International Communication through Skype for Engineering Education

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Abstract

The promotion of international communication and collaboration through English at Japanese Universities is one of the most important tasks in order to develop a global environment. Although exchange programs can provide students with the advantages of largescale communication, the use of technologies for long-distance interaction such as Skype, has made easier and more practical the language and cultural exchange with students located around the world. In this paper, a class promoting international communication through Skype is explained along with the testimony of participants and their impressions on the benefits and scope of this program. Documentation of the motivation of students to take this class is also reported and compared with their later impressions of the program and the lessons learned. Recommendations for improvement for future years are also provided.

Keywords: Skype, international communication, English

1. Introduction

International communication is a major issue in engineering collaboration. The existence of international codes, standards, platforms and information systems requires that all engineers are able to communicate with their peers around the world. There are different barriers to overcome to be able to communicate with people from other countries. Language and networking are some of the most relevant, therefore the development of education programs to improve these abilities before the students become professionals is essential.

In countries where English, one of the most common spoken languages, is not the mother tongue, English classes and tests have become one of the most popular tools to improve it. However, international networking sometimes is difficult to achieve and is set aside for undergraduate students. Sometimes, meeting both objectives, language and networking, can only materialize through studying abroad, either in regular or exchange programs.

Studying abroad has the advantages of providing a different perspective not only in the area of study, but in the personal and professional aspects. Students become more confident in their language skills and they get to know people who will become influential during their careers. Getting to know international students at their own university, is another alternative for students. In the case of the University of Tokyo, the number of international students as of May 10, 2016 is of 3,328 in regular programs and 455 in exchange agreements. The number of students studying abroad is 414. This fraction can be observed in Figure 1.

![Figure 1. International exchanges and students at the University of Tokyo as of May 10, 2016.](image)

The number of international students in the undergraduate and graduate level can be observed in Figure 2. The percentage of students going abroad and of the international students coming to the university is around 15%.
To increase this rate, there are alternatives to reach a larger population. One option to raise the number of
students benefiting from the international environment, is to make use of telecommunications to facilitate their
interaction. Nowadays, the options to communicate globally have evolved going further than simply being able
to talk, but reaching the point of videoconferences and live chats where people can actually see their interlocutor and
talk in real time to them, giving them the chance to receive immediate feedback, observe gestures and body
language from different cultures.

The class described in this paper makes use of Skype, a software that can be used to hold video-calls. Romiszowski & Mason [1] describe the term Computer Mediated Communication (CMC) as the process of
creating, exchanging and perceiving information via networked telecommunication systems facilitating process of
education and training. Skype communication meets these characteristics and also is a synchronous media.
Walther [2] have proved that during face-to-face meetings, speakers with higher abilities for the language or
higher positions, tend to have a larger portion of speech time, while CMC meetings give every speaker the same
opportunity and time to participate. That is why the use of Skype can facilitate the interaction among native and
nonnative speakers of English. The fact that students have the same chance to interact regardless of their English
skills, and the fact that their interlocutor is a person who can share the same interests, give the students motivation
to increase their knowledge of the language.

This paper describes the class structure, the need for having this kind of syllabus available during college
and graduate education, and the effects observed in the students that have taken the class.

2. M-Skype project

This project, which started in 2010 at the School of Engineering, has become an approach to promote
international communication at the University of Tokyo (UT). The class consists of a series of active learning
activities focused on developing the students’ English skills to be able to interact with scholars from the
Massachusetts Institute of Technology (MIT) in both, the day-to-day and academic life.

During the class, the students are able to chat via Skype with a partner from MIT and work together on a
research project aimed to highlight the similarities and differences between United Stated and Japan. Given that
the objective of the M-Skype class is to have a language and cultural exchange program, it is necessary that the
communication is done through simultaneous media in a way that the students could receive instant reactions but
also could perceive gestures, native expressions and accents, traditions and other types of cultural conditions that
could help them not only practice English but also get involved by the culture to make more meaningful learning
experiences.

At the middle of the semester, they have a summer camp where students of MIT can come and interact with
UT students. During that period, they participate in workshops, technical discussions, scientific contests and
manufacturing activities. This part of the class is one of the most befitting to enhance communication skills. They
are able to interact in person and they get to know several MIT students, which in turn, can practice their Japanese
skills and get to know more about the Japanese culture through visits to historical places and companies in Tokyo.

At the end of the term, UT students present their research topic to the class and can be selected to visit MIT
during the winter.

The selection process is the first stage to get relevant information from the participants. The students are
chosen among the 16 departments of the School of Engineering, that last year had 2180 undergraduate students
and 3210 graduate students.

Given the number of students, there are several applicants every semester to take the class. The process for
registering to the class consists in attending the first class where information regarding the schedule, activities and
selection process is provided. Then, students willing to take the class are encouraged to submit an essay. This essay, written in English, should contain their motivation to take the class. The choice of deciding on students by their writing, is aimed to make a selection unbiased regarding department, grades, year and English skills. Their reasons, their background, their driving and willingness to develop international relationships are the main factors to be chosen.

It can be pointed out that, although students have different motivations to participate in the class, a common one is to be able to practice their English as shown by the first reason they describe in their essays (Figure 3). This is relevant given that although several programs are taught in English at the University of Tokyo, the actual exposure perceived by the students, is limited.

The second common reason is the international networking. Several students applying to take the class have been involved in international environments and want to be able to meet and collaborate with scholars in other institutions and countries. The interaction with MIT students comes third as their main motivation to participate in the class. Other reasons to enroll are studying abroad and making friends. The percentage of each reason as their first, second and third motivation can be seen in Figure 4. These results are also a good indicator of the expectations of the students before taking the class. Although they are interested in meeting MIT students and contact them, they are looking forward to improving their English skills and making connections internationally.

After the selection process is made, the students are invited to attend the next regular lecture. A sample of the composition of the class can be observed in Figure 5. It can be seen that there are students from eleven departments of the School of Engineering, which makes an atmosphere of diversity. This is the depiction of the class of Summer 2017 and it varies constantly depending on the applicants.

The class is taught in English and all the students are encouraged to participate actively. After the summer camp students are invited to share their impressions and to introduce their final presentation topic. They present once and receive feedback from the instructor and their classmates to present a second time.
3. Impact of the class in students

At the end of the class, all the students write an essay to be selected for the visit to MIT and those students that participate in the trip are asked to write a journal with their experiences. During the visit, they join Japanese and Engineering classes, participate in several meetings with the MIT participants of the summer program and visit relevant facilities at MIT besides their personal choices of labs and faculty. Their final essay of the class and their journals after their trip to Boston, provide special feedback for the instructor, an invitation for future students and a summary of their progress. Below, there are some extracts of the final essays.

"In the class of M-Skype, I also studied how to speak in front of people. I was very bad at speaking in public, but I got used to speaking because of many chances in M-Skype class. Presentation or role playing were good chances to practice to speak."

"Before I started to take this class, I was reluctant to speak English. I was not good at speaking English and there were few opportunities to speak English in Japan, so I felt ashamed to speak… I was surprised that I was able to communicate with MIT students in English. I found that with the courage and certain level of the ability to speak English, we can communicate with people who live in foreign countries. Also, I found that communicating with such people in English is surprisingly exciting."

"Thanks to this M-Skype class, I have talked with MIT students this semester. That was the first time for me to talk with native speakers in English for some quality time. Communicating with MIT students is more exciting and fruitful than expected. I could learn about not only their personality but also United States, the life in MIT, and culture and custom in US. That was very impressive for me. Everything was different from what I had expected."

"First of all, M-Skype 2014 summer class had a great influence on my English motivation. As soon as the class started, I perceived my English skill is lower than other M-Skype students and I had trouble communicating with my MIT partner. Therefore, I studied English and as a result when MIT students visited Japan, I was able to communicate with them more fluently than I had expected… On the other hand, communicating with MIT students made me notice the difference of education between MIT and Todai, and I took interest in studying abroad."

"One of the biggest reasons why I applied for this program is to know what is like to study in a foreign country. As I gave a presentation about the differences of Japanese and American university education systems in M-Skype class, I’m very interested in how university in America works."

"After I took M-Skype class and made friends with the MIT students, I have studied English much harder than before. I am taking two English classes in the School of Literature this semester and doing online English conversation lesson. I also participated in the summer English program in the USA last summer vacation. What makes me study English hard is the wish to talk with the MIT friends in English more fluently when I meet them again."

Although these fragments are only a fraction of the essays received, it can be observed that the use of English is no longer the most important part of the class, but a mean to achieve effective communication with MIT students. This agrees with the results found by Benson [3] in which Japanese students are more willing to learn English through integrative and personal reasons, and they also want to do it for specific and global purposes. Besides, their interest in studying aboard or being part of an international environment becomes more relevant after this experience. A survey was also conducted with previous students of the class and it is possible to see in Figures 6 and 7, that their expectation of improving their English skills was initially the major reason to take the class, but at the end of the class, considering their results from the class activities, there was a decrease of 35.3% in the people choosing the improvement of English skills. They considered that the international interaction was a greatest result than the augmentation of their language ability.
The following is a fragment of the journal of the students who took part in the visit to MIT:

“The visiting is short, but the impression is deep. I could feel that MIT try their best to build the connections between students. They let students help each other in study and life. The school only does one thing which is just provide a more comfortable environment for student to develop their knowledge and learn teamwork.”

Throughout the journals it is possible to see that most of the students found a different scenario than that they expected and they are willing to learn more about it. More importantly, they become eager to import and incorporate things that can benefit their college experience in Japan and create a globalized environment for their careers.

Based on the results obtained, the methodology of this class can be incorporated also as a replacement of the traditional exchange program and make use of media such as Skype to facilitate the benefits of language and cultural relations between different universities. Carney [4] followed a similar approach during a project conducted also with Skype and found that the use of computer-mediated communication provides students with a good experience and can have a measurable impact on their language learning process. Beyond that, early networking in their professional paths is primordial to achieve a strong worldwide community. It is important to remind students of the scope of the class that involves the interaction of students with professors at MIT during the last stage of the program. The survey conducted on previous students of the class provided some insight into the effect on the internationalization of the students. Figure 8 shows that around 70% of the students have been abroad later on, either for studying or working, and that the same percentage is planning to do it. Also, as seen in Figure 7, some students credited taking the class for going to study. Some students commented:

“The best thing (of the class) was to make friends with MIT students. That made me decide to study abroad for a year.”

“It encouraged my new career to get started in MIT by offering opportunity for visiting MIT and making friends in M-Skype.”
Regarding networking, 64.7% indicated that they still keep communication with MIT students, even after two or three years after the class. This might indicate that the relations formed can last even after students incorporate to the laboral market or go into graduate school. This would increase the chances for international collaboration after college.

4. Conclusion

The idea of this class is to motivate students at the University of Tokyo to engage in meaningful interactions with MIT students and learn about American culture and educational system in engineering. The use of Skype for long-distance conversations and the summer camp made the learning process lastly and more engaging. Students expressed their preference to participate in this kind of exchange programs and found that English skills are only a medium to achieve international communication and that encouraged them to keep improving their abilities. Students were exposed to different backgrounds from their Skype partners that helped them broaden their perspective and integrate cultural knowledge about United States and other areas different from their majors. While monitoring of some of the conversation could provide further information regarding the early overcoming of the language and cultural barrier, it could discourage students and restrict their spontaneity. Constant survey with specific questions of the students’ impressions before and after their first Skype talks, and before, during and after the summer camp, could be a good instrumentation to obtain more data to enhance the class.

In overall, it was found that this kind of program can be used as a trigger to promote globalization and networking.

References