Virtual Meetups for Remote Learners

Dr. David G. Novick, University of Texas at El Paso

David G. Novick, Mike Loya Distinguished Chair in Engineering and Professor of Engineering Education and Leadership, earned his J.D. at Harvard University in 1977 and his Ph.D. in Computer and Information Science at the University of Oregon in 1988. Before coming to UTEP he was on the faculty of the Department of Computer Science and Engineering at the Oregon Graduate Institute and then Director of Research at the European Institute of Cognitive Sciences and Engineering. At UTEP he has served in a number of positions including as Chair of the Department of Computer Science, Associate Provost, Associate Dean of Engineering for Graduate Studies and Research, and co-director of the Mike Loya Center for Innovation and Commerce. His research focuses on college-level engineering education for entrepreneurship and leadership. He has authored or co-authored over 135 refereed publications and over $16 million in funded grant proposals.

Denise Saenz
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David Novick, Denise Saenz
Department of Engineering Education and Leadership
The University of Texas at El Paso

Abstract

This study assesses the impact of providing a weekly teleconference virtual meetup and Jamboard “meetup room” for students in engineering courses delivered via remote learning at a Hispanic-Serving Institution. The study’s results suggest that regularly scheduled Zoom meetings can be a reasonably effective substitute for some aspects of in-person informal interaction. The effectiveness of the meetings could likely be improved by having them more than once a week and by providing more guidance to students on how to use the meetings. The results also suggest that students are unlikely to use a Jamboard as a substitute for in-person informal interaction.

Introduction

In pre-pandemic times when courses met in on-campus classrooms, many students often hung around, usually in the corridor outside the classroom, for several minutes after class. As well, students often would encounter one another in the university’s public spaces or study areas. These routine opportunities for informal interaction could be used to arrange meetings, share insights or questions about the course’s content or logistics, complain about having too much reading assigned, and so forth. Such interaction on the margins of formal course structures served to fill in the course’s gaps, helping the students overcome limitations such as course material not getting effectively delivered, students’ varying degrees of understanding, and lack of time in class for students to coordinate. And more broadly, students use these times to bond socially. The nearly universal remote learning necessitated by the pandemic effectively eliminated these opportunities for informal interaction that actually made courses work for students.

Beginning in March of 2020 many colleges and universities, faced with the advent of the Covid-19 pandemic, moved to remote learning. Because this change was both sudden and recent, the research literature of engineering education had not yet provided much in the way of answers for faculty who seek to maintain the effectiveness of their teaching. In particular, our survey of the literature disclosed no research dealing with the loss of informal interaction among students. Accordingly, this paper reports an exploratory study at a Hispanic-Serving Institution to assess the impact of providing a weekly teleconference virtual meetup and Jamboard1 “meetup room” for students in courses delivered via remote learning. We review literature related to in-person meetups and study groups, describe a pilot project that provided virtual substitutes for in-person meetups, describe a methodology for assessing the effectiveness of the pilot project, and report the results of the assessment.
Related Work

While the literature disclosed no research dealing with the loss of informal interaction among students, the pre-pandemic research literature of virtual meetups and study groups did provide guidance for understanding the issues of the loss of opportunities for informal interaction. Meetups, in addition to people’s normal on-line interaction, do provide benefits to the participants. When online groups had in-person meetups, the participants enhanced their bonding social capital. Physical meetups enable software engineers to current, to build local networks, and to improve their practice through transfer of rich tacit knowledge with peers. To provide the function of being a gathering place beyond home and work (a “third place”), virtual meetups should provide localization, accessibility, and presence. In this context, localization means that the meetup is situated within an identifiable cultural milieu, access means that people in the community of interest can actually participate, and presence means that the meetup must be a warm and welcoming home away from home for the participants.

When course content is online, such as in a MOOC, watching MOOCs in physically co-located groups increases student satisfaction by connecting the students with each other and enabling interactions. Such meetings these meetings fill an important gap in the MOOC experience for students who seek social connectedness or belonging in their learning experience. And virtual study groups for students in MOOCs appear to improve student collaboration engagement.

Virtual Meetups

During the period of the study, we provided students in three upper-division engineering courses with virtual substitutes for the informal in-person interactions that the pandemic had ended. For each course we created (1) a weekly (non-hosted) one-hour Zoom session at a day and time convenient for as many students as possible and (2) a Google Jamboard “Virtual Meetup Room” in which the students could create new pages, leave notes, ask questions, share notes, and so forth. To enable the students to interact as normally as possible, the investigators did not participate in or observe the Zoom sessions. To provide a warm and welcoming home away from home, the first page of each Jamboard room had a photograph of a seating area in a ski lodge and simple suggestions on what students could do in the space, and we later added a link to the course’s Blackboard site (see Figure 1).

Methodology

To assess the effectiveness of the virtual meetups in providing students with venues for informal interaction, we posed four hypotheses:

1. Students in on-campus courses used routine opportunities for informal interaction to do things that were important to them.
2. Students in remote-learning courses have fewer opportunities for informal interaction.
3. Students in remote-learning courses are doing fewer of the things that were important to them in routine opportunities for informal interaction in on-campus courses.
4. Students participating in a weekly teleconference virtual meetup and using the Jamboard meetup room are able to do more of the things that were important to them in routine opportunities for informal interaction in on-campus courses.

![Capstone Design Virtual Meetup Room](image)

Figure 1. Jamboard welcome page for Capstone Design course.

The study’s methodology had two phases. In the pre-test phase, participants completed an open-ended survey in which they describe the times and places they had for informal interaction with classmates in on-campus courses, their activities in these times and places that were most important to them, the times and places they have for informal interaction with classmates in remote courses, which of their activities described in their answers to they can and cannot do in remote courses, any other informal interaction with classmates in remote courses that did not do in their on-campus courses. The results of these surveys were interpreted through thematic content analysis, addressed Hypotheses 1, 2, and 3, and enabled the investigators to compile lists of informal activities that, in going from on-campus to remote courses, continued, were lost and were gained. Between the pre- and post-test phases, we set up the virtual meetup and Jamboard for each of the three courses. In the post-test phase, participants completed a closed-ended survey, using the lists of activities compiled in the pre-test phase.

A review of the research literature did not disclose a validated instrument for assessing teleconference meetups for informal interaction. A validated scale for measuring learner engagement in MOOCs included social engagement as factor, in addition to behavioral engagement, cognitive engagement, and emotional engagement. But for the issues raised in the present study, only two of the twelve questions in the instrument were relevant:

- I often responded to other learners’ questions.
- I shared learning materials (e.g., notes, multimedia, links) with other classmates in the MOOC.
Consequently, this study required developing a new instrument that builds on the concepts from the two questions in the MOOC instrument and went beyond those questions to address the other factors of interest here. The pre-survey asked

This survey is about the times and places in which you have informal interaction with other students in your courses. Examples might be in the corridor after class or in the lobby of the UGLC. For each question, please respond as fully and completely as you can.

(A) Where and when have you had informal interaction with classmates in on-campus courses?
(B) At these places and times, what informal interaction activities were most important to you?
(C) Where and when have you had informal interaction with classmates in remote courses?
(D) At these places and times, which of the informal interaction activities you described in Question B could you do? Which could you not do?
(E) What other informal interaction with classmates, if any, did you have in your remote courses that you did not do in your on-campus courses?

The post-survey was more extensive, and the activities in Part 2 were based on participants’ responses to the pre-survey.

This survey is about the times and places in which you have informal interaction with other students in your courses.

Part 1

- In how many of your course’s weekly virtual meetups did you participate?
- Over the entire semester, in your best reasonable estimate, how much time (in hours) did you spend in your course’s weekly virtual meetups?
- How many times, in your best reasonable estimate, did you visit your course’s Jamboard virtual meetup room?
- Over the entire semester, in your best reasonable estimate, how much time (in hours) did you spend in your course’s Jamboard virtual meetup room?

Part 2

Participants in this study have indicated that they did the informal-interaction activities listed below in their on-campus courses. For each item, please indicate how well your course’s virtual meetups supported that activity for you. Use the following scale to indicate your assessment [1 = no support at all, 4 = undecided, 7 = complete support]. For example, if the weekly virtually meetups did very well in supporting an activity for you, you might choose 7, and if it did fairly poorly in supporting the activity, you might choose 3. If you are undecided, choose 4, but use this category sparingly.

- Hang out with friends, socialize, and/or de-stress
- Discuss when assignments are due
- Work on team projects together
- Help each other with course concepts
- Work on homework together
Part 3

Please use the following scale to indicate your agreement or disagreement with each of the following statements about the weekly virtual meetups. [1 = strongly disagree, 4 = undecided, 7 = strongly agree] For example, if you strongly agree, you might choose 7, if you mildly disagree, you might choose 3. If you are undecided, choose 4, but use this category sparingly.

- Compared to my experiences in other remote-learning courses, the weekly virtual meetups helped me feel socially connected to my classmates.
- Compared to my experiences in other remote-learning courses, the weekly virtual meetups helped me feel like I belonged in the course with my classmates.
- The weekly virtual meetups felt like a warm and welcoming home away from home.

Part 4

- Describe a particular instance, if any, of informal interaction in the weekly virtual meetups that stands out in your mind.
- What did you like about the weekly virtual meetups and the Jamboard virtual meetup room?
- What did you not like about the weekly virtual meetups and the Jamboard virtual meetup room?
- Please provide any other suggestions or comments about the weekly virtual meetups and the Jamboard virtual meetup room.
- Please provide any other suggestions or comments about this study.

Results

Our study was conducted at the University of Texas at El Paso, a large Hispanic-Serving Institution, where over 80% of the students are of Hispanic origin. Participants in the study included non-Hispanic and Black students, but the numbers of these students were too small to permit meaningful comparative analysis.

Fourteen students (out of 48 possible; some students were in more than one of the courses) completed the pre-survey and, of those, 11 completed the post-survey. In the pre-survey, participants reported pre-pandemic use of informal time for coordination of activities, discussion of what was going on in the class, and hanging out and seeing friends, which acted as an outlet from the stress of classes. For example, one participant wrote “The most important one is outside the classroom where we discuss what assignment is turned in or what we will be doing in the class that day,” and another participant wrote “I find most important to me the conversations about each other's lives.” The participants in the pre-survey reported that during remote courses there was less time for interactions because people usually do not have a reason to talk to other students, that it was not possible to do homework together, and that doing things took longer. For example, one participant wrote “I could not do much, all we would was catch up briefly, but doing homework together was no longer possible,” and another participant wrote “We could really do all of [the pre-pandemic activities] but when you do not see each other for a long time you prefer to do more catching up and talking instead of activities that were meant to pass by time.” Overall, the participants noted that they missed their pre-pandemic informal interaction and were trying to find
substitutes. As one participant wrote, “I miss spending time after classes meeting with other students. Shout out to the students who make the class groupchats.”

Interestingly, the participants’ responses suggested that having the instructors stay out of the virtual meetups was the choice. One participant, referring to interaction before we created the virtual meetups, wrote “In remote classes it is hard [t]o interact with classmates as the company of a professor changes the attitude or conversation of what happens outside of class.”

Overall, the participants’ responses in the pre-survey suggest that Hypotheses 1, 2, and 3 are true:

- **Hypothesis 1** was that students in on-campus courses did use routine opportunities for informal interaction to do things that were important to them. The pre-survey results indicated that nine out of ten participants described specific pre-pandemic informal-interaction activities and locations; the tenth participant had not had on-campus courses. So at least for our sample of students with on-campus courses, using routine opportunities for informal interaction was universal before the pandemic.

- **Hypothesis 2** was that students in remote-learning courses had fewer opportunities for informal interaction. The nine students with on-campus experience all reported reduced means of interaction; typical means were group chats and videoconferencing. Some students reported occasionally meeting with friends at their house.

- **Hypothesis 3** was that students in remote-learning courses did fewer of the things that were important to them in routine opportunities for informal interaction in on-campus courses. Six of the nine students with on-campus experience reported losing some or all their informal-interaction activities. For example, one student reported that “I could not do much. All we would [do] was catch up briefly, but doing homework together was no longer possible.” Even for students who were able to do their prior activities, the experience was limiting. A student commented that “I could do all of them, but for some reason it seemed more difficult to do (e.g. classmates seemed more easily distracted by multi-tasking, was harder for everyone to not accidentally interrupt others while speaking through a microphone, seemed like it took a longer time to do tasks remotely).”

Turning to the results of the post-survey, Hypothesis 4 was that students participating in a weekly teleconference virtual meetup and using the Jamboard meetup room are able to do more of the things that were important to them in routine opportunities for informal interaction in on-campus courses. The data suggest that the hypothesis was true for the virtual meetups but not true for the Jamboards.

The eleven students responding to the post-survey each averaged about eight hours total over the semester in the Zoom sessions, but the variance was high (Mean = 7.91, StDev = 11.53). In brief, it appears that participants mostly used the meetup rooms either a lot or not at all (see Table 1). The virtual-meetup Zoom sessions did better in supporting discussing when assignments were due but less well in supporting doing homework together or hanging out with friends (see Table 2).
Table 1. Total time in virtual meetups over semester per student.

<table>
<thead>
<tr>
<th>Total hours in meetups</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>6-10</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 2. How well the virtual meetups supported the students’ activities (1 = no support at all, 7 = complete support).

<table>
<thead>
<tr>
<th>Hang out with friends, socialize, and/or de-stress</th>
<th>Discuss when assignments are due</th>
<th>Work on team projects together</th>
<th>Help each other with course concepts</th>
<th>Work on homework together</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.75</td>
<td>5.13</td>
<td>4.88</td>
<td>4.38</td>
</tr>
<tr>
<td>StDev</td>
<td>1.91</td>
<td>2.03</td>
<td>2.36</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Participants reported particular instances in which the virtual meetups helped:

- If we had presentations due the next day we would join the meetup and help each other up.
- The first time the class met with all the mentors and talking to them about the project was a great experience. [NB. The mentors were project mentors other than the instructors or the study’s investigators.]
- There were times when demo presentations were due, but instructions were not as clear, so my team and other teams would meet up and discuss our plans to complete our assignments.
- I hosted a study session where 3 other students attended, asked questions, and discussed cases.

More generally, the participants reported that they liked the virtual meetups for these reasons:

- I enjoyed being in a room with the entire class and having jokes tossed around to get the mood up.
- We were able to see everyone and talk even during these times.
- We were able to discuss things together, concepts we couldn't understand became more understandable when classmates would provide their definitions and POVs.
- I liked the ability to challenge myself by acting as a sort of instructor. When students asked me questions, I knew if I didn't know the material as well as I should have based on whether or not I could answer the question.
Conversely, the participants reported that they disliked the virtual meetups for these reasons:

- The one time I showed up, no one was there. It would have been helpful to study for our exam together if my classmates joined too.
- The Zoom meetings for virtual meetups every Tuesday were hit or miss because most other students didn't appear to attend them.
- Awkward interaction, instead of distressing or discussing fun topics, the breakout rooms felt as a way to get surprised on project work with last minute deadlines or assignments to stress over. I understand virtual meetups are about teamwork too, but the way news abruptly come about [sic] are stressful.
- Sometimes classmates were not as active when brainstorming.

Although a few students liked their course’s Jamboard, most participants did not use the Jamboards at all (see Table 3), and they contributed little content. Participants commented that

- I never used Jamboard because I didn't find it very useful.
- Jamboard was inconvenient.
- The features didn't seem helpful.

One participant, who used the course’s Jamboard for an hour over the course of the semester commented that “I enjoyed the jamboard because it was like a virtual bulletin board.”

In their comments in the post-survey, participants also suggested that the once-a-week schedule should be improved to enable as many students as possible to join, and one participant suggested that designating an hour or two every day in the week that students could meet up. However, another participant noted that “I really enjoyed the fact that the meetup starts later in the morning and does not purposely stretch out to fill the time.” Other suggestions including making sure that the Zoom meetings allow students to share their screen to assist others.

<table>
<thead>
<tr>
<th>Total hours in Jamboard</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 3. Total time using Jamboard over the semester.

Conclusion

Our results suggest that regularly scheduled Zoom meetings can be a reasonably effective substitute for some aspects of in-person informal interaction, particularly for discussing when assignments are due, working on team projects, and helping each other with course concepts. The effectiveness of the virtual meetups could likely be improved by having them more than once a week and by
providing more guidance to students on how to use the meetings. Our results also suggest that students are unlikely to use a Jamboard as a substitute for in-person informal interaction. One participant commented that “There needs to be some motivation for students to use the weekly virtual meetups and Jamboard.” If students need extrinsic motivation to use the Jamboard, it appears that Jamboard lacks intrinsic value for informal interaction by remote students and would not be a useful substitute for in-person informal interaction.

References