

Cross-Cultural Competencies as Life Long Skills

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Abstract

The engineering curriculum generally has many required courses dealing with theoretical development, mathematical skills, and methods of problem solving. Recently, however, cross-cultural competencies and skills have become important for the graduate engineer. The necessity of such skills, however, is still debated among engineering educators, and the courses relating to them are rather a small part of the engineering education. The authors of this paper have attempted to provide engineering college students in Asia with such courses. They cover such topics as “societies and cultures of Pacific Rim countries”, “writing technical papers and making presentations in English”, “engineering design projects between students in Japan, Taiwan, Singapore, and the USA”, and others. These courses look at the various ways for West and East to work together in the workplace, academics, and daily life. Although the concepts and skills are not easily absorbed by the students, just being exposed to them and practicing the exercises are very helpful. Three courses dealing with such skills – culture course, writing and presentation course, and international project course – are discussed. While it has long been considered as one of the most important attributes needed in the workplace, communication is usually rated as one of the least developed skills. This is especially true in the global economy we now live in.

Introduction

The Importance of cultural skills such as sensibility of differences in cultural behaviors and adaptability of them has been recognized in engineering education. But, courses discussing the issues or aiming to develop the skills have not been given enough attention or class time. As a result, engineering college students are not confident in their readiness of the skills. Nakayama and others pointed out that Japanese engineering college students were least confident in their skills in English communication and cultural skills.⁶⁾ This problem seems to continue to the real world. Isogai and Nuka at Denso Corporation in Japan also reported that their new employees evaluated themselves to be least competent in English communication, adaptability in different cultures, and international perspectives.³⁾ Herbeaux and Richard exemplified that lack of cultural understanding led to an unsuccessful design of a commercial product by students.¹⁾

The authors of this paper have been attempting to respond to the needs of English communication and the cultural skills for Japanese students through the offering of various courses. One course is directly addressing cultural issues – understanding the differences in behaviors, perspectives, and values, and cultivating of cultural adaptability. Others include scientific paper writing and presentations in English, and engineering design projects between students in Asian countries and the United States. Although the cultural competencies seem to be rather abstract, they can be attained through presentations, discussions, exercises, and surveys.

Courses

1 Culture

The course offered is titled “Societies and Cultures in Pacific Rim Countries.” It starts with discussions on reasons why engineering students need to learn social systems, cultures, behaviors, and value systems of other countries. In a globalized world as we live in, we have people from different cultural backgrounds within our society and we need to work together cooperatively. There are examples of engineering products that failed to work due to lack of cultural

understandings. The discussion helps to motivate the students to learn. The course then presents various seemingly different cultures and behaviors, and shows common responses to these cultural encounters, such as uncertainty, anxiety, rejection, and fear. Finally the ways to deal with them are discussed. The course also shows video clips of many actual examples of conflicts, some which led to warfare, and reconciliations. They are powerful tools to help the students to understand human behaviors and capabilities, and the importance of cultural understandings. The students are given a survey on their choice of countries or cultures and present their findings at the end of the course. This requirement is for them to internalize what they have learned.

Below is the course syllabus (9 weeks, two 60 minutes meetings per week) to explain how the course tries to expose the students to the topics and to help them understand and accept the differences.

Table 1: Course syllabus

week	contents
1	Introduction, reason to learn cultures, examples of misunderstandings
2	Different cultures, behaviours, expressions, common responses
3	Country / culture 1, 2 with slides and videos
4	Country / culture 3, 4 with slides and videos
5	Country / culture 5, 6 with slides and videos
6	Students preparing conducting surveys, preparing for their presentations
7	Students' presentations
8	Students' presentations
9	Exams and reflection

Figure 1 Example of exposure to various cultures



Figure 2 Example of discussions on cultures

When different cultures encounter ...

1. Need for assimilation : pressure from major culture to minor culture
2. Passive permission (passive coexistence)→isolation, discrimination
3. Expulsion, extinction (aggressive elimination)

Different solution: changing own interpretation models: sustainable multi cultural societies (coexistence)

Cultures separate people rather than biological differences (Michael Hardt and Antonio Negri, Empire , 2000)

The students are given class times and instructions to conduct their surveys and to prepare their presentations. This is to avoid time conflict the students have with other course assignments and to direct them to the right track.

2 Scientific paper writing and Presentations

We tend to think, and particularly those of us working in scientific fields believe, that the logic in science is universal. However, it is not necessarily true as the flow of logic differs from culture to culture. It is particularly troublesome for Japanese speakers when it come to writing papers in English. Leggett illustrates that the general structures of writing in Japanese and in English are radically different. 4) This also affects their presentations styles as well. Moreover, presentations in Japanese culture tend to be more formal than Western counterparts, particularly in the United States. Jokes and humor are rarely seen in the former, while it is almost a norm to start a presentation with them in the latter.

Japanese students have problems separating facts from feelings or thoughts. It can be attributed to their writing practices in secondary education where they are mostly asked to write their feelings and thoughts. When they come to colleges, they have to do scientific writing without transitional writings practices. Moreover, they have very little or almost no exposure to scientific writings in English before their college education. It is important to give them a frame of reference through reading such papers.

In the Writing and Presentations in English course, it is most important to keep things simple, particularly if it is taught by a native speaker of English. The students in such a course are already burdened with the language, having to understand materials written in the language, to understand oral instructions also in the language, and to be accustomed to the Western instructor's attitude which is very much different from theirs. In such a course, we made teaching materials and distributed them in advance so that the students had time to read and understand the content before coming to the class. Also, we offered help by a Japanese instructor to help the students if they had problems with the native instructor. The Japanese instructor was always present at the class so that s/he could follow the course with the students.

The first problem appeared when the students tried to make abstracts of their papers. They had a tendency not to mention their findings or conclusions. This is most likely due to common notion of Japanese writing structure "ki, shoo, ten, ketsu." (beginning, following, changing, ending) The students were accustomed to this flow of writing that they did not mention their findings or conclusions until the end. The difference in the writing structure was discussed repeatedly in the course, but it took a long time for them to absorb and practice the idea. It was also observed that the students seemed to place more emphasis on words than graphical presentations. In addition, the students tended to stop when they finished writing the papers and were reluctant to practice for oral presentations This reflects the importance of written forms of expressions over oral forms in Japanese culture. With the large percentage of grade going to the oral presentations, the students realized the importance of oral skills.

3 Design Project

This course was offered in Japan, Singapore, and the United States as an international collaborative project.2), 5) The students who took this course designed bus stops and compared the designs. The result mirrored their societies and values. Japanese students designed the system for shorter waiting time by sending messages to passengers' cell phones when a bus was coming, by creating an easier way to pay fares, and by offering more comfortable boarding. Their designs seem to respond to Japanese pursuit for convenience. The Singapore designs matched their climate and environment. The US designs focused most to protect passengers that seems to reflect their society's emphasis on safety. The students had joint presentations to see and evaluate other students' designs.

Figure 3 Example of Japanese design

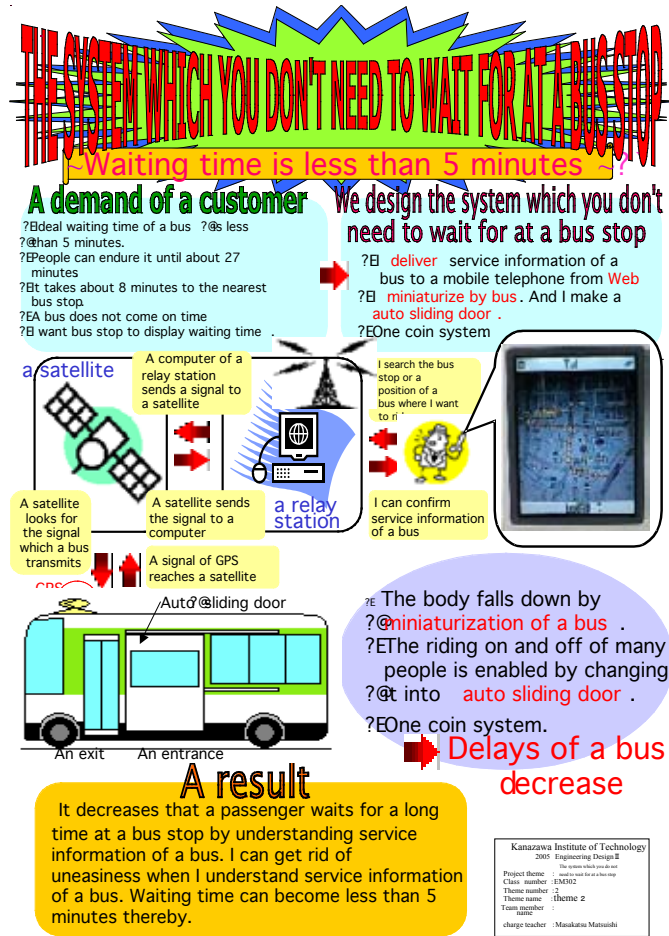


Figure 4 Example of US design



Discussion

The students who take the culture course are exposed to various issues relating to cultural competencies; sensitivity to different cultural behaviors, reflecting own culture and actions, understanding underlying value systems, and cultivating tolerance and acceptance of differences. The scientific paper writing and presentations course gives them

a different way of expressing and explaining their ideas. The engineering design course let them experiment their ideas in a new context and gain working experiences with people from different cultural backgrounds before they go into the globalized real world. Although some may find these courses difficult to follow, overall evaluations of the courses are quite positive. It could be more beneficial to have more tangible connections between these courses so that students can see the objectives more clearly and try to work to achieve them.

Suggestions

Cultural competencies are not easy to teach or to acquire, but they are helpful or even necessary for future engineers working in a globalized world. Moreover, they can enrich our lives. It will be easier and more beneficial to introduce these skills as early in curricula as possible for young people are more flexible in thoughts and actions.

There are some suggestions in developing courses aiming at cultural competencies:

1. keeping new concepts as simple as possible
2. giving many examples to help students understand
3. providing them with many exercises to internalize the skills
4. letting students know that differences are not something to be afraid of. They are things to enjoy.
5. giving them choices – rejecting, understanding, or accepting,
6. accepting that it takes time to train students to keep learning

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