Turkish Online Journal of Distance Education-TOJDE April 2015 ISSN 1302-6488 Volume: 16 Number: 2 Article 3

# STUDENTS' EVALUATION OF GOOGLE HANGOUTS THROUGH A CROSS-CULTURAL GROUP DISCUSSION ACTIVITY

**Michiko KOBAYASHI, Ph.D.**
**Associate Professor**
**College of Education & Human Development**
**Southern Utah University, Utah, USA**

## ABSTRACT

**The study investigated perceived ease of use and usefulness of Google Hangouts as an instructional/learning tool. Forty-two teacher education students at U.S and Japanese universities participated in an online cross-cultural activity using Google Hangouts and discussed cultural differences between the two countries and their teaching philosophies. After the activity, students responded to a survey to evaluate the ease of use and usefulness of Google Hangouts. Qualitative data were also collected through the survey to examine their overall learning experience. The results indicated that Google Hangouts is a useful instructional tool, but not easy to use. Although technical problems occurred during the conference, the activity provided valuable experiences for both U.S. and Japanese students. The study provides suggestions for how Google Hangouts can be integrated into online classrooms based on the findings.**

**Keywords:** **Videoconference, computer mediated communication, online learning.**

## INTRODUCTION

**Videoconferencing has been recognized as an effective delivery method in distance education and used at different grade levels. Despite the bandwidth limitation, many researchers agree that videoconferences add a human touch to online learning and decrease the psychological distance between students (Lim, Cha, Park, Lee, & Kim, 2012). Communication through live videos also enhances authentic student-student interaction (Smyth, 2011). Smyth identified connectivity as a critical factor in mediated learning environments and maintained that in order to promote student learning, instructors must provide a platform where students can meet and exchange information freely in both asynchronous and synchronous formats. Computer-mediated interaction can minimize the feeling of isolation among remote students and can promote a sense of community (Ferguson, 2010). Stewart, Harlow, and DeBacco (2011) also claimed that the use of live videoconferences not only increases interaction between the instructor and students, but also gives real time attention to remote students.**

**Videoconferences also benefit students in other ways. Living in the global society, it is important to develop a multicultural perspective and to be able to work effectively with people from different cultural backgrounds. In particular, teacher candidates must develop this skill to support diverse learners in their future classrooms. Due to the growing number of immigrants, many teacher education programs in different countries offer or even require multicultural education courses (Acquah & Commins, 2013; Keengwe, 2010).**

**However, a study showed that students living in less diverse communities tend to exhibit negative attitudes towards multicultural education (Dunn, Dotson, Ford, & Roberts, 2014). BaŞbay (2014) claimed that interaction with other cultures improves students' cultural awareness and helps them develop respect and appreciation for differences. Videoconferences can increase the opportunity for cross-cultural experiences, connecting students of different races and ethnicities without the need to leave their homes.**

**Google Hangouts is one of the videoconference systems available through Google Plus (Duffy, 2013). Some educators have integrated it into online and hybrid classrooms (Isaacson, 2013; Roseth, Akcaoglu, & Zellner, 2013). Google Hangouts is similar to Skype, as it provides a free audio/video conference along with a text chat capability. Both programs offer a free mobile app, making it easy for iPad, iPhone, or Android users to access the programs. However, Google Hangouts also has other unique features. Unlike Skype, Google Hangouts is free for a group conference. Anyone who has Google Plus accounts can join the group conference. Videoconferences on Google Hangouts can be recorded and uploaded to YouTube for sharing. The user can decide whether to share videoconferences publicly or only with friends. In addition, Google Hangouts also allows screen captures, screen shares, and remote desktop control, allowing users to control a computer monitor from the other end of the room during the videoconference (Google Inc., 2013).**

**In selecting an appropriate videoconference system, instructors should consider various factors. The system should be affordable, easy for students to use, and useful for enhancing instructional effectiveness and student learning. Although technology experts can provide reviews of new software and programs and help us learn their functionalities, instructors should also listen to student concerns so that they can adopt the technologies effectively to support student learning. Google Hangouts is a relatively new system and has not been used widely in educational settings. Therefore, the present study aims to examine students' perceptions of the ease of use and usefulness of Google Hangouts as an instructional tool in a cross-cultural activity.**

## METHODS

**Participants of the study were undergraduate and graduate students in teacher education programs at U.S. and Japanese universities. They engaged in an online activity using Google Hangouts to learn about each other's cultures and to discuss teaching philosophies. Both universities are located in rural areas where student populations are not diverse.**

**All U.S. participants were enrolled in an education class delivered through a learning management system, and the Google Hangouts activity was part of their required course assignments. Japanese students were not enrolled in the course but voluntarily participated in the activity. After the researcher received a list of Japanese participants from a Japanese professor at a partnership university, she formed 11 groups consisting of two U.S. and two Japanese students each.**

**Although all Japanese participants were English education majors, their conversational English skills were still limited. Therefore, meeting in groups, rather than one-on-one was expected to reduce their anxiety about miscommunication. The instructor also assigned one U.S. student from each group to serve as a group facilitator.**

**All participants received a handout explaining the procedures of the activity and how to use Google Hangouts. While all U.S. participants already had accounts with Google**

**through their university, many of them had never used them and did not even know how to access and activate their accounts. Most Japanese students did not have Google accounts. Once all participants created Google Plus accounts, the instructor asked them to create circles for their groups. Creating a circle is one unique capability of Google Hangouts and it allows students to interact with multiple participants within the groups.**

**The next step was to email the group facilitators. Each student was required to email available hangout times to the group facilitators by the assigned due date. Based on the information received from each group member, the group facilitators set their meeting times. During the activity, students discussed several assigned topics, including their perceptions of positive and negative aspects of U.S. and Japan and their teaching philosophies. U.S. students were also required to learn two Japanese phrases from their Japanese partners. The duration of the videoconference was about 45 minutes to one hour.**

**In this study, the researcher adopted the perceived ease of use and usefulness scales developed by Davis (1989). While a number of researchers have conducted path analysis and have added new constructs to the original model (Lee, Hsieh, & Hsu, 2011; Svendsen, Johnsen, Almås-Sørensen, & Vittersø, 2013; Teo, 2012), the purpose of this study was to assess the ease of use and usefulness of Google Hangouts. Therefore, the researcher only utilized the original scales for these two constructs. The survey also included an open-ended question (What is your overall learning experience with the cross-cultural activity using Google Hangouts?) and collected students' demographic data and prior experiences in Google Hangouts and other videoconference systems. The survey was voluntary and was distributed to all 42 participants. The researcher performed descriptive analysis for each construct and examined students' narrative comments.**

## RESULTS

**A total of 29 students (17 U.S. and 12 Japanese) responded to the survey. Of the 29, 17 were males and 12 were females, and more than half of the students were between the ages of 21 and 23. In terms of prior experience with Google Hangouts, 24 students said that they had never used it and five students said that they had used it only a few times before. Most students reported that they had little or no previous experience using other web conference systems, such as Skype.**

### Descriptive Analysis

**Table: 1 shows the frequency data for ease of use items. Overall, students' responses were mostly positive. The percentage of positive responses (a combination of students who responded strongly agree, moderately agree, and somewhat agree) for each item ranged from 55.1% to 86.4%. Among the seven items, "*good functionalities*" demonstrated the highest percentage of combined positive responses, and "*mental efforts not required"* was the lowest. The percentage of positive responses including all seven items was 68%. Both "*mental efforts not required"* and *"easy to use"* also showed the highest percentage of negative responses (a combination of somewhat disagree, moderately disagree, and strongly disagree) (24.1%).**

**Table: 1**
**Frequency for Ease of Use**

| | Strongly agree | Moderately agree | Somewhat agree | Neutral | Somewhat disagree | Moderately disagree | Strongly disagree |
|---|---|---|---|---|---|---|---|
| Clear Understandable | 3 (10.3) | 8 (27.6) | 8 (27.6) | 5 (17.2) | 3 (10.3) | 2 (6.9) | 0 |
| Mental Effort Not Required | 6 (20.7) | 3 (10.3) | 7 (24.1) | 6 (20.7) | 2 (6.9) | 3 (10.3) | 2 (6.9) |
| Easy to Use | 5 (17.2) | 7 (24.1) | 9 (31.0) | 1 (3.4) | 4 (13.8) | 2 (6.9) | 1 (3.4) |
| Do What I Want | 3 (10.3) | 9 (31.0) | 6 (20.7) | 5 (17.2) | 4 (13.8) | 2 (6.9) | 0 |
| Flexibility | 5 (17.2) | 7 (24.1) | 9 (31.0) | 3 (10.3) | 3 (10.3) | 2 (6.9) | 0 |
| Perform Task | 3 (10.3) | 5 (17.2) | 10 (34.5) | 5 (17.2) | 3 (10.3) | 2 (6.9) | 1 (3.4) |
| Good Functionalities | 7 (24.4) | 11 (37.9) | 7 (24.1) | 4 (13.8) | 0 | 0 | 0 |
| Total | 32 (15.8) | 50 (24.6) | 56 (27.6) | 29 (14.3) | 19 (9.4) | 13 (6.4) | 4 (.4) |

**Note. N=29. Numbers in brackets indicate percentage.**

**Table: 2 shows the frequency data for usefulness items. The percentage of combined positive responses for each item ranged from 69% to 93%. With all six items together, the percentage of combined positive responses was 78%, which was higher than that of ease of use responses (68%).**

**Among the six items, students responded to "*potential instructional tool*" most positively. Although the combined positive responses for "*increase interaction*" accounted for the lowest percentage, the highest number of students selected "*strongly agree*" for this item. It is also notable that students responded most negatively to the same item (24%). Lastly, 20% of students did not find Google Hangouts "*useful for live video lecture*" and responded to the item negatively.**

**Table: 2**
**Frequency for Usefulness**

| | Strongly agree | Moderately agree | Somewhat agree | Neutral | Somewhat disagree | Moderately disagree | Strongly Disagree |
|---|---|---|---|---|---|---|---|
| Increase Interaction | 10 (34.5) | 2 (6.9) | 8 (27.6) | 2 (6.9) | 5 (17.2) | 1 (3.4) | 1 (3.4) |
| Collaboration Productive | 7 (24.1) | 7 (24.1) | 8 (27.6) | 5 (17.2) | 1 (3.4) | 1 (3.4) | 0 |
| Collaboration Enjoyable | 7 (24.1) | 9 (31.0) | 7 (24.1) | 5 (17.2) | 1 (3.4) | 0 | 0 |
| Useful for Live Video Lecture | 5 (17.2) | 8 (27.6) | 8 (27.6) | 2 (6.9) | 3 (10.3) | 3 (10.3) | 0 |
| Develop Sense of Community | 6 (20.7) | 8 (27.6) | 8 (27.6) | 3 (10.3) | 1 (3.4) | 1 (3.4) | 1 (3.4) |
| Potential Instruct. Tool | 9 (31.0) | 7 (24.1) | 11 (37.9) | 0 | 2 (6.9) | 0 | 0 |
| Total | 44 (25.4) | 41 (23.7) | 50 (28.9) | 17 (9.8) | 13 (7.5) | 6 (3.5) | 2 (1.2) |

**Note. N=29. Numbers in brackets indicate percentage.**

## Qualitative Analysis

**In the open-end question, students expressed their opinions about the ease of use and usefulness of Google Hangouts, and their feelings about the activity. Their responses varied, including both positive and negative feedback. However, in terms of the program's technical aspects, comments were mostly negative.**

**The following statements were extracted from the survey:**

> **Video and audio were often cut off in the middle of conversations. However, many people around the world have Gmail accounts, and those Gmail users would find the program convenient, due to easy access to the program. Google Hangouts has much potential and certainly can connect many people and expand the global network. (Japanese student A)**
>
> **Google Hangouts can be a great tool but I have found it very hard to use and it was not easy for me to learn how to use as most computer related things have been for me in the past. I enjoyed talking with the students from Japan. I just wish Google Hangouts was easier to use or I received more training in how to use Google Hangouts. (U.S. student A)**

**Many students expressed that it was difficult learning how to use Google Hangouts. They encountered technical difficulties during the activity and expressed frustration. Several students reported that technical problems interrupted conversations and that the chat**

**tool only worked intermittently. One student mentioned that the Google Hangouts interface was not user-friendly and that it was difficult to locate tools she needed. Another student said, "The learning curve with Google Hangouts comes from learning how to set up circles, but once that is accomplished the actual interaction functions seemed fairly easy to operate." The initial set up for Google Hangouts circles seems to involve a complicated process and requires students to follow instructions carefully. One student pointed out:**

> **If more teachers used it [Google Hangouts], it would be better used because students would know how to use it. I think that it is a good source to help with interaction. It's really great for those kinds of things, but it's just another account that students are required to get for just one class and can be slightly irritating at times. (U.S. student B)**

**Conversely, there were also students who expressed positive feelings about the technical aspects of Google Hangouts. One student said, "I really like Google Hangouts and have found myself using it more than Skype nowadays. It seems to work more effectively and more often than Skype. I am glad that I had the opportunity to use it!" Another student said, "I love the app that is available for smart phones, it is very convenient."**

**Both U.S. and Japanese students expressed positive feelings about the activity. Several students commented that a videoconference is better than audio-only or text chat and that it makes conversations easier. One Japanese student said, "It was a very meaningful activity because I don't have many opportunities to interact with people from another culture. The activity made me want to learn English more." Many U.S. students also enjoyed the conversations with Japanese students and appreciated the opportunity to meet with people from outside the United States. One student wrote, "It was very exciting and fun for me to do this activity. It was the highlight of my day and made me want to visit [Japan]."**

## DISCUSSION

**This study investigated students' perceived ease of use and usefulness of Google Hangouts in a cross-cultural activity. The quantitative data showed that students' perceptions about Google Hangouts were mostly positive. Students rated ease of use higher than they rated usefulness. Many students struggled with Google Hangouts at the beginning, although they felt that the system itself had good functionalities. In their comments, they indicated a number of technical issues that they had encountered during the activity; most groups experienced audio and video problems of varying degrees. To reduce the number of sites logged into the same meeting room, the researcher asked Japanese student groups to enter their meeting rooms using one computer. Although only three sites (two U.S. sites and one Japanese site) logged into the same meeting room, connection problems still occurred. Further research is needed to determine whether the unstable connection was caused merely by a bandwidth issue or if it is associated with other Google Hangouts system problems. Based on the present study's findings, when participants are spread throughout different countries, the researcher recommends one-on-one conferences. If group interaction is essential for the activity, the instructor might consider using an audio-only conference or text chat.**

**Other technical issues that students mentioned were associated with setting up a Google Plus account and creating a circle. The circle function makes it easy to contact group members and invite them to the meeting. As mentioned earlier, these processes were**

**confusing to many students. The majority of participants did not have Google Plus accounts and needed to create one to participate in the activity. The process of creating a circle required extra time and efforts. For the past few years, the researcher has also used Adobe Connect, a videoconferencing program similar to Google Hangouts, for her course activities. Because none of the students had experience using Adobe Connect, she provided detailed written instructions and had each student practice using Adobe Connect prior to starting the activity. Only a few students confused about how to use it and needed additional help. In this study, as previously mentioned, the researcher provided a similar instructional handout on how to use Google Hangouts, but many students were still frustrated learning how to use the program. Therefore, when instructors introduce Google Hangouts to students, they should use it throughout the course, not just for a one-shot activity. The more students use it, the more comfortable they will feel with the program. In addition to a written instructional handout, it would be helpful for instructors to provide a short instructional video.**

**Despite the technical problems mentioned earlier, many students felt that Google Hangouts was a useful instructional tool. Videoconferences are generally used in online classrooms to connect students and the instructor.**

**In this study, all U.S. participants were students enrolled in the online class and many of them had taken other online courses before. Therefore, they had probably used one or more online tools, such as discussion boards and Google Docs to interact online with instructors and peers.**

**Although U.S. students might be likely to accept use of videoconferences as an educational tool, none on the Japanese participants in this study had had online learning experience before because online courses were not offered at their university. Therefore, it might have been difficult for them to view videoconferences as instructional media. This could explain the disparity of the responses to "*increase interaction*" and the low rating of "*useful for live video lecture*" on the usefulness scale.**

**Finally, students' comments indicated that the activity was enjoyable and that learning about differences and similarities between the two countries was a fun experience. The assigned topics, one of which was a discussion of their teaching philosophies, were relevant to participants' future professions. Because they were about the same age, it was not difficult to pinpoint other common interests, such as music and sports. Furthermore, the synchronous videoconferences provided an environment similar to one in which students have face-to-face interaction with one another. Students commented that they felt more comfortable and closer to each other using this format than they did when using audio or text-only communication.**

**This study revealed that, despite the occasional interruption by technical problems, cross-cultural interaction through videoconferences still provides students with valuable learning experiences.**

## CONCLUSION

**In online courses, instructors and students must rely on technology to communicate with each other. Choosing appropriate technology that meets the goal of the activity is important. The present study revealed that Google Hangouts may not be an easy program to learn, but it has the potential to be a useful instructional and collaborative tool. In summary, when Google Hangouts is used to facilitate online cross-cultural activities, the researcher provides the following suggestions:**

- **Take time to train students on how to use the system and expect that some students may need additional support.**
- **Provide at least several opportunities to practice using the program prior to the actual conference.**
- **Use the program consistently throughout the course.**
- **Design meaningful activities to engage students.**
- **Use the program to facilitate a one-on-one activity, if possible, to reduce connection problems.**
- **Have an alternative program ready, in case technical problems occur.**
- **Research the country or the area where participants reside and consider using asynchronous technologies if the participants' region has an unstable internet connection.**

**Both synchronous and asynchronous online tools have positive impacts on student learning (Borup et. al., 2013; Heeyoung & Johnson, 2012).**

**On some occasions, asynchronous communication formats may better meet the instructional objectives than real-time interactions would. Google Hangouts is a relatively new program, and there is not yet much literature that explores its application in instructional settings. In this study, only a small number of students responded to the survey after participating in the Google Hangouts activity.**

**The researcher recommends further investigation into Google Hangouts in a cross-cultural context. Students' perceptions about Google Hangouts may vary, depending on their countries of origin.**

**Comparing different videoconference programs in one-on-one and group settings will help us identify technology appropriate for planned course activities.**

## BIODATA and CONTACT ADDRESSES of the AUTHOR

**Michiko KOBAYASHI is an associate professor at Southern Utah University in the U.S. She has been teaching preservice and inservice teachers in this university since 2006. Her specializations include instructional design & technology, ESL & linguistics, and multicultural education. Dr. Kobayashi has been involved in various forms of distance education, including interactive television and online courses at different grade levels. Her current research interest is the use of open sources to enhance student interaction and engagement in online classrooms.**

**Associate Professor Michiko KOBAYASHI, Ph.D.**
**College of Education & Human Development**
**Southern Utah University**
**351 W. University Blvd. Cedar City, Utah 84720**
**Phone: (435) 865-8535**
**Fax: (435) 586-5434**
**Email: kobayashi@suu.edu**
**Website: http://www.suu.edu/faculty/kobayashi/**

## REFERENCES


**Acquah, E. O., & Commins, N. L. (2013). Pre-service teachers' beliefs and knowledge about multiculturalism. *European Journal Of Teacher Education*, *36*(4), 445-463. doi:10.1080/02619768.2013.787593**

**BAŞBAY, A. (2014). Investigation of Multicultural Education Courses: The Case of Georgia State University. *Educational Sciences: Theory & Practice*, *14*(2), 602-608. doi:10.12738/estp.2014.2.2055**

**Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–339.**

**Duffy, J. (2013). Does Google+ Have a Future? *PC Magazine*, 42-44.**

**Dunn, A., Dotson, E. K., Ford, J. C., & Roberts, M. (2014). "You Won't Believe What They Said in Class Today": Professors' Reflections on Student Resistance in Multicultural Education Courses. *Multicultural Perspectives*, *16*(2), 93-98. doi:10.1080/15210960.2014.899779**

**Ferguson, R. R. (2010). Peer interaction: the experience of distance students at university level. *Journal Of Computer Assisted Learning*, *26*(6), 574-584. doi:10.1111/j.1365-2729.2010.00386.x**

**Isaacson, K. (2013, June). An Investigation into the Affordances of Google Hangouts for possible use in Synchronous Online Learning Environments. In *World Conference on Educational Multimedia, Hypermedia and Telecommunications* (Vol. 2013, No. 1, pp. 2461-2465).**

**Keengwe, J. (2010). Fostering Cross Cultural Competence in Preservice Teachers Through Multicultural Education Experiences. *Early Childhood Education Journal*, *38*(3), 197-204. doi:10.1007/s10643-010-0401-5**

**Lee, Y., Hsieh, Y., & Hsu, C. (2011). Adding Innovation Diffusion Theory to the Technology Acceptance Model: Supporting Employees' Intentions to use E-Learning Systems. *Journal Of Educational Technology & Society*, *14*(4), 124-137.**

**Lim, S., Cha, S., Park, C., Lee, I., & Kim, J. (2012). Getting closer and experiencing together: Antecedents and consequences of psychological distance in social media-enhanced real-time streaming video. *Computers In Human Behavior*, *28*(4), 1365-1378. doi:10.1016/j.chb.2012.02.022**

**Roseth, C., Akcaoglu, M., & Zellner, A. (2013). Blending Synchronous Face-to-face and Computer-Supported Cooperative Learning in a Hybrid Doctoral Seminar. *TechTrends*, *57*(3), 54-59.**

**Smyth, R. (2011). Enhancing learner-learner interaction using video communications in higher education: Implications from theorising about a new model. *British Journal Of Educational Technology*, *42*(1), 113-127. doi:10.1111/j.1467-8535.2009.00990.x**

**Stewart, A. R., Harlow, D. B., & DeBacco, K. (2011). Students' experience of synchronous learning in distributed environments. *Distance Education*, *32*(3), 357-381. doi:10.1080/01587919.2011.610289**

**Svendsen, G. B., Johnsen, J. K., Almås-Sørensen, L., & Vittersø, J. (2013). Personality and technology acceptance: the influence of personality factors on the core constructs of the Technology Acceptance Model. *Behaviour & Information Technology*, *32*(4), 323-334. doi:10.1080/0144929X.2011.553740**

**Teo, T. (2012). Examining the intention to use technology among pre-service teachers: an integration of the Technology Acceptance Model and Theory of Planned Behavior. *Interactive Learning Environments*, *20*(1), 3-18. doi:10.1080/10494821003714632.**

## APPENDIX

## GOOGLE HANGOUTS SURVEY

### 1. Perceived ease of use

| |
|---|
| **1. My interaction with Google Hangouts is clear and understandable.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7 Strongly agree** |
| **2. Interaction with Google Hangouts does not require a lot of my mental effort.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7 Strongly agree** |
| **3. I find Google Hangouts to be easy to use.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7 Strongly agree** |
| **4. I find it easy to get Google Hangouts to do what I want it to do.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **5. I find Google Hangouts to be flexible to interact with.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **6. Learning how to perform tasks using Google Hangouts is easy.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **7. Google Hangouts has good functionalities.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral 5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |

## 2. Perceived Usefulness

| |
|---|
| **1. Google Hangouts increases interaction with my classmates.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **2. Google Hangouts makes online collaboration productive.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **3. Google Hangouts makes online collaboration enjoyable.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **4. Live video lectures using Google Hangouts (will) help me learn class materials.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **5. Google Hangouts is effective to develop a sense of community among students.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |
| **6. Overall, Google Hangouts has a potential as an instructional tool.** |
| **1. Strongly disagree, 2. Moderately disagree, 3. Somewhat disagree, 4. Neutral<br>5. Somewhat agree, 6. Moderately agree, 7. Strongly agree** |

***Adopted from the perceived ease of use and useful scales developed by Davis (1989).**