Talkabout: Small-group Discussions in Massive Global Classes

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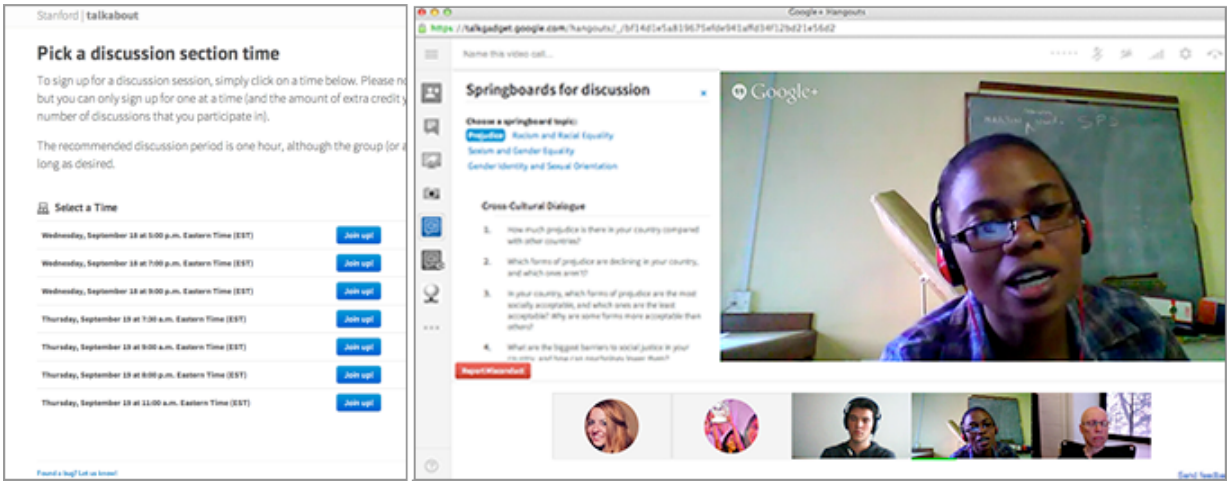

Figure 1: Talkabout (https://talkabout.stanford.edu) enables peer discussions in global classes with Google Hangouts. (Left) Students choose discussions that fit their schedule. (Right) Talkabout embeds a guide into video discussions (Image by Scott Plous).

ABSTRACT

In the physical classroom, peer interactions motivate students and expand their perspective. We suggest that synchronous peer interaction can benefit massive online courses as well. Talkabout organizes students into video discussion groups and allows instructors to determine group composition and discussion content. Using Talkabout, students pick a discussion time that suits their schedule. The system groups the students into small video discussions based on instructor preferences such as gender or geographic balance. To date, 2,474 students in five massive online courses have used Talkabout to discuss topics ranging from prejudice to organizational theory. Talkabout discussions are diverse: in one course, the median six-person discussion group had students from four different countries. Students enjoyed discussing in these diverse groups: the average student participated for 66 minutes, twice the course requirement. Students in more geographically distributed groups also scored higher on the final, suggesting that distributed discussions have educational value.

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SCALING PEER LEARNING

In physical classrooms, students' interaction with diverse peers widens their perspectives [2], improves critical thinking [4], and improves satisfaction with their educational experience [3]. We hypothesize that peer interaction in massive online courses may provide similar benefits. Furthermore, these classes bring a diverse set of peers together into a single classroom, which may amplify these benefits.

However, online students learn largely in isolation and have limited opportunities for peer interaction. Students primarily interact with peers on discussion forums, but response latency makes it difficult to develop the common ground [5] necessary for peer learning [1]. Some students self-organize meet-ups with local peers, but these meet-ups require significant effort to attend, so participation is limited. In addition, instructors have little control over the content or composition of self-organized meet-ups.

This paper introduces Talkabout, a small-group video discussion system for massive global classes. Built on Google Hangouts, Talkabout enables peer interactions that combine the rich synchronous interaction of meet-ups with the flexibility and availability of forums. The system comprises a website for scheduling discussions and organizing groups,

and a Hangout application that guides and monitors discussions. Using Talkabout, instructors can determine group size and composition, and provide discussion prompts for students. Talkabout leverages the scale and diversity of online classes to offer discussions at many times through the day.

So far, five courses have run discussions using Talkabout. In these courses, 2,474 students participated in discussions in groups of approximately four to six students each. Even though students chose their discussion times, the resulting groups were geographically diverse. Overall, our findings suggest that real-time interactions in massive classes could further peer learning.

COORDINATING SMALL-GROUP DISCUSSIONS

The large scale of online classes implies that instructors are unable to participate in discussions directly and enforce student behavior as they would in a physical classroom. Therefore, instructors should be able to guide the educational experience of discussion by structuring best practices into the system, and organizing discussions automatically.

Talkabout provides instructors with control over the structure of discussions. Instructors can decide the number of students in each group, the timing of discussions, and whether discussions are a series throughout the course. By modulating frequency and size, Talkabout can support peer interactions ranging from peer programming exercises to classroom-style discussions and design-studio critiques. Instructors provide discussion guides that are embedded directly into the Google Hangout (Figure 1R).

Hundreds of students enroll in each discussion. As a result, Talkabout offers sessions many times each day and students choose a session that fits their schedule (Figure 1L). To date, discussions have typically been scheduled every six hours. Talkabout assigns students to one of many parallel sessions when they arrive. By assigning students to sessions at runtime, Talkabout can handle no-shows and ensure that groups reflect the instructor's preferences. For example, the system can balance group sizes, gender, and geography, or it can place students with classmates they have met in previous discussions. Students receive reminder emails before their session begins. If students miss their scheduled discussion, the system can also send them emails to reschedule.

To better understand the ingredients of a successful discussion, Talkabout gathers metrics on student behavior during discussions. Currently we collect attendance and record conversational turn-taking through a Hangout application.

STUDENTS VALUED GLOBAL DISCUSSIONS

To date, Talkabout has been used in five massive global classes, spanning six hundred discussion sessions. These courses covered historical interpretation of photographs, philosophical reasoning, organizational analysis, social psychology, and human-computer interaction. Participation in discussions was voluntary, though two courses encouraged it through extra credit. Of the 5,060 students who signed up for a discussion, 49% (2,474 students) participated. The Social Psychology course had the largest participation. In this class, students discussed prejudice and social justice as a one-time, optional extra credit activity in the final week of the course. All discussions were held in English, and students were assigned to the first available group upon arrival. The mean attendance time per student was 66 minutes, twice the required minimum of 30 minutes. Students from 102 different countries participated, with a median of four countries in each six-person discussion group. On follow-up, students reported they enjoyed the discussions (median rating 4 on 4 point Likert scale; 4:Very enjoyable), and found the global nature of these discussions remarkable. One reported, "It was like a mini-UN. We had an Australian currently residing in Dubai, an Afghan, a Romanian, an Indian and myself (a Pakistani)." A linear model found students assigned to discussion groups with participants from more countries scored higher on the final exam, when controlled for pre-final grade. Each additional country represented improved scores by 0.4% ($n=1600$, $F(1,789)=2.6$, $\beta=4.7$, $R^2=0.07$, $p < 0.01$).

DISCUSSION AND CONCLUSION

Our experience suggests peer discussions are a promising approach for small-group interaction at large scale. These discussions face unique design and technical challenges. We found that students struggle with technical issues such as bandwidth limitations and installing Google Hangouts. Furthermore, because only half the students who enrolled in discussions actually attend, students must be assigned to groups on arrival. Students were less likely to attend a discussion session the earlier they signed up for it. In follow-up emails, many reported they had simply forgotten about their session, or that a conflict came up. Moving forward, we suggest "just-in-time" discussions might be preferable to pre-scheduled times.

REFERENCES

1. Baker, M., Hansen, T., Joiner, R., & Traum, D. (1999). The role of grounding in collaborative learning tasks. In P. Dillenbourg (Ed.), Collaborative learning: Cognitive and computational approaches (pp. 31-63). Oxford: Pergamon.
2. Gurin P., Dey E., Hurtado S, Gurin G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, 72(3), 330-366.
3. Luo, J., & Jamieson-Drake, D. (2009). A retrospective assessment of the educational benefits of interaction across racial boundaries. *J. Coll. Student Dev.*, 50(1), 67-86.
4. Pascarella, E. T., Palmer, B., Moye, M., & Pierson, C. T. (2001). Do diversity experiences influence the development of critical thinking? *J. Coll. Student Dev.*, 42(3), 257-271.
5. Rocco, E. (1998). Trust breaks down in electronic contexts but can be repaired by some initial face-to-face contact. In *Proc. CHI 1998*, 496–502.