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Final Report: Factors facilitating and hindering student comprehension in English medium instruction

Overview

The study focused on student responses to online surveys and recordings of English medium instruction (EMI) lecturer. A separate version of the online survey will be created for each individual lecture. Following the lecture, teachers a weblink that students used to respond to their comprehension and perceptions about the lecturer's English use in that particular lecture. Recordings were made using a small, unobtrusive digital recorders placed on the podium/desk in front of the lecturers. Recordings provided evidence with which to compare student perceptions (e.g., if rate of speech is reported as problematic on the student surveys, rate of speech for that lecture will be calculated from the recording).

The project ran solely in Spring 2020, since the applicant changed jobs on 1 August 2020. Therefore, the initial plan for the Fall term (see below, taken from the original application) did not occur. Despite this, valuable initial results were found from the data collected in the Spring 2020 semester.

Project Timeline for 2020

Spring Semester	Jan	Recruit teachers for spring semester; Schedule recordings; Design survey
	Feb	Pilot survey; Revise survey; Meet with participating teachers
	Mar-June	Data collection and analysis; Transcribe lectures as necessary
Fall Semester	Aug	Recruit teachers for fall semester; Schedule recordings; Begin work report
	Sept-Nov	Ongoing data collection and analysis; Transcribe portions of lectures as necessary
	Dec	Plan and delivery internal faculty development/PIL workshop; Prepare publications; Complete work report

Project implementation

Two lecturers (from the Center for Applied Autonomous Sensor Systems and the Mobile Robotics & Olfaction Lab, respectively, at Örebro University) participated in the project. Data collection occurred during Spring 2020, which meant it happened during the initial stages of the corona virus pandemic. One participating lecturer had in-person lectures during February 2020. These lectures were recorded live with students present. The second lecturer held all lectures via Zoom from March – May. Lecture recording for this second group of lectures consisted of the lecturer recording his Zoom sessions. All recordings were transcribed. Lecturers gave signed consent for the recordings and transcriptions. No student voices or images were used in the data processing.

Immediately following each lecture, students completed a survey related to their comprehension of the lecture content and their perspective on the lecturer's use of English for teaching purposes. Most survey questions featured a Likert scale from 1-10, which students used to rate major parts of the lecture genre, as outlined in literature: the clarity of the instructor's introduction; definitions and explanations; use of topic shift signals; conclusion and summary. In addition to these items about lecture structure, other survey items focused on aspects of the lecturer's use of English more specifically: pronunciation, volume, rate of speech, word/vocabulary choice, and sentence/grammatical construction. The final part of the survey focused on tracking familiarity with the lecturer's speech patterns and English use from lecture to lecture (e.g., with the assumption that students would have some struggles in understanding the language use and become more adjusted to it as the course when on; thus, resulting in higher reported English comprehension in later sessions).

Data collection and initial results

Data came from two different course: one in AI (31 students and 1 lecturer) and one in Robotics (5 students and 1 lecturer). The AI course generated 12 sets of survey results, with the number of responses ranging from 31 to 3. Participation in the post-lecture surveys certainly dropped off towards the end of the semester despite starting very high. The Robotics course was shorter and generated 5 sets of survey results.

To illustrate survey findings, I will draw on results from the survey with the most respondents (AI, 30 March 2020).

On a scale of 1-10 with 1 = 0% comprehensible and 10 = 100% comprehensible, rate your comprehension of the lecturer's English use: 70% (1 student), 80% (2), 90% (10), and 100% (18).

On a scale of 1-10 with 1 = 0% comprehensible and 10 = 100% comprehensible, rate your comprehension of the lecturer's introduction: 50% (1 student), 60% (1), 70% (3), 80% (5), 90% (8), 100% (13).

On a scale of 1-10 with 1 = 0% and 10 = 100%, rate the lecturer's ability to clearly signal important information: 40% (1), 50% (2), 60% (2), 70% (2), 80% (1), 90% (9), 100% (14). *Here, more than half of the students indicated less than the ideal (and perhaps assumed) 100%.

On a scale of 1-10 with 1 = 0% comprehensible and 10 = 100% comprehensible, rate your lecturer's rate of speech: 50% (1), 70% (1), 80% (5), 90% (9), 100% (15).

On a scale of 1-10 with 1 = 0% comprehensible and 10 = 100% comprehensible, rate your lecturer's word/vocabulary choice: 60% (1), 70% (5), 80% (6), 90% (8), 100% (11). *Here, more than half of the students indicated less than the ideal (and perhaps assumed) 100%.

Several of these results signal areas that lecturers might need to take in to account in order to structure their lectures, signal important information, and adjust their use of English to ensure that more of their lecture content is attainable for their students.

To find out more about student views on the AI course, I conducted two interviews with students with Zoom. The following questions were used:

1. Have you studied in other English medium instruction (EMI) courses? What was that like?

2. What affects your ability to understand lecture and course content in the course?

3. What do you think about your teacher's ability to teach in English? What does your teacher do to help students understand?

4. Does your teacher have any teaching habits that make things difficult for you to understand?

In general, findings from the interviews coincided with survey results and discussions with the instructor. Namely, that the course consisted of two groups when it came to studying and learning in EMI: one group of students with a range of backgrounds when it came to English use and a second group who had spent their entire education (compulsory education, upper secondary school, etc.) in Sweden and therefore had second language English abilities that closely aligned with Skolverket's progression leading to highly-competent English users. The former group at times struggled with comprehending concepts in this EMI course, which was evident, according to the participants, in the lecturers themselves as well as in study groups and group tasks outside of the lectures.

Reflections

The project worked well particularly for the AI course, given the relatively substantial number of student respondents. The AI course data is also unique in the sense that it was collected during the period very early in the pandemic in Sweden, when teaching had only a few days before been moved online. The Robotics course presented a different type of small group teaching environment that was not necessarily within the focus of this project, which was on the lecture genre. In some ways, this could be useful for comparison purposes, although in that case it would be more valuable to have the same lecturer teaching in both contexts (i.e., normal lecture style and small group teaching).

All survey and transcript data were shared with the participating lecturers. They were thankful for the feedback on their teaching and how students perceived their use of English in lecturers. Neither lecturer said they had even considered who second language English use might affect lecture comprehension and content learning, so in that sense, the project served an awareness-raising purpose. The lecturers also found a practical use for the lecture transcripts in that they can review their language production patterns and read the transcripts to identify techniques and strategies they used to emphasize certain points and create clear and consistent structure while lecturing. Furthermore, they could identify areas of the lectures where they might express themselves differently in the future. These lecture scripts (or at least parts of them) can be used to keep lecture delivery of certain concepts consistent in the future.

Further development

Similar projects with more participants would help elucidate EMI lecture comprehension and lecturer delivery as well as identify strategies for successfully supporting student learning, particularly for those from backgrounds that have had less exposure to English. Furthermore, specific research on particular aspects of EMI delivery (e.g., definitions, explanations, introductions) would amplify the issues suggested by this study. Closer examination of lecture transcripts, possibly in the form of "stimulated recall protocols" with lecturers could prove useful. Finally, a series of developmental workshops for those teaching in EMI could provide more awareness and strategies when it comes to teaching groups who use English as a second language.

Financial report

Per the project budget and due to changes in employment, this project funded 280 hours during the Spring 2020, according to Humus accounting.