ABSTRACT

MAINTAINING SOCIAL CONNECTEDNESS:
HANGING OUT USING FACEBOOK MESSENGER

by Paulina Zeng

The research paper is about maintaining social connectedness through hanging out using Facebook Messenger. This research explains how young adults and adults, age 18-29 years, connect with friends by hanging out. The definition "hanging out" does not mean speaking the entire time when friends meet up. Hanging out means being and establishing familiarity through a series of "chit chats" while engaged in other activities. The paper is mainly focused on how people define hanging out and how young adults are currently utilizing Facebook Messenger to maintain those social connections digitally. A total of 51 young adults participated in the survey to discover how people are hanging out physically and digitally. 6 survey participants were interviewed. Both methods are created to discover design opportunities the Facebook Messenger. The research outcome is a prototype conversation generator. Usability tests are conducted with the prototype to confirm its capabilities to identify the feature usefulness in messenger hangout settings.

Keywords: Experience Design, Mobile Instant Messaging Applications, Facebook Messenger, Hanging Out, Social Connectedness, Young Adults

MAINTAINING SOCIAL CONNECTEDNESS:
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# Chapter 1: Communication Devices

## 1.1 Research Inspiration

Current technologies allow people to communicate and maintain social relationships using digital devices. Among these technologies, mobile phones keep local and non-local relationships connected.[1] Mobile devices and apps change rapidly and are used by millions; hence, it is important to learn what changes in human behaviors to cultivate friendships. The study interests arise from this aspect. The research is to develop ways to preserve young adults' relationships they met offline using Facebook Messenger.

## 1.2 Hanging Out

The phrase "hanging out" was first used to identify shops' business in the 1400s.[2] Based on the Oxford English Dictionary, hanging out is defined as "to spend time or pass time, habitually, idly, or at leisure, usually specified place, or with specified company; to socialize, informally, as part of a peer group, of two or people to associate or spend time together."[3] In this paper hanging out is defined as spending time together but not necessarily talking both in person and online. Spending time together without verbal cues still initiates a sense of development of close interpersonal relationships. Sorrel's article explains the act of small talk helps relationships become better acquainted or bonded.[4] At the moment, there is no substantial evidence to prove shorter conversations lead to stronger relationships.

## 1.3 Computer-Mediated Communication

Technology has become more robust than it ever has been before. More people can socialize with friends or family using the internet and telecommunications of different devices. Socials scientists refer to these technologies as computer-mediated communication, CMC. People using two or more devices such as emails, blog posts, video chat, audio communication, mobile instant

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[1] Scott W. Campbell and Michael J. Kelley, "Mobile Phone Use in AA Networks: An Exploratory Study," *Journal of Applied Communication Research, no 34*. May 2006. doi:10.1080/00909880600574104

[2] "Hang out," *Oxford English Dictionary*. last modified June 2003. http://www.oed.com/view/Entry/83964?rskey=imKsrz&result=2&isAdvanced=false#eid2021383

[3] "Ibid.

[4] Charlie Sorrel, "Small Talk Is Essential for Primate Bonding, However Boring It Might Be," *Co.Exist.* March 9, 2016. http://www.fastcoexist.com/3054732/small-talk-is-essential-for-primate-bonding-however-boring-it-might-be

messaging, and the list continues refers as using computer-mediated communication.[5] All these devices have one thing in common. Individuals are unable to receive immediate verbal feedback.[6] People who do not respond immediately refers as asynchronous communication. Individuals tend to be occupied while the person on the other end is available to answer.[7] When individuals are both available, it's referred to as synchronous communication. Such cases, for example, can happen in video chats, instant messaging online or on mobile, and text messaging. People are taking advantage of technologies to communicate with each other.

## 1.4   Mobile Instant Messaging

One of the most popular CMC or alternatives to texting is mobile instant messaging, MIM. In 2015, PEW Research explains 49% of mobile devices were used by young adults and within this number, 41% were highly active in using their messaging app.[8] This type of nonverbal communication comes in a form of a mobile or smartphone application which in some cases are free to download from an app store. Some of the current applications are WhatsApp and Facebook Messenger with over millions of active users. Recent WhatsApp studies by Church and her colleagues explains the choice of MIM over using text messages were due to cost, group messaging features, and organized contacts.[9] WeChat is another MIM popular in China with hundreds of millions of users. Research conducted by Wang, Li, and Tang identified their reasoning why people use WeChat. People use WeChat for similar reasons as WhatsApp.[10] WeChat users are using it for voice memos, killing time, meeting new people, seeking information, and supporting office interactions. Studies have shown MIM increases friendships and connectedness. The continual use of MIM encourages the users to have face-to-face

[5] Rob Higgins, "Computer-Mediated Cooperative Learning: Synchronous and Asynchonous Communication Between Students Learning Nursing Diagnosis," *Virtual World for Knowledge Building*. 1991. April 29, 2016. http://www.cybercorp.net/rhiggins/thesis/higlitb.html
[6] Ibid.
[7] Susan C. Herring, "Computer-Mediates Conversations: Introduction and Overview," *LanguageatInternet*. 2010. April 29, 2016. http://www.languageatinternet.org/articles/2010/2801.
[8] Maeve Dugga, "Mobile Messaging and Social Media 2015," *Pew Research Center*. August 19, 2015. http://www.pewinternet.org/2015/08/19/mobile-messaging-and-social-media-2015/
[9] Karen Church, and Rodrigo de Oliveira, "What's up with Whatsapp?: Comparing Mobile Instant Messaging Behaviors with Traditional SMS," Association for Computing Machinery. August 20, 2013. doi:10.1145/2493190.2493225
[10] Yang Wang, Yao Li, and Jian Tang, "Dwelling and Fleeting Encounters: Exploring Why People use WeChat – A Mobile Instant Messenger," *Association for Computing Machinery*, no.33 (2011): 1543-1548. doi:10.1145/2702613.2732762

conversations.[11] Mobile instant messaging allows individuals to communicate with one another, to build their friendships, and to stay connected.

## 1.5    Research Purpose

Use of MIM is currently one of the most popular communication tools among millennials. The increase of MIM increases face to face connection. Previous research was conducted internationally but not specifically about Facebook Messenger, one of the popular applications used today. The purpose of this research is to understand how Facebook Messenger helps young adults maintain friendships. Although many of Facebook's features are tailored to the functional aspects such as paying friends, calling Uber, and having Chatbots, the research focuses more on Facebook's mission. Their perspectives express Facebook to be, "more open and transparent... will create greater understanding and connection."[12] Some of the features in Facebook Messenger supports their missions such as group messaging and shareable links. The design reinforces their missions by making it more accessible to those features and feels comfortable with using the Facebook Messenger. This study is not funded by Facebook, and the research is work on independently.

# Chapter 2: Facebook

## 2.1    Background Information About Facebook

Facebook first launched in 2004[13] as a website to find other college students at Harvard University, where they can like or dislike a particular person on campus. Facebook transformed into one of the most popular social sites. Facebook have a total of 1.65 million monthly active users as of April 27, 2016.[14] On Facebook, people can share their stories, thoughts, and experiences. Their mission as a corporate company is that they want to help people stay open and

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[11] Frank Bentley, S. Tejaswi Peesapati, and Karen Church, "I thought she should like to read it" Exploring Sharing Behaviors in the Context of Decline Mobile Web Use," *Bentley Publication*. 2016. http://web.mit.edu/bentley/www/papers/mobileWebLinkShare.pdf

[12] "Facebook Principles." *Facebook*.com. accessed April 29, 2016. https://www.facebook.com/principles.php

[13] "Our History," *Facebook.com*. accessed April 28, 2016. https://newsroom.fb.com/company-info/

[14] "The Top 20 Valuable Facebook Statistics – Updated April 2016," *Zephoria Digital Marketing*. accessed April 29, 2016. https://zephoria.com/top-15-valuable-facebook-statistics/

connect friends, families, as well as the people they care. As their mission states," Facebook's mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them."[15] Their goal is to help people connect with friends from all around the world." Facebook wants to make it easier for people to connect.

## 2.2    Facebook Messenger

For the purpose of this research, the paper will focus on Facebook Messenger, their mobile instant messaging application. The application first originated from Facebook messages, where it allowed users to send instant messages to friends through the website. These messages show up as a small window attached on the footer on the web page. Facebook created the Facebook app specifically for people to view content from the newsfeed. Facebook did not create an individual application for messages. Not until 2011, where they gave an option to download Facebook Messenger, a separate application for mobile instant messaging, or stay in the original Facebook application messages.[16] They officially announced Facebook messages is no longer accessible in the Facebook app, but require all users to download Facebook Messenger to use it, in 2014.[17] Mark Zuckerberg explained there were 10 billion messages sent per day over the Facebook app and would require time to for the app to switch from newsfeed to messages tab.[18] Zuckerberg suggested it was best to have one application be proficient on one thing. The transition may have caused some resistance between the users and Facebook. With the recent numbers of 900 million actives users worldwide on Facebook Messenger as of April 2016, shows the decision may be as contrary.[19]

## 2.3    Facebook Features

With the positive outcome of Facebook Messenger, they continue to build the robust application

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[15] "Our History," *Facebook.com. accessed* April 28, 2016. https://newsroom.fb.com/company-info/

[16] Jason Kincaid, "Facebook Launches Standalone iPhone/Android Messenger App (And It's Beluga)," *TechCrunch.* last modified August 9, 2011. http://techcrunch.com/2011/08/09/facebook-launches-standalone-mobile-messenger-app-and-it%E2%80%99s-beluga/

[17] Josh Constine, "Facebook Is Forcing All Users To Download Messsenger By Ripping Chat Out Of Its Main Apps," *TechCrunch.com,* last modified April 9, 2014. http://techcrunch.com/2014/04/09/facebook-messenger-or-the-highway/

[18] Ibid.

[19] "Leading social networks worldwide as of April 2016, ranked by number of active users (in millions)," *Statista.com,* accessed April 29, 2016.

with additional embedded features. Users are allowed to make video calls, one to one payments, send gifs, voice messages, and calling for transporting with Uber. The majority of the features, video calls, and payments, are universal features in mobile instant messaging and can be seen in many other applications such as WeChat, Kik, Viber, Google Hangouts, and Skype. Other universal features also include the use of stickers, emojis, send images or videos, and group chats. Facebook recently launched hidden games on Facebook called @fbchess @dailycute and a March Madness basketball game. The users can play chess with friends by using different keywords to specify the steps and moves.[20] If the users type in @dailycute, a cute picture or gifs of cute animals shows up.[21] The messenger team launched yet another game where users can shoot basketball hoops with friends to celebrate the basketball season. It reached 5% of Facebook Messenger users.[22] The reason being may be due to technical difficulties with the mobile application. Users may question and look forward to what is ahead to interact with friends virtually in a whole new way. Facebook's most recent announcement indicated their next direction at their yearly held Developer Conference on April 12th and 13th of this year. Facebook Messenger integrated with artificial intelligence, Chatbot.[23] Using this feature, people can talk to a company with the combined artificial intelligence with the user as human as possible over the messenger.[24] It is unclear what direction Facebook is heading with all the features peeking around in their Messenger app. It brings a new light for how people can be using Mobile Instant Messaging apps.

## Chapter 3: Methodology

This section presents the research methods to understand how young adults today feel about

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[20] Jacob Shamsian, "There's a secret chess game hidden in Facebook – here's how to play," *TechInsider.com*, last modified February 1, 2016, http://www.techinsider.io/play-chess-on-facebook-messenger-hidden-feature-2016-2.
[21] Justin Diaz, "Users Can Play Chess Inside of Facebook's Messenger App," *AndroidHeadlines.com*, last modified February 1, 2016, http://www.androidheadlines.com/2016/02/users-can-play-chess-inside-of-facebooks-messenger-app.html.
[22] Nick Summers, "Facebook Messenger has a hidden basketball game," *Engadget.com*, last modified March 18, 2016, http://www.engadget.com/2016/03/18/facebook-messenger-march-madness-basketball/.
[23] Jillian D'Onfro and Matt Weinberger, "Facebook announces chatbots for Messenger and more," *BusinessInsider.com*, last modified April 12, 2016, http://www.businessinsider.com/live-facebooks-f8-conference-2016-4.
[24] Josh Constine, "Facebook launches Messenger platform with chatbots," *TechCrunch.com,* last modified April 12, 2016, http://techcrunch.com/2016/04/12/agents-on-messenger/.

hanging out in the physical and digital space using computer-mediated communication, specifically mobile instant messaging, to maintain social connectedness. Surveys, interviews, and usability tests were utilized for this research to develop new features and better mobile application user experiences. The survey questions were created to find an opportunity to design to maintain social connectedness using Facebook Messenger. Kellingley's article about user research for mobile application explains quantitative methods include online surveys, behavior analysis, automated logging, and experience sampling method.[25] In this paper, she describes lab studies, journal or diary studies, and observational and field studies were beneficial for mobile qualitative research. Usability tests help identify the user's satisfaction with the product and to learn where improvement is needed.

## 3.1    Surveys

To understand how young adults hang out and their nature of maintaining social connectedness, surveys were conducted to receive a diverse number of participants using the internet. The survey was hosted on Typeform, a website where participants could answer those twenty-seven questions. See Appendix for survey questions. The link to the survey is posted on different social groups such as Facebook Groups, Forums, and Reddit Research Forums.

## 3.2    Interviews

In the follow-up phase of this study, I emailed participants who were interested in an interview to understand further what hangout means to them and the reasons behind using and not using certain features in Mobile Instant Messaging, specifically Facebook Messenger. The interviews lasted between fifteen to forty-five minutes depending on the participant's length of responses and were held using Google Hangouts in Hiestand Hall Room 221. See appendix for interview questions. After the interview, the participants were asked if they were interested in testing a design prototype based on the survey and interview results. The participants who were interested were contacted to test the application.

## 3.3    Usability Test

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[25] Nick Kellingley, "Getting into the Mobile App User's Mind – User Research for Mobile Applications," *Interaction Design Foundation*, accessed March 28, 2016. https://www.interaction-design.org/literature/article/getting-into-the-mobile-app-user-s-mind-user-research-for-mobile-applications

A design prototype was created based on the feedback from the surveys and interviews. The applications are built using Marvel App[26], a website platform where designers and creators can upload designs, image files, to make it feel similar to a real app or website. Marvel App provides different gestures and transitions to contribute to making the applications realistic to the audience. The participants are asked to review the prototype feature, visual aspects, user experience, and quality of the application. The questions pertain to how they feel about the user interface, understand whether they were able to find the new feature and if participants feel the feature is something they may be interested in using. Please refer to Appendix for usability test questions.

### 3.4    Participants

Participants were recruited using the different social sites on the internet including Facebook, Twitter, Reddit, and online forums with the link to the survey. PEW Research specifies young adults as one of the most popular active mobile instant messenger users.[27] Of the respondents, only young adults age ranges between 18 to 29 will be analyzed for this research. A total of 45 out of 51 participants shared that they used mobile instant messaging.

### 3.5    Process of Coding Qualitative Data

Surveys, interviews, and usability tests have qualitative data. Data is analyzed using the process called coding to understand the collected information; Saldana's research describes one word to identify a phrase from the gathered information.[28] The results section will indicate the number or phrases that occurred for each specified term. The goal of coding is to discover reoccurring patterns within the data. Each pattern is given a symbol and marked every time it occurs. The results chapter shows the reoccurring pattern from all 51 participants unless noted.

## Chapter 4: Results

 A total of 51 young adults participated in the survey. Within the number of participants, six

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[26] "New features and updates," *MarvelApp.com,* accessed April 20, 2016, https://marvelapp.com/features/.

[27] Maeve Dugga, "Mobile Messaging and Social Media 2015," *Pew Research Center.* August 19, 2015. http://www.pewinternet.org/2015/08/19/mobile-messaging-and-social-media-2015/

[28] Johnny Saldaña, "An Introduction to Codes and Coding," *Sagepub,* accessed April 26, 2016. http://www.sagepub.com/sites/default/files/upm-binaries/24614_01_Saldana_Ch_01.pdf

were interviewed to gather in-depth insights.

**4.1    Survey**

The following results are survey results divided into four different categories called hanging out, mobile instant messaging, Facebook Messenger users, and other mobile instant messenger users.

**4.1.2 Hanging Out**

To understand how young adults, connect in the physical space. When asked what hanging out in person mean to them, reoccurring patterns suggest activities, talking, spending time, fun time, becoming closer friends, and relax.

**SURVEY QUESTION**
What does hanging out in person mean to you?

| OCCURRENCES | SUMMARIZED CODE |
|---|---|
| 26 | Activity |
| 22 | Talking |
| 18 | Spending time |
| 13 | Fun time |
| 2 | Become closer friends |
| 2 | Relax |

*Table 1. What does hanging out in person mean to you?*

Table 1 identifies the recurring patterns of what hanging out in person mean to young adults and the number of times it occurred.

| SURVEY QUESTION | | | |
| --- | --- | --- | --- |
| Think about hanging out in person with a friend. How do you spend time hanging out? | | | |
| **Eating and Drinking** | | **Form of Activity** | |
| OCCURRENCES | SUMMARIZED CODE | OCCURRENCES | SUMMARIZED CODE |
| 25 | Eating (lunch, dinner) | 27 | Talking |
| 22 | Drinking | 21 | Watching movie or TV |
| 18 | Coffee | 11 | Sport |
| 13 | Alcohol | 5 | Travel |
| | | 5 | Play games |

*Table 2. Think about hanging out in person with a friend. How do you spend time hanging out?*

Table 2 shows the breakdown of how participants spent time hanging out with the number of mentions for specific actions and activities. For a more particular type of activity see Figure 1.
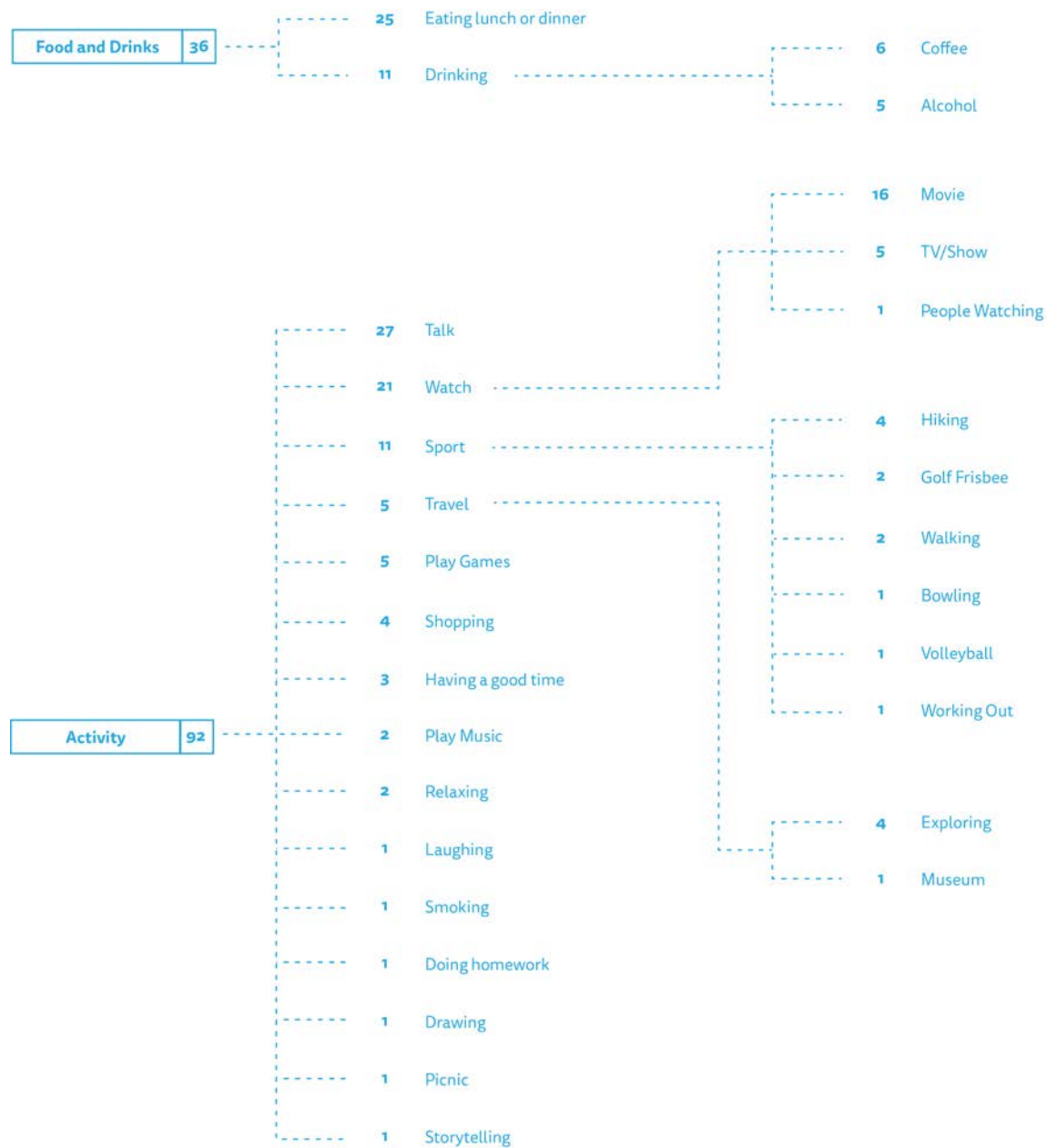
*Figure 1. Spending time to hang out breakdown*

Figure 1 shows the breakdown of food, drinks, and form of activities.

**SURVEY QUESTION**
Looking back over the past six months, how many people have you hung out with in person?

| # OF FRIENDS | PARTICIPANTS | |
|---|---|---|
| 6+ | | 42/51 |
| 5 | | 1/51 |
| 4 | | 1/51 |
| 3 | | 4/51 |
| 2 | | 3/51 |
| 1 | | 0/51 |
| 0 | | 0/51 |

*Table 3. Looking back over the past six months, how many people have you hung out with in-person?*

Table 3 show the number of friends; young adults hang out with in person over the past six months. The majority of the participants hung out with six or more people. There are not many young adults who answered one or none.

**SURVEY QUESTION**
Are any of these people living less than 15 miles away from your home?

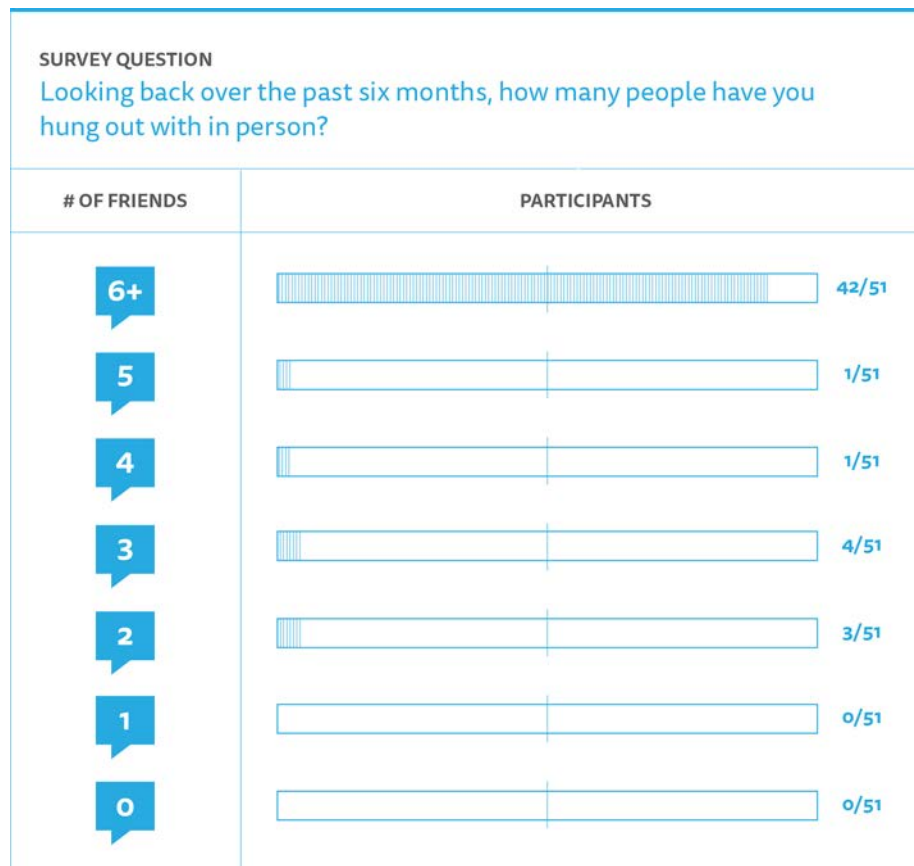| ANSWERS | PARTICIPANTS | |
|---------|--------------|---|
| Yes | | 17/51 |
| No | | 5/51 |
| Both | | 29/51 |

*Table 4. Are any of these people living less than 15 miles away from your home?*

Table 4 shows the participants answered whether they had friends living less than and more than 15 miles away from their home. Nearly half of the participants hang out with people who are living both more than and less than 15 miles away. 17 out of the 51 participants only have hung out with friends living 15 miles away.

| SURVEY QUESTION | | | |
| How many friends live less than 15 miles away? | | | |
| PARTICIPANTS | # OF FRIENDS | PARTICIPANTS | # OF FRIENDS |
| --- | --- | --- | --- |
| 2 | none | 0 | 9 |
| 1 | 1 | 7 | 10 |
| 4 | 2 | 1 | 15 |
| 6 | 3 | 4 | 20 |
| 4 | 4 | 2 | 25 |
| 4 | 5 | 3 | 30 |
| 3 | 6 | 1 | 100 |
| 4 | 7 | 1 | 150 |
| 1 | 8 | | |

*Table 5. How many friends live less than 15 miles away?*

Table 5 shows participant's number of friends living less than 15 miles from participant's home.

| PARTICIPANTS | COMMUNICATION TOOL | PARTICIPANTS | COMMUNICATION TOOL |
| --- | --- | --- | --- |
| 28 | Text Messages` | 2 | Facebook |
| 13 | Facebook Messenger | 2 | Snapchat |
| 13 | Call | 2 | Go to their home |
| 12 | WhatsApp | 2 | Social Media |
| 12 | In Person | 1 | Home |
| 10 | Facebook Messaging | 1 | Skype |
| 5 | WeChat | 1 | Schedule Hangout |
| 4 | Email | 1 | Same local events |
| 3 | Facetime | 1 | Grabbing Meals |

*Table 6. How do you communicate with friends who live less than 15 miles away from your home?*

Table 6 reveals the type of communication tools participants use to communicate friends who are less than 15 miles away from their home.

## SURVEY QUESTION
### How many friends live more than 15 miles away?

| PARTICIPANTS | # OF FRIENDS | PARTICIPANTS | # OF FRIENDS |
|---|---|---|---|
| 0 | none | 1 | 9 |
| 4 | 1 | 6 | 10 |
| 2 | 2 | 1 | 11 |
| 3 | 3 | 3 | 20 |
| 1 | 4 | 3 | 25 |
| 8 | 5 | 3 | 30 |
| 4 | 6 | 2 | 40 |
| 3 | 7 | 1 | 150 |
| 2 | 8 | 1 | 700 |

*Table 7. How many friends live more than 15 miles away?*

Table 7 shows participant's number of friends living more than 15 miles from participant's home.

How do you communicate with friends who live more than 15 miles away from your home?

| PARTICIPANTS | COMMUNICATION TOOL | PARTICIPANTS | COMMUNICATION TOOL |
|---|---|---|---|
| 16 | Facebook Messenger | 3 | Email |
| 14 | Text Messages | 3 | Facetime |
| 11 | Call | 3 | Twitter |
| 9 | Facebook | 3 | Google Hangouts |
| 6 | Facebook Messaging | 3 | Social Media |
| 5 | WeChat | 2 | Discord |
| 5 | WhatsApp | 2 | Home |
| 4 | Snapchat | 2 | Letters |
| 4 | In person | 1 | Instagram |
| 4 | Skype | 1 | Video Chats |

*Table 8. How do you communicate with friends who live more than 15 miles away from your home?*

Table 6 reveals the type of communication tools participants use to communicate friends who are less than 15 miles away from their home.

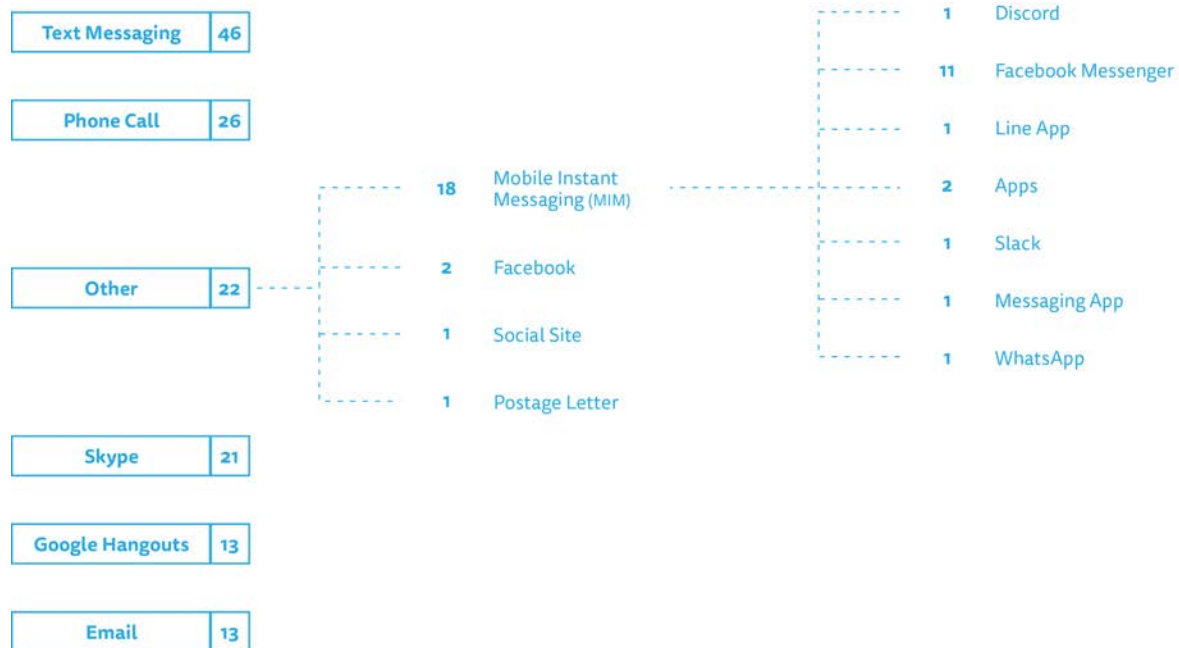Select the communication tools you use to communicate with friends.



*Figure 2 Communication tools participants use.*

Figure 2 shows the number of different communication tools the participants use to communicate with their friends. Some of the other communication tools used by young adults are text messaging and phone calls.

**SURVEY QUESTION**
What about the previously you selected one(s) lead you to pick them?

| OCCURENCES | ANSWERS |
| --- | --- |
| 11 | Friends with similar app |
| 11 | Convenience |
| 7 | Easy to use |
| 7 | Fast |
| 2 | User Friendly, accessible |
| 2 | Face to face (video) |
| 1 | Asynchronous |

*Table 9. What about the previously you selected one(s) lead you to pick them?*

Table 9 indicates the reasons why they chose the previous communication tools. The table show they use the communication tools because friends have a similar app, it is convenient, easy to use, and fast.
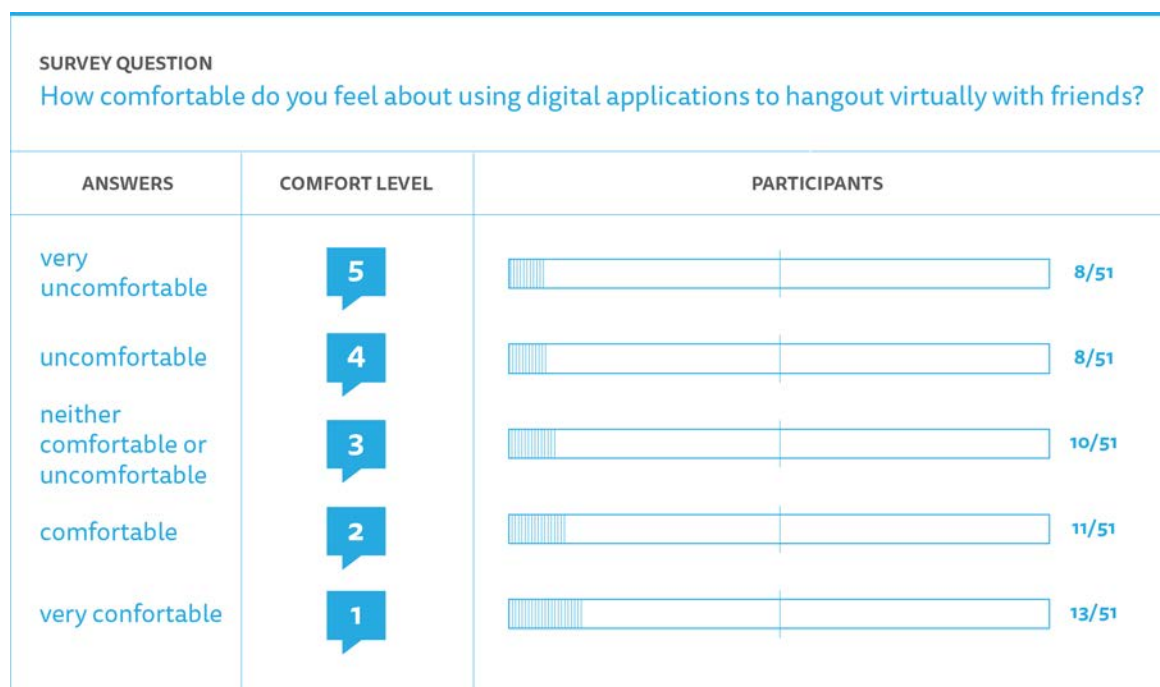
*Table 10. How comfortable do you feel about using digital applications to hang out virtually with friends?*

Table 10 indicates the level of comfortability participants feel about using digital applications to hang out virtually with friends. 13 of the 51 participants finds that it is very comfortable to hang out virtually. 8 participants indicated it was very uncomfortable.
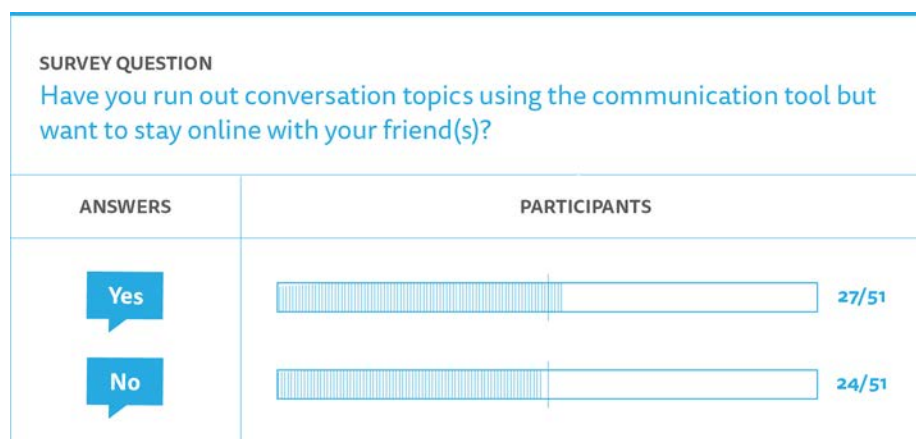


*Table 11. Have you run out of conversation topics using the communication tools but want to stay online with your friend(s)?*

Table 11 illustrates 27 participants run out of conversation topics but want to continue the stay online together. Whereas, 24 did not run out of conversation topics.

**SURVEY QUESTION**
**What are some things you do when this happens?**

| OCCURENCE | ACTIONS MADE |
| --- | --- |
| 5 | Talk about something else |
| 5 | Look for information to share |
| 4 | Send pictures, videos, emojis |
| 4 | Do something else separtely |
| 4 | Ask questions |
| 3 | Hang up and leave |
| 3 | Do homework |
| 2 | Doing something else together virtually |
| 2 | Repeat topic |
| 2 | Work on something else while talking |
| 1 | Watch online videos together |
| 1 | Play games, video games, not talking |

*Table 12. What are some things you do when this happens?*

Table 12 shows the 27 participants who run out of conversation topics; they explained some of the activities they did when such events occur. Through the process of coding, a descriptive code is given to summarize the qualitative information.

### 4.1.3 Mobile Instant Messaging

The following results are related to Mobile Instant Messaging and Facebook Messenger users. Participants who do not use Facebook Messenger are asked questions related to their experience with the general mobile instant messenger apps.
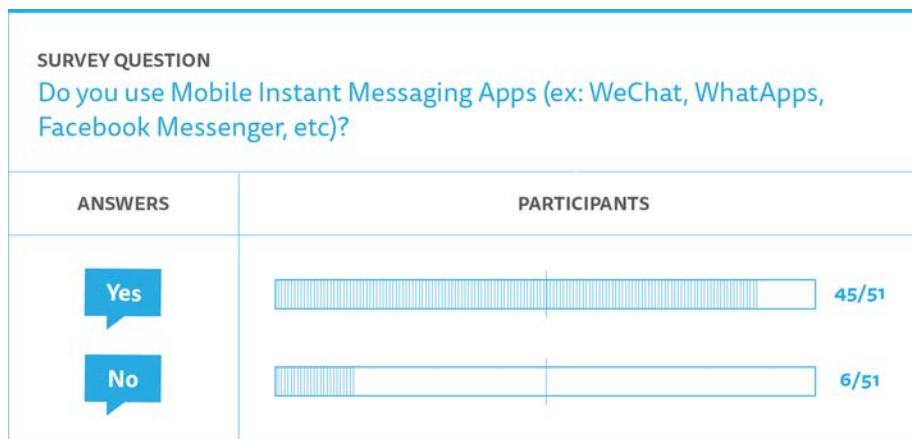


*Table 13. Do you use Mobile Instant Messaging Apps (ex: WeChat, WhatsApp, Facebook Messenger, etc.)?*

Table 13 shows the number of participants who use MIM.

**SURVEY QUESTION**
**Why do you use Mobile Instant Messaging Apps?**

| OCCURENCE | REASON |
|---|---|
| 28 | Easy of use (to get contact) |
| 13 | Convenience |
| 13 | Free |
| 12 | Friends have it |
| 12 | Reach out without phone number |
| 10 | Fast |
| 5 | Accessible from any device |
| 4 | Have stickers |
| 3 | Group conversations |
| 2 | Stay in touch without long conversations |

*Table 14. Why do you use Mobile Instant Messaging Apps?*

Table 14 explains the number of the reason occur in participant's response.

**SURVEY QUESTION**
What mobile instant messaging apps do you currently use?

| # OF SELECTIONS | MOBILE INSTANT MESSAGING APP |
|---|---|
| 42 | Facebook Messenger |
| 18 | Skype |
| 16 | WeChat |
| 13 | WhatsApp |
| 9 | LINE |
| 5 | Kakaotalk |
| 2 | Kik |
| 2 | Other |
| 1 | QQ Mobile |
| 0 | BlackBerry Messenger |
| 0 | I do not use instant messaging apps. |

*Table 15. What mobile instant messaging apps do you currently use?*

Table 15 presents the which MIM app participants. The majority of them used toFacebook Messenger. Note, participants can use more than one application.

### 4.1.4 Facebook Messenger

The following survey results are related to Facebook Messenger users.



**SURVEY QUESTION**
How many times do you use Facebook Messenger within an hour?

| ANSWERS | PARTICIPANTS | |
| --- | --- | --- |
| None | | 5/40 |
| 1–3 times | | 24/40 |
| 4–6 times | | 3/40 |
| 7–12 times | | 4/40 |
| More than 12 times | | 4/40 |
| Other | | 0/40 |

*Table 16. How many times do you use Facebook Messenger within an hour?*

Table 16 reveals how often participants used Facebook Messenger.

**SURVEY QUESTION**

**How long have you been using Facebook Messenger (previously Facebook Messages)?**

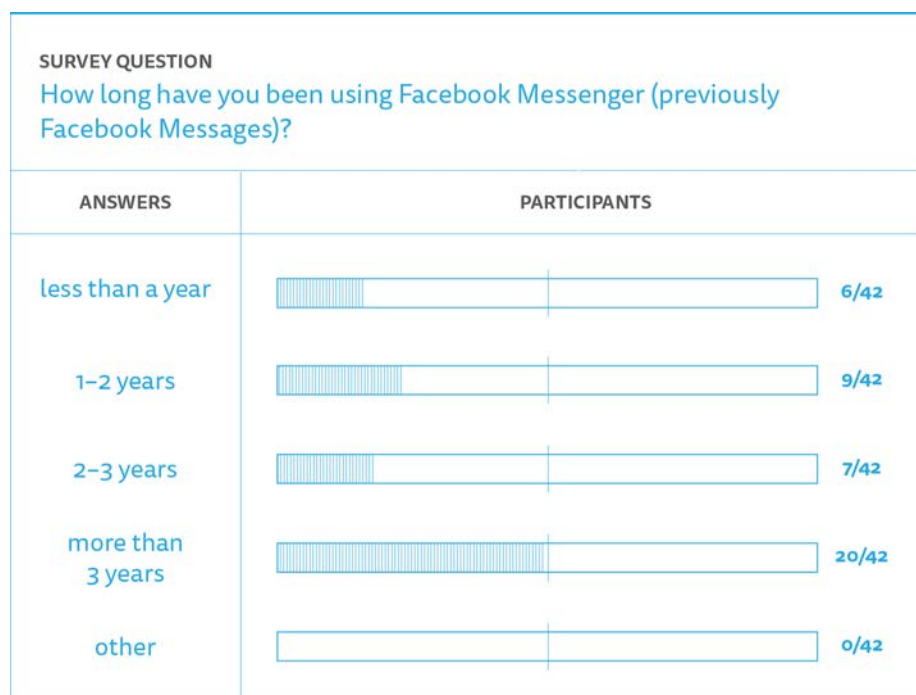| ANSWERS | PARTICIPANTS | |
|---------|--------------|--|
| less than a year | | 6/42 |
| 1–2 years | | 9/42 |
| 2–3 years | | 7/42 |
| more than 3 years | | 20/42 |
| other | | 0/42 |

*Table 17. How long have you been using Facebook Messenger (previously Facebook Messages)?*

Table 17 shows how long the participants had been using Facebook Messenger.

SURVEY QUESTION
What features do you currently use in Facebook Messenger?

| # OF SELECTIONS | FACEBOOK MESSENGER FEATURES |
|---|---|
| 42 | Messaging |
| 32 | Group Messaging |
| 22 | Character Stickers |
| 20 | GIFs |
| 8 | Video |
| 6 | Phone Call |
| 1 | Games (@fbchess or third party apps linked to Facebook) |
| 1 | Payment |
| 1 | Shared Location |
| 0 | Call Uber |
| 0 | M (beta virtual assistant) |
| 0 | Other |

*Table 18. What features do you currently use in Facebook Messenger?*

Table 18 indicates the features participants use in Facebook Messenger. It shows many participants use messaging, group messaging, character stickers, and gifs.

**SURVEY QUESTION**
Please indicate when was the last time you used the feature selected and what you used it for?

| PARTICIPANTS | REASON OF USE | PARTICIPANTS | REASON OF USE |
|---|---|---|---|
| 6 | GIF/Emoij for humor | 3 | Messaging |
| 6 | Chat with friend | 1 | Classmate |
| 4 | Event related plannning | 1 | Video |
| 4 | Group messaging | 1 | Shared link |

*Table 19. Please indicate when was the last time you used the feature selected and what you used it for?*

Table 19 does not show all mobile instant messenger questions were answered the survey question by all Facebook Messenger users. Only 22 participants responded to this question. Table 19 shows participants mainly use GIF or Emoji for humor, chat with friends, plan events, and message groups.
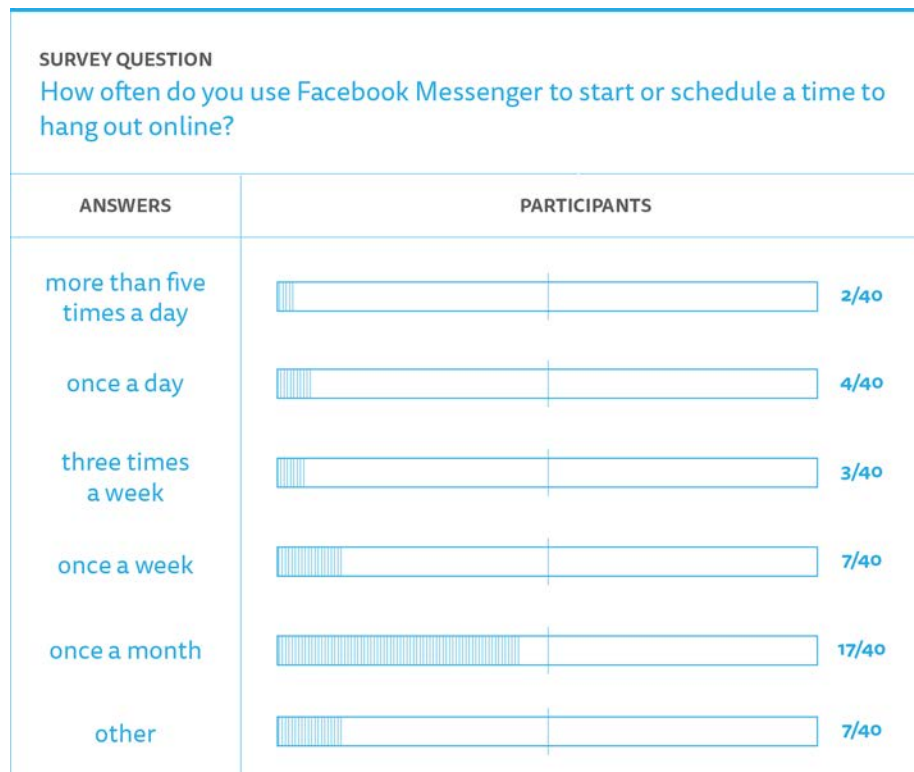
SURVEY QUESTION
How often do you use Facebook Messenger to start or schedule a time to hang out online?

| ANSWERS | PARTICIPANTS | |
| --- | --- | --- |
| more than five times a day | | 2/40 |
| once a day | | 4/40 |
| three times a week | | 3/40 |
| once a week | | 7/40 |
| once a month | | 17/40 |
| other | | 7/40 |

*Table 20. How often do you use Facebook Messenger to start or schedule a time to hang out online?*

Table 20 shows how often they plan online hangouts using Facebook Messenger. It shows 17 participants use it once a month to do so.

## 4.1.5 Other Mobile Instant Messenger Users

There is a total of 5 participants who do not use Facebook Messenger but uses mobile instant messengers.
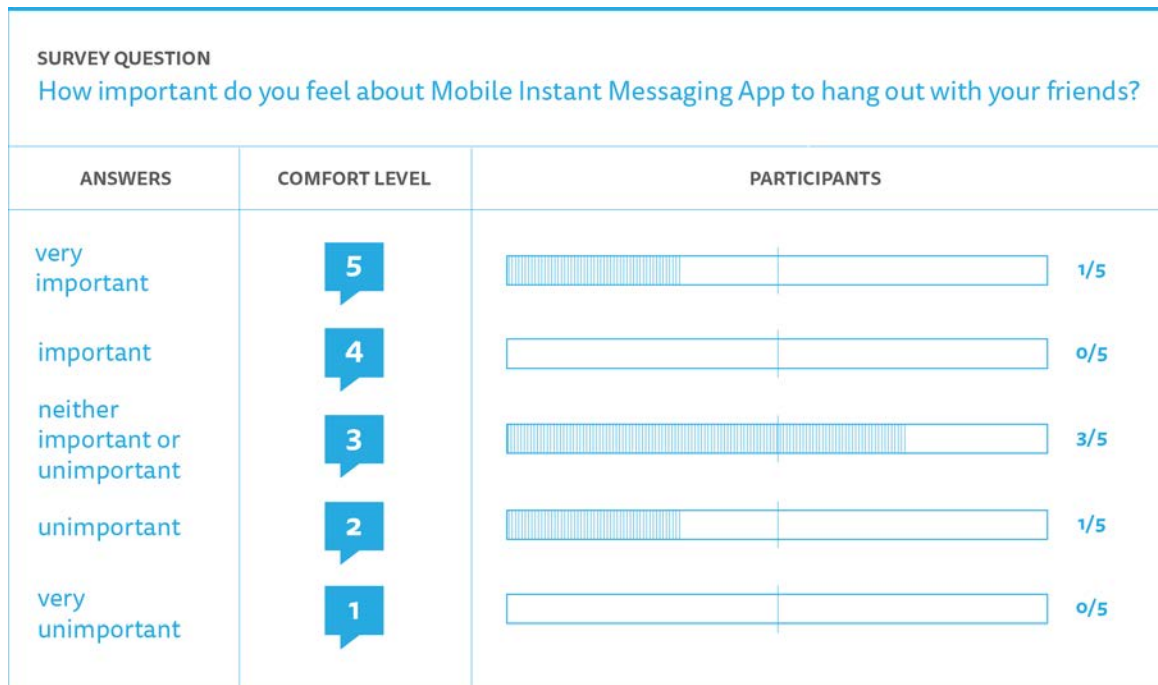


*Table 21. How important do you feel about Mobile Instant Messaging App to hang out with your friend?*

Table 21 show 3 participants selecting MIM is neither important or unimportant and one participant select very important. Other participants indicated it was unimportant.
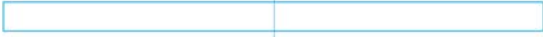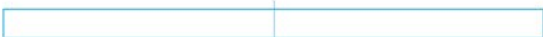
**SURVEY QUESTION**
**How many times do you use Mobile Instant Messaging within an hour?**

| ANSWERS | PARTICIPANTS | |
|---|---|---|
| None | | 0/5 |
| 1–3 times | | 4/5 |
| 4–6 times | | 0/5 |
| 7–12 times | | 0/5 |
| More than 12 times | | 1/5 |
| Other | | 0/5 |

*Table 22. How many times do you use Mobile Instant Messaging within an hour?*

Table 22 shows the how often participants use mobile instant messengers. Facebook Messengers users did not answer this question.

**SURVEY QUESTION**

How long have you been using Mobile Instant Messaging App?

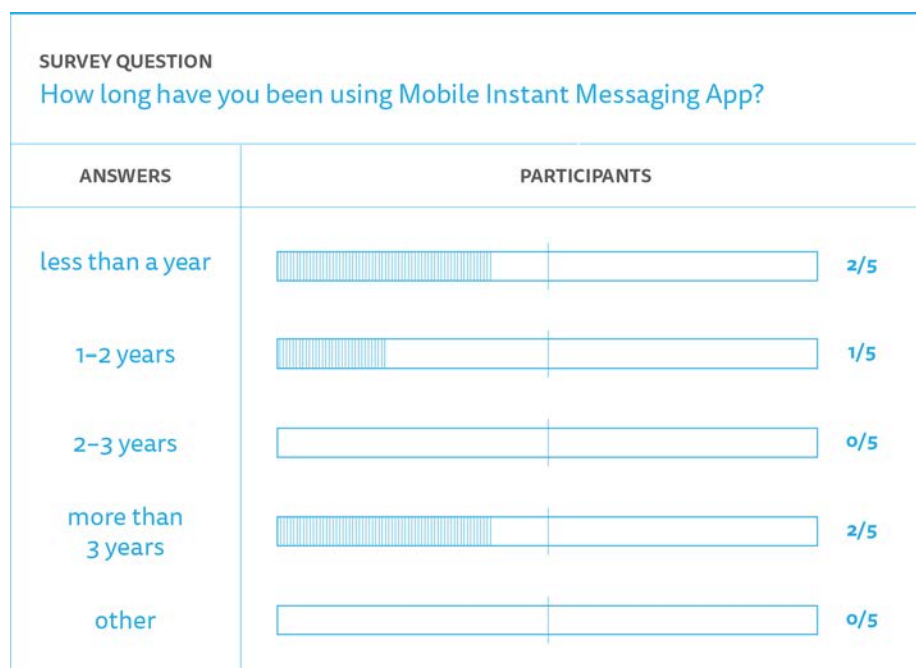| ANSWERS | PARTICIPANTS | |
|---|---|---|
| less than a year | | 2/5 |
| 1–2 years | | 1/5 |
| 2–3 years | | 0/5 |
| more than 3 years | | 2/5 |
| other | | 0/5 |

*Table 23.  How long have you been using Mobile Instant Messaging App?*

Table 23 show how long they have used mobile instant messaging app.

**SURVEY QUESTION**
What features do you currently use in Mobile Instant Messenger Apps. Select those that apply.

| # OF SELECTIONS | MIM FEATURE |
| --- | --- |
| 3 | Messaging |
| 1 | GIFs |
| 1 | Group Messaging |
| 0 | Payment |
| 0 | Phone Call |
| 0 | Shared Location |
| 0 | Video |
| 0 | Other |

*Table 24. What features do you currently use in Mobile Instant Messenger Apps? Select those that apply.*

Table 25 explains what features participants use specific features. Note, Facebook Messenger user did not answer this question.

*Question: Please indicate when the last time you used the feature selected and what you used it for?*

The 5 participants who do not use Facebook Messenger suggested they use MIM to communicate with a classmate, entertainment purposes, and chat with a friend from a few months ago.

## 4.2 Interviews

The first seven questions on the interview are the same as the survey answers and will not be repeated in this session. 6 participants responded to questions 8 and 9.

*Question: Tell me a time when you used images or gifs in a conversation? Why?*
Two participants mentioned the use of gifs, images, and stickers and used at the end of a conversation when they don't know what else to say. Other individual responses include using it to lighten up conversations, a picture is worth more than a thousand words, using gif for less typing, and using gif to exaggeration.

*Question: Can you tell me about some of the positive and/or negative things you encountered while using an instant messaging application?*
Two participants answered that messages could be misinterpreted. Other participants responded that it takes a while to get a response, one mentioned you can reply whenever you like, and another said you can respond quickly.

# Chapter 5: Design Proposal

## 5.1 Prototype

A prototype is created using current Facebook Messenger's user interface. Some of the results gathered from the survey and interviews helped to develop this feature. Not all the research results were incorporated into the proposed feature. The feature is a topic generator. When users run out of conversation topics, the user can select the lightbulb icon next to the most recent received comments. Selection of interesting topics will show up and allow the user to select. The topics will be generated by previous likes on the newsfeed, interests, and context on Facebook. When similar interest occurs, the use of technology will pull out the topics to restart the conversation. View prototype screens image below for clearer understanding.

## 5.2 Usability Testing Results

A total of 2 usability tests were tested formally. Both participants mentioned the prototype being static and didn't know where to click at first. Not all links are clickable, thus causing some

confusion. One of the participants mentioned it would be difficult to search for topics while scrolling. Another commented about the application should have an indication for the users to know when the information is loading. Users were curious if the all the options were news related and how it would filter the topics. One of the participants felt after selecting topic does not necessarily be place in the message box. It should automatically send. Overall, the feature was attractive to both users and something they were interested in using.
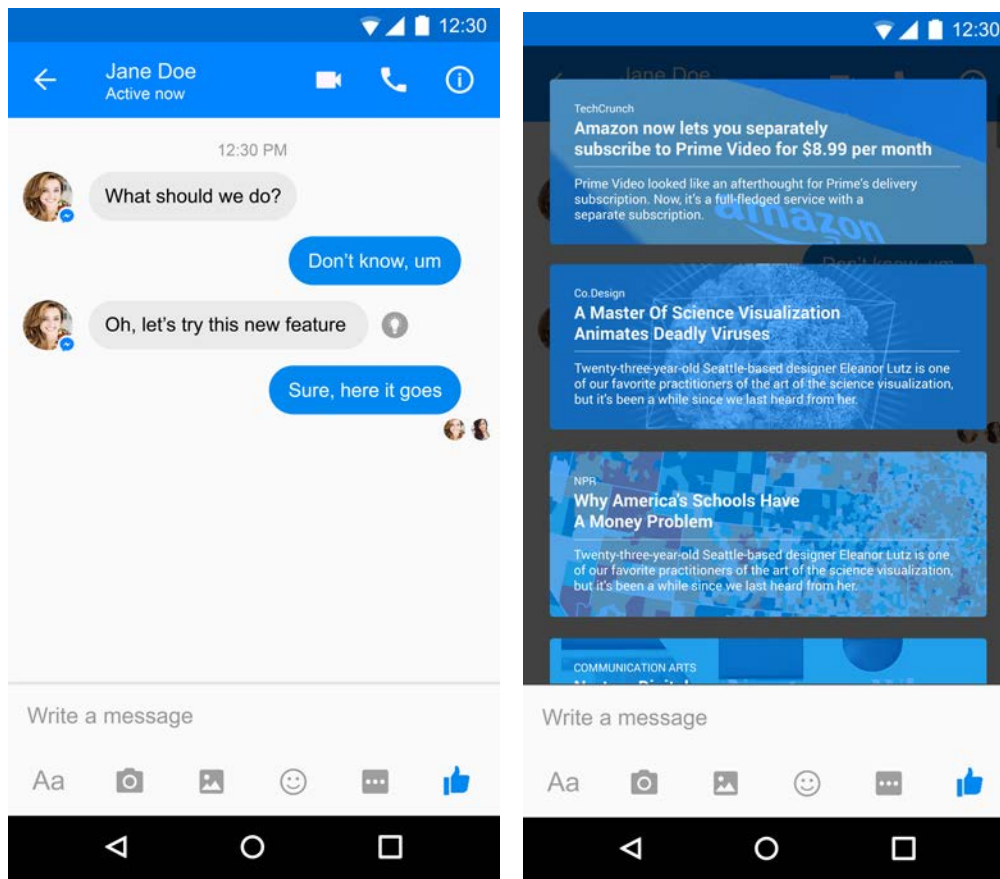


*Figure 3. (left) Instant messaging screen (right) Roll over with selections of conversation topics*
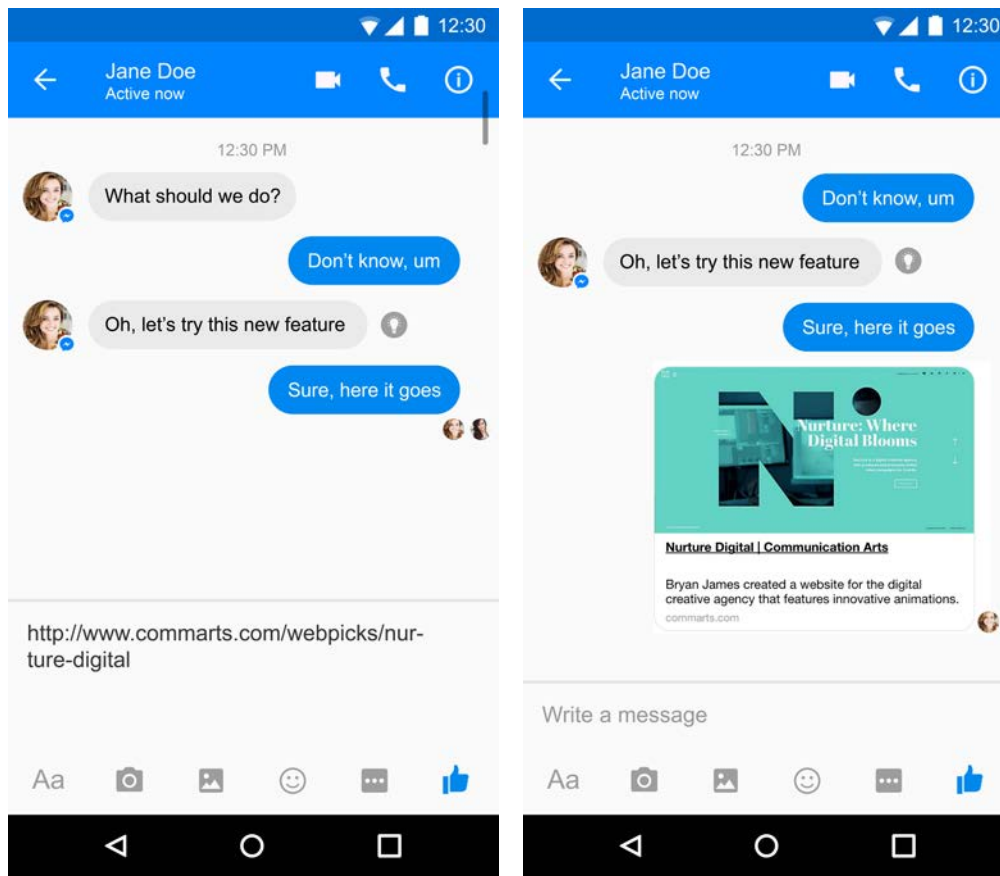
*Figure 3 continued. (left) Instant messaging screen with conversation topic link in textbox (right) Submitted conversation topic*

# Chapter 6: Discussion

The discussion is broken down into two sections. The first section interprets what the results mean. The second section will point out the limitations.

## 6.1 Interpretation

Hanging out questions were asked to reconfirm whether the dictionary term and how young adults felt about hanging out were similar. The results show the both the dictionary and young adults definition are identical. Hanging out is about spending time together. These actions relate to eating or drinking and doing some activity. Refer to Table 1, 2, and Figure 1.

Table 5 and seven reveals there were more participants with friends living close by than living farther away. There is not much of a difference on how people communicate with friends living close by and farther away. The top choices are still text messages and Facebook Messenger. The main difference is if friends are living close by they will meet in person. Refer to Table 6 and 8.

All five levels of comfort level in the spectrums are fairly evenly spread out on Table 10. The participants feel relatively comfortable using the digital device to communicate with friends.

Within the number of young adults who do run out of conversation topics online in Table 11 and 12, their actions can be categorized into four variables; no talking, talking, similar, and different. See Table 25 below. When young adults are hanging out online, they can be spending time together in silence doing individual work or related activities. An example can be playing video games online in the same environment. There are times when young adults are talking; they will find other interesting topics online together while speaking to other or sending instant messages. There is not enough information in the survey to identify whether if participants were doing different activities but still talking. See Figure 4.



*Table 25. Hanging Out in Digital Space Matrix Table*
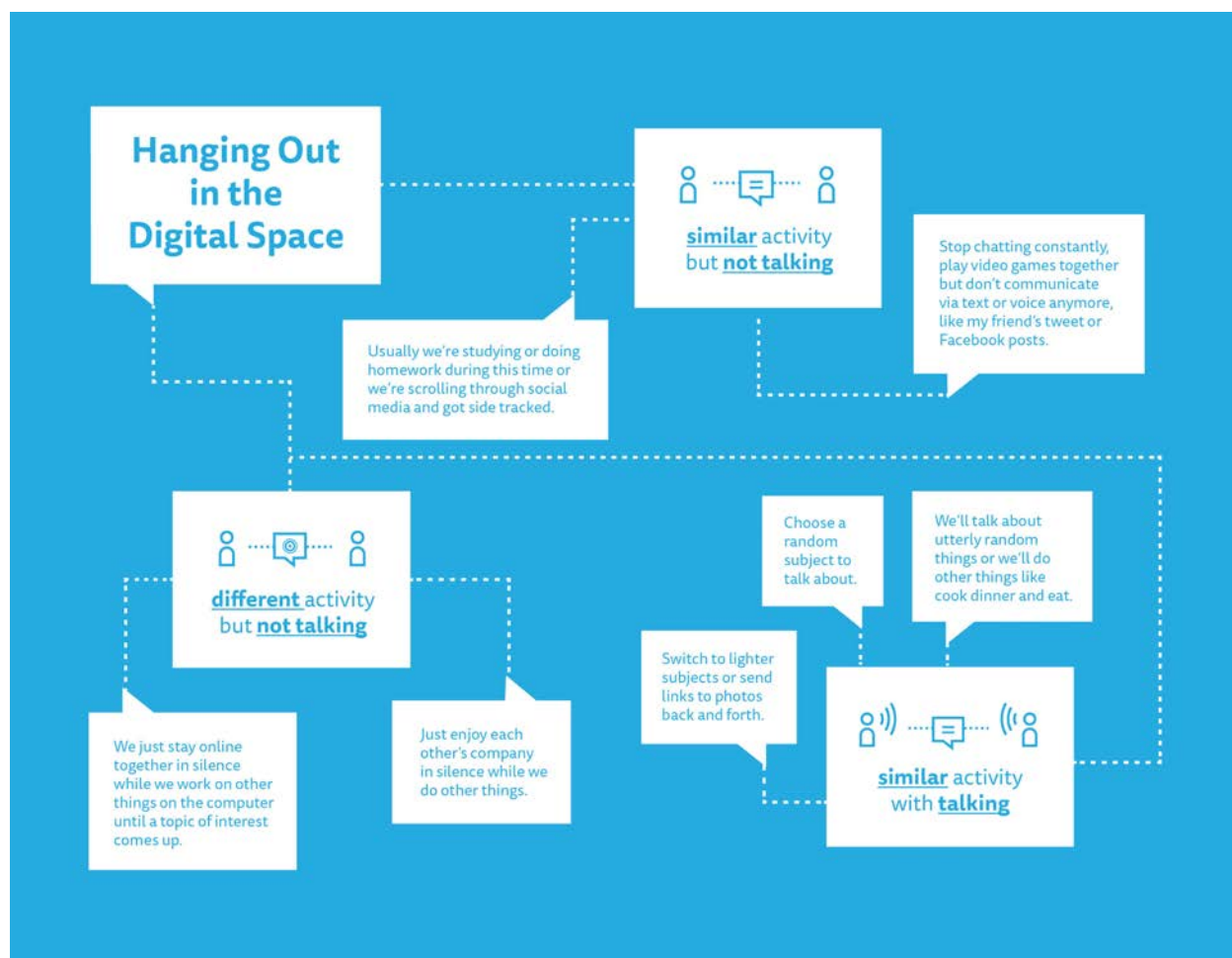
*Figure 4. Hanging Out in Digital Space with participant's commentary.*

Table 16 presents the participants in this research are relatively active Facebook Messenger users. The majority of them used Facebook Messenger 1-3 times within an hour. They use MIM for the top two reasons ease of use and convenient. Convenient means the young adults do not interrupt the receiver, messages in groups, access the conversation using their desktop, tablet, or their mobile device and have shorter conversations. The ease of use is interpreted easier to contact friends on Facebook because many people have Facebook. They can easily find old friends and new friends without their phone number.

Table 18 and 19 shows the majority of the features Facebook Users use are Messaging, Group Messaging, Stickers, and GIFs. A few use video and phone calls. Not many of the young adults use many of the universal tools such as payment, and shared location. None of the participants

call Uber or use the virtual beta assistant who is limited to a particular number of users. It is interesting to see Facebook market the most technical aspect at their Facebook Developer Conference 2016. Similar results also are shown in Table 24, five participants who use other MIMs selected Messaging, GIFs, and group messaging.

## 6.2    The Limitations and Future Work

The continuation of this research will refine the application to allow users to adjust preferences to notify when the application should recommend conversations topics.  It would be best to have more than one researcher to take part in these studies. All analysis is based on one researcher's perspective and would be beneficial to have one or more researchers to confirm data analyzed, coded, and categorized.

### 6.2.2 Survey Questions

Having qualitative questions incorporate in surveys makes it difficult to ask follow-up questions. Not all participants interested in follow-up interviews after answering the survey. It would be interesting to explore other social sites co-side with mobile instant messaging application such as Snapchat and Tumblr in survey questions.

### 6.2.3 Methods

The methods used for this research only consists of surveys, interviews, and usability tests. Due to time and technical constraints, not all methods are explored. Having more in person qualitative data will be more valuable using lab studies, journal or diary studies, and observational field studies.

### 6.2.4 Interviews

Similar survey questions were asked during the interviews. There were a few negative emotions regarding repeated questions. In future research, there should be new questions about for the interview or ask less qualitative questions in the survey.

### 6.2.5 Technical Interviews

The current prototype is not a fully functional application. Technical issues occurred when

participants were testing the prototype. There were lagged moments when users select a button, and there were not enough clickable screens to fulfill participant's expectations. It will make the usability testing feel more realistic if a real application is built. With a fully developed application, there will be advantages where the researcher can observe conversations without actively asking participants to verbalize all actions through Google Hangouts.

### 6.2.6 Non-technical Interviews

Alternative non-technical usability tests can be incorporated in future with another research to assist. The researcher will need to recruit two participants who are close friends who understand each other well. It is crucial to know both participant's personal interests and likes on the Facebook newsfeed. During a test, one research will be in charge of observation and documentation field notes. Another researcher will facilitate the test with prepared questions relating both participants when they run out of topics.

## Chapter 7: Conclusion

Digital devices help people maintain their relationships. Sherry Turke states, "Technology doesn't just do things for us. It does things to us, changing not just what we do but who we are."[29] People do change. People modify the way they contact friends depending on the type of communication tools they use. With mobile instant messaging as one of them. It alters how people maintain their relationships. Staying together online is a form of connectedness. Bonding in a similar space brings young adults together. There are those moments when young adults who still wants to stay online together but run out of conversation topics. Or at times, sharing content is what is more important to them. Facebook's mission is to give people the ability to connect with friends and share what matters. Technology can do many things for people. It can send payments, call transportation, and share locations to find each other. But what truly matter is our relationships with people who we believe are close to us or with the ones we are in the process of bonding.

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[29] Sherry Turkle, "The Documented Life," *The New York Times,* last modified December 15, 2013.
http://www.nytimes.com/2013/12/16/opinion/the-documented-life.html?_r=0

# Appendices

# Appendix A: IRB Permission Letter

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**MIAMI UNIVERSITY**

Research Compliance Office
102 Roudebush Hall
Miami University, Oxford, OH 45056

1-Apr-16

To: Paulina Zeng and Seth Munro    (zengp3@miamioh.edu; munrons@miamioh.edu)
    Art

RE: Maintain Social Connectedness: Hanging out with Facebook Messenger

**Project reference number is:  02105e**
*(please refer to this ID number in all correspondence to compliance administration)*

The project noted above and as described in your application for registering Human Subjects (HS)  research has been screened to determine if it is regulated research or meets the criteria of one of the categories of research that can be exempt from approval of an Institutional Review Board (per 45 CFR 46).  The determination for your research is indicated below.

> The research described in the application is regulated human subjects research, however, the description meets the criteria of at least one exempt category included in 45 CFR 46 and associated guidance.

**The Applicable Exempt Category(ies) is/are:  2**

Research may proceed upon receipt of this certification and compliance with any conditions described in the accompanying email message.  When research is deemed exempt from IRB review, it is the responsibility of the researcher listed above to ensure that all future persons not listed on the filed application who i) will aid in collecting data or, ii)  will have access to data with subject identifying information, meet the training requirements (CITI Online Training).

If you are considering any changes in this research that may alter the level of risk or wish to include a vulnerable population (e.g. subjects <18 years of age) that was not previously specified in the application, you must consult the Research Compliance Office before implementing these changes.
Exemption certification is not transferrable; this certificate only applies to the researcher specified above.  All research exempted from IRB review is subject to post-certification monitoring and audit by the compliance office.

---

**Neal H. Sullivan, PhD**
*Director of Research Compliance*
*Office for the Advancement of*
*        Research and Scholarship*
*102E Roudebush Hall*
*Miami University*
*Oxford, OH   45056*
*neal.sullivan@MiamiOH.edu*
*(513) 529-2488*

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# Appendix B: Survey Questions

**Hanging Out**

a. What does hanging out in person mean to you?
b. Think about hanging out in person with a friend. How do you spend time hanging out?
c. Looking back over the past six months, how many people have you hang out with in person?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6+
d. Are any of these people living less than 15 miles away from your home?
    a. Yes, I have friends living less than 15 miles away.
    b. No, I have friends living more than 15 miles away.
    c. Both, I have friends living more than and less than 15 miles away.
e. How many friends live less than 15 miles away?
f. How do you communicate with friends who live less than 15 miles away from your home?
g. How many friends live more than 15 miles away?
h. How do you communicate with friends who live more than 15 miles away from your home? Please explain.
i. Select the communication tools you use to communicate with friends.
    a. Email
    b. Google Hangouts
    c. Phone Call
    d. Skype
    e. Other
j. What about the previously selected one(s) lead you to pick them?
k. How comfortable do you feel about using digital applications to hangout virtually with friends?
    a. Very comfortable
    b. Comfortable
    c. Neither comfortable or uncomfortable
    d. Uncomfortable
    e. Very uncomfortable
l. Have you run out conversation topics using the communication tool but want to stay online with your friend(s)?
    a. Yes
    b. No
m. If yes, what are some things you do when this happens?

**Mobile Instant Messaging**

a. Do you use Mobile Instant Messaging Apps (ex: WeChat, WhatApps, Facebook Messenger, etc)?
   a. Yes, I do
   b. No, I do not
b. If yes, why do you not use Mobile Instant Messaging Apps?
c. If no, why do you not use Mobile Instant Messaging Apps?
d. Think about the friend who you are close with who communicate with using mobile instant messaging. How did you meet your friend?
e. What mobile instant messaging apps do you currently use?
   a. Facebook Messenger
   b. WhatsApp
   c. Kik
   d. WeChat
   e. QQ Mobile
   f. Skype
   g. LINE
   h. Blackberry Messenger
   i. Kakaotalk
   j. I do not use instant messaging apps.
   k. Other

(if Facebook Messenger is selected)

f. How important do you feel about **Facebook Messenger** to hang out with your friends?
   a. Very comfortable
   b. Comfortable
   c. Neither comfortable or uncomfortable
   d. Uncomfortable
   e. Very uncomfortable
g. How many times do you use **Facebook Messenger** within an hour?
   a. 1-3 times
   b. 4-6 times
   c. 7-12 times
   d. More than 12 times
   e. None
   f. Other
h. How long have you been using **Facebook Messenger** (previous Facebook Messages)?
   a. Less than a year
   b. 1-2 years
   c. 2-3 years
   d. More than 3 years
   e. Other
i. What features do you currently use in **Facebook Messenger**?
   a. Phone Call
   b. Shared Location
   c. Messaging

d.　Video
　　　　e.　GIFs
　　　　f.　Payment
　　　　g.　Group Messaging
　　　　h.　Call Uber
　　　　i.　Character Stickers
　　　　j.　Games (@fbchess or third party apps linked to Facebook)
　　　　k.　M (beta virtual assistant)
　　　　l.　Other
　　j.　Please indicate when was the last time you used the feature selected and what you used it for?
　　k.　How often do you use **Facebook Messenger** to start or schedule a time to hang out online?
　　　　a.　Once a month
　　　　b.　Once a week
　　　　c.　Three times a week
　　　　d.　Once a day
　　　　e.　More than five times a day
　　　　f.　Other


(if Facebook Messenger is not selected)

　　a.　How important do you feel about **Mobile Instant Messaging** to hang out with your friends?
　　　　a.　Very comfortable
　　　　b.　Comfortable
　　　　c.　Neither comfortable or uncomfortable
　　　　d.　Uncomfortable
　　　　e.　Very uncomfortable
　　b.　How many times do you use **Mobile Instant Messaging** within an hour?
　　　　a.　1-3 times
　　　　b.　4-6 times
　　　　c.　7-12 times
　　　　d.　More than 12 times
　　　　e.　None
　　　　f.　Other
　　c.　How long have you been using **Mobile Instant Messaging** (previous Facebook Messages)?
　　　　a.　Less than a year
　　　　b.　1-2 years
　　　　c.　2-3 years
　　　　d.　More than 3 years
　　　　e.　Other
　　d.　What features do you currently use in **Mobile Instant Messaging**?
　　　　a.　Phone Call
　　　　b.　Shared Location

       c. Messaging
       d. Video
       e. GIFs
       f. Payment
       g. Group Messaging
       h. Other
e. Please indicate when was the last time you used the feature selected and what you used it for?
f. How often do you use **Mobile Instant Messaging** to start or schedule a time to hang out online?
       a. Once a month
       b. Once a week
       c. Three times a week
       d. Once a day
       e. More than five times a day
       f. Other

**About You**
a. How would you identify your gender as?
b. How old are you?
c. I would like to follow up with you to talk more about your responses in this survey. Would you be interested in talking with me for 45 minutes either remotely or in person?
       a. Yes
       b. No

# Appendix C: Interview Guide

**Introduction**

Hello, my name is Paulina. I am a Graduate Research in Experience Design at Miami University. I will be spending a moment learning about your instant messaging experiences.

**Questions**
1. What does hanging out mean in person for you?
2. What are some of the activities you do when hanging out with your close friends who do not live in same city and haven't seen each other for long time?
3. How do you feel about using mobile instant messaging (MIM) applications?
4. Why do you use mobile instant messaging applications (MIM)?
5. How do you start a conversation in mobile instant messaging (MIM) application?
6. Have you ever had a time when you ran out of things to say online but wanted to continue to stay online together?
7. What features are your currently using in MIM? Why?
8. Tell me a time when you used images, gifs in a conversation? Why?
9. Can you tell me about some of the positive and/or negative things you encounter while using instant message application?

**Closing**

I appreciate your participation and thank you for your time! Would you be interested in usability test after the design prototype for this research?

# Appendix D: Usability Test Guide

**Introduction**

1. Tell me about what you use to communicate with friends and families?
2. What are some of the conversation you have in a (MIM) mobile app?
3. Do you use other features in the app to express your feelings during conversations?

**Direction**
I'll be showing you the prototype. As you will be navigating around the pages, there will be some links are clickable and some not. A blue outline of the button will show up when you select non-clickable areas. Along the way, please verbalize your thoughts and actions.

**Download App**
Now, you may visit the link to the application and look at the application on your mobile phone.

https://marvelapp.com/dhe8a8

Following the direction to access the app.
Please feel free to click around.
Please let me know when you have the app download.

**Questions**
1. How do you feel about the mobile application feature?
2. What are some thinks you liked or disliked about the feature?
3. What type of difficulties did you encounter?

**User Scenario**
Say you haven't seen your friend in a long time, where and how do you think you will use this application to hang out with your friend?

**Additional**
Was their additional feedback you have in mind and would like to comment about?

**Closing**
Thank you for helping me out! I appreciate you time. Have a great rest of your day.

# Appendix E: IRB Survey Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of its purpose as well as the inherent benefits and risks of the study and how it will be conducted.

**Title of Study**: Maintaining Social Connectedness: Hanging out using Facebook Messenger

**Principal Investigator:** Paulina Zeng

**Purpose of Study:** You are being asked to participate in a research study to determine young adults perspectives on how they hang out in digital and in real life. This information is being gathered in order to find opportunities for design that can help people maintain their friendship and social connectedness.

**Study Procedures:** You will be asked to participate in an survey that consists of less than 27 questions which will take no more than 15 minutes of your time. Your participation is voluntary and you may decline to answer any questions for any reason. Your decision whether to participate or to withdraw from the study will have no detrimental effects.

**Foreseeable Risks:** No foreseeable risks to your physical or psychological well-being are involved in this study. You will not be asked to do anything that exposes you to risks beyond those of everyday life.

**Benefits to the Subjects and/or Others:** The data gathered from this survey will inform the development of design experiences to help people maintain their long distance friendships.

**Compensation for Participants:** No compensation will be offered for participation in this study.

**Information Gathered**: The survey will not ask for personal information but should you inadvertently provide this information it will be omitted from any presentations or publications. Data will not be presented in a way that individuals could be identified.

**Procedures for Securing Research Information:** All the survey questions will not be associated with your name.

**Questions About the Research:** If you have further questions about the study, please contact Paulina Zeng via email at zengp3@miamioh.edu.

**Review for the Protection of Participants:** If you have questions about your rights as a research participant or the voluntariness of this consent procedure, please contact the Research Compliance Office at Miami University at (513) 529!3600 or humansubjects@miamioh.edu.

Thank you for your participation. I am grateful for your help and hope that this will be a rewarding experience for you. You may print this page for your records.

I agree to participate in Rewarding Risk: Maintaining Social Connectedness: Hanging out using Facebook Messenger. By selecting "I accept" button, I acknowledge that I am 18 years or older. I understand my participation is voluntary and that my name will not be associated with my responses.

I accept
I don't accept