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The Cross-Cultural Communication Workshop in
the Educational Setting: A Service Design Aims
to Alleviate the Loneliness of International
Students in Japan

Keio University
Graduate School of Media Design

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A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
Master of Media Design

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The Cross-Cultural Communication Workshop in the Educational Setting: A Service Design Aims to Alleviate the Loneliness of International Students in Japan

Category: Design

Summary

Japan has a large number of international students, and most of these students are troubled by loneliness, which is exacerbated by the COVID-19 situation. Since social support and social capital can play an important role in alleviating mental stress, and the workshop has been used as an approach to help new students adjust to university life, a similar process to that of international students could help adjust to a new environment. This study aims to help international students in Japan alleviate their loneliness by promoting the formation of momocultural and cross-cultural friendships through the cross-cultural communication workshop.

The cross-cultural communication workshop is a cultural-centered workshop that aims at enhancing cross-cultural knowledge, improving intergroup attitudes, and fostering friendship formation through culture-focused communication. It is designed based on the four models of friendship formation: the incremental model, the shared-stress model, the perceived-similarity model, and the perceived need-complementarity model.

This study found that the cross-cultural communication workshop has been effective in fostering monocultural friendship formation and deepening bonds, and four factors that promote friendship formation include: (1)sufficient time; (2)the exchange of profound topics; (3)similar situations; and (4)the desire to build a connection with peers. Besides, the cross-cultural communication workshop has been proven to relieve participants' mental stress and recall good memories, thus serving to alleviate their loneliness.

Keywords:

design thinking, service design, workshop, loneliness, friendship formation

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Chapter 1
Introduction

Japan is a major non-Anglophone study abroad country in Asia. In 2019, there were 312,214 international students in Japan [1]. When pursuing education abroad, international students have to leave their home, social networks, and suddenly find themselves in a "relational deficit" [2]. At this time, they need support more than they always do. If the need to belong is not satisfied, they could be bothered by negative feelings and may feel loneliness [3]. In a study of international student security of 200 students in Australia, it was found that two-thirds of the group had experienced problems of loneliness [4]. According to Weiss [5], students experience both personal loneliness because of the loss of contact with families and social loneliness because of the loss of networks, as well as cultural loneliness as a result of the lack of the preferred cultural and linguistic environment.

Nevertheless, the COVID-19 pandemic has been shown to cause serious psychological problems [6]. The WHO pronounced COVID-19 as a global pandemic on March 11th, 2020, and encouraged governments throughout the world to put in place measures and limitations to prevent it from spreading further. Governments have taken steps to require people to be quarantined at home and maintain social distance, which might have had negative effects on people's mental health [7]. In Japan, the government has issued the State of Emergency multiple times to prevent the spread of infection. In response to the government's anti-virus measures, schools switched to online courses and restricted on-campus activities. Thus, many international students had to spend a long time alone at their residences. As a result, many international students were physically isolated, and the negative emotions that international students feel are heightened due to the COVID-19 pandemic.

However, the main part of the literature on international students is focused on their academic experiences and achievements. A lesser body of research at-

tends to the conditions of their mental health. Nevertheless, as an international student who suffers from loneliness, the author intends to focus this study on the mental condition of cross-border students and to focus on how to alleviate their loneliness. Because denser networks foster a sense of belonging and lower loneliness, Stokes argues that college students' loneliness can be alleviated simply by expanding their networks [8]. Therefore, the objective of this research is to design a cross-cultural communication workshop in the educational setting to promote cross-cultural and monocultural friendship formation among international students in Japan to help alleviate their loneliness. The cross-cultural communication workshop, which will be held once a week for one month, consists of two main sessions: the self-disclosure session and the cross-cultural communication session. The first session aims to encourage participants to get to know each other and thus build friendships. The second session focuses on sharing cultural knowledge to eliminate cultural prejudice and discrimination.

This study was conducted with Keio University as a research subject, with Keio Media Design students. The study was conducted in small groups, which centered on strangers interacting with each other to build closer bonds. As it was difficult to coordinate larger groups with limited researchers, the groups were mainly four to seven people at a time. Keio Media Design is a diverse college that brings together students from all over the world, and because this study aims to promote the formation of friendships with and across nationalities, it does not intentionally divide the nationalities of participants, but rather randomly selects them according to the students' willingness and strives to test in the most natural setting. Because human concentration can not usually exceed two hours, the first two cross-cultural communication workshops were conducted in two-hour increments. Besides, the first two cross-cultural communication workshops were independent and were not conducted in stages. Although they were similar in content, the two groups of participants were different.

Based on the feedback from the first two cross-cultural communication workshops, the cross-cultural communication workshop 3 was attempted in stages and was divided into four rounds, once a week for an hour and a half, for one month. The cross-cultural communication workshop 3 consists of four rounds: first, getting to know each other and sharing common experiences; second, talking about

culturally related topics and sharing similar difficulties; third, answering a list of psychological questions; and fourth, sharing cultural backgrounds, to be conducted in a phased manner to promote friendship among the participants from shallow to deep. After the cross-cultural communication workshop 3, participants were required to complete the Revised UCLA Loneliness Scale and the friendship scale for quantitative comparison, and in-depth semi-structured interviews were conducted with participants to examine whether the connections between them had deepened.

The purpose of this study was primarily to provide a new way of coping with international students' loneliness in the context of the pandemic. Most studies on loneliness tend to focus on older populations or on the differences between males and females, and few have examined questions about international students' loneliness in host countries. The COVID-19 epidemic has now been demonstrated to cause major mental health issues [6] and that loneliness impacts everyone, including international students. Generally, the probability of mental health disorders, such as psychological distress, is high among college students [9] [10], and this risk may be amplified by overseas students' lack of social support [7]. However, despite mounting evidence of the urgent need for care to their psychological condition during the pandemic, it has not been appropriately addressed [1]. As a result, it is necessary to assist international students in better coping with their loneliness by developing their networks. However, because social activities have been substantially restricted as a result of the pandemic, forming such bonds is extremely difficult. We need to work on developing an effective way to strengthen international students' networks. This study will take a physical and online approach to examine communication among international students and how it can help foreign students better reduce their feelings of loneliness.

Chapter 2
Related Works

2.1. Loneliness and International Students

Loneliness is a common mental condition that is characterized as a bitter experience caused by dissatisfaction with the quantity and quality of socializing [11]. Loneliness is often combined with other psychological problems such as depression [12], social anxiety [13], personality disorders, and eating disorders [14]. In addition, loneliness has been connected to a range of biological processes that have been associated with an increased risk of health problems, including high systolic blood pressure [15], aberrant stress reactions [16], and high-risk heart disorders [17].

Loneliness affects everyone at some point in their lives, regardless of age, gender, color, religion, or socioeconomic situation [18]. Although it is widely assumed that loneliness is primarily a problem for older adults, younger groups are also at high risk for loneliness [19]. According to research, younger adults may experience loneliness in a more intense and cruel way than other age groups [20].

Indeed, many people leave their homes in their early adulthood to continue studying. In the majority of circumstances, the transition to student life is personal and without the help of friends or family. Cutrona discovered that 75% of new students felt lonely in their first two weeks, and the results of a recent National College Health Assessment survey of 2,149 students in the United States revealed that 64% of the sample felt highly lonely in the previous 12 months [21]. This is why most universities acknowledge the importance of orientation week [22]. Attending college sometimes means migrating to a new place, sometimes overseas, and this change in lifestyle raises the risk of loneliness by isolating people from not only intimate relationships but also establishing social networks and support systems [2].

Previous research strongly suggests that individuals living outside their home countries suffer from high levels of loneliness [14]. Several studies have examined the prevalence of loneliness among immigrant and international students. When students cross nations for study, they leave behind their families and social networks and suddenly find themselves in a "relational deficit" [4]. Negative feelings, including loneliness, can arise if students' needs for belonging are not met [23].

In a study on the safety of international students, which included 200 intensive interviews with students living within Australia, it was found that two-thirds of this group experienced loneliness and isolation, particularly in the first few months [4]. According to Weiss [5], students experienced both personal loneliness due to loss of contact with family, and social loneliness due to loss of network. Sawir and others identified a third type of loneliness experienced by international students, cultural loneliness, triggered by the lack of a preferred cultural and linguistic environment [4]. This can affect even students who have adequate personal and social support. Therefore, a co-cultural network is often crucial for international students.

Furthermore, loneliness is the most powerful predictor of psychological discomfort in students, and longitudinal research demonstrates that loneliness causes or worsens anxiety, stress, depression, and general poor mental health in students [24]. According to Catt, loneliness is an obstacle to freshmen's success [25]. Students who report feeling isolated are much more likely to have low levels of well-being and life satisfaction, according to several studies [26]. These negative feelings were reinforced by the mandatory blockade resulting from the COVID-19 pandemic.

By the end of 2019, COVID-19 began to spread around the world [27]. People began to experience significant levels of anxiety and tension as the number of cases globally increased rapidly, and measures to quarantine people from each other were implemented [28]. Overall, it has been shown that the COVID-19 pandemic can lead to serious mental health problems [6]. Currently, the feelings of loneliness caused by the COVID-19 are more intense. International students, who leave their families and are quarantined at their residences, are facing an explosive mix of emotions that often leads to increased stress and even depression. Therefore, this study is dedicated to focusing on the mental health status of international

students and how to alleviate their loneliness in the context of COVID-19 as a way to improve the life satisfaction of international students.

2.2. Alleviate Loneliness

Loneliness is a type of "social distress" that reveals social relationship inadequacies and promotes reconnection [29]. As a result, effectively managing loneliness is critical for re-establishing a satisfying feeling of social connection and reducing mental health suffering. Generally, when dealing with loneliness, people tend to seek social support, be attracted to religion and faith, and do increased activities [30] [31].

Social support is emphasized as a coping mechanism throughout crisis situations, such as COVID-19, and plays a key role in well-being. Social support is an interpersonal process in which the provider's communication aids the recipient in coping with the uncertainty and challenges of the situation in which they find themselves [32]. Through interpersonal communication, social support comprises the supply of numerous resources such as information, candid aid, or emotional consolation. Communication is a fundamental mechanism for shaping social support perceptions [33].

Similarly to how loneliness is linked to health issues, perceived social support is linked to fewer health symptoms [34] and improved physical and mental well-being [35]. People with greater social and emotional support are often healthier than those who do not [36]. Social isolation and a perceived lack of social support, on the other hand, are linked to a worse perception of health [37].

Furthermore, during times of crisis, social capital can play a vital role in reducing mental stress and enhancing the ability to cope with unusual circumstances [38] [39] [40] [41]. According to Putnam, social capital can be divided into two sorts: bonding and bridging social capital. A solid network of that kind between close friends and family, demonstrates bonding social capital, which can provide solidarity and emotional support [42]. International students have been observed to use this type of social capital to assist them in managing loneliness in the host nations [43].

Mosanya's [44] findings suggest that during the COVID-19 pandemic, students

most often identified supporters as parents (37%) and friends (32%), while support from universities was rare (2.5%), and coping with loneliness by seeking support was a common strategy, reported by 14 out of 15 participants (93%) in Mosanya's study. When seeking support from others, they mainly reach out to family members, friends back home, and people with whom they feel close in their new setting. Sometimes, they seek help from psychologists, therapists, acquaintances, or peers, and Mosanya's study side-stepped Putnam's theory.

Achieving social contact in moments of isolation is valuable. When feasible, students use various types of communication technology to connect with people, or when they are geographically separated from the social ties that they desire to engage in. Having the company of other people to talk to or share happy activities with helps students manage feelings of isolation.

Similarly, Stokes discovered that increasing the size of a college student's network might help them feel less lonely, and he looked at the link between social network factors and undergraduate students' loneliness from a statistical standpoint. A dense network enhanced the sense of belonging and reduced loneliness. Students who had strong support networks were healthier psychologically and physically, especially during stressful times [45]. Vaux discovered that the perceived quality of support networks was directly associated with social isolation, and that attitudes toward support systems were inversely related to both the quality and quantitative components of social support networks [46].

At the same time, however, according to Sawir and others, there is a clear link between loneliness and difficulty with cross-cultural interactions [4]. In Australia, two-thirds (65%) of students with problems of feeling loneliness had difficulty finding friends from other cultures, compared to just 36% of students who did not feel isolated. To put it another way, monocultural networks, while vital, are insufficient to alleviate feelings of loneliness.

Since loneliness is a common occurrence among people and leads to psychological discomfort, every effort to promote students' mental health and well-being and avoid mental health problems necessitates a planned response from academic institutions. As suggested by the findings of Misirlis and others [47], universities may be one of the most critical inhibitors of such anxiety. Mental problems associated with COVID-19, such as loneliness, anxiety, or stress, can be signif-

icantly reduced if the host institution provides emotional and spiritual support to students. Sawir and others also indicated that building deeper links between foreign and local students in learning environments, as well as assisting multinational students in reshaping their own cultural map, are also important aspects of combating loneliness [4].

Based on the above literature, the author concluded that the way to reduce international students' loneliness is to enrich their social capital, expand their social networks in the host country, and enhance their monocultural networks while also promoting the development of cross-cultural friendships. Meanwhile, universities, as educational institutions, should take the responsibility of providing psychological support for international students.

2.3. Friendship Formation

The previous chapter highlighted the importance of monocultural and cross-cultural friendship for international students to reduce their feelings of loneliness. The next chapter focuses on summarizing four models of friendship formation and the elements that facilitate the formation of cross-cultural friendships.

2.3.1 General friendship formation

Fiebert and Fiebert viewed friendship formation as a subclass of relationships of interpersonal attraction and presented a conceptual guide to models of friendship formation [48]. The four models of friendship formation to be examined are presented as all-inclusive, but not mutually exclusive: (1)incremental model, (2)shared-stress model, (3)perceived-similarity model, and (4)perceived need-complementarity model.

Incremental model

It has been well acknowledged that the longer you see someone, the more likely you are to like him or her. Part of the idea for the incremental model of friendship formation comes from this sensible insight. Homans agreed and indicated that the degree of like for each other would rise as the frequency of interaction between

two or more people increases [49]. Lott and Lott also concluded that the broad assumption that interpersonal attraction is really a strong indicator of interaction has been validated by research [50].

Shared-stress model

The sharing of acute, generally time-limited, and externally induced stress proves to be a potent friend-initiator. Interactions during imprisonment or detention centres are frequently recorded as forming the foundation for long-term friendships. Shared-stress situations that are less extreme, such as those in college or graduate school, can still establish the foundation for enduring connections.

Perceived-similarity model

One of the necessary prerequisites for friendship building, according to Fiebert, is a mutual sense of similarity [48]. He claimed that as people create friendships, they actively seek anchors of similarity in more important domains. The active search for similarity and the desire to secure a foothold in more significant domains are regarded as typical of the friendship-building process, despite the fact that the degree of dissimilarity between friendship partners might vary greatly. The sense of status equality is another crucial part of the perceived-similarity model. There is some evidence in the literature that perceived equality is a crucial variable, since it suggests that friendships are much more possible to occur amongst people of similar status [50].

Perceived need-complementarity model

The need-complementarity model has some definitional issues because it indicates that friendship develops from oppositional attraction, which differs from the perceived-similarity model. However, some research shows that while differences in some fields tend to enhance friendship building, differences in others do not [50].

To summarize, the four models mentioned above in the literature focus on the role of four variables: (1)timing; (2)shared stress; (3)perceived similarity; and (4)perceived need complementarity, on friendship formation, and the cross-cultural communication workshop is designed based on the four models.

2.3.2 Cross-cultural friendship formation

Since cross-cultural friendships are not experienced in the same way as mono-cultural friendships [51], the variables that form cross-cultural friendships can be different from those that form general friendships. In detail, when international students arrive in a new nation, they develop new social circles that are made up of various groups with different psychological functions. To begin with, co-nationals (friends from the same nation) offer an atmosphere in which national and cultural values can be expressed. Secondly, host nationals (friends from the host country) promote foreign students' academic and career achievements. Finally, multinational nationals (friends from other countries) give company for amusement activities [52]. The host nationals' friendship formation and the multinational nationals' friendship formation, which are considered as the cross-cultural friendship formation, can be different from monocultural friendship formation, which is considered as the general friendship formation.

Kudo and Simkin investigated the attitudes of Japanese students studying at an Australian institution about the establishment of cross-cultural friendships in order to better understand the dynamics of cross-cultural relationship building among students [53]. An interpretive analysis of personal interviews was used to outline students' conceptions of friendship and to identify the following factors in the development of cross-cultural friendships: (1)frequent contact; (2)similarity; (3)self-disclosure; and (4)acceptability by other nationals. First, frequent contact involves two subfactors: (a)intimacy and (b)shared networks. Second, two sub-themes appear in similarity: (a)personal similarity and (b)age. Third, self-disclosure involves: (a)English speaking skills and (b)openness to communication. Finally, receptivity of other nationals consisted of: (a)cross-cultural orientation and (b)empathy.

Three of these factors become prerequisites for close friendships: (1)consistent contact, (2)emotional connection, (3)and support. First, friendships require regular interaction through entertaining and educational activities. The dialogue was especially crucial in many activities they did with their friends. Students believed that the scope and depth of their self-disclosure were proportional to their friendship with their peers [54] [55]. The emotional bond, which consists of trust, empathy, and acceptance, is the second component of intimate friendship.

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Finally, emotional and behavioral support is considered to be an important indicator of close friendship. Helping behavior is also well regarded as one of the major elements of friendship throughout the research [56].

Based on the above literature, because cross-cultural friendship is not experienced in the same way as monocultural friendship, attention should also be paid to two important variables, self-disclosure and receptivity of other nationals, when promoting cross-cultural friendship formation.

2.4. Transition Workshop

Adjusting to a new school and social environment is part of the transition to university. According to a recent study on this phase, a large majority of students have at least some difficulties throughout this shift, and McInnis and James' Australian benchmarking survey highlights the importance of the initial learning experience of freshmen [57]. Tinto also highlights that students' early experiences may have a significant impact on their attitudes toward academic learning and social life at the tertiary level [58] [59]; if these are bad, attrition rates can be high. This challenge, however, may be alleviated by a range of institutional interventions aimed at helping students with their transition, and one method to improve the first-year experience is to aid students in forming supportive peer groups [57]. Such groups provide a buffer against the challenges of early transition, as well as a structure for students to assist one another in their school work [60] [61].

Workshops to assist students with their transition to university life are not novel. They are widespread at residential university institutions in Australia, where many students come from rural regions. Beginning in 1996, the University of Sydney's Faculty of Science sponsored a "Transition Workshop" for all freshmen, a one-day workshop focusing on the building of social and intellectual networks held prior to the university orientation event [62]. The workshop's purpose is to provide a collaborative event for students and faculty, based on the understanding that students who work and socialize together are more likely to succeed and continue their education activities [58]. In workshops, students were divided into small groups based on their key areas of interest. During the first semester, students' schedules were altered such that they were put in two minor weekly meetings for

a total of 6 hours per week in groups of 10-20 students. The workshop's major goal was to introduce students to the value and advantages of peer networking and small group learning.

In detail, during the enrollment process, all freshmen were advised to participate in the workshop and requested to respond in writing stating their interest in the workshop as well as their academic and professional goals. Before the workshop, individuals were organized according to their areas of interest and topic preferences, and their timetables were altered to form groups of 10-20 students.

For the morning part of the workshop, students were organized in the classroom according to general areas of study. Within these classrooms, several pre-assigned peer groups had been created to share the lesson schedule. Morning sessions were facilitated by first-year learning coordinators related to the students' academic preferences and career goals. A welcome, guidance on how to acclimate to college life, lectures by previous freshmen, and the development of peer study groups were all included in these sessions. The major activity of these sessions was the formation of peer groups, which occurred when students left their original seats and created their allocated peer group in a separate area in the lecture room where they might interact with others in their timed group (10-20 students). Students were expected to get to know one another and were informed about the benefits of peer groups and the fact that they would be in class together during the first semester. All students were given blank "business cards" on which they could share phone numbers with others in their group in order to build a continuous peer network. Students were expected to keep in touch all across the semester, particularly outside of their shared school class.

In the afternoon, a formal welcome was given to students and their parents. Afterwards, the students left in small groups to visit the campus, while the parents stayed for an afternoon transition process session, where parents were given advice on how to help their sons and daughters, ending with a group question and answer session.

At the end of the day, evaluations of the workshops were conducted, and in 1997, follow-up surveys were conducted. According to the survey, students who took part in the sessions showed great flexibility on a variety of criteria. Besides, in comparison to their counterparts who did not attend the workshops, students who

attended the workshops performed better academically in their first year of study. Nevertheless, according to a qualitative evaluation, workshops fostered the establishment of strong peer connections, which improved learning, self-motivation, and general satisfaction of college life. These findings suggest that the "Transition Workshop" helped develop peer networks and helped ease the transition for undergraduate students [62].

This "Transition Workshop" is dedicated to enhancing the experience of freshmen by facilitating the formation of peer networks, and its goal is very similar to the author's study, which is to help international students, especially the first-year students who are facing the transition to a new environment and suffering from isolation by enhancing the development of social networks through the cross-cultural communication workshop. The "Transition Workshop" has been proven to help freshmen build a peer network to enhance their experience at the university, so this study also used the workshop to help international students alleviate their feelings of isolation.

Chapter 3
Design

Based on the literature review, international students leave their family and social networks to study abroad and therefore suffer from high levels of loneliness. Meanwhile, social support and social capital can play an important role in alleviating mental stress. However, the problem of loneliness among international students has not been well addressed, and universities do not provide sufficient psychological support and assistance to international students. Therefore, to fill this gap, the author came up with a service design that aims to alleviate the loneliness of international students in Japan by organizing a cross-cultural communication workshop in the educational setting to enrich the social capital of international students by promoting cross-cultural and monocultural friendship formation among students.

3.1. Design Concept

3.1.1 The cross-cultural communication workshop

In this study, the target users are international students in Japan who experience problems of loneliness and isolation. In particular, this study targets international students who suffer from personal loneliness, social loneliness, and cultural loneliness triggered by the loss of contact with family, the loss of networks, and the absence of the preferred cultural and linguistic environment.

To alleviate social loneliness and cultural loneliness, a cross-cultural communication workshop was designed. Since the key to alleviating loneliness is to bring people together and create opportunities for them to connect with each other, there are many solutions to this problem, but the study finally chose workshops

as a means to alleviate loneliness because workshops can be easily replicated, and the cross-cultural communication workshop in this study can be easily replicated and applied by other universities with large numbers of international students, thus helping more students who are suffering from loneliness.

In detail, the cross-cultural communication workshop is a cultural-centered workshop that aims at enhancing cross-cultural knowledge, improving intergroup attitudes, and fostering friendship development through culture-focused communication. The cross-cultural communication workshop is not limited to online or offline formats. Through participating in online or offline workshops, international students can get the opportunity to communicate with others to break the isolation and establish their own social network in the host country, addressing the problem of loss of networks. At the same time, through cross-cultural exchange, international students can deepen their understanding of other students' cultural backgrounds and decrease misunderstandings, thus promoting their friendship with students from different countries and alleviating their cultural loneliness.

The cross-cultural communication workshop is designed based on the four models of friendship formation: the incremental model, the shared-stress model, the perceived-similarity model, and the perceived need-complementarity model. Firstly, based on the incremental model, the workshop was finally designed as a weekly workshop where participants are required to have repeated contact because the longer you know someone, the more likely you are to like him. Only through repeated contact do participants have a greater chance of liking each other and thus forming friendships. Besides, the workshop needs to create a common goal for the participants. Based on interviews with past workshop participants, many of them said that they would not reach out to other participants after the workshop because they did not have an excuse. The workshop needs to create a common goal to give participants an excuse to keep communicating outside the workshop, and more communication will help to form friendships.

Secondly, based on the shared-stress model, the workshop is held in the educational setting, and the participants must be students from the same college because sharing extreme, generally time-limited, externally caused stress appears to be a potent activator of friendship. Besides, shared-stress situations that are less extreme, such as those in college and graduate school, can also establish the

foundation for enduring friendships. International students within the same college will experience similar academic and life pressures, making it easier to provide the basis for long-term friendships.

Thirdly, in the cross-cultural communication workshop, participants have to discuss their common experiences. Based on the perceived-similarity model of friendship formation, one of the prerequisites for friendship creation is a shared feeling of resemblance. This progression begins with content areas such as interests and attitudes, progresses to broad personality qualities, and may conclude with structures that represent cognitive styles. Despite the fact that the degree of dissimilarity between friendship partners can vary greatly, the active search for commonality and the attempt to gain a foothold in progressively important domains are viewed as typical of the friendship-building process. The cross-cultural communication workshop was designed to help participants develop friendships by discussing the similar experiences they shared and helping them find common ground.

Finally, based on the perceived need-complementarity model, in the cross-cultural communication workshop, while discussing their similar experiences, participants also discover differences in interests, needs, characteristics, and structures. Complementarity refers to particular different patterns in needs. This patterning involves the presence of one person's and another person's needs, a need that can reciprocally satisfy the first person's needs, that can also contribute to the formation of friendships.

As for the methodology, following the Input-Environment-Output Model, this cross-cultural communication workshop exposes students to contact and intercultural communicating experiences, and input and output are assessed through pre-and post-surveys and follow-up interviews.

3.1.2 Service process

In this service design, the university is the service provider, providing the venue, organizer, and facilitator for the cross-cultural communication workshop. The organizer is responsible for planning and holding each cross-cultural communication workshop, while the facilitator is responsible for controlling the flow of the cross-cultural communication workshop and engaging participants. International

students in Japan who are facing problems of loneliness and isolation are the service receivers who will attend the cross-cultural communication workshop based on their interests and needs. Through this process, the university as the service provider offers social support to international students, helping them adapt to the new learning environment and thus improve their academic performance. In contrast, international students as the service receivers can expand their social capital by participating in the cross-cultural communication workshop, thus alleviating their isolation, adapting to the new environment, and achieving better academic results, which in turn will have a positive impact on the school's academic performance.

3.2. Design Requirements

The cross-cultural communication workshop consists of a facilitator and several participants. The facilitator must first have strong communication skills, be able to drive the atmosphere of the cross-cultural communication workshop and actively guide others to participate in the discussion; and secondly, have strong empathy skills and be able to listen to the participants and give positive responses to them. In addition, the facilitator needs to control the flow of the event and the duration of the discussion in order to complete each part within the time limit.

The maximum number of participants in the cross-cultural communication workshop is six, because if there are more than six participants, it will be difficult for the facilitator to control the flow of the event and to take care of each participant's feelings. Each participant will not have enough time to speak, and it will be difficult to discuss the topic in depth. Although there is a limit to the number of participants in each cross-cultural communication workshop, as long as a sufficient number of facilitators are gathered, the university can hold multiple cross-cultural communication workshops at the same time, thus helping more international students. Finally, the participants should be students from different cultural backgrounds because monocultural networks, however necessary, are not enough to overcome feelings of loneliness. Therefore, both cross-cultural and monocultural communication are imperative.

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3.3. Design Process

This study follows a design thinking approach in which the author gathered and validated existing data, developed a common understanding and different perspectives on the issue of international students' loneliness, and developed assumptions that the more connected international students are to each other, the less lonely they will feel in phase 1. In phase 2, the author researched the target audience, international students, to discover their needs and to explore their behaviors and mental models. This is done by doing ethnography, conducting interviews, and doing field observation. To connect the pieces and make sense of the study findings, the author analyzed, organized, and prioritized the acquired data in phase 3. This is done by making personas and figuring out the main needs of the persona. Phase 4 is ideation, in this phase the author comes up with the solution that addresses the customers' real needs, which is designing a cross-cultural communication workshop to enrich the social capital of international students. In phase 5, the author made the ideas and solutions tangible and experienceable by prototyping. In phase 6, the author conducted the user test to receive feedback and find out whether the prototype could satisfy the needs of target users. Two rounds of workshops were conducted with the target group to achieve the final design. The table 3.1 briefly summarizes the design iteration, and more details will be explained in the following part.

3.4. Ethnography

In order to get a better understanding of the cultural exchange workshop, the author attended three different cultural exchange workshops from August 20th to October 10th, 2021. Observed and interviewed the organizers, facilitators, and participants of the workshops to learn the mental models of the facilitators and participants and analyze the appropriations and breakdowns of these workshops.

3.4.1 Borderless-English meeting

First, the author attended an English meeting held by a student association called Borderless, a Keio University association, on August 29, 2021. The author inter-

Table 3.1 Design process

Date	Method
2021/08/01-08/20	Literature review
2021/08/21-10/10	Ethnography Interview Field observation
2021/10/11-10/15	Persona
2021/10/16-10/18	Ideation
2021/10/19-10/22	1st prototype
2021/10/23	User study
2021/10/24-2022/02/05	2nd prototype
2022/02/06	User study
2022/02/07-05/21	Final design
2022/05/22-06/12	User study

viewed the founder of the association and learned that he founded the association with the goal of making some Japanese friends, forming an association with more diverse and international organizers, and eliminating prejudice against different countries.

The association has three kinds of workshops, the first is social-oriented, and the main purpose is to make friends. The second is language-oriented and aims to improve language skills, taking the English meeting the author attended as an example. The third is an in-depth cross-cultural communication workshop.

In detail, this English meeting was an online meeting, two hours long, and the theme was identity and personality. The workshop consists of five sessions. The first session was the opening, and the second session was the Discussion 1. Before the start of the meeting, the organizer asked each participant to do a personality test in advance. In the Discussion 1 session, participants needed to introduce themselves and share their personality test results and start the discussion based on their personality test results. The questions for discussion were "What do you think of the results? Is it correct or not? What do your friends think of you? Is there any difference between you and your friends in terms of the image of yourself?". The third session was a ten-minute break, and the fourth

session was Discussion 2, which centered on characteristics of the culture of the home country. The questions for discussion were "Compare personalities that you think most seen in your country using these three dimensions: (1)Individualism, (2)Uncertainty avoidance, (3)Long-term orientation. Giving examples to explain why you think people in your country have such personalities." In the fifth session, each group made a presentation based on the results of the discussion. There were two facilitators and eight participants, and the ten people were divided into two groups of five each, with the facilitators leading the discussion.

At the end of the meeting, each participant was asked to fill out a questionnaire that asked questions about the basic information of the participant (gender, nationality, grade, major, school), the purpose of attending the meeting, the most satisfying part of the meeting, the level of difficulty of the discussion, the level of satisfaction with the meeting, the willingness to continue attending in the future, whether they wanted to be a facilitator, and whether they would invite other friends to attend.
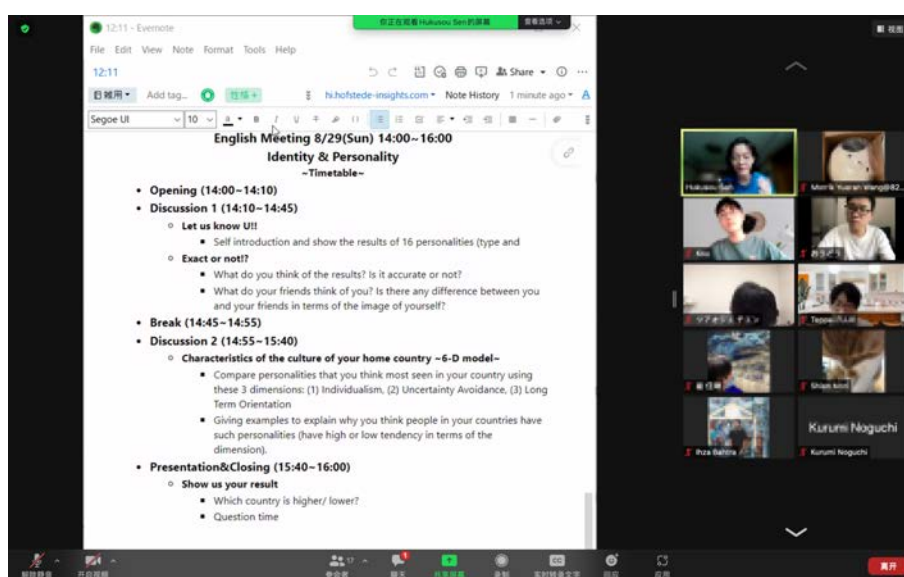

Figure 3.1 English meeting of Borderless

As for the breakdowns, first of all, the workshop was not very entertaining and the topics discussed were a bit boring, which made it difficult for the author to stay

focused as a participant throughout the whole workshop. Secondly, participants usually only speak up after being asked by the facilitator. There is a lack of interaction between participants. However, the facilitators were enthusiastic, and the workshop used a post-event questionnaire to find out what kinds of attributes would be interested in what kinds of activities, and to develop criteria to measure the performance and ability of the facilitator to help him or her improve, which are worth learning from this workshop.

3.4.2 Japanese language exchange workshop

Secondly, the author participated in the Japanese language exchange workshop held by Linc Corporation, a company that offers online services to support various life activities such as education and employment in Japan for foreign nationals. It is a workshop aimed at improving Japanese language skills and making friends. The workshop is an offline workshop held every Friday evening, with about seventy participants divided into nine groups of about eight participants each, consisting of a facilitator and seven participants, with the facilitator from Japan and the participants from different countries, mainly from China. The content of the workshop is mainly about playing games, and the facilitator is responsible for leading the group to play the games together. In the course of the games, participants can improve their Japanese skills through Japanese communication and make new friends through interaction with other participants.

As for the findings, the author interviewed one of the participants, who is living by herself and feels lonely the most of time, and she thinks it is difficult to make new friends in the epidemic environment. The author learned that for the participant, the goal of attending this workshop was to practice Japanese and to have some fun during the epidemic, *"...there were few opportunities to meet many Chinese friends in Japan like this"*, said by the participant. Besides, the participant said it was a good experience because first, the facilitator was very enthusiastic, and other members were also very gentle. Secondly,there was no one to monopolize the speaking for a long time, and she had ample opportunity to express herself.

To summarize, the workshop was a good opportunity for this participant to break her isolation, as she was relatively isolated during the epidemic and had

difficulty making new friends. Secondly, the performance of the workshop facilitators and other participants is closely related to the participants' experience, so it is necessary to control the quality of the facilitators and participants. In addition, whether the participants have enough opportunities to express themselves is also related to the participants' experience, so the facilitator should try to balance the speaking time of each participant in order to make everyone have a better experience.

Figure 3.2 Japanese language exchange workshop of Linc corporation

Beyond that, the authors interviewed one of the facilitators and then learned that the criteria for being a facilitator are, first, the facilitator needs to have the motivation and ability to bring the atmosphere alive; secondly, the facilitator needs to have an outgoing and lively personality and good communication skills. This criteria is also used in the final design of the cross-cultural communication workshop. Regarding the goal of the facilitator, first of all, there are few opportunities to communicate with people offline during the the COVID-19. Secondly, there are some people who have already graduated from college and started work-

ing, and they rarely have the opportunity to interact with others like this after work, so they need some opportunities to meet new people. In conclusion, the workshop meets the needs of participants and facilitators who want to interact with people offline.

3.4.3 Global Education-Global workshop

The global workshop was organized by Global Education of Keio Media Design, in cooperation with Fujimioka High School, and was attended by students from one of the high school's senior classes. The workshop is held eight times a year, and the theme is Sustainable Development Goals, which aims to teach students about small things that they can do to help achieve the Sustainable Development Goals, and then reflect on some international issues to cultivate international citizens who are willing to take action. The workshop has both online and offline formats. The author participated in one of the online workshops as a facilitator on September 18, 2021, and then observed the mental models of the students and the breakdown of the workshop.

Figure 3.3 Global workshop of Global Education

In detail, the students were not very active, and did not participate actively. To illustrate, three students did not show up, so they waited a little longer, and the head teacher went to contact the late students. The head teacher texted in the chatbox, *" Everyone, please turn on your camera."* However, a lot of people still did not turn on their cameras. When discussing in groups, there were groups where everyone did not turn on the camera, and since no one spoke first, everyone stayed silent. The students in group four did not speak at first until the facilitator went in and started to guide everyone to speak. As for the appropriation, each group should arrange a group leader because usually no one wants to be the first one to turn on the camera or speak up.

3.4.4 Learning from the ethnography

First, the workshop needs to meet the needs of people who want to interact with others and make new friends in epidemic situations, and the content needs to be interesting to attract the attention of the participants. Besides, a questionnaire can be used after the workshop to understand the participants' experiences and to receive their feedback.

Secondly, in the process of discussion, the presence of the facilitator is very important. The facilitator needs to have the following qualities, good communication skills, and the ability to bring the atmosphere alive, because a very important task of the facilitator is to allow each participant to engage and fully express themselves. Not only the facilitators but also the participants are very crucial, and they need to be actively engaged in order for the workshop to run smoothly.

3.5. 1st Prototype

3.5.1 The cross-cultural communication workshop 1

The cross-cultural communication workshop 1 is a one-time offline workshop. Regarding the participants, all enrolled students and alumni of Keio Media Design who are physically in Japan may be invited to participate. This time the author was the facilitator, and since the author is Chinese, she invited six students from

different regions of China to participate in order to easily communicate in the same language they feel most comfortable with.

At the beginning of the cross-cultural communication workshop 1, each student filled out the Revised UCLA Loneliness Scale and a self-report scale that measures friendship, indicating their level of loneliness and first impressions of other participants. The cross-cultural communication workshop 1 consists of three sessions: the self-introduction session, the self-disclosure session, and the cross-cultural communication session.

First of all, in the self-introduction session, each of the six participants introduced themselves for about two minutes based on five questions: "What's your name and which batch do you belong to? What country and city are you from? Which real project are you currently in and what's your research interest? How long have you been in Japan? What are your hobbies?", allowing them to learn the basic information about each participant.

In the self-disclosure session, participants spent an hour sharing their common experiences at Keio Media Design, such as "Who was your examiner at the Keio Media Design interview? Did anything interesting happen during the interview? Did anything interesting happen within your Real Project? If you could give a piece of advice to your juniors, what would it be?", helping build bridges between participants.

In the cross-cultural communication session, participants spent an hour sharing similar cultural shocks and experiences in Japan, and discussed two questions: "Why did you choose to study in Japan in the first place? What did you like about Japan?". This session aims to bring participants even closer and facilitate stronger bonding.

In the end, students filled out another survey indicating their perceptions of other participants. One week later, the semi-constructed interview was conducted to learn their actual contact following the workshop.

3.5.2 Findings and learning

First of all, in the self-introduction session, each of the six participants introduced themselves for about two minutes based on five questions, and they thought the self-introduction was boring but necessary. Participants could not remember what

Figure 3.4 The cross-cultural communication workshop 1

others said, and did not know what they should say, therefore, this session should be shortened or more entertaining.

Secondly, in the self-disclosure session, participants spent an hour sharing their common experiences at Keio Media Design, and this session is highly rated and helped build bridges between participants. Although it is useful for connecting first-time participants, more similar topics need to be designed for the following workshop with the same members.

Thirdly, in the cross-cultural communication session, participants spent an hour sharing similar cultural shocks and experiences in Japan, which brought them even closer and facilitated stronger bonding. Many participants indicated that it was from this session that they got to know each other. Although this topic is useful for deepening mutual understanding, the focus of the conversation should be leaded from the same difficulties to the same goals.

Besides, every participant conducted the friendship scale before and after the workshop, and the value of the pre and post-scale did not change much. Therefore, the questions in the scale should be more detailed, and a new friendship scale should be made.

Based on the interview, one participant has lived in Japan for five years but still feels that she has not fit in the Japanese community. Meanwhile, Participants who have spent years in Japan have built up their social circles, so they do not usually feel lonely, *"...loneliness is the norm and I get used to it. I can't meet my friends every day, meeting them once a week is considered frequent"*, said by a man who has lived in Japan for seven years.

However, those who did not have a social circle felt extra lonely during the pandemic. A man who has lived in Japan for two and a half years said that from January to April of 2021, he was so lonely and bored that he could not stand it anymore, mainly because people did not go to campus because of the epidemic. Therefore, this cross-cultural communication workshop will target people without a stable social circle in Japan and will match people who have lived in Japan for many years with newcomers, accelerating these newcomers to build their social circle.

Besides, the extroverted participants will take the initiative to invite others, but the introverted will not, and the introvert thinks there is no excuse to reach out to others, but if they get invited by others, they will not refuse. Therefore, participants will be divided into two type: extroverts and introverts. And the author will try to match those two types of people in equal proportion and expect extroverts to actively invite introverts to meet off-campus, enhancing the formation of friendships and a common goal will be created to encourage participants to communicate after the cross-cultural communication workshop.

Moreover, introverts will only speak up after being cued by the facilitator, but extroverts will speak up whenever they want to. Besides, when asked "Do you feel you have enough opportunities to express yourself during the workshop?", one participant indicated that communication was a two-way thing and he would like to receive positive feedback after speaking, and another participant said he did not have a strong desire to express himself and he enjoyed listening. Therefore, the facilitator needs to pay attention to the behavior of introverted participants and promptly cue them to speak if they are inclined to do so, and need to give positive feedback to each participant after they speak.

Furthermore, participants felt trusted and comfortable if other participants were also Keio Media Design students. One participant felt anxious in a non-native-

language environment, and participants tended to interact with others of the same gender after the workshop. Therefore, the cross-cultural communication workshop will continue to stay within the community and try to ensure that participants have equivalent language ability and gender will also be considered as a factor. To conclude, gender, personality, and the frequency of participation are three important factors that affect friendship formation.

3.6. 2nd Prototype

3.6.1 The cross-cultural communication workshop 2

The cross-cultural communication workshop 2 is a one-time offline workshop. Regarding the participants, all enrolled students and alumni of Keio Media Design who are physically in Japan may be invited to participate. This time the author was the facilitator, and she invited seven people, four Chinese, one Danish, one Brazilian, and one Russian, to participate in order to make this workshop more diverse.

A week before the cross-cultural communication workshop 2, each participant was asked to fill out a matching survey, which was designed to find out the participant's gender, nationality, English ability, Japanese ability, personality type, length of time living in Japan, and whether they have a stable social circle in Japan. The purpose of the survey was to explore whether the participants' personality and gender factors would have an impact on the follow-up friendship formation.

At the beginning of the cross-cultural communication workshop 2, each student filled out the Revised UCLA Loneliness Scale indicating their level of loneliness. The cross-cultural communication workshop 2 consists of four sessions: the self-introduction session, the self-disclosure session, the cross-cultural communication session, and the art appreciation session.

First of all, in the self-introduction session, each of the seven participants briefly introduced their name and Real Project. To prevent participants from forgetting this information, each person's name and Real Project were also written on a name tag in front of them.

In the self-disclosure session, participants spent thirty minutes sharing their common experiences at Keio Media Design, such as "How many languages can you speak? Is it enough to be able to survive in Keio Media Design with these languages?" Each participant was multilingual, so the topic could help build bridges between them.

In the cross-cultural communication session, participants spent forty-five minutes sharing similar cultural experiences and discussing two questions, "Why did you choose to study in Japan in the first place? What did you like about Japan?" This session aims to bring participants even closer and facilitate stronger bonding.

In the art appreciation session, participants were grouped to do some teamwork about art appreciation and sketching, which gave them a common goal to work towards. In the end, students filled out the friendship scale 2 to measure whether the participants had established closer ties between them. One week later, the semi-constructed interview was conducted to learn their actual contact following the workshop.

Figure 3.5 The cross-cultural communication workshop 2

3.6.2 Findings and learning

Regarding the friendship scale, when asked "If other participants invited you to meet off-campus, I would say yes," five out of seven participants strongly agreed, but when asked "I would invite other participants to meet off-campus," only two participants strongly agreed. Therefore, it was difficult for the participants to continue to communicate or meet after the workshop, so they needed an excuse to continue to interact. And in the next cross-cultural communication workshop, the participants will be assigned some assignments to continue talking with each other after the workshop in order to further promote the formation of friendship.

About the Revised UCLA Loneliness Scale, there is basically a negative correlation, with the shorter the time spent in Japan, the higher the degree of loneliness. Therefore, the workshop should help those who have lived in Japan for a short period of time because they often lack a sufficient social network.

Based on the interview, after the cross-cultural communication workshop 2, only two participants hung out offline, everyone said one workshop was not enough time to build a strong relationship, and one participant said she is also a bit passive. Maybe if others invite her, she will be quite happy to join. Therefore, in the following study, the cross-cultural communication workshop will be designed as a weekly workshop.

When asked "How to define acquaintances, casual friends, and close friends?", most of the participants said that casual friends become close friends only after a long period of time, and this time may take one to two years. Therefore, the goal of this research should be to make the participants go from acquaintances to casual friends, not close friends.

In addition, two participants said that when they were in trouble or felt lonely, they chose to adjust themselves, and they were reluctant to go to talk to their friends for worrying about bringing difficulties and negative emotions to them. Even if they chose to talk to them, it might be just once. Several respondents said that the way to relieve loneliness is to open themselves, like a participant said, *"Sometimes you feel lonely because you feel that no one understands you, but this state is actually because you close yourself, no contact with others, you should open yourself, then you will find a lot of people with common ideas, then you will not feel lonely."* Another interviewee emphasized that relieving loneliness

does not necessarily mean talking to others about her worries, but simply going out for a meal or a walk with friends can help her open herself up, as she said, *"I think friends who can come out to eat together or go for a walk can help me relieve loneliness, not necessarily I have to rely on this person to moderate my mood, just that I may need to do such a thing, need to go out and open myself, and then in this process, I may be self-healed."* Therefore, by attending the cross-cultural communication workshop to interact with other people, participants can also open themselves up and thus alleviate the feeling of loneliness.

When asked "Are there significant barriers in making friends across cultures?", one participant said that because of the language barrier, she doesn't actively want to talk about very deep things. Therefore, the workshop should strive to create an environment where participants can speak freely and trust each other.

Regarding the feedback, interviewers felt it would be more effective to have regular weekly workshops rather than one workshop, and the workshop needs to be more fun and has more ice-breaking sessions. Based on the above feedback, the weekly cross-cultural communication workshop 3 was designed.

3.7. Final Design

3.7.1 The online cross-cultural communication workshop 3

The online cross-cultural communication workshop 3 is a weekly workshop. It is held every weekend, four times in total. The goal of this series is to foster friendship development through repeated contact so that participants can grow from strangers to acquaintances and even casual friends. All Keio Media Design students and alumni will be invited to participate, and no more than four participants and a facilitator will be present at each workshop to discuss in English.

Props

First of all, the online cross-cultural communication workshop 3 utilizes the online video conferencing software Zoom. Before each workshop, the organizer will send the link of the zoom meeting to all participants by email, and the participants will enter the meeting through the link at a scheduled time.

Date	Goal	User's experience		Value proposition
2022/05/22 Round 1	Bridge participants Turning participants from strangers to	Self-introduction session Ice-breaking session Self-disclosure session		Learning basic information about others and finding common ground
2022/05/29 Round 2	Bond participants Turning participants from acquaintances to casual friends	Ice-breaking session Cross-cultural communication session Culture experience session		Sharing stories about their lives in Japan and continuing to interact after the workshop
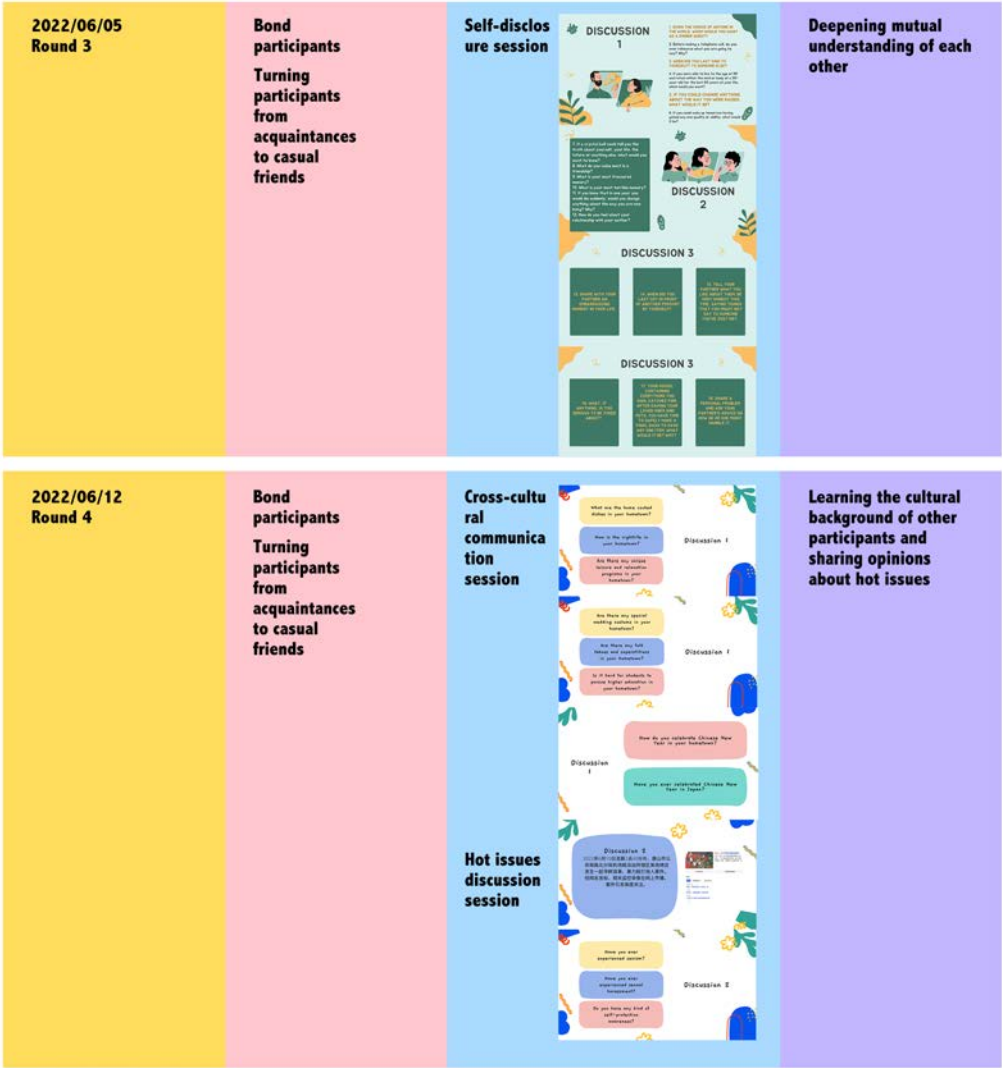
Figure 3.6 Final design
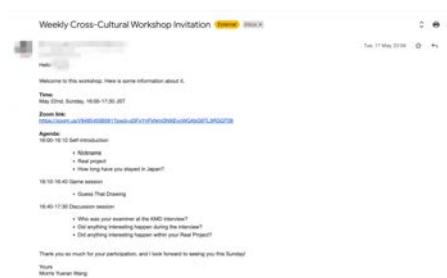
Figure 3.7 Workshop invitation email

Secondly, before each round, the organizer will make slides according to the theme and content of the upcoming round of workshop, and share the slides with the participants through screen sharing during each round. The content of each slide includes all the sessions of each round, the questions and topics to be discussed in each session. The slides play the role of reminding the participants of the topics and attracting their attention.

Figure 3.8 Slides of the round 4

Round 1

The purpose of the round 1 is to bridge participants, allowing them to learn basic information about others, discuss common experiences, and transition from strangers to acquaintances. The round 1 consisted of three sessions. The first part

was a self-introduction session, where participants had to answer three questions, "What is your name? Which real project do you belong to? How long have you stayed in Japan?", and play a game called two interesting truths and a lie, where each person says three pieces of information about themselves, two of these information are supposed to be interesting facts, and one should be a lie, and other members need to guess which one is the lie.

The second part was the ice-breaking session, where all participants played the game guess that drawing. It is an online drawing game, and players need to choose from three random words to quickly interpret and draw their vision. Other players can score more points for identifying the word the fastest.

The third part was the self-disclosure session. This session is divided into two parts: Discussion 1 and Discussion 2. In Discussion 1, participants have to talk about two questions: "Who was your examiner at the Keio Media Design interview? Did anything interesting happen during the interview?", to discuss their common experiences within the university. In Discussion 2, participants need to talk about one question: "Did anything interesting happen within your Real Project?", to share their similar experiences within the university.

Round 2

The purpose of the round 2 was to bond participants by sharing stories about their lives in Japan and guiding them to continue to interact after the workshop by creating a common goal. The round 2 consisted of three sessions. The first part was the ice-breaking session, where all participants played a culture shock-themed test.

The second part was a cross-cultural communication session, and this session was divided into three parts: Discussion 1, Discussion 2, and Discussion 3. In Discussion 1, participants had to answer the question, "Why did you choose to come to Japan in the first place? What do you like about Japan? Have you experienced any culture shock in Japan?". In Discussion 2, the participants talked about two questions, " As a foreigner, have you encountered any inconvenience or difficulty in Japan? What embarrassing or funny things have you encountered because of the language problem?". In Discussion 3, the participants discussed three questions, "Do you feel that you have fit in Japanese society? Or do you

think you are just a foreigner all the time? Does this feeling bother you at all?".

The third part was a cultural experience session, where the participants were given an assignment. They were divided into groups of two according to their wishes, and each group was asked to find a unique spot to enjoy the weekend, which facilitated the participants to continue their communication after the workshop or maybe meet offline by creating a common goal.

Round 3

The round 3 was designed to continue bonding participants. It consists of one session, the self-disclosure session, where the host will prepare a series of personal questions, which were selected from 36 questions in a study by Arthur Aron and others. Psychologist Arthur Aron and colleagues have investigated whether asking two strangers a series of personal questions would speed up the process of developing closeness. The 36 questions in this research are divided into three groups, each of which is designed to be more probing than the one before it. Mutual vulnerability develops connection, according to the theory. "One key pattern associated with the development of a close relationship among peers is sustained, escalating, reciprocal, personal self-disclosure." the scientists wrote. The participants will try to answer the questions one by one, thus deepening their understanding of each other.

Round 4

The round 4 aims to continue bonding participants, turning them from acquaintances to casual friends. The round 4 consists of two sessions: the cross-cultural communication session and the hot issues discussion session. In the cross-cultural communication session, the host prepared a series of questions on the theme of cultural differences in each region, such as "What are the home-cooked dishes in your hometown? How is the nightlife in your hometown? Are there any unique leisure and relaxation programs in your hometown? Are there any special wedding customs in your hometown? Are there any folk taboos and superstitions in your hometown? Is it hard for students to pursue higher education in your hometown? How do you celebrate Chinese New Year in your hometown? Have you ever celebrated Chinese New Year in Japan?". Participants are guided to

share the culture and customs of their hometowns so that they can understand each person's cultural background, enrich their own cultural knowledge, eliminate cultural discrimination, and thus build cross-cultural friendships.

In the hot issues discussion session, the participants discussed the recent hot topic in China, Chinese police arrest nine men over an attack on women in Tangshan, and the discussion centered on three questions, "Have you ever experienced sexism? Have you ever experienced sexual harassment? Do you have any kind of self-protection awareness?". Participants share their views and express their worldview and values, thus deepening mutual understanding.
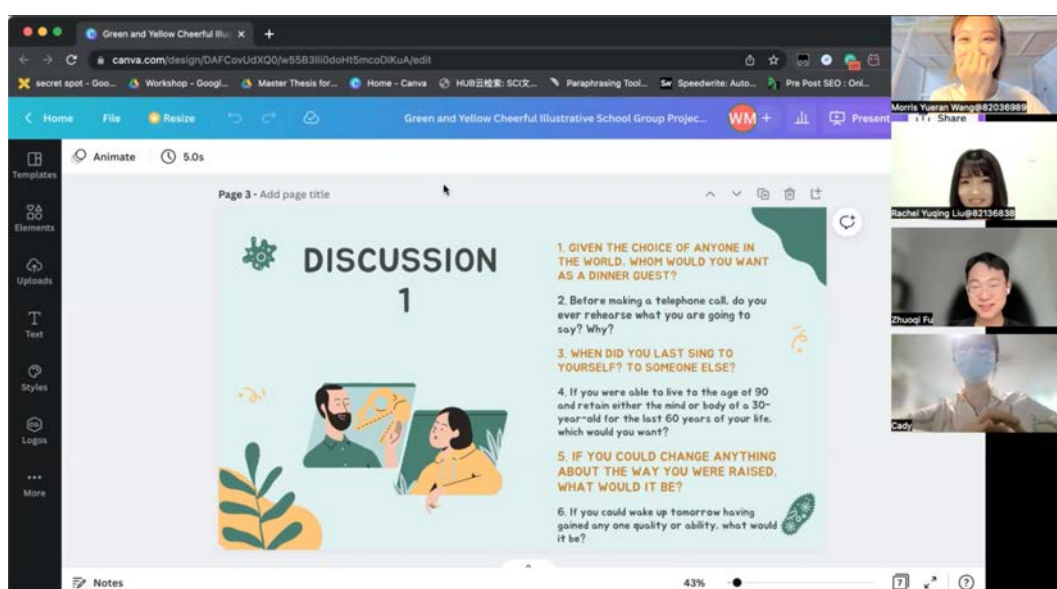
Figure 3.9 The online cross-cultural communication workshop 3

Data collection

After the round 1 and the round 4, each student filled out the Revised UCLA Loneliness Scale, and the author will compare the results between the two times to explore whether the participants' loneliness was reduced. Besides, after each round, each student will fill out a self-report scale that provides feedback on the workshop and their attitude towards other participants, and the author will compare the results to find out whether friendship is established between participants.

Nevertheless, after the round 4, the semi-structured interview will be conducted with all participants.

Chapter 4

Evaluation

This chapter depicts the evaluation of the value of this service in detail, and three research questions of this study were answered.

Research Question 1: To what extent was the cross-cultural communication workshop successful in fostering monocultural friendship formation (co-nationals friendship formation)?

Research Question 2: To what extent was the cross-cultural communication workshop successful in fostering cross-cultural friendship formation (host-nationals and multinational-nationals friendship formations)?

Research Question 3: To what extent was the cross-cultural communication workshop successful in alleviating the loneliness of participants?

The evaluation was conducted through four-times cross-cultural communication workshops to assess the value of the service, and a detailed description of the methodology, user study implementation, results and reflections are described in the following sections.

4.1. Research Design

4.1.1 Participants

Unlike the previous 1st and 2nd prototypes, where the organizers invited specific participants to join the workshop, this time all participants volunteered to participate after viewing the posters of the online cross-cultural communication workshop 3. A week before the round 1 of the online cross-cultural communication workshop 3, the organizers created a promotional poster and posted it on several social media sites, including Instagram, WeChat, and Slack, along with an online registration form. The maximum number of participants for this online

cross-cultural communication workshop 3 is four. Four people signed up after seeing the posters before the round 1 began, and two of them, Alice and Ben (pseudonyms), attended the round 1 on May 22, 2022. Only one participant, Alice, showed up for the round 2 on May 29. Before the round 3 started, two more people, Cindy and Daniel (pseudonyms), signed up. Alice, Cindy and Daniel attended the round 3 and round 4 on June 5 and June 12. To elaborate, Alice is female and is a first-year student of Keio Media Design. Ben is male and is a graduate of Keio Media Design. Cindy is female and is a second-year student of Keio Media Design. Daniel is male and is a second-year student of Keio Media Design.

4.1.2 Data collection

This research utilizes two kinds of research methodology, quantitative and qualitative research. Regarding the quantitative data, before the round 1 and after the round 4, participants were asked to fill out the Revised UCLA Loneliness Scale. Besides, at the end of every round, participants were asked to complete a feedback survey, which was used to measure the participants' satisfaction with each round of workshops and the closeness of their relationships with other participants. As for qualitative data, after the four rounds of workshops, the authors conducted in-depth semi-structured interviews with each participant. A detailed description of the surveys and the details of the interviews will follow.

Revised UCLA Loneliness Scale

One of the core questions of this study is whether the cross-cultural communication workshop helps participants alleviate their loneliness. Therefore, to measure the level of loneliness of participants before and after attending the workshop, the author used the Revised UCLA (University of California, Los Angeles) Loneliness Scale. Developed by psychologist Daniel Russell (1996), the revised UCLA Loneliness Scale is a 20-item scale designed to measure one's subjective feelings of loneliness as well as feelings of social isolation [63]. Participants rate each item on a scale from 1 (Never) to 4 (Often). This measure is a revised version of the original UCLA Loneliness Scale.

Feedback survey

After each round of workshops, the author designed a feedback survey based on the content of the previous workshop. Therefore, participants filled out four different but interrelated feedback surveys. The following paragraphs will describe the details of each survey.

Feedback survey of the round 1   The feedback survey of the round 1 is a 15-item scale designed to measure participants' subjective feelings about attending this round of workshop. This survey consists of 12 rating scale questions where participants rate each item on a scale from 1 (Disagree) to 4 (Agree) and three open-ended questions.

The questions in the survey were mainly classified into three parts. The first part was about the participants' satisfaction with this round of workshop. The main questions included whether the participants were satisfied with the topics discussed in round 1, whether they were satisfied with the performance of the facilitator, whether they felt nervous during the process of attending, their willingness to continue to attend the next round, and their comments on this round of workshop. The second part was about how well the participants learned about the other participants. Specific questions included whether the participants learned basic information about the other participants as well as their interests and hobbies. The third part was about the participants' perceptions of the value and function of this round of workshop. Specific questions included whether the topics discussed by the participants brought them closer to each other, whether the workshop was a good opportunity to make friends, and what value the participants sensed from this round of workshop.

Feedback survey of the round 2   The feedback survey of the round 2 is a 14-item scale designed to measure participants' subjective feelings about attending this round of workshop. This survey consists of 12 rating scale questions where participants rate each item on a scale from 1 (Disagree) to 4 (Agree) and two open-ended questions.

The questions in the survey were mainly classified into two parts. The first part was about the participants' satisfaction with this round of workshop. The

main questions included whether the participants were satisfied with the topics discussed in round 2, whether they found the topics discussed very interesting, whether they were satisfied with the performance of the facilitator, whether they felt nervous during the process of attending, their willingness to continue to attend the next round, and their comments on this round of workshop. The second part was about whether a closer connection was established between participants, with specific questions including whether participants gained a more comprehensive and deeper understanding of others, whether participants felt closer to others, and whether they were willing to invite other participants to meet offline.

Feedback survey of the round 3   The feedback survey of the round 3 is a 15-item scale designed to measure participants' subjective feelings about attending this round of workshop. This survey consists of 12 rating scale questions where participants rate each item on a scale from 1 (Disagree) to 4 (Agree) and three open-ended questions.

The questions in the survey were mainly classified into three parts. The first part was about the participants' satisfaction with this round of workshop. The main questions included whether the participants were satisfied with the topics discussed in round 3, whether they were satisfied with the performance of the facilitator, whether they felt nervous during the process of attending, their willingness to continue to attend the next round, and their comments on this round of workshop. The second part was about the participants' perceptions of the value and function of this round of workshop. Specific questions included whether participants gained a more comprehensive and deeper understanding of others, whether they could open their hearts by talking to other participants, whether the topics discussed by the participants brought them closer to each other, and whether this round of workshop was a good opportunity to make friends.

Feedback survey of the round 4   After each of the first three rounds, all participants filled out the same feedback survey. But at the end of the round 4, everyone filled out a unique survey. This survey is a 56-item scale where participants rate each item on a scale from 1 (Disagree) to 4 (Agree).

This survey is divided into two parts. The first part consisted of two questions and was designed to measure participants' satisfaction with this round of

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workshop, the questions included whether the participants were satisfied with the topics discussed in round 4. The second part consisted of 54 questions, and these questions were divided equally into three groups, each with the same questions about three different participants (the facilitator was also considered as a participant in the study) respectively. This part was designed to measure whether or not friendships were formed between participants. And if a friendship was formed, what level of friendship was it?

To illustrate, first of all, in 1994, De Vries, Dustan, and Wiebe asked men and women from each of four age groups (20 to 34, 35 to 49, 50 to 64, and 65 and older) to define friendship [64]. They then coded the definitions into a list of categories, including self-disclosure, affection or appreciation, assistance, empathetic understanding, ego reinforcement, shared activities, shared interests or values, acceptance, trust, structural features, loyalty or commitment, and compatibility. According to their findings, the author designed the questions based on eight categories of the definitions of friendship, including self-disclosure, affection or appreciation, assistance, empathetic understanding, shared interests, acceptance, trust, and compatibility, to measure whether friendship is established between participants.

Secondly, according to social penetration theory, four stages of relationship development are applicable to friendship [65]. In the first stage, orientation, people notice and interact with each other in superficial, stereotype ways. In the second stage, exploratory affective exchange, relations are friendly and relaxed but interactions are not very intimate. Affective exchange, the next stage, involves greater intimacy and mutual understanding. During the last stage, stable exchange, the pair know each other well and can easily predict each other's behaviour; communication is increasingly intimate. The last three stages correspond roughly to three friendship levels: casual, close and best. Based on the description of these four stages of friendship, the questions of the survey were designed to measure which stage of friendship had developed between the participants.

Interview

The authors conducted interviews with the participants one week after the round 4. The one-week interval between the end of the round 4 and the interview was

intended to provide participants with time to connect with each other outside of the cross-cultural communication workshop. Because this study was designed to measure the effects of the series of online cross-cultural communication workshops on friendship formation and the alleviation of loneliness, participants who attended the online cross-cultural communication workshop 3 once may not have experienced the effects of the series in depth, therefore, only those who attended at least twice were considered the target of this study. The authors only interviewed three participants, Alice, Cindy, and Daniel (Alice attended four rounds and Cindy and Daniel attended the last two rounds).

The interview questions were designed based on the survey results. The questions were divided into three main categories. The first category was about the participants' satisfaction with the workshop 3. Specific questions included which topics the participants were interested in discussing in the workshop 3? Why were they interested? Which topics were not interesting to the participants? And why not?

The second type of question was about whether or not friendships were formed between the participants. Specific questions included whether or not participants made contact with each other after the workshop 3? Did participants make new friends? How did participants perceive the other participants? Did the connections between participants become closer?

The third category of questions was about whether the workshop 3 helped participants feel less lonely. Specific questions included whether making new friends helped participants feel less lonely? Did talking to others during the workshop 3 help participants open themselves up? In addition, based on the comparison of the results of the Revised UCLA Loneliness Scales before and after the workshop 3, the author asked questions about the specific data variations in the scales. For example, if a participant thinks that he or she often feels like lacking companionship before attending the workshop 3, but feels like never lacking companionship after attending the workshop 3, the author will specifically ask the participant why he or she feels this way.

4.2. Results and Discussions

4.2.1 Overall satisfaction with the workshop

According to the results of the feedback survey, overall, the participants showed a satisfactory attitude towards the topics discussed in the online cross-cultural communication workshop 3. At the end of each round, participants were asked to rate the topics discussed in the round of workshop, where participants rated on a scale from 1 (strongly dissatisfied) to 4 (strongly satisfied). The table below shows that the participants gave each topic a score of 3 (satisfied) or more, which shows that they are satisfied with the topic in general.

Topic	Alice	Cindy	Daniel	Mean
Self-introduction session	4	3	4	3.67
Ice-breaking session				
Game: Guess that drawing	3			3
Quiz: Culture shock	3			3
Self-disclosure session				
Life in Keio Media Design	4			4
Psychological questions	4	3	3	3.34
Cross-cultural communication session				
Life in Japan	4			4
Cultural background and cultural differences	4	3	4	3.67
Culture experience session	4			4
Hot issues discussion session	4	3	4	3.67

Table 4.1 Participants' satisfaction with the topic

In detail, first of all, the self-introduction session received a high score of 3.67. Compared to the 1st prototype, where participants said the self-introduction session was long and boring, the simplified and more interesting self-introduction session was approved by the participants.

Secondly, topics that focus on hot issues discussion and personal cultural backgrounds, which both received a high score of 3.67, are more satisfying to participants than topics that are related to sharing the personal lives of the participants,

which received a score of 3.34. This was partly because participants felt uncomfortable discussing such private topics when they were not yet intimate with other participants. As Daniel said, *"I personally felt that because Alice and I were meeting for the first time, I was not very willing to share very personal and private information or thoughts and would feel a little awkward."*

Thirdly, Alice, who participated in four rounds of workshops, gave most of the topics a high score of 4, but only rated the ice-breaking session 3. This is because Alice thought that in the ice-breaking session she was simply receiving information rather than outputting it, and she was very satisfied with the other discussion sessions because those sessions allowed her to express her opinion or share her stories.

4.2.2 Factors that promote and hinder the friendship formation

This study was dedicated to promoting the formation of friendships among participants. This study found that factors that promote friendship formation include sufficient time, in-depth topics of discussion, similar situations and the desire to build a connection with peers, while factors that hinder friendship formation include insufficient time, online communication and participants' nervousness.

After the four rounds of workshops, each participant was asked to fill out the feedback survey of the round 4, where he or she had to rate the degree of intimacy between him or her and the other participants on a scale from 1 (strongly agree) to 4 (strongly disagree). According to the results of feedback of Alice, Alice and the author, the workshop facilitator, successfully established a friendship and transformed from strangers to casual friends. However, Alice and the other two participants, Cindy and Daniel, did not change from strangers to casual friends; their relationship was somewhere between acquaintances and casual friends. In detail, according to the eight categories of the definitions of friendship, from the perspective of acceptance, Alice did not fully accept Cindy and Daniel as friends (as shown in question 11). From the perspective of trust, Alice's trust in Cindy and Daniel is not enough for her to ask them for help without hesitation (as shown from question 12 to question 14). From the perspective of compatibility,

Alice didn't fully feel that her personality and that of Cindy and Daniel were very compatible (as shown in question 15). According to the four stages of relationship development, Alice felt that she interacted with Cindy and Daniel in a relatively superficial, stereotype way. The relationship between them is not fully friendly and relaxed and the interactions between them are not really intimate. Therefore, Alice and Cindy and Daniel did not turn from strangers to casual friends.

Sufficient time

First of all, the key to the formation of this friendship is sufficient time. Alice was the only participant who participated in four rounds of workshops, so she had enough time to communicate with the author, the workshop facilitator, which contributed to the formation of the friendship, while the other two participants, Cindy and Daniel, who only participated in two rounds of workshops, did not have enough time to communicate with Alice and the author, so Alice perceived that a friendship relationship had not been established between her and Cindy and Daniel.

Exchange of profound topics

Secondly, another major factor that facilitates the formation of friendship is the exchange of deep topics, especially the sharing of negative or sad issues, and this workshop created an environment where participants can share stories and ideas freely. For example, in the round 3, participants shared their recent problems and concerns and asked other participants how they would address them. In addition, in the round 4, participants discussed topics such as gender discrimination and women's awareness of self-protection around a news event, the brutal attack on women in Tangshan, and through sharing troubles and discussing profound topics, the participants were brought closer together. As Alice said, *"I usually only share positive things with my friends, but I also have a lot of sad or distressing things I have nowhere to share, and in this workshop I can share these negative things, and other people will also share their stories, I feel that I am allowed to express negative feelings in this environment, and I can express myself freely, which helps me to relieve my internal stress and bring me closer to other participants."* At the same time, Daniel also said, *"Usually I rarely discuss very in-depth topics with*

Table 4.2 Degree of intimacy between Alice and other participants

Question	Cady	Daniel	Facilitator
Q1: My interests and hobbies are shared by him/her	4	4	4
Q2: My private live is shared by him/her	4	4	4
Q3: My values and worldview are shared by him/her	4	4	4
Q4: I have affection for him/her	4	3	4
Q5: I appreciate some qualities of him/her	4	3	4
Q6: If he/she has difficulties in her study, I will be happy to help him/her	4	4	4
Q7: If he/she has difficulties in her daily life, I will be happy to help him/her	4	4	4
Q8: If he/she is frustrated, I'm happy to listen to his/her concerns	4	4	4
Q9: I understand and empathize with some of the experiences of him/her	4	4	4
Q10: I have shared interests or values with him/her	4	4	4
Q11: I regard him/her as a friend	3	3	4
Q12: If I have difficulties in my studies, I will ask him/her for help	3	3	4
Q13: If I have difficulties in my daily life, I will ask him/her for help	3	3	4
Q14: If I get upset, I will talk to him/her	3	3	4
Q15: My personality and that of him/her are very compatible	3	3	4
Q16: I interact with him/her in superficial, stereotype ways	3	3	2
Q17: The relation between him/her and me is friendly and relaxed	3	3	4
Q18: Interactions between him/her and me are very intimate	2	2	4

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my friends, but this workshop gave me an opportunity to discuss profound topics, and also let me express my ideas freely and better understand others."

Similar situations

In this study, Alice and the facilitator formed a new friendship, and a factor contributing to the formation of this friendship was that Alice and the author were in very similar situations. Alice and the facilitator were both in China during the online cross-cultural communication workshop 3, away from their classmates and in a relatively isolated state due to China's strict anti-epidemic policies, so that Alice and the facilitator were in a more isolated state than the other two participants. This similar situation and similar sense of isolation contributed to the formation of the friendship.

Desire to build a connection with peers

When asked about the initial motivation for participating in the online cross-cultural communication workshop 3, both participants, Alice and Daniel, expressed their desire to build closer ties with their peers. Due to the online classes, students rarely have the opportunity to interact with their peers on campus, thus losing a sense of community. They were looking forward to connecting with their peers and finding that sense of safety in the community, and the online cross-cultural communication workshop 3 was an opportunity for them to do so. As Alice said, *"Since I am in China and not in Japan, I have less contact with my school and classmates, so I want to use this opportunity to strengthen the connection, to meet some new friends, especially to get to know seniors, so that I can ask for help if I have any problems in my studies."* At the same time, Daniel also said that, *"Since I am in Osaka, I seldom go to campus, so I do not have much opportunity to communicate with my peers or juniors, so I think this workshop is a good opportunity to interact with them."*

Insufficient time

However, there are also factors that hinder friendship formation in that study. First of all, insufficient time was a major factor preventing friendship formation,

which is why Cindy and Daniel, who had only attended two rounds of workshops, did not develop a friendship with Alice.

Online communication approach

Secondly, the online communication approach was another major obstacle to friendship formation, with both participants, Alice and Daniel, indicating that offline communication would be more likely to facilitate friendship formation than online communication. Alice said that because she and the other two participants, Cindy and Daniel, had only interacted online and had never met offline, they were only friends on the Internet to her, not friends in real life. Daniel also mentioned that he was originally friends with Cindy and he could communicate with Cindy more deeply during the online cross-cultural communication workshop 3, discussing some topics that they would not normally discuss. Outside of the online cross-cultural communication workshop 3, Daniel and Cindy often meet on campus. This combination of online and offline communication deepens their friendship, and since Daniel and Alice did not know each other before, Daniel says it's hard for him to have a real sense of making new friends just by communicating online, and he is looking forward to meeting Alice offline, not just communicating online.

Tension of the participants

Thirdly, the tension of the participants is also a factor that can not be ignored. Take Alice for example, she felt a little bit nervous when she participated in the first round of workshops, but as the workshop went on, the participants gradually became familiar with each other, so Alice no longer felt nervous in the round 2. However, as new participants joined the workshop in the round 3, Alice felt nervous again, and this tension required some time for her to adapt, so she was unable to communicate with the new participants, Cindy and Daniel, in a relaxed state in the last two rounds, which prevented the formation of friendship between them. As Alice said, *"I will feel very nervous when I first meet someone. I will be afraid if I do something wrong, and if I am not good enough, he or she will not like me. I will give myself a lot of such pressure, so I will feel very constrained."* At the same time, Daniel also indicated in the interview that a

relaxed communication environment would be more conducive to the formation of friendship, as he said, *"If it's an offline workshop, we can go to dinner together after the workshop and chat together in a more relaxed way, which will promote the formation of friendship."*

4.2.3 Effects of workshop on participants' feelings of loneliness

After participating in the online cross-cultural communication workshop 3, all three participants experienced varying degrees of change in their feelings of loneliness. First, one participant's level of loneliness increased instead of decreasing. According to the results of the Revised UCLA Loneliness Scale, Alice's level of loneliness before attending the workshop 3 was 63, which indicated a moderately high degree of loneliness, and after attending the workshop 3, Alice's level of loneliness was 65, which indicated a high degree of loneliness.

However, two participants' feelings of isolation were reduced after attending the online cross-cultural communication workshop 3. Before the workshop 3, Cindy's loneliness level was 33, and after the workshop 3, Cindy's loneliness level was 30, both of which represent a low degree of loneliness. In addition, before attending the workshop 3, the degree of loneliness of Daniel was 35, which represents a moderate degree of loneliness. After attending the workshop 3, the degree of loneliness of Daniel was 30, which represents a low degree of loneliness.

According to the data, two out of three participants' levels of loneliness decreased after participating in the online cross-cultural communication workshop 3, but there are many factors that affect the participants' levels of loneliness, and the effect of the online cross-cultural communication workshop 3 is very limited. The next section will analyze the effects of online cross-cultural communication workshop 3 on participants' loneliness and the limitations of workshops in detail.

Alleviate mental stress

First of all, two participants, Alice and Cindy, reported that the online cross-cultural communication workshop 3 helped them relieve their loneliness, specifically in the way that it helped them to relieve their mental stress. They stated

Table 4.3 The UCLA Loneliness Scale result of Alice

Statement	Alice (before)	Alice (after)
I feel in tune with the people around me*	2	2
I lack companionship	4	4
There is no one I can turn to	4	4
I do not feel alone*	1	1
I feel part of a group of friends*	2	3
I have a lot in common with the people around me*	2	2
I am no longer close to anyone	3	3
My interests and ideas are not shared by those around me	3	3
I am an outgoing person*	2	2
There arc people I feel close to*	3	3
I feel left out	3	4
My social relationships arc superficial	3	3
No one really knows me well	3	4
I feel isolated from others	3	4
I can find companionship when I want it*	2	2
There are people who really understand me*	2	2
I am unhappy being so withdrawn	4	4
People are around me but not with me	3	3
There arc people I can talk to*	2	2
There are people I can turn to*	2	2

Note. The total score is the sum of all 20 items.

* Item should be reversed (i.e., 1=4, 2=3)before scoring.

Table 4.4 The UCLA Loneliness Scale result of Cindy

Statement	Cindy (before)	Cindy (after)
I feel in tune with the people around me*	3	4
I lack companionship	1	1
There is no one I can turn to	1	1
I do not feel alone*	2	4
I feel part of a group of friends*	3	3
I have a lot in common with the people around me*	3	2
I am no longer close to anyone	1	1
My interests and ideas are not shared by those around me	1	2
I am an outgoing person*	3	3
There arc people I feel close to*	3	4
I feel left out	2	1
My social relationships arc superficial	1	1
No one really knows me well	1	1
I feel isolated from others	1	1
I can find companionship when I want it*	3	3
There are people who really understand me*	3	3
I am unhappy being so withdrawn	2	2
People are around me but not with me	1	1
There arc people I can talk to*	3	3
There are people I can turn to*	3	3

Note. The total score is the sum of all 20 items.

* Item should be reversed (i.e., 1=4, 2=3)before scoring.

Table 4.5 The UCLA Loneliness Scale result of Daniel

Statement	Daniel (before)	Daniel (after)
I feel in tune with the people around me*	3	3
I lack companionship	3	1
There is no one I can turn to	1	1
I do not feel alone*	4	4
I feel part of a group of friends*	2	3
I have a lot in common with the people around me*	2	3
I am no longer close to anyone	1	1
My interests and ideas are not shared by those around me	2	2
I am an outgoing person*	2	2
There arc people I feel close to*	2	4
I feel left out	1	2
My social relationships arc superficial	2	1
No one really knows me well	1	1
I feel isolated from others	2	2
I can find companionship when I want it*	4	4
There are people who really understand me*	4	4
I am unhappy being so withdrawn	2	2
People are around me but not with me	1	2
There arc people I can talk to*	4	4
There are people I can turn to*	4	4

Note. The total score is the sum of all 20 items.

* Item should be reversed (i.e., 1=4, 2=3)before scoring.

that the online cross-cultural communication workshop 3 fully satisfied their desire to share.

In detail, when asked "Do you feel left out? And do you feel like no one really knows you?", Alice said she often felt this way and her desire to share is not satisfied in her daily life. Alice felt extremely lonely because she had no place to express her thoughts and things in her daily life, but the online cross-cultural communication workshop 3 helped her relieve her mental stress by fulfilling her need to share her thoughts with others. As Alice said, *"Attending the workshop was like doing a psychological consultation, and I felt more relaxed after talking to people about my ideas."* However, the effect of the online cross-cultural communication workshop 3 was only temporary. Alice felt relaxed and less lonely while attending the workshop 3, but after the workshop 3, she went back to her former life, and the loneliness would trouble her again.

Recall good memories

Secondly, two participants, Alice and Cindy, also reported that the online cross-cultural communication workshop 3 helped them alleviate their feelings of loneliness by reminding them of good memories from the past. In detail, in the online cross-cultural communication workshop 3, participants discussed many topics that could trigger their past memories, including good memories, embarrassing memories or sad memories. Among them, Alice and Cindy indicated that these good memories could help them alleviate the feeling of loneliness.

To illustrate, Alice currently lives alone and feels very lonely as she rarely sees her friends and family because of the epidemic. When asked "How often do you feel part of a group of friends?", Alice's answer changed from a 2 (rarely) before the workshop 3 to a 3 (sometimes) after the workshop 3. This is because the participants discussed topics that could trigger good memories during the workshop 3, such as "What is your most precious memory?" and "Have you ever celebrated Chinese New Year in Japan? How was it celebrated?" These questions reminded Alice of her good memories of spending time with her friends in high school and with her colleagues while working in Japan, thus reminding her that she is not alone but has many companions. Although Alice is still alone, her loneliness is reduced after realizing that she still has many friends.

Limitations of online communication

All three participants reported that online communication had a limited contribution to the promotion of friendship. First of all, online communication means that participants can be anywhere, at home, at school, or in a coffee shop, and participants rarely continue to communicate with others online after the online workshop, because sending messages to friends they do not know that well can be anxiety-provoking. As Alice said, *"When I send a message to a friend I don't know well, I wait nervously for his or her reply, and if he or she does not reply for a long time, I start to worry if he or she does not like me or if I have said something wrong."* And this anxiety leads some people to choose not to send messages to friends they do not know well, thus hindering the formation of friendships. Compared to online interaction, offline interaction is more conducive to friendship formation. Because offline communication means that participants are in the same space and face-to-face communication means that people can get prompt responses, the anxiety of waiting for others to respond does not exist, so participants are more willing to start a small talk with others after the offline workshop, which is more conducive to the formation of friendships.

Secondly, online communication is difficult to bring participants a sense of realism in making friends. Even though the participants had in-depth communication in the online cross-cultural communication workshop 3, they still treated other participants as friends from the Internet rather than in real life. As Daniel said that for him the online cross-cultural communication workshop 3 was just a chance to get to know people he had never met before, he could get to know other participants in the workshop 3, but only after interacting with them in real life could he have the feeling that he had made new friends. The way to alleviate one's loneliness is to expand one's social network, so the online cross-cultural communication workshop 3 is not only limited in helping people build friendships, but also in reducing participants' loneliness.

Chapter 5

Conclusion

5.1. Limitation

5.1.1 Limited number of participants

First of all, the biggest limitation of the study was the relatively small number of participants in the final user study. The ideal situation for the final design is to have four participants attending four rounds of online cross-cultural communication workshop 3 together so that the participants have enough time to get to know each other and build friendships that will alleviate their feelings of isolation. However, the actual situation was that four participants participated in the workshop successively. Only one of them participated in four rounds, one of the remaining three participants participated once and two of them participated twice. As a result, these four participants did not have enough time to spend with each other, which hindered the formation of friendships.

Since the participants volunteered to participate in the online cross-cultural communication workshop 3 after seeing the posters, it was not possible to force them to attend each round of the workshop 3. However, it is possible to attract more participants and motivate them to participate on a continuous basis by increasing the promotion and making the online cross-cultural communication workshop more enjoyable.

5.1.2 Cultural background of the participants

The goal of this research is to alleviate the loneliness of international students by fostering monocultural friendship formation (co-nationals friendship formation) and cross-cultural friendship formation (host-nationals and multinational-

nationals friendship formations). However, in this study, three of the four participants were from China, and only one was from India. Although China is a large country and the Chinese participants came from different regions of China, and they had different cultural backgrounds, this study was committed to promoting co-nationals friendship formation while trying to promote host-nationals and multinational-nationals friendship formation. Therefore, the cultural background of the participants in this study was relatively homogeneous, which hindered the formation of cross-cultural friendships.

Because the participants attended the workshop spontaneously, the cultural background of the participants was uncontrolled and random. However, in the future, if enough participants sign up, the cross-cultural communication workshop organizers can group the participants according to their cultural backgrounds and try to ensure the diversity of participants in each group, thus facilitating the formation of cross-cultural friendships.

5.2. Conclusion

In conclusion, Japan, as a major non-Anglophone study abroad country, has a large number of foreign students. These international students leave behind their families and social networks, and most of them experience personal loneliness, social loneliness, and cultural loneliness. Nevertheless, the COVID-19 pandemic intensifies the loneliness of international students. In this context, this research focuses on international students in Japan who suffer from loneliness, and aims to help them reduce their feelings of loneliness.

According to Stokes, increasing the size of a college student's network could help him or her feel less lonely since a dense network enhances the sense of belonging and reduces loneliness. Nevertheless, according to Sawir and others, building deeper links between foreign and local students in learning environments is also essential for combating loneliness. However, the issue of loneliness among international students has not been well addressed and universities do not provide sufficient support to international students. Therefore, to fill this gap, this research aims to help international students alleviate their loneliness by promoting the formation of monocultural and cross-cultural friendships in the educational

setting.

To do so, the cross-cultural communication workshop was designed to address this issue, which focuses on enhancing cross-cultural knowledge, improving intergroup attitudes, and fostering friendship formation through culture-focused communication. According to the feedback of the final user study, first of all, participants have an overall satisfying attitude towards the online cross-cultural communication workshop 3.

Secondly, from the perspective of promoting friendship, between the four participants and a facilitator, the workshop successfully facilitated the formation of a monocultural friendship (co-nationals friendship) between two people, Alice and the facilitator. Besides, some of the participants were already monocultural friends before attending the workshop, and the workshop allowed them to get to know each other better, thus deepening their relationship. To summarize, the workshop has been effective in fostering monocultural friendships and deepening bonds. Nevertheless, the study found that the factors that promote friendship include: (1)sufficient time, participants need to have sufficient time to get acquainted; (2)the exchange of profound topics, through the exchange of profound topics can bring people closer; (3)similar situations, people in similar situations are more likely to form a bond; (4)the desire to build a connection with peers, this desire is conducive to the formation of friendship.

Thirdly, due to the limitations of the online cross-cultural communication workshop 3, where three participants and one facilitator were from the same country, the online cross-cultural communication workshop 3 did not lead to the formation of cross-cultural friendships (host-nationals and multinational-nationals friendship), therefore the role of the online cross-cultural communication workshop 3 in promoting cross-cultural friendship formation has not been validated.

Finally, in this research, two of the three participants experienced a decrease in loneliness after attending the workshop. In the interview, all three participants said that the in-depth communication with other participants in the workshop could help them open themselves up, relieve their mental stress, and recall good memories, thus serving to alleviate their loneliness. However, the effect of the workshop on alleviating loneliness was temporary and limited. If the participant remained isolated in his or her daily life, he or she might feel less lonely during

the cross-cultural communication workshop, but would feel lonely again after the cross-cultural communication workshop.

5.3. Future Works

In the future research, the author would like to continue to explore the role of the cross-cultural communication workshop in promoting friendship from two perspectives. First of all, from the perspective of gender differences, it was found in 1st prototype that participants tended to choose to interact with participants of the same gender after the cross-cultural communication workshop rather than with the opposite gender. Therefore, in the future, the authors hope to investigate the effect of participants' gender on the promotion of friendship among participants. The study will be conducted by convening three groups, one all female, one all male, and one half female and half male, for a controlled experiment. The authors will observe three different groups of participants as well as interview them and compare the differences between them.

Secondly, from the perspective of personality differences, it was found in 1st prototype that extroverted participants continued to contact or meet with other participants after the cross-cultural communication workshop, while introverted participants did not. Therefore, in the future, the authors hope to investigate the effect of participants' personalities on the promotion of friendship among participants. The study will be conducted by convening three groups, one with all extroverts, one with all introverts, and one with half extroverts and half introverts, for a controlled experiment. The authors will observe three different groups of participants as well as interview them and compare the differences between them.

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Appendices

A. Feedback survey of the online cross-cultural communication workshop 3

3. I am satisfied with the discussion 1 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

4. I am satisfied with the discussion 2 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

5. I felt very nervous at the beginning *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

6. As the discussion goes on I gradually become less nervous *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

7. I learned basic information about other participants (include the facilitator *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

8. I learned about the hobbies and interests of other participants (include the *
facilitator

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

9. My interests and ideas are shared by other participants (include the *
facilitator

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

10. The topics we discussed can bring us closer to each other *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

11. I think this workshop is a good opportunity for me to make new friends *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

12. I think the facilitator was very helpful *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

13. I would like to join the next workshop *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

14. What value do you see from the workshop? *

_____

15. Do you have any comments/suggestions about the workshop? *

_____

Workshop Feedback 2022/05/228

*必填

1. Name *

2. I am satisfied with the quiz session *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

3. I am satisfied with the discussion 1 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

4. I am satisfied with the discussion 2 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

5. I am satisfied with the discussion 3 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

6. I am satisfied with the assignment session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

7. I think the topic of discussion is very interesting *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

8. I didn't feel nervous *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

9. I got a more thorough and in-depth understanding of the other participants *
(include the facilitator

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

10. I feel closer to the other participants (include the facilitator *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

11. I will ask other participants to meet offline (include the facilitator *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

12. I think the facilitator was very helpful *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

13. I would like to join the next workshop *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

14. Do you have any comments/suggestions about the workshop? *

Workshop Feedback 2022/05/22

*必填

1. Name *

_____

2. I am satisfied with the self-introduction session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

3. I am satisfied with the discussion 1 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

4. I am satisfied with the discussion 2 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

5. I am satisfied with the discussion 3 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

6. I felt very nervous at the beginning *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

7. As the discussion goes on I gradually become less nervous *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

8. I got a thorough and in-depth understanding of the other participants   *
(include the facilitator

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

9. By talking to other participants I can open my heart *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

10. The topics we discussed can bring us closer to each other *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

11. I think this workshop is a good opportunity for me to make new friends *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

12. I think the facilitator was very helpful *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

13. I would like to join the next workshop *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

14. What value do you see from the workshop? *

_____

15. Do you have any comments/suggestions about the workshop? *

_____

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2。 I am satisfied with the discussion 2 session *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

Rachel

3。 My interests and hobbies are shared by Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

4。 My private live is shared by Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

5. My values and worldview are shared by Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

6. I have affection for Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

7. I appreciate some qualities of Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

8. If Rachel has difficulties in her study, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

9。 If Rachel has difficulties in her daily life, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

10。 If Rachel is frustrated, I'm happy to listen to her concerns *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

11。 I understand and empathize with some of the experiences of Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

12。 I have shared interests or values with Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

13. I regard Rachel as a friend *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

14. If I have difficulties in my studies, I will ask Rachel for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

15. If I have difficulties in my daily life, I will ask Rachel for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

16. If I get upset, I will talk to Rachel *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

17. My personality and that of Rachel are very compatible *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

18. I interact with Rachel in superficial, stereotype ways *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

19. The relation between Rachel and me is friendly and relaxed *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

20. Interactions between Rachel and me are very intimate *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

Cady

21. My interests and hobbies are shared by Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

22. My private live is shared by Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

23. My values and worldview are shared by Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

24. I have affection for Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

25. I appreciate some qualities of Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

26. If Cady has difficulties in her study, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

27. If Cady has difficulties in her daily life, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

28. If Cady is frustrated, I'm happy to listen to her concerns *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

29. I understand and empathize with some of the experiences of Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

30. I have shared interests or values with Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

31. I regard Cady as a friend *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

32. If I have difficulties in my studies, I will ask Cady for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

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33.   If I have difficulties in my daily life, I will ask Cady for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

34.   If I get upset, I will talk to Cady *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

35.   My personality and that of Cady are very compatible *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

36.   I interact with Cady in superficial, stereotype ways *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

37. The relation between Cady and me is friendly and relaxed *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

38. Interactions between Cady and me are very intimate *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

Morris

39. My interests and hobbies are shared by Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

40. My private live is shared by Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	○	○	○	○	Agree

41. My values and worldview are shared by Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

42. I have affection for Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

43. I appreciate some qualities of Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

44. If Morris has difficulties in her study, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

45. If Morris has difficulties in her daily life, I will be happy to help her *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

46. If Morris is frustrated, I'm happy to listen to her concerns *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

47. I understand and empathize with some of the experiences of Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

48. I have shared interests or values with Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

49. I regard Morris as a friend *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

50. If I have difficulties in my studies, I will ask Morris for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

51. If I have difficulties in my daily life, I will ask Morris for help *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

52. If I get upset, I will talk to Morris *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

53. My personality and that of Morris are very compatible *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

54. I interact with Morris in superficial, stereotype ways *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

55. The relation between Morris and me is friendly and relaxed *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree

56. Interactions between Morris and me are very intimate *

请仅选择一个答案。

	1	2	3	4	
Disagree	◯	◯	◯	◯	Agree