FLEXIBLE STUDENT GROUPING: DIGITIZED

Collaboration has long been considered an effective approach to learning, and flexible student grouping has become a salient aspect of instructional planning in K-12 environments as a means of enabling peers to learn from each other. In her STEP courses, Rachel Lotan creates small learning groups to increase interaction and to capitalize on her students' teaching experience and subject area expertise within the context of that week's content and activities. However, forming optimal groups of students along multiple criteria (for example 15 mixed-gender groups of 4 students in different school placement sites but same subject areas) each week by hand—as Lotan has for many years—is difficult and time consuming.

Though several online tools existed to automate random group assignment tasks, none created groups along multiple dimensions at once. In December, GSE-IT's Web Developer, Wilson Wang created a web-based computer program, the "GSE Randomizer" to aid in generating groups along any combination of instructor-driven criteria. To use the Randomizer, an instructor first uploads a spreadsheet of student names and category values (labeled in the top row of the spreadsheet) and then identifies target group size and any combination of homogenous and heterogeneous criteria on which to generate groups. The group formation process uses an algorithm that initially separates samples along any user-selected homogenous grouping criteria, generates random groups within that sample, calculates entropy (a measure of diversity) for user-selected heterogeneous criteria, and continues to randomize groups until the highest level of entropy is met. The resulting groups can be printed, or displayed on a view that is optimized for projecting, so that when students arrive to the classroom they can immediately and clearly see which table they will sit at and who they will work with for that day. The instructor's uploaded student datasets can be saved for the formation of new groups in future class sessions.

Since the beginning of the quarter, Lotan has been using the Randomizer in the EDUC 246 Secondary Teaching Seminar she leads with Colin Haysman, Kristina Dance, and Meghann Tovar. The tool "is very cool, has saved us lots of time, and is easier for the students to see when they enter the classroom" says Lotan.

> **Interested in using the GSE Randomizer in your course or research?**
>
> *Contact Pamela Levine at pblevine@stanford.edu*

'StanfordEdTech' appears on Edudemic's 20 Innovative Education Technology Pinterest Pages

Content curation on Pinterest has become one of the biggest ways for those in the education space to share innovative, inspiring and relevant online resources. In response to a need for wider awareness of available education technology-related instructional and learning design resources, last fall GSE-IT created the Stanford Edtech Pinterest Page. Since then, the page has accumulated over 500 followers, including teachers, administrators, academic institutions, designers, education technology news sites, and members of the Stanford community.

Edudemic Magazine recently cited the Stanford Edtech Page as one of the leading Pinterest sites to learn about education technology. Other GSE pages on the social-bookmarking site include the Stanford History Education Group and MediaX.

http://pinterest.com/StanfordEdTech

OPEN-SOURCE QUALITATIVE RESEARCH

Shelley Goldman and Doctoral students Molly Bullock and Tanner Vea are conducting qualitative analysis of student drawings as part of their research on student conceptions of the engineering profession. Students are given a task called 'Draw an Engineer' before and after engaging in their STEM and Design Thinking curriculum.

To examine the student-generated images for changes in student thinking about the engineering profession, "we looked at numerous qualitative analysis tools that would both enable coding on specific sections of PDF documents and allow multiple coders. This was important because we are coding both written responses and drawings done by middle school and university students." says Bullock. TAMS Analyzer, an open source research tool that allows users to select and click relevant data, assign codes, and extract coded information for analysis, "held the potential to meet both of these criterion with the additional benefit of being cost effective." However, a back end database was required to enable their multiple coders to collaborate on the dataset. To help their team of researchers share files and

> **" We now can easily share codes, arrive at inter-rater reliability, and find patterns in this multifaceted dataset that has both text and pictures. "**
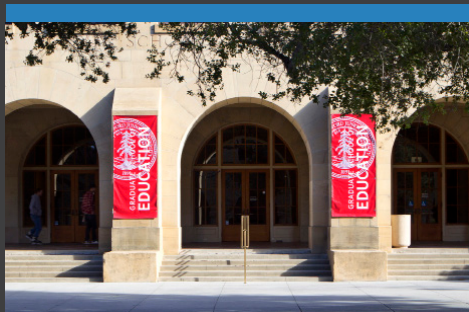>
> *- Molly Bullock*

codes while disaggregating their coding efforts, GSE-IT's Technology Support Associate, Noah Freedman programmed a MySQL database customized to work with TAMS Analyzer, that enables the storage and synchronization of data between multiple coders and locations. "We now can easily share codes, arrive at inter-rater reliability, and find patterns in this multifaceted dataset that has both text and pictures," Bullock said of the GSE-IT support and development efforts enabling their use of the TAMS Analyzer open-source software.

stanford.box.com

Box (stanford.box.com) is an easy-to-use platform and mobile application provided by Stanford for document creation, management, and collaboration.

• Single sign-on using your Stanford SUNet ID

• 25 GB of cloud storage per user and additional storage for shared working group folders

• Integration and online editing for Microsoft Office tools and GoogleDocs

• Document version control

• Document sharing and collaboration with Box users within and external to Stanford

• Email upload feature for easy submission of attachments

• Mobile clients for iPhone, Android, and Blackberry

Workgroups can take advantage of folders with additional storage space. MediaX and GSE Career Services have already begun using shared group space in Box. Contact GSE-IT to set up a working group folder.

UPDATES

Campus visitor wireless self-service is now available through the Stanford Visitor Wifi connection.

The Cubberley wireless internet connection speed will be upgraded this quarter.

AFS quota increased this month:

- **User from 2GB to 5GB**
- **Group from 500MB to 4GB**
- **Dept from 2GB to 4GB**
- **Class from 1GB to 2GB**

iPads now available

Did you know that GSE-IT has iPads available to check out? Faculty have begun using the iPads in a variety of ways: for teaching demonstrations, to facilitate student collaboration, and as a research tool for videotaping and data collection in field settings.

Contact Pamela Levine (pblevine@ stanford.edu) to learn more about use cases, apps, or to reserve iPads for your courses or work.

GSE Identity Toolkit

For desktop templates, web design resources, email signatures, stationery and business cards printing with the new GSE wordmark, visit:

ed.stanford.edu/identity

Contact Lyudmila Christie (lyudmila@ stanford.edu) with questions about the identity toolkit website.

PROMOTE YOUR EVENT

Submit your event to promote it on the GSE online event calendar, visit:

ed.stanford.edu/events

Contact GSE webteam (gse-webteam@gse. stanford.edu) with questions about submitting an event.