A summary of the data collection in spring 2015

Last spring, we have deployed CourseMIRROR in two courses: PHYS0175 (Basic Physics for Science and Engineering 2) at the University of Pittsburgh in United States and IE256 (Statistics for Industrial Engineers) at the Boğaziçi University in Turkey.

The data collection for the two courses followed similar procedures as shown below:

 A survey was distributed before the user study including

 Participants were voluntary. Students who were willing to participate would fill out the survey and the access to the CourseMISSOR will be given the participants after that.

 After each lecture,

* Students could submit their reflection to reflections prompts. In the study, two reflection prompts are used: 1) Point of Interest: Describe what you found most interesting in today's class? 2) Muddiest Point: Describe what was confusing or needed more detail? The students could also indicate how interesting and how confusing for their responses in a 5-point scale: slightly, somewhat, moderately, mostly and completely.
* A summary of the responses will be automatically generated and sent to students and the instructors.

 An exit survey will be distributed in the last week of the study to collect further feedback.

Major differences between the two courses:

 Payments

* For PHYS0175,

 A $10 debit card (UPMC) will be issued to the participants after they finished the survey and downloaded the CourseMIRROR client. They have to come to our Office to get their payment.

 Another $10 will be issued after they complete the user study and submitted at least 80% of their reflection response.

* However, IE256 they are no monetary benefits for the students. Instead, they can receive extract credit if they filled the survey and submit their feedback for each lecture.

 Submission Notification

* For PHYS0175, after each lecture, notifications (in terms of individual emails) will be sent to the participants.
* For IE256, there is no notification in CourseMIRROR but the instructor allowed some time in the end of each lecture for the participants to submit their feedback.

 Survey Collection

* Survey collection for PHYS0175 was done physically, but online via Qualtrics for IE256.

 Participants

* Including,
  + Major
  + Major languages
  + Country
  + And maybe culture

 Instructors

* The instructor for IE256 is a friend.

 Control Group

* We also have a control group for PHYS0175 but not IE256.

Raw Data for PHYS0175

 Survey results

* The survey results distributed at the beginning of the study
* The exit survey results

 Participants related information, including

* name, email address, gender

 Course related material

* slides
* quiz scores
* course schedule
  + lecture date, topic

 CourseMIRROR related Data

* Prompts
* For each lecture and prompt
  + Students’ submission of responses
  + Timestamp
  + Textual responses
  + Rating
* Log data
  + Whether and when they have reviewed a summary

Raw Data for IE256

 Same as PHYS0175 except

* No slides for the course
* Quiz scores? (Are there quiz scores for IE256? Should be, but need to be confirmed with Muhsin)

 In addition, we have human annotated summary for each lecture and each prompt

* The response rate for PHYS0175 is bad, so that summary annotation is not performed

Response number for the two courses

Annotation Introduction for IE256

Annotator Recruiting Procedure:

Finding an annotator to create a summary for each lecture is not trivial since the annotator should have a proper background to understand the students’ responses. Since the topic of IE256 is Statistics for Industrial Engineers, which gives a general introduction of statistics for industrial engineers. Therefore, we believe, graduate students or senior undergrads majoring in Statistics or Math would be qualified for this task. Since the course is taught in English, native speakers are preferred.

We send an advertisement to the mailing list of the corresponding department and also post flyers there.

At least, we recruited two participants. Both are graduate students and native English speakers. One majors in Math and the other majors in Statistics.

Payment:

$25 per lecture, per annotator

Task introduction:

For each lecture and prompt, an annotator will create three different types of summarization. When creating the summaries, the annotators are told to imagine themselves as a TA for the course, by assuming what they want to present to the instructor after reading the students’ responses. The instruction given to the annotators for each task is introduced as follows.

**Task 1: Extractive summary**. Select five most representative sentences in order as the summary. (Use the sentence index number.)

**Task 2: Abstract Summarization**. Given the students’ responses, create a short summary using your own words (~40 words, no specific format other than linear) of it.

**Task 3: Phrase Summarization**. Create a summary using 5 phrases together with how many students semantically mentioned each phrase. You can use your own phrases.

For the last 12 lectures, annotators are also asked to highlight where the summary phrases come from for the phrase summarization. Here is the instruction: “please also highlight the corresponding phrases in the student responses above which are semantically same to the summary phrases using the highlighted colors in the first row in the table below. The number of highlights for each phrase should match the number of students who semantically mentioned the phrase.”

The beginning and ending time stamps are recorded by the annotators.  
 At least, an annotator will be asked their preference among the three generated summaries by answering the question below: “If you had to choose only one summary among the task 1 vs 2 vs 3 to give to the instructor, which one do you prefer?”