to be a way for users to express themselves without making eye contact with a relationship counselor. This prototype would provide a feature that users could counsel with professionals online. Beyond chatting directly with professionals, users could identify their relationship status by testing on this prototype. Furthermore, when users test their relationships, playing games by using this prototype, they will get relationship advances, tips, and award points. Those tips and award points could be an incentive for users to seek professional help. I will explain more possible benefits during the pilot study.

I adopted Adobe XD to develop a set of interfaces for a mobile application which meet the requests of online professional help and a relationship learning system that can be constantly updated. Adobe XD allows all the pages of this prototype to connect interactively. Therefore, when conducting user testing, interactive pages are more intuitive and realistic for participants.

Figure 10 Landing pages from the prototype

Design

My focus was to build the general framework of the prototype so that users would

grasp the essential functions. Based on previous research, at the time, there was a

design opportunity to design a prototype that would combine professional couples

counseling with an approach to learning relationship skills. The "Talkspace "app

inspired the first prototyping design, and also the book of Dr. Gottman's *"The Seven*

Principles for Making Marriage Work." This prototype design mainly combines

personal assessment and improving knowledge and skills about couples' relationships.

Therefore, this design proposal should provide users with a test of their emotional

relationships, helping users to improve and help find a suitable psychological counselor.

These features will provide better support for users' relationship satisfaction.

This prototyping included two original functions: professional relationship support and

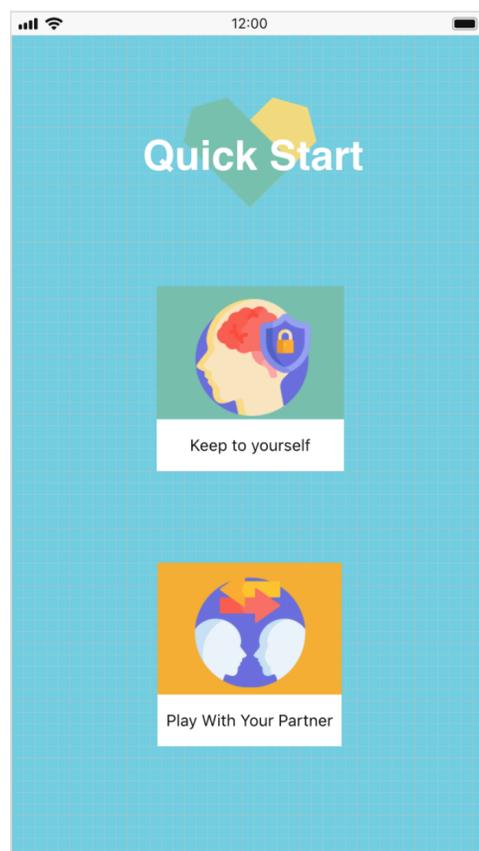a learning system of relationship skills, shown in Figure 11.

Figure 11 Homepage from the first prototype

The professional support function was called "keep to yourself" for this first generation

prototype allowing users to test their attitudes to a relationship, their relationship

quality, and an active link to their therapist. When users finish self-testing, they can also

choose to share these records with a personal therapist so that the therapist can

receive information about the user's relationship status immediately and offer

corresponding feedback.

In two simple steps, users can finish a relationship report. For people in an uncertain

relationship status, they are able to report their status to their relationship counselor
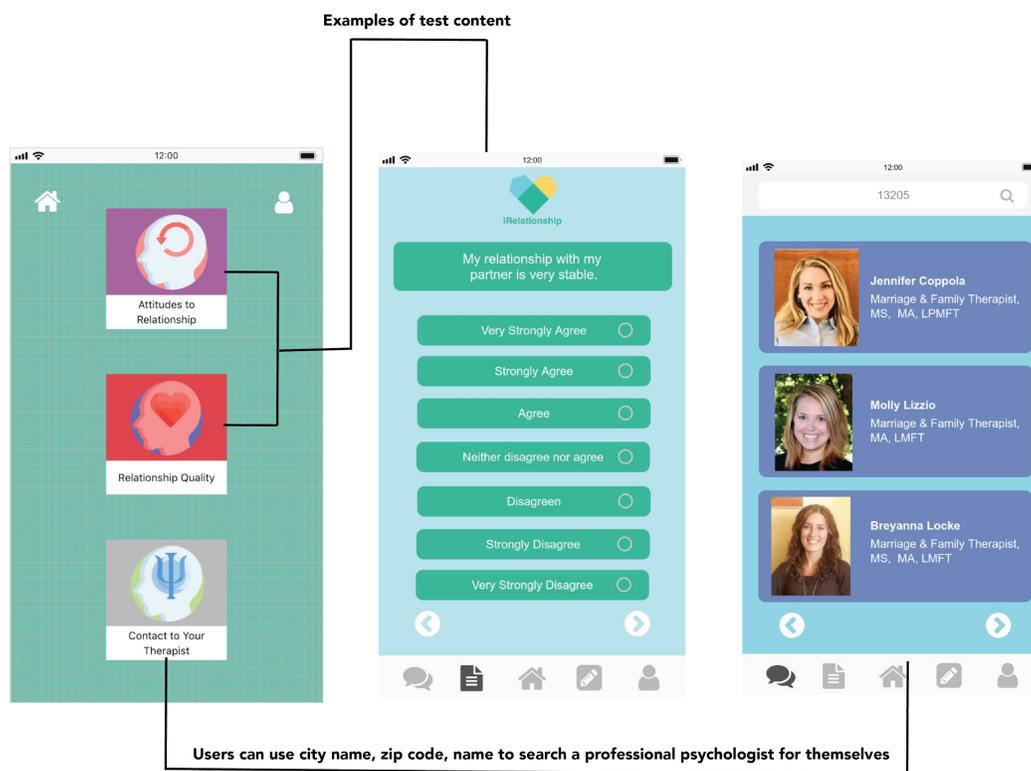
quickly, shown in Figure 12.

Figure 12 Professional support page

The second function is the learning system of relationship improvement skills. Based on my previous research, this prototype provides eight different sections to improve a relationship: Enhance your love maps; Nurture Your fondness and admiration; Turn toward each other instead of away; Let your partner influence you; Solve your solvable problems; Overcome gridlock; Create shared meaning; The magic six hours.

Based on the previous literature review and content analysis, this function aims at improving relationship satisfaction from the perspective of how well you know your partner, how do you increase positive emotions, and what level of daily social support should there be? It also supports how to express empathy, communication, appreciation, shared meaning, and what the relationship advice should be.

This function was designed based on Dr. Gottman's "*The Seven Principles for Making Marriage Work*" method and other research. For this function, users can play alone, or they can pair their partner to play together. This function could help strengthen the relationship between couples. If users actively use this function, their relationship will be more stable and, over time, should gradually improve, shown in Figure 13.
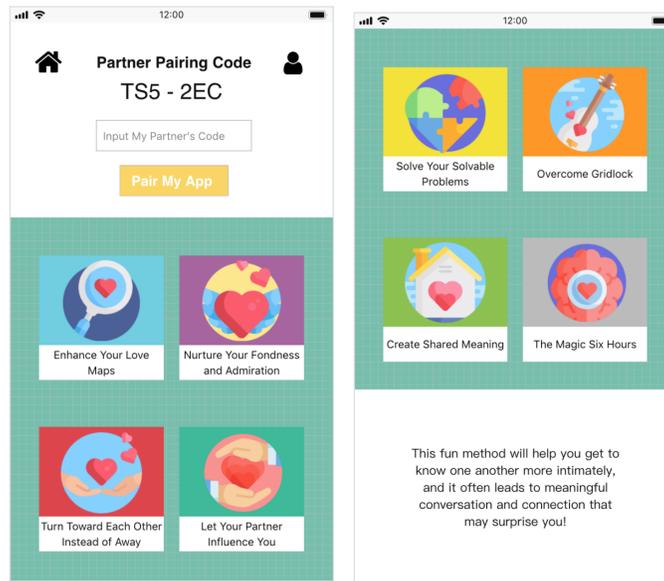
Figure 13 The learning system

User Testing

The primary purpose of this user testing would be to inform the design of this prototype and the logic of the general framework. Participants were also selected by convenience sampling. For the pilot study, participants included three professors with a wealth of design experiences, two professors with psychological backgrounds, and my seven colleagues studying UI design at Syracuse University. I conducted user testing with them one by one. Also, I used this test not to collect data but to learn how to improve the design of the prototype.

Due to quick prototyping for the general idea of the app design, I did not complete modeling the functionality of all features. When discussing this prototype with the

participants, I explained this prototype was a semi-functional and only served to model several of the critical functions.

The participants were given three different tasks. The ideal situation was to complete all three tasks successfully without the help of others. I found there were some struggles based on how much time the participants required to finish each task and the number of errors made.

The first task was to finish one test about relationship assessment; the second one was to find "Jennifer Coppoia" at Zip Code 13205 as a therapist, and the last one was to find the "Create share means" function within the "Play with your partner" section.

Summary of the feedback

By collecting feedback from the user testing, participants were positive about the feasibility test. Moreover, participants gave several constructive suggestions about the overall design, which led to a more logical approach to this app. I have summarized some of their comments, as shown below:

The two function buttons on the main page may have ambiguous meanings: Participants pointed out that it was challenging to complete the first two tasks because of the ambiguous meanings of the two function buttons on the main page.

The overall homepage and secondary page structure are not very logical:

The first two sections - "Attitudes to Relationship" and "Relationship Quality" at the second level page both are self-testing functions. However, the last section - "Contact to Your Therapist," logically, should be at the same level as the main functions on the home page.

Add the new section - "Frequently Asked Question":

If someone is frequently asked questions that may be encountered in professional psychotherapy, can they appear as a prompt? Or, could they be directed to search for additional reading on this topic?

Add the new section - "The Newlywed Game":

In order to meet the needs of couples at different stages, adding "the newlywed game" as a new section should be a good start.

Add the function - "My Report":

After the relationship status tests are completed, the results can be automatically generated using an extensive database to generate emotion analysis reports. Moreover, if the users choose to send the report to their therapist, their therapist would have immediate access to view users' relationship status.

In general, the design proposal is an app design that has several advantages. First of all, there are too many skills and knowledge about improving relationships that need to be continually updated; therefore, it would be advantageous to make them available in digital form. Secondly, not every couple looks to seek face-to-face professional help in the first place when relationship problems arise. Therefore, if they can seek counseling for relationship issues online with experts, this should be more comfortable and easier to accept. Moreover, for those people who do not look for professional help, they can still learn relationship skills by using this app now and then. Therefore, the app meets the requirements of a relationship coaching system, which also combines a professional counseling service.

2.6 ORIP Verification

For valid user testing and feedback, I got an approval letter from the Institute of Research Integrity. This thesis project focuses on how to improve relationship satisfaction and maintain a healthy and robust relationship between newlyweds, unmarried, and married couples. This project is essential to work because the divorce rate is increasing very quickly. I plan to talk to couples to find out if they believe that my design is a useful product for increasing their relationship satisfaction. Therefore, I

believe that I do not need IRB approval for my project. ("ORIP verification," 2019) (see

Appendix - A).

Syracuse University Office of Research Integrity and Pr
otections <orip@syr.edu>
Wed 4/10/2019 6:37 AM
Ran Zhang

Hi. I was able to hear back from IRB Office Director Tracy Cromp and she provided the following feedback below:

· **From the questions included there are no questions about the individual, they all focus on the product. If there will be no testing questions about individuals and their relationships, this project does not require IRB review. If anything were to change in the future, the IRB Office should be contacted.**

Thanks again,
Christopher

Office of Research Integrity and Protections
Syracuse University

T 315.443.3013
orip@syr.edu
214 Lyman Hall
http://researchintegrity.syr.edu/
==========================

Figure 14 ORIP Verification

2.7 Design Iterations

The second generation of prototypes

The pilot study was successful based on the feedback from user testing. Due to the

previous feedback, I built a logical design flow chart and designed the second
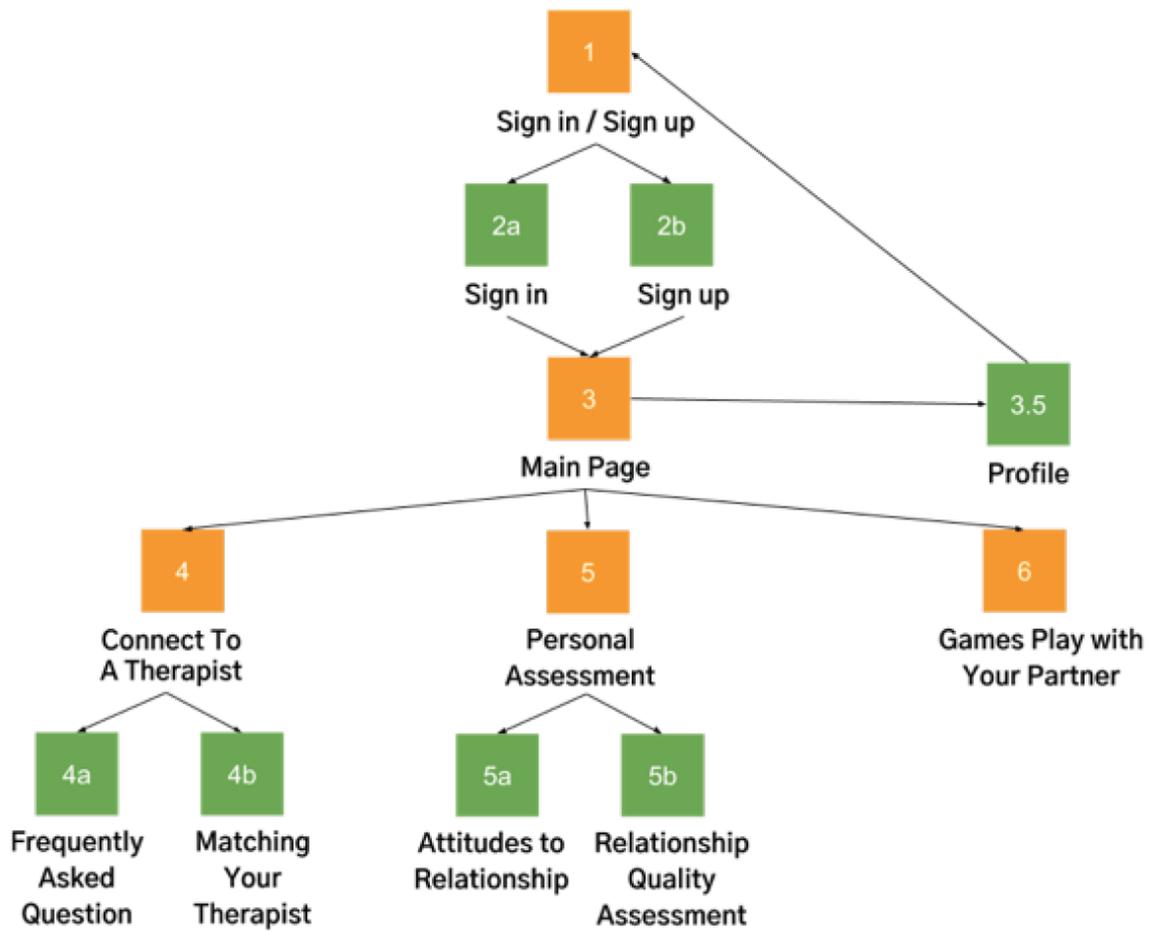
generation of prototypes, shown in Figure 15.

Figure 15 the UI flow for the new generation of prototypes

Most of the knowledge and skills raised in the app come from Dr. Gottman's theory of couples' emotional relationship. Based on the literature review, Dr. Gottman claims that as long as a user persists in learning and practicing his theory, the relationship between couples will improve.

It takes a long period to prove whether Dr. Gottman's theory works, and the issues in the app can be updated at any time. So, instead of focusing on whether the relationship crises between couples can be improved or not, I focused more on the design.

In Figure 16, the first row shows the prototype of the pilot study, and the second row is the second prototype that has been modified.

Prototype 1.0

Prototype 2.0

The main page

The secondary menu

Quick Start

Change the style of all the icons.

Use precise words for the function of the description.

Move the "contact to your therapist" to the main page.

Add the new section - "Frequently Asked Question."

Add the new section - "The Newlywed Game."

If some frequently asked questions that may be encountered in professional psychotherapy for users can be added to search for reading and learning would be better.

For buttons that have much text to read, set them to text and Then add the "Read More" button.

Add the function - "My Report":

The results can be automatically generated using an extensive database to generate emotion analysis reports.
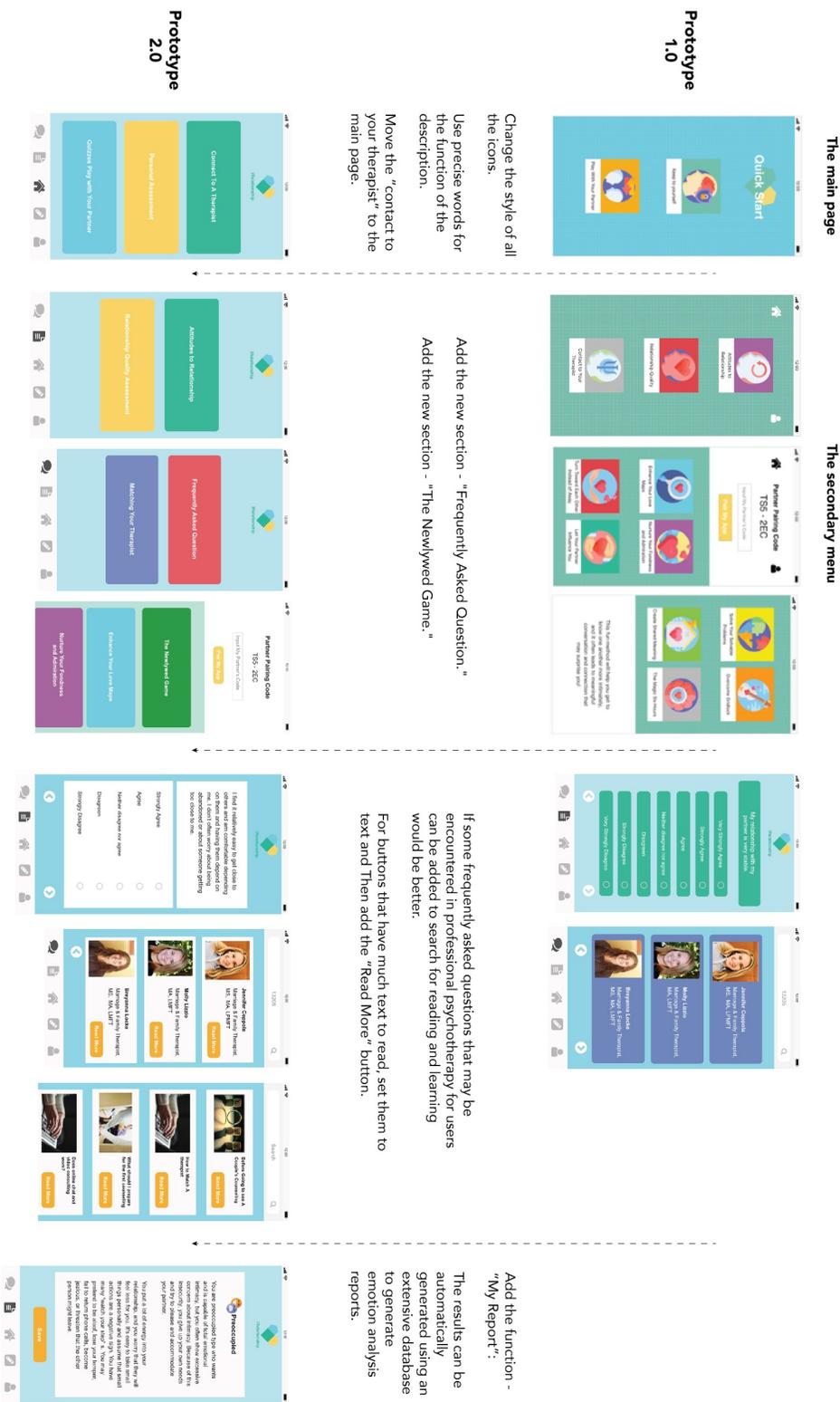
Figure 16 the difference between the first generation and the second generation of prototypes

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User testing

The purpose of this user test is to understand the acceptance of my app design by various stakeholders. I wanted to know if users like this app or not, and how many people are willing to download the app to manage their relationship. Alternatively, are they willing to use this app to find a therapist that suits them?

After updating the prototyping, I was ready to conduct more user testing. For this time, user testing is essentially a form of convenient sampling for recruitment. I was invited by Dr. Brittany Jakubiak to explain my thesis design to her students. The reason for inviting me is that Dr. Brittany Jakubiak would like to show her students the idea of combining Dr. Gottman's psychology theory about couples' emotional relationship with design. There were over 20 students in Dr. Brittany Jakubiak's class, which were all majors in psychology.

In her class, she gave me about 10 minutes to finish the user testing, including letting me distribute the task card to her students and ask them to try my app via a link. Then she gave me 15 minutes to conduct student feedback.

More participants responded to my recruitment. Ten participants were also students at Syracuse University, seven of whom are my colleagues, and the other three are my

classmates. Four professors with design backgrounds and two professors with psychology backgrounds at Syracuse University were participants to this user testing as well. Moreover, seven participants were recruited from the provincial clinical mental building at 528 Oak Street. Three of whom were psychologists who were sitting in the clinic, and the other five were random participants I was looking for in this building. And then, there are four more participants, which are my friends with psychology backgrounds as well. I sent the link of Adobe XD and tasks to them via a social platform.

In the end, my participation number reached 47. My user testing gave each of the participants five tasks. The user testing method I used was based on Lean UX, and it's referred to as "think out loud." This approach requires participants to speak out loud to express whenever they are thinking while doing tasks. Moreover, the benefits of using Adobe XD became apparent in this case. Adobe XD, as a user interface prototyping software, can provide the function of recording the screen cursor tracks and the participant's voice at the same time. This feature helped me to summarize all user test results and feedback.

These tasks are given to the participants as follows:

1. Search an FAQ for "what should I prepare for the first counseling session" in the "Connect To A Therapist" series;

2. Save "Jennifer Coppoia" as your therapist at Zip Code 13205 and find the button to contact her;

3. Complete either the "Attitudes to Relationship" session or the "Relationship Quality Assessment" session in "Personal Assessment" series and save the results;

4. Using a partner pairing code TS6 - 3ES to "Pair My App" in "Games to Play with Your Partner" series;

5. Complete one task, which is either the task "Enhance Your Love Maps" session or the task "Turn Toward Each Other Instead of Away" in the part of "Games to Play with Your Partner" series, and save the results.

After the participants finished the user test, based on their level of completion and efficiency for each task, I asked them several questions about this prototype design regarding the ORIP letter (see Appendix - A). In the end, I was able to determine which functions are valid and which ones need improvement.

Summary of user's feedback

By conducting the results and feedback from user testing, participants were positive about the usability test. Participants believed that these prototypes would work if the partners would be willing to use this app. If the partners both cooperate and work on this together, it would work. Participants gave several constructive suggestions for a more detailed design for this app. I've summarized some of their comments, as shown below:

Add a customized game:

Participants claimed that if this app could add a customized game in the function "play

with your partner," then users will feel more compelled to use it. More personal and

intimate kinds of communication would be a reason to use this app regularly.

Add a weekly report:

Participants asked if this application could automatically generate a weekly report? If so,

then this better reflects the data visualization.

Add a daily notification:

Participants pointed out that this application needs a notification push as a daily

reminder since this application is planned to be used for daily based activities, to let

people keep being proactive in their relationship work and make daily improvements.

Overall, the app meets the requirements of a relationship coaching system, which also

combines a professional counseling service. The colors of this app are lovely, and

layouts of this app are functional and clear to follow the steps. There were no serious

problems. These participants thought the design details needed to be updated.

However, they feel that the design is very professional.

The third generation of prototypes

Due to the previous feedback, I built a third generation of prototypes, shown in Figure

17.

The main page

Prototype
2.0

Use precise
words for the
function of the
description.

Add the new
section -
"Customized
Game."

Divide "My Report" into two parts. The first part is "My Results"
which includes all test results from this app; the second part is
new added section "Weekly Report", which helps users to keep
tracking their relationship data.

Add the
feature
-"Push
notifications
daily"

Prototype
3.0

Figure 17 the difference between the second generation and the third generation of prototypes

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The first row is the second prototype, and the second row is the third prototype that has been modified.

User testing

After updating my prototyping, I was ready to conduct more user testing. The purpose of this user test was to look for additional design flaws in my app. User testing was conducted by recruiting convenient sampling as well. Participants included two professors with Lean UX design backgrounds, two professors with product design backgrounds, two professors with psychology backgrounds, four therapists with psychology backgrounds, and seven colleagues with design backgrounds. There were 17 participants in total. For the user testing, I gave each of the participants three tasks.

These tasks are as follows:

1. Check "Customized Game" session in "Games to Play with Your Partner" series, and see do you like the feature or not;
2. Find out where is "My Account," and check out "Weekly Report" in "My Report;"
3. Find out where is "My Account," and set up a notification at 9 p.m. every day.

Based on their level of completion and efficiency for each task, I was able to determine which designs were successful and which ones needed further adjustments.

Summary of user's feedback

By conducting user testing, among all participants, two professors and two colleagues pointed out that the design of this prototype does not convey enough play aspects to be viewed as an example of gamification design. It needs more gamification elements to help attract users. Also, several people pointed out the name "iRelationship," which I used for this app, and it's not more persuasive enough to present my thesis.

Besides, some participants pointed out that the target audiences for this app did not include users who have just started dating. Meanwhiles, there is research that shows that 49 percent of adults who have used a dating app or website are looking for an exclusive romantic partner (JALILI, 2019, para 3). After people find their romantic partner, they wonder what will happen to the next. Moreover, what is coming next is determining whether the person would be the one. So, the target group can include emotional novices who are just beginning their relationship journey, and this app would help them to determine the relationship.

Therefore, I feel that this app needs to be gamified so that it grabs peoples' attention and compels them to download and use it. Moreover, additional games should be added to help the relationship beginner. After carefully summarizing the results of all user tests, I finalized the design.

Results

3.1 Final design

Since couples are ill-equipped to deal with conflicts that stem from interpersonal relationships, and their failure to seek assistance at the formative stage of conflict results in a high level of separation and devoice, the final design is helping to solve the problem.

After constant revision and comments, I finalized my design. I built a logical design flow chart and designed the final prototyping. With Professor Danny Godin's help, I put more gamification elements in my final design. This prototype has more functions compared to my previous versions. Moreover, during the design process, I adopted IOS design guidelines and modao.cc software to connect all pages of the final design.
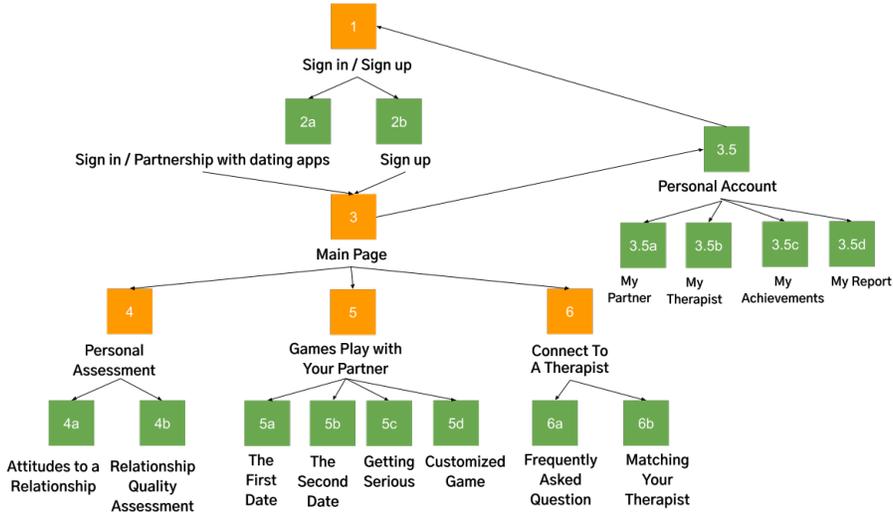

Figure 18 the UI flow for the final design

The link to the final prototype design is

https://free.modao.cc/app/0HIZxBCuV05Duvo6nuRnhOAIM4809CX?simulator_type=device&sticky.

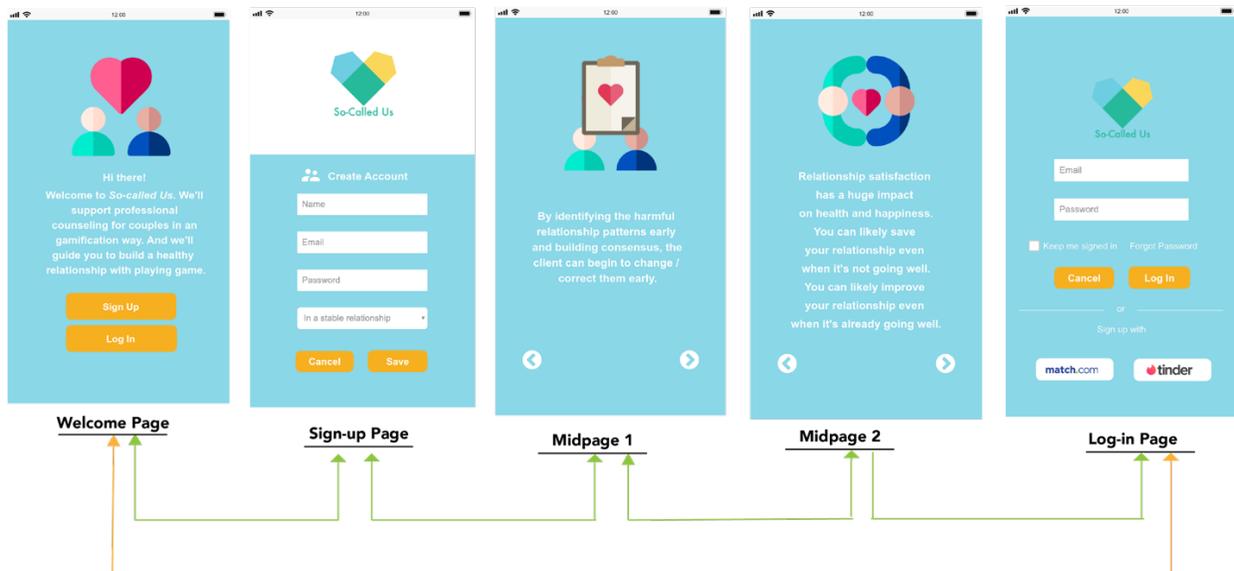The following are some details of interface screens from the final design:
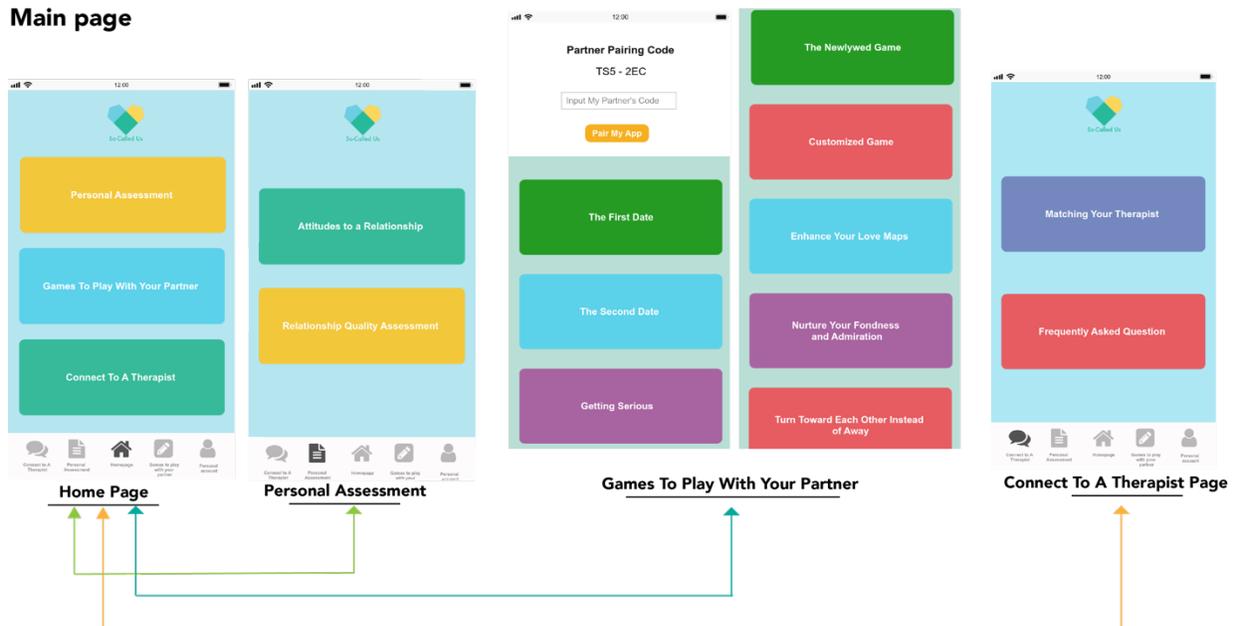

Figure 19 Landing pages of the final design

Figure 20 Main pages of the final design

I adjusted the hierarchy of the three buttons on the homepage. And I put a text

caption underneath each button in the fixed bar on each page to avoid ambiguity.
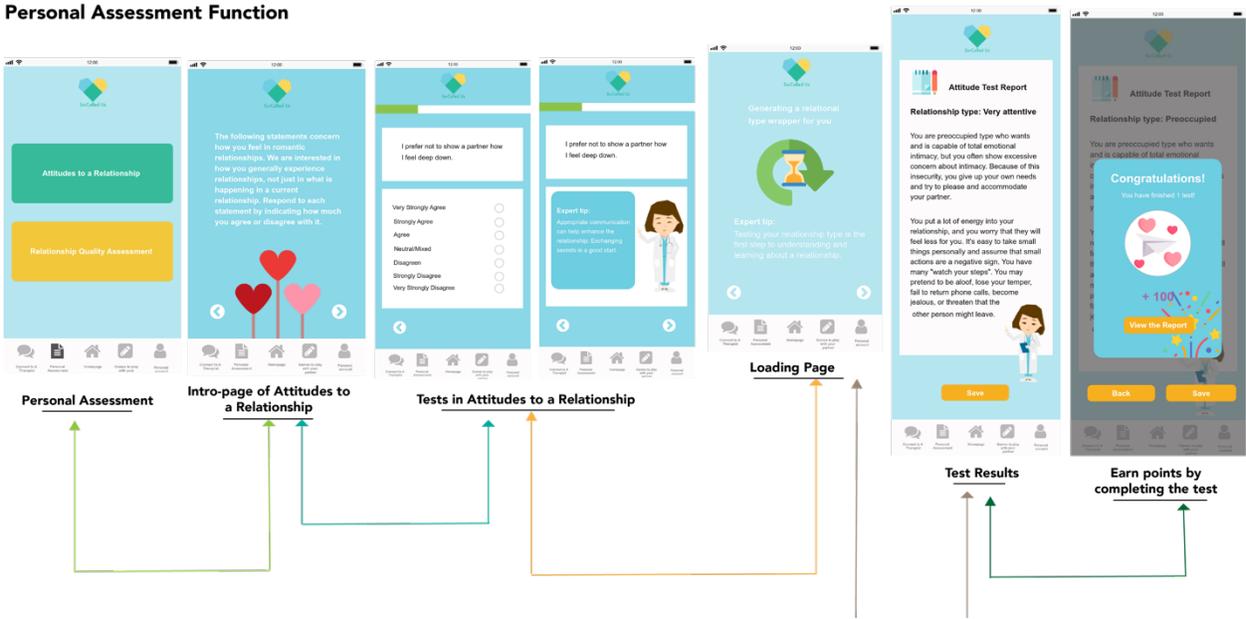

Figure 21 Personal Assessment Pages of the final design

This function is divided into two primary sections, namely "Attitudes To a

Relationship," which helped users to determine their relationship type by taking tests,

and "Relationship Quality Assessment," which helped users to identify their

relationship status. I also added the processing bar for each testing.

Figure 22 Games to play with partner pages of the final design

In this function, all games are scored. "The First Date," "The Second Date," and "Getting Serious" are designed to teach users a step-by-step approach to healthy dating. Users can learn what they would do when they find someone and how to maintain their relationship. Moreover, a cartoon character plays a decisive role. When completing a task or answering questions, a character of a mental health therapist will appear on screen to act in a decisive role to mentor and encourage users. I also applied the gamification theory to my design and built a complete gamification environment. Users can get points when they are completing different tests.

Games To Play With Your Partner Function - The Newlywed Game
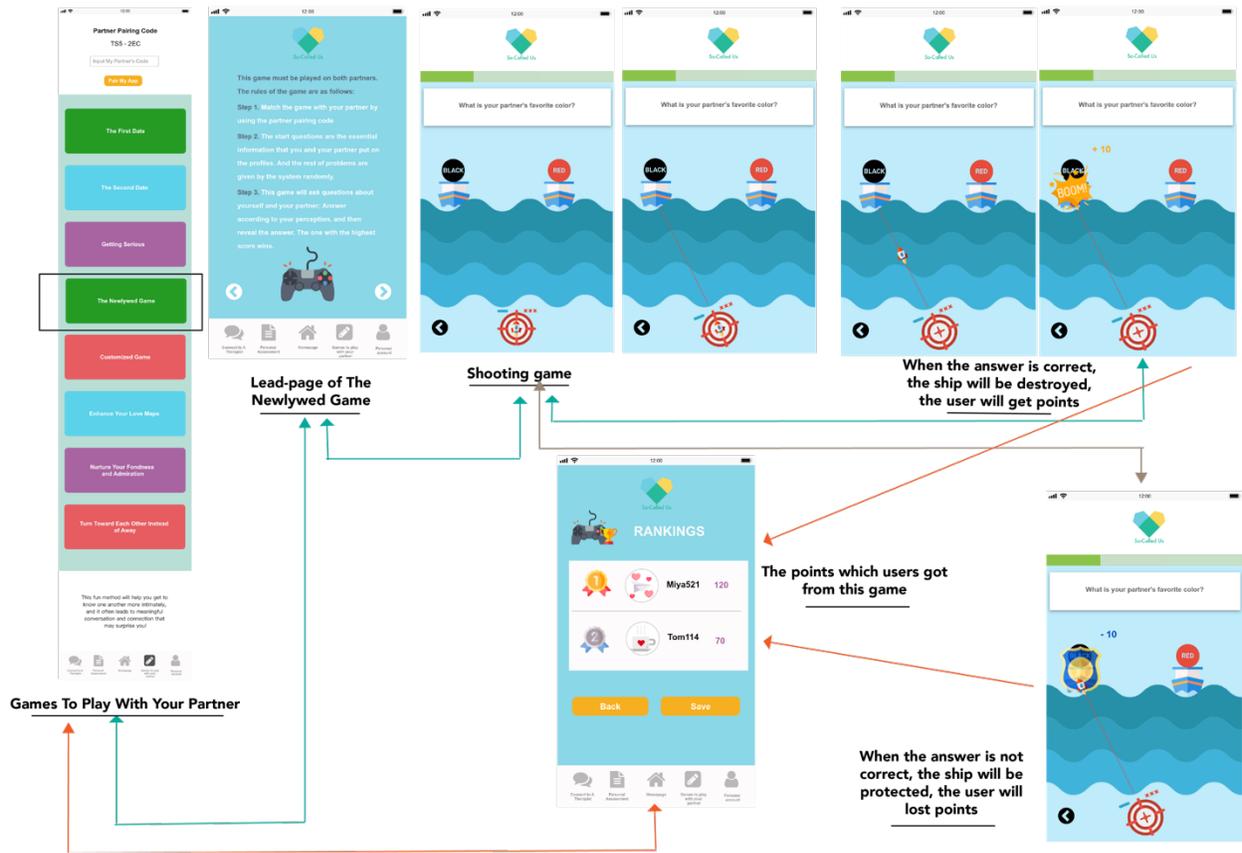
Figure 23 The newlywed game pages of the final design

Special pay attention to the newlywed game, this game is designed to know your

partner well. This game must be played on both partners. The rules of the game are as

follows: Step 1. Match the game with the partner pairing code; Step 2. The start

questions are the essential information that users put on their profiles. Moreover, the

rest of the problems are given by the system randomly; Step 3. This game will ask

questions about both of the couple. The answer, according to the user's perception.

Step 4. When the user chooses the correct answer, the ship will be destroyed, and the

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user gets the points. When the user chooses the incorrect answer, the shop will be protected, and the user loses points. The one with the highest score wins.
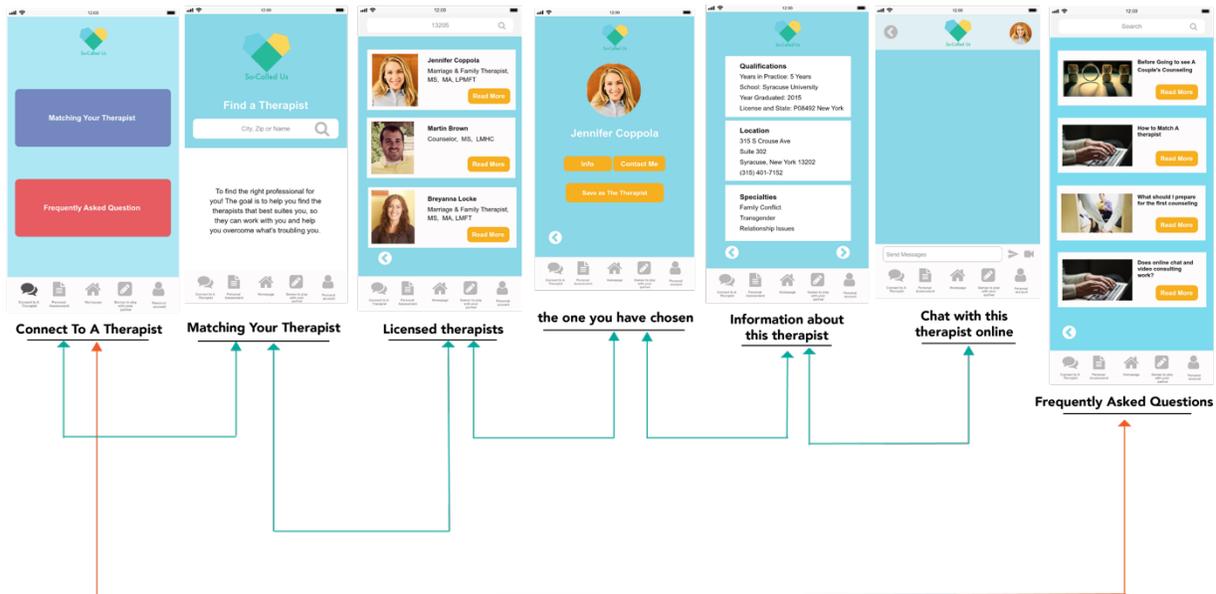
Figure 24 Connect To therapists pages of the final design

In this function, there are two significant features, "Frequently Asked Question," which is the question that users primarily asked to inquire when they are searching and selecting a marketplace, and "Matching Your Therapist," which let users search for professional psychologists by city name, zip code, name. Moreover, users can contact their chosen therapist without appointments by sending text, audio, and video messages during regular work hours.

Personal Account Function
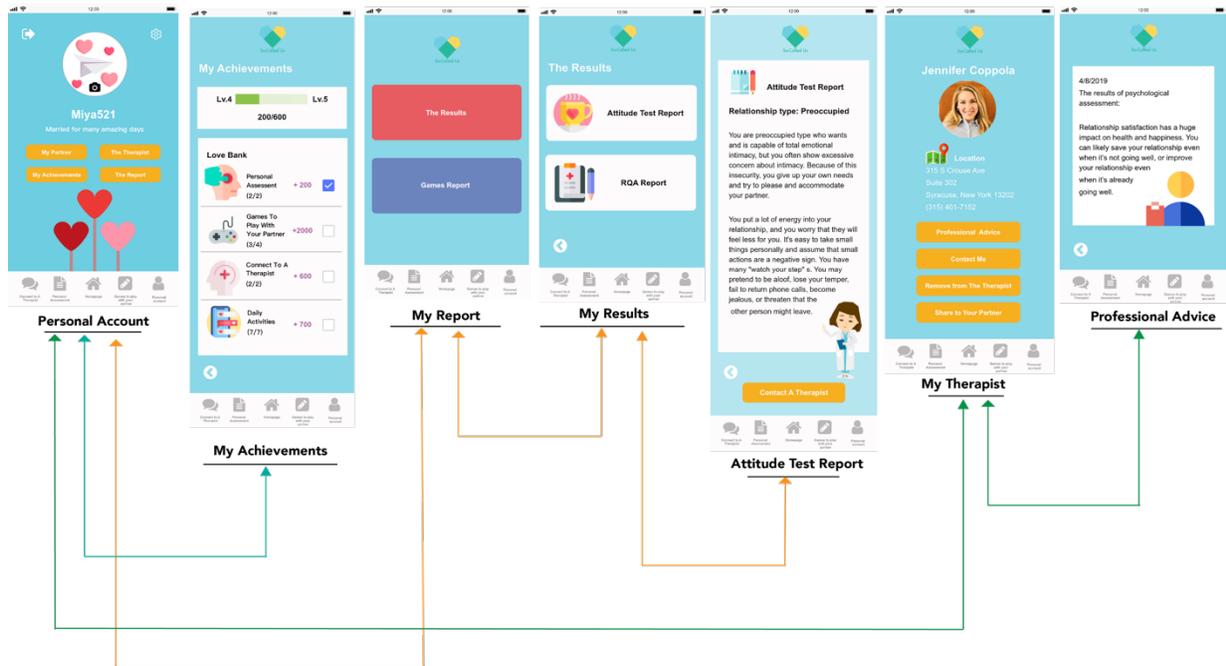
Figure 25 Personal Account pages of the final design

Other Functions
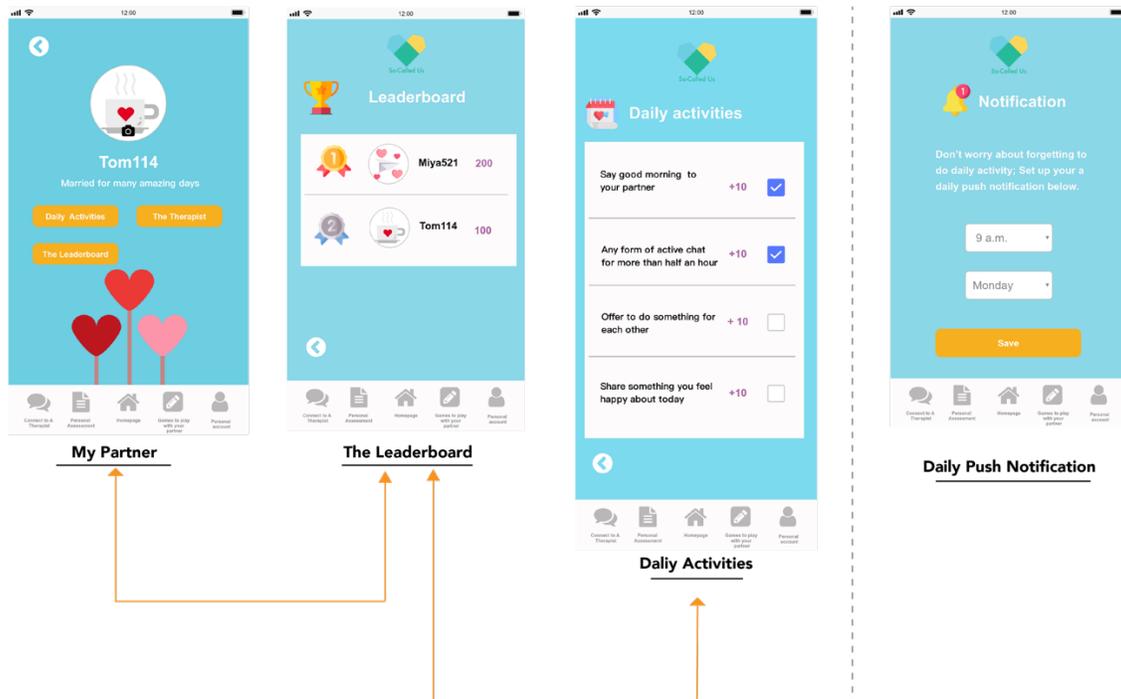
Figure 26 Partner pages of the final design

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The achievement system is widely using as gamification elements. Therefore, I also added an achievement system to my app. By completing different tasks specified in the achievement system, users can also view the leaderboard to see their rankings among all users and as well as their friends. Moreover, users can use the points to trade for various coupons to apply to Netflix, a free psychological counseling session.

In general, the final design adds various game elements and uses cartoon characters to make it more enjoyable to play. Based on the multiple rounds of user testing, this app has improved with each iteration.

3.2 Direct quotes from experts

By showing the final prototype to experts, there are several great direct quotes they have provided as follows:

"The part about 'Connect to Therapist' is impressive, especially when you can see their profile. The newlywed game should be a good start as a couple's game. And, yes, it is a consistent and professional application." Dr. Merril Silverstein, who is a Marjorie Cantor Professor of Aging Studies at Syracuse University, said.

"I think it is a logical process. Using Dr. Gottman's theory - the Seven Principles for Making Marriage work - definitely will guarantee those games and exercises in your

Application can maintain a healthy relationship in a couple." Dr. Brittany Jakubiak, who is an assistant professor at the Department of Psychology at Syracuse University, pointed out.

Dr. Henry Zhane Li pointed out: "It is good to have prompts for non-directional questions or open-ended questions to ask each other or having a section to focus the couples. So far, it is good for a subtle approach. I think it's fine for early reminders and quick notes."

"The part about 'Connect to Therapist' is quite good, and you may need some part to help people find the right therapist. Using some of the 'Attachment Styles Tests' is a good idea for romantic relationships." Yusai Su, an intern therapist in Syracuse, believed. Another intern therapist Amanda Li, also said: "The Application is quite professional and has a logical process. It's a great advertising platform for new psychotherapists worried about their clients."

Diane M. Malikow declared: "I would recommend this application to my clients and friends." And Linda D. Hatz, who is an LCSW and therapist, claimed: "This is a nice and easy way to contact clients and protect their privacy."

In conclusion, these experts in the field of psychology, while affirming my design, offered excellent advice. For example, some development questions should be added to increase the depth of communication between the couple. Since the experts I interviewed are all based in the field of psychology, I found that they paid more attention to the 'Connect to Therapist' feature. They concluded that they thought the app would be an excellent advertising platform, and they were happy to sign-up. If convenient, they would be willing to help promote this product with their clients.

3.3 Design Exhibition
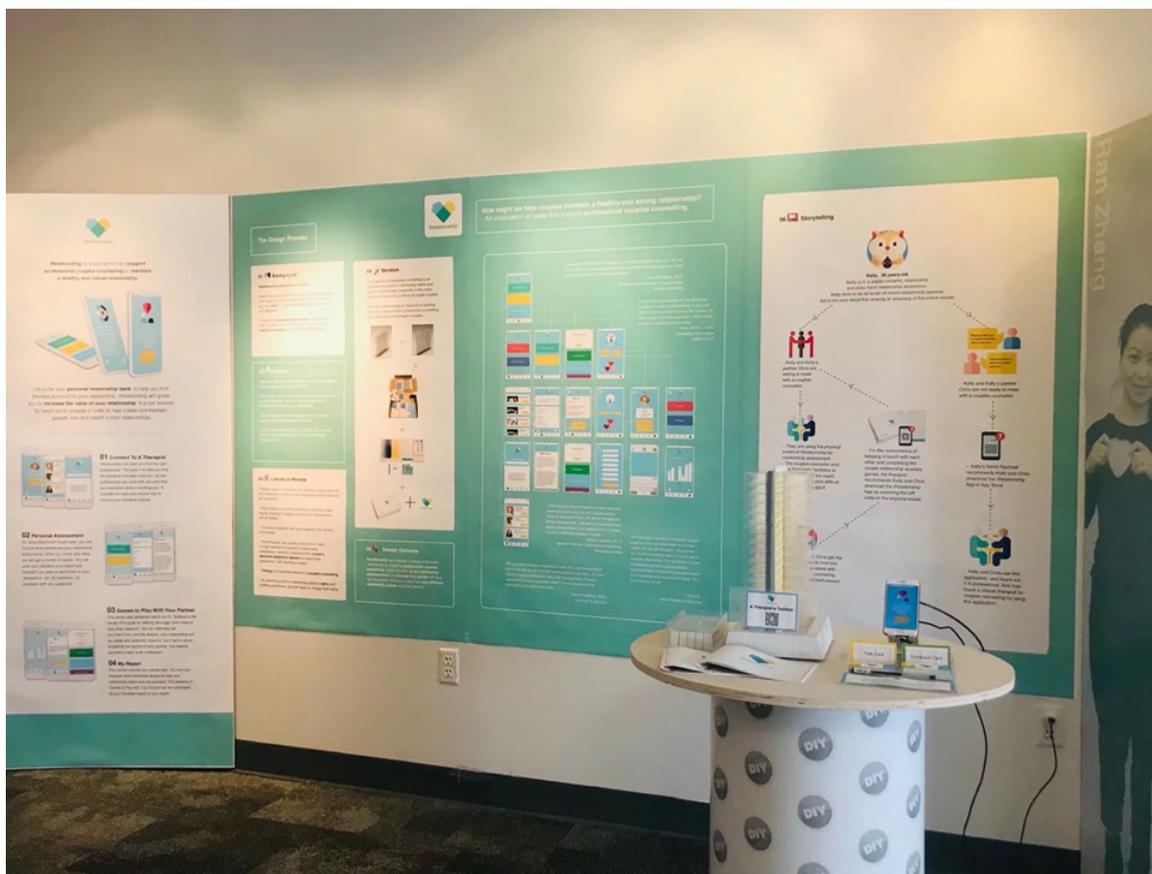
Figure 27 Design Exhibition

Summary and Conclusion

4.1 Summary

According to the content analysis, I have found that few tools combine gamified professional counseling and relationship coaching for couples.

Based on the results of research probes, the research probe does lead couples to think deeply. But the research probe is not a designed proposal. Therefore, during the pilot study, a prototype was designed successfully based on the feedback from the user testing of research probes.

This prototype is a mobile application which is called "So-called Us." "Us" stands for partner relationships. Moreover, it highlights an essential function of this app, which is a learning system for couples relationships.

Since the problem I've looked to address is that couples are ill-equipped to deal with conflicts that stem from interpersonal relationships at an early stage of a relationship, I believe that "So-called Us" does meet this need. Furthermore, because they fail to seek assistance at the formative stage of the conflict, this app provides a relationship learning system that serves to mitigate such issues at the earliest possible stage.

Therefore, *So-called Us* is the solvation of research into modern relationship challenges; users can learn to balance work and life in a relationship; users will not face the problem with the small number of relationship counselors available coupled with the time and expense required to address these needs.

By using *So-called Us* regularly, couples can maintain a healthy and robust relationship by receiving daily relationship skills. Users can conduct relationship assessments and discuss the results with their therapist. Moreover, users can play different relationship games with their partners to achieve more knowledge and informed advice.

4.2 Significance of the design

So-called Us includes four main functions as follows:

1.)Personal Assessment

By using Attachment Styles tests - Experiences in Close Relationships Inventory (ECR) (see Appendix - C), couples will find out what determines or has defined their relationship performance. By using Relationship assessment scale (RAS) (see the Appendix - D), couples will find out their current relationship status, in comparison to their desires and goals. When they finish their tests, they will get a variety of results. They can save their results to the report and choose if they want to send them to their therapists or not.

2.) Games to Play With Your Partner

This series was designed based on Dr. Gottman's Seven Principles for Making Marriage Work method and other researches. Based on Dr. Gottman's theory that to continue practicing the games and questions, couples' relationship will be stable and gradually improve.

Three of the games were designed for beginners who just started their relationship journey. One of the games was designed based on "the Newlywed Game," which is a famous TV show to bring up the Newlywed couple to play games. Dr. Silverstein believes using this Game can let newlywed couples get to know each other better.

Moreover, the purpose of I designed a supportive role is that this role can help to guide the users to realize they may need professional help. For example, hint at therapy with expert tips. Alternatively, introducing people to the idea of therapy is extended use of this platform.

Furthermore, this Game will ask several different questions daily, some of them are the same as the user's partner's, and the rest of them are random. Once the user and user's partner answer the same questions, *So-called Us* will reveal if the user has

matched or not. The more user's answers match, the more points users will receive to reach new levels.

On the one hand, this app is mainly designed to let new partners get to know each other more quickly diagnose whether this person is a suitable long-term partner contains; on the other hand, this app provides relationship knowledge and learning skills to secure long-term relationships. In this app, users can earn points and medals by learning various relationship skills, punching in various learning tasks, and daily couples' daily routines. Also, when the user's chance reaches a certain number of points, the user level can be improved, and different coupons can be received.

3.) Connect To A Therapist

So-called Us can also help users find the right professional. The goal is to help users find the appropriate therapist that best suits them and their needs so that professionals can work with them and help them overcome what is troubling them, or resolve deeper problems that have not reached the service. It provides an easy and secure way to contact couples therapists directly. Therapists can also provide online counseling via *So-called Us* by sending a text, audio, and video messages. It is an excellent way of providing emergency counseling services within reasonable boundaries.

Moreover, the user can remove any therapist from the therapist list if the user does not

consider this current therapist suit for the user. Please remember, therapy is not one

size fits all, and the process is long, and the clients cannot just switch after not seeing

immediate results, so there have to be time dedications. The best way is to find two or

three therapists at the same time, and then slowly see which one is most effective.

4.) Personal Account

This function includes four sections: "My Partner," "The Therapist," "My

Achievements," and "The Report." Inside "My Partner," it also includes "Daily

Activities" and "The Leaderboard." Users can see a user's level and points in "My

Achievements." This section records couples' results daily. Users and their therapists

have immediate access to view users' relationship status and improvement. The user's

therapist can customize the sessions of "Games to Play with Your Partner" based on

your report. Moreover, the other feature is a daily push notification, so users do not

need to worry about missing daily activities.

From the perspective of the therapists, this product provides an advertising platform

for therapists and can bring them more clients. Therapists register on the platform and

start using this app to serve clients, and the users download this app on the App store

are both ways to boost the number of app downloads. In general, *So-called Us* can

assist therapists to follow up and track back their clients, and also help users maintain a

stable and healthy relationship by receiving professional couples counseling and

relationship coaching. What is more, the product can help users learn the knowledge

and skills to improve their relationship while playing.

Discussion and Opportunity

5.1 Limitation

According to the preliminary research, there is not one that is prevalent as of now in

modern times existing tools to combine professional couples counseling and

relationship coaching together. This design opportunity is a market advantage. While

the project is trying to fill out the gap in the market and cater to the needs of users,

there are still many problems that need to be solved.

First of all, product testing in the selection of user testing sampling takes the

convenience sample. This type of sampling does not require the generation of a simple

random sample since the sample is taken from easily accessible people. Therefore, this

sample sampling method has the disadvantage of lacking population representation.

Secondly, theoretically, Dr. Gottman's The Seven Principles for Making Marriage Work method and other researches have approved that it can help improve the relationship between couples. However, in the process of practice, whether the relationship can be enhanced, relevant promotion data, and related factors affecting the promotion needs to be further verified.

The third, how to ensure that the therapist replies in a timely matter to the user's message, especially as therapists will not always be "on duty" and there is a personal code limitation for the professionalism of when to be able to establish contact;

Fourth, even if couples are willing to FaceTime with a therapist when it is impossible to say for sure of the boundaries of contact and relationship, alongside HIPPA (Health Insurance Portability and Accountability Act)approval for this app to be used in direct contact for sessions, and last but not least the effort to maintain confidentiality.

Finally, in the course of product testing, I found that many times in a couple, one partner may not be willing to cooperate with their partner to play this game. So as repeatedly mentioned before, the app can be developed in a more gamification way. Even though I mentioned this app could be a partnership with some dating apps, it is not difficult to imagine that some people still do not want to play this game at all. How

to attract them becomes a problem. Maybe more benefits to users could be a good starting.

5.2 Future Study

In future studies, further research and follow-ups are needed. First of all, I want to figure out how many therapists are willing to register and introduce this app. Secondly, to do relevant data recording and research, which can provide pieces of evidence that this app can help improve couples' relationships. Thirdly, I want to design an interactive and engage way to record those open-ended questions. Finally, more game designs need to involve more psychological experts.

Moreover, as I mentioned in the introduction of this article, I am using American resources to design this product that can be promoted in the United States, although I want to promote my design to my own country. However, there are significant cultural differences between China and the United States. In the United States, although some people have some resistance to seeing a psychiatrist, it is generally acceptable to see a psychiatrist. In China, depression is widespread.

As the old Chinese saying goes, "Do not wash your dirty linen in public." That is to say, if something wrong happens at home, it will not be said outside. So, in China, in many

cases, when couples quarrel, they quarrel, the cold war ends, and the divorce ends. There is no such thing as going to a psychologist.

Therefore, I am eager to design a product that can help adjust and improve the relationship between couples at anytime and anywhere. Therefore, I hope that in the future, there is a way to introduce my design to the Chinese market.

Appendix
Appendix A - ORIP verification letter

RAN ZHANG
School of Design | Syracuse University
350 West Fayette Street Syracuse, New York 13202
cell . 315-992-0509

Office of Research Integrity and Protections
Syracuse University, 214 Lyman Hall, Syracuse, NY 13244
April 8, 2019

Dear ORIP Board,

I am a School of Design student in the MFA Design program. This semester I am working on a thesis project that focuses on how to improve relationship satisfaction and maintain a strong and healthy relationship between newlywed, unmarried and married couple in professional way. This is important work because the divorce rate is increasing very quickly. I want to develop a design intervention for this. I plan to talk to couples to find out if they believe that my design is an effective product for increasing their relationship satisfaction.

This is a product development project. The current design intervention I am developing is An exploration of tools that support professional counseling for couples to maintain a strong and healthy relationship based on my preliminary research. While I plan to talk to people, I will not collect information about their personal relationship or their feelings. The opinions that the focus group shares will be exclusively for the intent to develop the product design and content.

This project is design to make participants feel comfortable; they are not obligated or prompted to share personal health or wellness information (physical, emotional, mental).

Product Development Protocol: Show the participants a prototype design of the "iRelationship."

Ask the participants to familiarize with the contents of the product. Play with it.
  a. Observe what features are interacted with and the frequently.
  b. Document any questions they ask
  c. Note: additional tasks will be developed in later iterations of the porotype
2. Do you think that any of the items in the product might be able to improve a couples' relationship?
  a. Prompt them to explain their thinking and ideas
3. Which aspects of the design do you like? Which ones do you dislike?
  a. Prompt them to explain while pointing out features of the prototype
4. The goal of this design is to improve relationship satisfaction between couples. Do you have any suggestions for how my design can improve? Do you believe I am missing parts that would make this product better?
5. Would you be willing to try this product once the design process is complete? (for a future study)
6. Is there anything else you would like to share with me about this experience of reviewing this product?

I believe that I do not need IRB approval for my design project. If you can provide me confirmation about this, I can report back to my thesis committee and my final thesis documents.

Sincerely,
Ran Zhang

Appendix B - LWRAT

Locke-Wallace Relationship Adjustment Test

Name_____

Date_____ Circle One: Male   Female

Circle the dot on the scale below which best describes how happy your relationship is. The middle point ("happy") represents the degree of happiness you believe that most people get from romantic relationships. Do not share answers with your partner.

●   ●   ●   ●   ●   ●   ●

Very Unhappy   Happy   Perfectly Happy

State the approximate extent of agreement or disagreement between you and your mate on the following items by checking a response for each item. Do not share answers with your partner

	Always Agree	Almost Always Agree	Occasionally Disagree	Frequently Disagree	Always Disagree
Handling Family Finances					
Matters of Recreation					
Demonstrations of Affection					
Friends					
Sex relations					
Conventionality (right, good, or proper conduct)					
Philosophy of Life					
Ways of dealing with in-laws					
Other (describe):					

Please answer the following items by circling ONE answer. Please substitute your partner's identity for the term "wife" and "husband" if you are not married.

1. When disagreements arise, they usually result in:

(a) husband giving in
(b) wife giving in
(c) agreement by mutual give and take

2. Do you and your mate engage in outside interests together:

(a) All of them
(b) some of them
(c) very few of them
(d) none of them

3. Do you ever wish you had not married?

(a) Frequently
(b) occasionally
(c) rarely
(d) never

4. In leisure time do you generally prefer:

(a) to be "on the go" _____
(b) to stay at home?

5. Does your mate generally prefer:

(a) to be "on the go"
(b) to stay at home?

6. If you had your life to live over again, do you think you would:

(a) marry the same person
(b) marry a different person
(c) not marry at all

7. Do you ever confide in your mate:

(a) almost never
(b) rarely
(c) in most things
(d) in everything

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Appendix C - ECR

Experiences in Close Relationships Inventory
Brennan, Clark, & Shaver (1998)

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the 7 different scales from "Very Strong Agree" to "Very Strong Disagree":

___ 1. I prefer not to show a partner how I feel deep down.
___ 2. I worry about being abandoned.
___ 3. I am very comfortable being close to romantic partners.
___ 4. I worry a lot about my relationships.
___ 5. Just when my partner starts to get close to me I find myself pulling away.
___ 6. I worry that romantic partners won't care about me as much as I care about them.
___ 7. I get uncomfortable when a romantic partner wants to be very close.
___ 8. I worry a fair amount about losing my partner.
___ 9. I don't feel comfortable opening up to romantic partners.
___ 10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
___ 11. I want to get close to my partner, but I keep pulling back.
___ 12. I often want to merge completely with romantic partners, and this sometimes scares them away.
___ 13. I am nervous when partners get too close to me.
___ 14. I worry about being alone.
___ 15. I feel comfortable sharing my private thoughts and feelings with my partner.
___ 16. My desire to be very close sometimes scares people away.
___ 17. I try to avoid getting too close to my partner.
___ 18. I need a lot of reassurance that I am loved by my partner.
___ 19. I find it relatively easy to get close to my partner.
___ 20. Sometimes I feel that I force my partners to show more feeling, more commitment.
___ 21. I find it difficult to allow myself to depend on romantic partners.
___ 22. I do not often worry about being abandoned.
___ 23. I prefer not to be too close to romantic partners.
___ 24. If I can't get my partner to show interest in me, I get upset or angry.
___ 25. I tell my partner just about everything.
___ 26. I find that my partner(s) don't want to get as close as I would like.
___ 27. I usually discuss my problems and concerns with my partner.
___ 28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
___ 29. I feel comfortable depending on romantic partners.
___ 30. I get frustrated when my partner is not around as much as I would like.
___ 31. I don't mind asking romantic partners for comfort, advice, or help.
___ 32. I get frustrated if romantic partners are not available when I need them.
___ 33. It helps to turn to my romantic partner in times of need.
___ 34. When romantic partners disapprove of me, I feel really bad about myself.
___ 35. I turn to my partner for many things, including comfort and reassurance.
___ 36. I resent it when my partner spends time away from me.

Appendix D - RAS

RELATIONSHIP ASSESSMENT SCALE

Please mark on the answer sheet the letter for each item which best answers that item for you.

How well does your partner meet your needs?

A	B	C	D	E
Poorly		Average		Extremely well

In general, how satisfied are you with your relationship?

A	B	C	D	E
Unsatisfied		Average		Extremely satisfied

How good is your relationship compared to most?

A	B	C	D	E
Poor		Average		Excellent

How often do you wish you hadn't gotten in this relationship?

A	B	C	D	E
Never		Average		Very often

To what extent has your relationship met your original expectations:

A	B	C	D	E
Hardly at all		Average		Completely

How much do you love your partner?

A	B	C	D	E
Not much		Average		Very much

How many problems are there in your relationship?

A	B	C	D	E
Very few		Average		Very many

NOTE: Items 4 and 7 are reverse scored. A=1, B=2, C=3, D=4, E=5. You add up the items and divide by 7 to get a mean score.

Appendix E - The open-end questions related to the research probe

A. Finances
a. I feel that we can freely talk about money.
b. When it comes to money, you are a saver
c. When it comes to money, you are a spender
d. I consider going to the movies and having a vacation every year is a necessity
e. I consider going to the movies and having a vacation every year is a luxury
f. I do not have any outstanding fines or debts
g. We should have our plans for purchasing a home
h. I am willing to relocate for either of our jobs

B. Sex
a. I feel comfortable to talk about sex
b. I am comfortable discussing my sexual expectations

C. Intimacy
a. I have trust issues and feel insecure
b. I think that affirmations are essential to me
c. I handle compliments well
d. I think we listen to one another well
e. I think it is essential to be faithful to one another
f. I believe that we should be doing everything together?
g. I need time alone
h. I believe that you can accept if I want a night out with my friends now and then
i. I am willing to make sure we have quality time together

D. Conflict and Communication
a. Let us make all significant decisions together
b. We are both willing to face difficult areas
c. We try to avoid conflict
d. I think we have problems in our relationship that we need to deal with before moving together
e. We handle conflict well
f. I am willing to accept that we are different
g. I think our differences will create problems in our relationship
h. I expect me to change
i. we both can forgive
j. I feel like try my best to understand your views, feelings, and opinions
k. We are both willing to work on our communication skills and to share intimately with each other
l. I feel like we have a good understanding of how and when we should bring up issues in our relationship

Appendix F - The full scale of Content Analysis

Tools	The stage of relationship		Sessions and Exercises to help couples learn skills to improve relationship satisfaction						Professional Counselling		Playability	Participants
Apps	Relationship assessment (self-report)	How well do you know your partner	Increase Positive Emitons	Social Support (Daily Moments)	Expressing Empathy	Communication	Appreciation	Create Shared Meaning	Relationship Advice	Professional Counseling	Level of game mechanics	Play With Partner
Card Decks	0	10	10	10	10	7	10	7	7	0	6	5
My Love	0	0	5	5	5	8	0	8	5	0	1	0
Love'n'Graph	5	3	5	3	0	0	0	0	0	0	3	2
Daily True love Calculator	0	0	0	0	0	0	0	0	0	0	0	0
Duable	6	5	5	5	0	5	0	10	10	0	7	10
Between	0	5	5	0	0	8	5	0	0	0	5	10
Couple Game	7	7	7	8	0	8	0	7	5	0	6	10
Quizzes.net	5	0	0	0	0	0	0	0	0	0	5	10
Lasting	8	10	10	8	6	7	10	10	10	0	9	5
Talkspace	10	0	0	0	0	0	0	0	0	10	1	0
Happy Couple	0	10	7	7	0	8	0	8	8	0	8	0
Honi	0	3	8	3	0	7	0	5	5	0	8	10
Couple Love Test	6	5	7	0	0	0	0	0	7	0	5	0
LOVE LAB	5	0	5	5	0	8	0	0	0	0	5	10
Love Challenge	0	0	0	0	0	0	0	0	0	0	5	0
Love Quotes	0	0	0	3	0	0	0	5	5	0	2	0
Happy Love Life	0	0	0	0	0	4	0	3	3	0	3	0
iLove	5	5	7	3	0	7	0	7	7	0	0	2
Love Nudge	0	6	8	8	3	6	0	0	6	0	1	10
All Mending The Marriage	0	7	0	0	0	7	10	0	10	0	0	0
TherapyChat	10	0	0	0	0	0	0	0	8	10	2	0
Games	Relationship assessment (self-report)	How well do you know your partner	Increase Positive Emitons	Social Support (Daily Moments)	Expressing Empathy	Communication	Appreciation	Create Shared Meaning	Relationship Advice	Professional Counseling	Level of game mechanics	Play With Partner
Lolly Vibes	0	0	5	5	0	8	0	8	0	0	5	10
Our Moments Couples	0	0	7	5	5	8	0	8	0	0	6	10
Spouse-Ology	0	8	4	3	0	6	0	8	0	0	7	10
Vertellis Relationship Edition	0	8	5	5	0	7	0	7	0	0	5	10
The discovery Game	0	4	4	4	0	7	0	5	0	0	7	10
Bedroom Battle	0	4	6	6	0	7	4	4	0	0	7	10
Uncommon Questions	0	5	5	4	5	7	5	4	0	0	6	10
Routine Breaker	0	0	5	5	0	7	7	7	0	0	5	10
Couple's Kindle Cards	0	6	5	5	4	7	6	6	7	0	7	10
The Art of Couples Conversation	0	4	4	4	0	7	6	5	0	0	6	10
Ungame	0	5	4	4	0	7	0	6	5	0	5	5
Cards For Couples 30 Days	0	4	4	5	4	7	0	6	4	0	6	10
Letzalk	0	5	5	3	4	8	4	0	0	0	6	10
Face to Face - Transition	0	5	3	3	4	7	5	0	5	0	5	5
GROK Relationship Games	0	6	6	5	6	8	2	0	5	0	8	10
Fog of Love	0	0	7	7	0	5	0	8	0	0	2	5
Coupons For Couples	0	0	5	7	0	7	0	5	0	0	5	10
88 Great Conversation Starters	0	5	8	8	4	8	5	4	0	0	9	10
Couples Retreat	0	5	8	8	0	8	5	0	0	0	9	10
Marshall Bliss	0	0	5	5	0	4	0	0	5	0	4	5

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Vita

RAN ZHANG

<u>EDUCATION</u>

- Syracuse University   07/2017- 05/2020
    College of Visual and Performing Arts

    Master of Fine Art in Design

- P.I. Art Center   05/2016 - 01/2017
    Advance Graphic Design Workshop Introduction to Graphic Design
    Workshop

- State University of New York - Plattsburgh   09/2010 - 05/2013
    Business school at SUNY- Plattsburgh Bachelor of Science in Business
    Administration

<u>AWARDS & ACTIVITIES</u>

- Awarded the outstanding prizes in "Against COVID-19" Design contest
    by **CADA American Asian Designers Association**
    * Poster design, graphic design, illustrational design
- Awarded the top 100 graphic works of international graphic design
    by "**BREATH * SYMBIOSIS-2020" Posters Exhibition**
    * Poster design, graphic design, illustrational design
- Awarded the Special choreography designer prizes
    * Program director, choreography design and lead dancer for
    the "Night of nations" event in the SUNY at Plattsburgh in 2011

<u>Personal Website</u>

- www.rosaleezhang.com