

Instant Reminder: The Impact of E-Communication on First Year College Students

Ching-Wen Chang
Cathy Pearman
Missouri State University

Electronic communication is the standard method of communication among college students. However, which format of e-communication is most preferred seems to be somewhat of a moving target. Utilizing a researcher-developed survey, this study investigated the use of Remind, a popular form of instant messaging, for communication between the instructors and students in two sections of a required, first-year college orientation course. The use of this instant messaging platform was compared to the use of email. Two research questions drove this study. When asked whether instant message-based course communication was more effective than email communication, 75.4% of participants agreed, with 61.5% reacting to information in Remind more quickly than messages via email. Information from the second question showed 94% of participants felt Remind helped them organize their learning. Overall, the responses to the use of Remind were positive, and it was clearly preferred over traditional email communication for a number of reasons delineated in the study. Actual participant comments are included.

Keywords: instant messaging, first year college students, remind app, effective course communication, organizing learning

INTRODUCTION

It is understood that electronic communication is the standard method of communicating among college students. Nonetheless, the debate continues as to what *format* of e-communication is preferred by college students. Nkhoma (2018) states that this demographic group has become the largest user of instant messaging, and suggests the displacement of email by instant messaging (IM) as the preferred method of communication by college students. In November of 2011, Mark Zuckerberg, co-founder of Facebook stated, “We don’t think a modern messaging system is going to be e-mail” (Kolowich, 2011, para 1). His company had just unveiled a new messaging platform with

no subject line and designed “on the assumption that in the future most electronic communication will come in brief, informal bursts” (Kolowich, 2011, para 2). Nevertheless, many believe the predictions about the death of email has been exaggerated. For example, Kolowich (2011) stated,

Ed Garay, assistant director for academic computing at the University of Illinois at Chicago, says that while it is “superficially” apparent that Blackboard, Facebook, and increasingly sophisticated text-messaging platforms built into smartphones might amount to a death knell for institutional e-mail, there are certain types of communication – such as formal notices from financial aid, student affairs, and health officials – that might be too formal and detailed to convey effectively in a pithy text message. (para 7)

Fast forward to 2018 and the question still lingers about the preferred e-communication format, but the question is changing—because the technology is changing. One such change is *Remind*, the instant messaging platform that was utilized in this study.

Remind (formerly Remind101) is a free, real-time messaging app in wide use in K-12 schools that allow teachers and administrators to instantly communicate with students and parents. Remind is classified as educational software that is used to send instant one-way messages (announcements) or hold real-time, two-way conversations (chats) with students or parents using any device (Luckman, 2015). Because these conversations are school-related, the issue of student privacy immediately surfaces. However, a review of the platform in *PC Magazine* states, “Because Remind works with the personal information of students and parents...the application has a number of extensive safety controls in place to ensure that potentially sensitive information never makes its way into the wrong hands” (Remind, 2017, para 5). Further, the Remind software has been certified by iKeepSafe, an independent certification organization in order to maintain FERPA compliance (<https://www.remind.com/>). FERPA, or Family Educational Rights and Privacy Act of 1974, is a Federal law that protects the privacy of, and governs the access to, student education records and information (U.S. Department of Education, 2018). The iKeepSafe organization specializes in FERPA, COPPA (Children’s Online Privacy Protection Act), and CSPC (California Student Privacy Certified) software certifications (<https://ikeepSAFE.org/>).

While there are a number of instant messaging platforms available today, these researchers are not advocating for any one platform. Remind was chosen because it is free, has the built-in security oversights and controls mentioned above, and because collecting student cell phone numbers is *not* required to communicate via this platform (explained below). The rapidly growing popularity of Remind among college students is another reason this platform was selected.

The Remind website claims their product is in use by more than 70% of U.S. public schools, has delivered 8.8 billion messages, and has over 20 million users (<https://www.remind.com/about>). These are impressive numbers for a software product that was launched in 2011. The founders, brothers Brett and David Kopf, say their goal was to create a product that overcomes the barriers teachers face when communicating with their students and parents i.e., what they consider ‘inefficient’ methods of communicating such as email, printed handouts, and other outdated communication tools (<https://www.remind.com/about>).

While Remind was originally developed for the K-12 market, today’s tech savvy college students, who seem to be continuously seeking new ways to communicate electronically, have discovered this tool, and it is now also in use by a growing number of college students and their faculty. This research study explores the use of this platform as

an alternative to email as a method of electronic communication by first year college students.

RESEARCH QUESTIONS

The following questions guided this study:

1. Do participants perceive an instant message-based course communication tool more effective than email communication?
2. Do participants perceive an instant message-based course communication tool for real-time messaging helps organize their learning?

Before investigating these questions, the following review of the literature provides a brief overview of the development of electronic communication, followed by an examination of the use of the Remind instant messaging software as an alternative method of communicating course-related information in two sections of a required first-year college orientation course.

LITERATURE REVIEW

Electronic communication, technically, is any communication methodology that utilizes electricity—which would include telegraph, telephone, radio, television, and so forth. However, for the purposes of this study, the working definition of electronic communication is Internet-based digital communication methodologies i.e., email and instant messaging.

Email had its beginnings as an improvement to the file directory: “it just put a message in another user's directory in a spot where they could see it when they logged in. Simple as that. Just like leaving a note on someone's desk” (Peters, 2004, para 2). In 1965, Massachusetts Institute of Technology (MIT) developed MAILBOX, likely the first actual email system. Be that as it may, Ray Tomlinson, an ARPANET (Advanced Research Projects Agency Network) contractor, is credited with inventing email in 1972. After the Internet emerged and made its unprecedented climb to omnipresence, protocols were developed which standardized then-new email products such as Eudora and Pegasus. Subsequently, with the advent of the World Wide Web, email became an inexpensive, user-friendly product available to everyone, and providers such as Yahoo and Hotmail flourished (Peters, 2004).

Another electronic communication system to appear on the scene, and the one of interest to this research project, is instant messaging. While the term *instant messaging* became common parlance in the early 1990s, the concept actually dates back to the mid-1960s (Petronzio, 2012). There were multi-user systems such as a time-sharing system developed at MIT, and peer-to-peer networking communication protocols developed in the 1970s. The bulletin board systems, which began in the late 1970s, were the first formal online tools for discussions (Sun, 2017). The *Usenet* news system, which started in the early 1980s, was in a format similar to email, but allowed users to post messages which could be read by many users rather than a single recipient.

In 1980, CompuServe created a program that mimicked the then-popular citizen band radio form of communication. This program was capable of sending text-based messages and is considered the first dedicated online chat (Petronzio, 2012). An Israeli company developed ICQ (onomatopoeia for ‘I Seek You’) which was launched in 1996 and was the first text-based message service to reach widespread use (Yin, 2012). There were numerous other developments during this time, but the major break-through came in 1997 when AOL launched AOL Instant Messenger (AIM) which allowed users to message each other, create user profiles, and utilized icons. By 2005, AIM dominated the IM market with 53 million users (Petronzio, 2012).

In 1998, Yahoo followed suit with Yahoo! Messenger, and Microsoft launched MSN Messenger in 1999, which was renamed Windows Live Messenger in 2005. In 2009, Microsoft had more than 330 million active monthly users (Petronzio, 2012, para 10). Apple developed iChat in 2002 and in 2003 Skype was released, an instant messaging platform that also included video and voice capabilities.

Social media chat came on the scene shortly thereafter. Google released Google Talk in 2005; MySpaceIM was developed in 2006; and Facebook Chat in 2008 (Petronzio, 2012). Today there are numerous e-communication platforms. Remind, just one of these platforms, was chosen for this study because there is a free version, it has, as mentioned earlier, significant privacy features built in, and because of its beginnings in education, it has quickly become a favorite of students and educators alike.

While the literature is replete with research on computer-mediated communication (CMC), instant messaging (IM) has been somewhat overlooked. The huge popularity of IM is, in part, due to the fact that IM has capabilities not available to other CMC applications. Instant messaging provides “near-synchronous one-to-one communication and near-immediate confirmation of exchanged messages, making the transaction almost like a telephone conversation” (Balci & Gülnar, 2008, p. 82). However, while almost as instantaneous as a phone call, IM does not require the user’s continuous attention, and, as such, is more convenient. Instant messaging can also be a more discreet method of communication – often to the chagrin of faculty!

Another reason for IM’s popularity is that it allows users to instantly create private chat rooms, share images and documents, stream content, and attach music files. Additionally, IM provides *presence awareness* i.e., the capability to notify users when their classmates are also online (Balci & Gülnar, 2008).

Nkhoma (2018) found four primary motivations for IM use among college students: social entertainment, sociability gratifications, social usefulness, and task accomplishment. Public school educators have long been searching for more effective ways to communicate with parents other than traditional methods such as handouts and sending notes home with students. Because of the proliferation of smartphones, digital tools such as email and instant messaging have been utilized to improve communication between teachers and families. In addition, there are now commercial providers that can deliver e-communication tools to school districts. Advocates of digital communication methods claim these tools are faster, more effective, and break down walls between schools and families. Opponents claim the digital divide will exclude some families and express concerns about privacy and the possibility of too much information overwhelming some teachers and/or parents (Gilgore, 2015). Now that digital communication is common among students, it seems intuitively to make sense for teachers and administrators to tap into the world of e-communication. One New York City tenth grade chemistry teacher stated, “Any tool that I can leverage to help [students] learn a little bit more is enticing to me” and further, that some forms are “like an alert, a notification... which creates a different feel to the communication” (Gilmore, 2015, para 7).

In higher education, students are using instant messaging (IM) on a regular basis both socially and as a medium of education i.e., as a learning tool (Klein et al. 2018). While IM tools are increasing in use by college students, they are also gaining in use by some faculty and administrators (early adopters) in a myriad of applications. IM has been implemented for use as an online library referencing service in a number of academic libraries (Horne, Ragon, & Wilson, 2012); as a tool to assist ESL learners develop their English language abilities (Basoglu, 2017; Ene, 2014); and as a retention tool for admissions offices, and to quickly communicate with at-risk students (Walsh, 2016). Walsh also states that instant messaging “helps students stay connected...brings efficiencies to the administrative

process such as document exchange, calendaring, and sending push notifications for messaging” (Walsh, 2016, para 21).

Because of the near-instantaneous nature of instant messaging, this tool has also become a significant part of many university emergency notification systems. Students can sign-up for these systems and choose to receive text alerts on their smartphones, notifications on school and personal email, and their voicemail. “Recent emergencies and tragic events on college campuses have highlighted the need for effective and immediate communication with students and staff” (Junco, Merson, & Salter, 2010, p. 619) and IM can fulfill this need.

While instant messaging is not the only method of e-communication available to university students, clearly it has come to the forefront because of its overwhelming popularity and usage. Could yet another function of IM in higher education be to benefit first year college students? Specifically does this demographic prefer IM to email? Does IM help them organize their learning; a skill critical to success in college? The purpose of this research was to explore these questions. What follows is the methodology utilized to conduct the current study.

METHODOLOGY

PARTICIPANTS

Purposive sampling was utilized to identify participants for this study. All were first-year college students in two sections of a required, seated, college orientation course at a public Midwest university. The researchers of this study were instructors of these two sections. A survey was administered to 62 students with 57 valid responses returned (92% response rate).

The participants were an essentially homogeneous group, so typical demographics such as age and gender were not collected in the demographic section of the questionnaire for the following reasons. These two particular sections of this college orientation course were College Designated sections with all of these first year students already declared as Education majors. Furthermore, gender was not considered a variable and was not a captured demographic as 98% of the students were female. The age of the participants was also not included in the questionnaire. Since all of the participants were first year, traditional college-aged students i.e., 18-22 years old, this age range could be assumed and was not considered a variable.

SETTING

As mentioned, there are a number of products similar to Remind available today, and these researchers are not recommending any particular IM tool over any other. The rationale for choosing Remind for this research project was again, because it is free, and because of its built-in safety/privacy features and iKeepSafe Certification making it FERPA compliant. And perhaps more importantly—unlike other instant message systems – the users’ phone numbers do not have to be captured. How is this accomplished? The instructor sets up a Remind account then creates a *class code* for that account. The students are provided with the unique URL and class code, which gives them and only them, access to the account via the Internet, therefore potentially identifying phone numbers do not need be collected, further assuring the participants’ privacy.

PROCEDURE

Researchers developed a three-part survey consisting of demographic information, questions on the use of an instant message-based course communication tool, and an open-ended question on use of the tool.

After researchers received permission to conduct the study from the university's Institutional Review Board, students were informed their survey responses would be completely anonymous, their participation was voluntary, and they could stop the survey at any time without completing it. Students were provided a consent form, and the survey was administered at the beginning of their required, seated, college orientation class midway through the semester. The survey took approximately 15 minutes to complete. Completed surveys were then placed in an envelope by the participants without researcher involvement. Data collected was used in aggregate so individual participants could not be identified.

SURVEY

Researchers developed a 17-question survey (see Appendix) which was administered to 62 participants with 57 valid responses (92% response rate). The survey included seven demographic questions and one open-ended question for participants to share comments on the use of the Remind app. In addition, the survey included nine statements specific to the use of the instant messaging tool. The participants were asked to respond to this series of statements using a Likert scale with strongly agree, agree, neutral, disagree, and strongly disagree to determine if they perceived the use of an instant message-based course communication tool, such as the Remind App, to be more effective than email communication and whether they perceived the Remind app helped organize their learning.

The following section delineates the results of the survey and provides responses to the research questions as well as insights into student preferences concerning electronic communication platforms.

DATA ANALYSIS & RESULTS

SAMPLE POPULATION DEMOGRAPHICS

As stated above, 98% of the participants were female, and all of the participants fell into the traditional 18-22 age range. In the survey, participants self-reported their high school GPAs. Forty-two students had GPAs between 3.6-4.0; 12 students were between 3.1-3.5; and three students were between 2.6-3.0. The participants also self-reported their ACT scores. One student was between 31-33; five students were between 28-30; 17 students were between 25-27; 23 students' ACT scores were between 22-24; nine students were between 19-22; and one student fell into the 16-18 range.

Very likely, the only obstacle to participating in this study was the issue of the digital divide, as a smartphone was required to participate. However, when participants were asked if they had a smartphone, the results indicated 57 out of 57 participants (100%) did own a smartphone. That leads to the next question in the survey, which asked if the participants had signed up to join Remind, the instant messaging app used in this study. Fifty-six out of 57 participants (98.2%) signed up for the Remind app on their smartphone. Forty of the participants (70%) indicated they had used the Remind app prior to this study.

RESEARCH QUESTION 1

Is an instant message-based course communication tool more effective than email communication?

When participants were asked if they prefer to receive course information via a Remind message rather than email, a clear majority (75.4% strongly agreed or agreed) did prefer to receive course information via instant message. The results are listed in Table 1.

Table 1. *Participants Prefer to Receive Course Information in Remind*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	28	49.1	51.9
	Agree	15	26.3	27.8
	Neither agree nor disagree	9	15.8	16.7
	Disagree	1	1.8	1.9
	Strongly Disagree	1	1.8	1.9
	Total	54	94.7	100.0
Missing	System	3	5.3	
Total		57	100.0	

Another survey question asked the participants if they react to information in Remind messages sooner than an email. Of the respondents, 61.5% indicated they would react to an instant message sooner than a message sent via email, as shown in Table 2.

Table 2. *Participants React to Remind Message Sooner Than an Email*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	23	40.4	40.4
	Agree	12	21.1	21.1
	Neither agree nor disagree	16	28.1	28.1
	Disagree	5	8.8	8.8
	Strongly Disagree	1	1.8	1.8
	Total	57	100.0	100.0

RESEARCH QUESTION 2.

Does the use of an instant message-based course communication tool for real-time messaging help first year students organize their learning?

When participants were asked if they believe Remind messages help them meet assignment due dates, Table 3 shows that 54 out of 57 participants (94.8%) believe instant messages help them meet assignment due dates, and only two participants (3.5%) responded neither agree nor disagree. No participants disagreed or strongly disagreed with this question.

Table 3. *Participants Believe Remind Messages Help Meet Assignment Due Dates*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	31	54.4	55.4
	Agree	23	40.4	41.1
	Neither agree nor disagree	2	3.5	3.6
	Total	56	98.2	100.0
Missing	System	1	1.8	
Total		57	100.0	

Table 4. *Participants Believe Remind Messages Help Them Organize Their Learning*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	26	45.6	46.4
	Agree	24	42.1	42.9
	Neither agree nor disagree	4	7.0	7.1
	Disagree	2	3.5	3.6
	Total	56	98.2	100.0
Missing	System	1	1.8	
Total		57	100.0	

When asked if they believe Remind messages help them organize their learning, 50 participants (87.7%) agreed or strongly agreed that an instant message helps them organize their learning. Four participants (7%) responded neither agree nor disagree, and only two participants (3.5%) disagreed. The results are listed in Table 4.

OVERALL EXPERIENCE WITH REMIND

Participants were asked about their overall experience using Remind in their first year college orientation course. Fifty-five (96.5%) participants indicated they appreciated getting Remind messages (see Table 5). Moreover, 56 participants (98.2%) agreed or strongly agreed that Remind messages are helpful as indicated in Table 6.

Table 5. *Participants Appreciate Getting Remind Messages*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	38	66.7	66.7
	Agree	17	29.8	29.8
	Neither agree nor disagree	2	3.5	3.5
	Total	57	100.0	100.0

Table 6. *Participants Find Remind Messages Helpful*

		Frequency	Percent	Valid Percent
Valid	Strongly Agree	37	64.9	64.9
	Agree	19	33.3	33.3
	Neither agree nor disagree	1	1.8	1.8
	Total	57	100.0	100.0

OPEN-ENDED QUESTION

If you are a Remind user, why do you prefer this app? If you do not prefer this app, please share your reasons.

This question was asked at the end of the survey and most of the participants commented on the convenience of receiving instant messages on their smartphone. Student reflections on the open-ended question include: "I prefer this app because it is easy to check and goes straight to my phone"; "I check my messages more than my email, so it keeps me up to date with assignments and class alerts"; "My phone notifies me just like a text and I am able to see it, with email however I am not notified, just responsible for checking"; and "I like that Remind is faster and less formal".

However, there were a few participants who made the following comments: "I do not use the app and only read the messages when they come through as a text"; "I usually am

more apt to checking [sic] my email since all of my professors use email and not all use Remind”; and “I think it is very helpful, but most of my teachers don’t use it very often”.

DISCUSSION

A number of 21st century digital tools and emerging technologies are available but most require capturing identifiable data such as phone numbers. This makes the cyber security of software of prime consideration when it is to be used with students. Remind was chosen for this study since it has extensive safety controls mentioned earlier in this paper and is offered at no cost to either students or faculty. Another positive factor in choosing this particular software was that 70% of participants indicated they were already familiar with the application, either in other college courses or K-12 schools.

The general consensus of this group of participants was that Remind is more convenient, useful, and easier to access than email. There was an overall positive response to the first research question regarding the effectiveness of instant messaging as compared to email. Based on the findings from this study, first year college students reported the use of Remind messaging was more effective for them than email communication with regard to alerting them to due dates, extra credit opportunities, assignment directions and other course information. Moreover, students appreciated the format of a Remind message as a text that appeared on their smartphone. This was more convenient for them than logging into email on a consistent basis to search for communication on their assignment due dates and course notifications. Students also reported they respond more quickly to Remind messages than email. Additionally, in terms of organizing learning (research question two) the response again was clearly positive. Immediate notification via Remind garnered responses such as: “I prefer this app because I am a forgetful person and it helps me stay focused and remember assignments”; and “Remind is a quick and easy way to know when something is due. I also use Remind for my psychology class and I find it really nice because my professor uses it to tell us about extra credit opportunities in class. Overall, I feel that Remind is very helpful to me”.

The only mentioned drawback to this method of communication over email seems to be the fact that not all faculty use Remind, or other instant messaging platform, to communicate with their students. A student shared the comment that “I think it is very helpful, but most of my teachers don’t use it very often.” Another student relayed “I am more apt to checking [sic] my email since all of the professor use email and not all use Remind.”

LIMITATIONS

The majority of students in this study, 56 of 58 (98%), were female. This gender difference may have an effect on the generalizability of the results of this study as Alsalem et al. (2017) reported that “female students had significantly greater time management skills than males” (p. 3042). The female students in this study may have been more inclined to use supports to aid them with time management. They may have viewed Remind software as one more tool in their organizational tool box. A more equal gender mix may have netted different results. Also, 54 of the 58 students in this study self-reported their GPA as between 3.1 and 4.0, and 46 of the students reported an ACT score of 22 or above. Thibodeaux, Deutsch, Kitsantas, and Winsler (2017) found students with higher GPAs are more self-regulated to invest in organizing for academics. For this study, this self-regulation may have manifested in checking Remind messages and using the information to organize their learning. Students with lower GPAs may have needed the support of Remind at a greater level than students with above average GPAs, but this study did not net information on use with a critical number of students who self-reported a low GPA.

Lastly, this study was composed of a relatively small sample of 57 students at one mid-western university following a common first-year program. The reader will need to determine if the information provided generalizes to their teaching situation.

FUTURE DIRECTIONS

One unexpected, but nonetheless interesting finding, was that a number of students mentioned in their open-ended comments that this method of communication, i.e., instant messaging, was less formal, (a qualitative perception on the part of the participants) which apparently is also an appealing feature of the technology to this generation of students. It would be worthwhile to follow up on this perception in future studies.

Another avenue where Remind or other instant messaging software may be useful is in mediating procrastination. Procrastination has been described as a personality characteristic or habit of mind (Tripathi, Pragyendu, Kochar, & Dara, 2015). It is common among university students with a reported 57% of students spending three hours or more a day procrastinating (Klassen et al. 2010; Rice, Richardson, & Clark, 2012). By aiding students in managing their time through reminders of assignments and subsequently helping them organize for studying, Remind software may aid students who are procrastinators to develop a habit of mind to cultivate time management skills and academic organizational skills. Further research will increase knowledge on whether Remind software, or other instant messaging platforms, will be a factor in mitigating procrastination.

Future research seems to be limited only to the researcher's imagination. For example, Remind has been used to attempt to improve math scores (Williams, 2017). It has also been used to help patients adhere to medication regimens (Stawarz, Cox, & Blandford, 2014). Another study (Dyer, Aroz, & Larson, 2017) used Remind to create a sense of proximity and were able to change the students' perception of instructor proximity via this technology. They stated that by using the Remind app "the instructor can foster engagement, emphasize socialization and personalization and create a learning community that is critical to the formation of new knowledge" (p. 1). Most online courses are completely asynchronous, which can create a sense of isolation, particularly for students new to distance education. Consequently, all experienced online educators are aware that community building is a best practice and a key to a successful online course, and Dyer et al. (2017) leveraged the technology to facilitate instructor proximity; other educators could do the same.

CONCLUSION

In this study, the researchers examined the effectiveness of Remind instant messaging software in a first-year college student program in a Midwestern university. Research question 1 asked if instant messaging-based course communication was a more effective communication tool than email communication. Results were positive with 75.4% (43 out of 57) stating they preferred to receive course information via instant message. Participants also indicated they respond more quickly to instant messages than email, 61.5% (35 out of 57). Research question 2 provided information that participants felt instant message-based course communication helped them to organize their learning. Participants responded that the Remind software aided them in meeting assignment due dates (94.8%) and helped them to organize their learning (87.7%). Open-ended survey items showed participants preferred the convenience of receiving messages in a text format on their smartphones as opposed to specifically logging in to check email. However, some participants had mixed feelings. They found Remind helpful but stated that they must check email regardless since many of their professors do not use Remind.

In sum, participants found instant messaging via Remind software to be more expedient, beneficial, and straightforward to access than email. The positive findings from this study show the potential for Remind, or other instant messaging software, to play a part in helping first-year college students be successful. This type of software may help them develop necessary time management skills and organize their learning in a more efficient manner. As research continues, instant messaging may be found to have an impact on mediating procrastination, community building between students and faculty, and exploring the role of less formal course communication.

REFERENCES

- Alsalem, W. S. Y., Alamodi, L. A., Hazazi, A. T. M., Shibah, A. M., Jabri, S. A., & Albosruor, Z. A. (2017). *The Egyptian Journal of Hospital Medicine*, 69(8), 3042-3049. doi: 10.12816/0042853
- Balcı, Ş., & Gülnar, B. (2008). Instant messaging use among university students. *Selçuk İletişim*, 5(3), 81-96.
- Basoglu, B. (2017). Youtube or writing tube: A technology-mediaed learning tool for TESOL. *International Journal of Humanities, Arts & Social Sciences*, 3(3), 98-105.
- Dyer, T. D., Aroz, J., & Larson, E. (2017). Now you see me: Using Remind to achieve proximity online. SoTL Commons Conference. 58. Abstract retrieved from <https://digitalcommons.georgiasouthern.edu/sotlcommons/SoTL/2017/58>
- Ene, E. (2014). Learner uptake of teacher electronic feedback in ESL composition. *System*, 46, 80-95.
- Gilgore, S. (2015, September 15). Probing the impact of parent-teacher digital communication. *Education Week*. Retrieved from <https://www.edweek.org/ew/articles/2015/09/16/probing-the-impact-of-parent-teacher-digital-communication.html>
- Horne, A. S., Ragon, B., Wilson, D. T. (2012). An innovative use of instant messaging technology to support a library's single-service point. *Medical Reference Services Quarterly*, 31(2), 127-139.
- Junco, R., Merson, D., & Salter, D. W. (2010). The effect of gender, ethnicity, and income on college students' use of communication technologies. *Cyberpsychology, Behavior, and Social Networking*, 13(6), 619-627.
- Klassen, R. M., Ang, R. P., Chang, W. H., Krawchuk, L. L., Huan, V. S., Wong, I.Y.F. & Yeo, L. S. (2010). Academic procrastination in two settings: Motivation correlates, behavioral patterns, and negative impact of procrastination in Canada and Singapore. *Applied Psychology: An International Review*, 59, 361-379, doi:10.1111/j.14640597.2009.00394.x
- Klein, A. Z., da Silva Freitas, J. C., da Silva, M. Mattiello, J. V. V., Barosa, J. L. V., & Baldassa, L. (2018). The educational affordances of mobile instant messaging (MIM): Results of Whatsapp® used in Higher education. *International Journal of Distance Education Technologies*, 16(2), 51-64.
- Kolowich, S. (2011, January 6). How will student communicate? *Inside Higher Ed*. Retrieved from <https://scherlund.blogspot.com/2011/01/how-will-students-communicate-by-steve.html>
- Luckman, V. (2015, April 10). Teachers actually want students to use this app in class. *Tech Apps*. Retrieved from <http://time.com/collection-post/3758016/remind-app-teachers-classroom/>
- Nkhoma, C. A. (2018). Measuring the impact of out-of-class communication through instant messaging. *Education + Training*, 60(4), 318-334.

- Peters, I. (2004) The history of email. *Net History*. Retrieved from <http://www.nethistory.info/History%20of%20the%20Internet/email.html>
- Petronzio, M. (2012). A brief history of instant messaging. *Mashable.com*. Retrieved from <https://mashable.com/2012/10/25/instant-messaging-history/#TIpmKIObnPqs>
- Remind. (2017) *PC Magazine Business Software Index*. Retrieved from <https://www.pcmag.com/business/directory/profile/1951-remind>
- Rice, K. G., Richardson, C. M. E., & Clark, D. (2012). Perfectionism, procrastination, and psychological distress. *Journal of Counselling Psychology*, 59(2), 288-302.
- Stawarz, K, Cox, A., & Blandford, A (2014). Don't forget your pill!: Designing effective medication reminder apps that support users' daily routines. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, (pp. 2269-2278), Chicago, IL.
- Sun, Y. (2017). Comparing the use of a social annotation tool and a threaded discussion forum to support online discussions. *Internet & Higher Education*, 32, 72-79.
- Thibodeaux, J., Deutsch, A, Kitsantas, A, & Winsler, A. (2017). First-year college students' time use: Relations with self-regulation and GPA. *Journal of Advanced Academics*, 28(1), 5-27.
- Tripathi, S. R., Pragyendu, Kochar, A. & Dara, P. (2015). Role of self-efficacy and hope in academic procrastination among undergraduate students. *Indian Journal of Positive Psychology*, 6(4), 376-379.
- U.S. Department of Education. (2018, March). *Family Educational Rights and Privacy Act (FERPA)*. Retrieved from <https://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html>
- Walsh, K. (2016). Apps personalize campus communications. *University Business*. Retrieved from <https://www.universitybusiness.com/article/apps-personalize-campus-communications>
- Williams, C. M. (2017). *Remind.com: The use for intervention in math*. (Dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 10274165).
- Yin, S. (2018). ICQ Messenger 3.1 (for Android). *PC Magazine*, 1-1.

APPENDIX

SURVEY QUESTIONS

Demographic Data

1. High School GPA _____ (Exact or your best recollection)
2. ACT score _____ (Exact or your best recollection)
3. Do you have a smartphone: Yes No
4. Did you sign up for Remind in your GEP 101 class? Yes No
5. Have you used Remind before? Yes No If yes, when? _____
6. How often do you check Remind on your phone daily?
never once twice 3 times more than 4 times
7. How quickly do you respond to or comply with Remind messages?
within 12 hours within 1 day within 1 week do not respond/comply

SA=Strongly Agree; A=Agree; N=Neither Agree nor Disagree; D=Disagree;
SD=Strongly Disagree

S A N D S

Text-based Communication

I prefer to receive course information in Remind rather than email.

I check my Remind messages several times a day.

I check my email several times a day.

I check my Remind messages more frequently than emails.

I believe Remind messages help me meet assignment due dates.

I believe Remind messages help me organize my learning.

I react to information in Remind messages sooner than an email.

I appreciate getting Remind messages.

I find Remind messages helpful.

Open-ended Question

If you are a Remind user, why do you prefer this App? If you do not prefer this App, please share your reasons.