Teaching Technical Communication and English Language to Potential Engineers

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Abstract - Graduates' communication skills and English language proficiency have long been a concern of employers in Hong Kong. In order to equip engineering students with the expected English language and communication skills in the workplace, institutions should develop specific programmes to meet their needs. This paper attempts to demonstrate how the Professional and Technical Communication courses at two universities in Hong Kong help their engineering students develop their language and technical communication skills. A comparison and appraisal of the pedagogy will be presented, illustrated with empirical data and examples of classroom practice. It is hoped that this paper will stimulate insights from technical communication professionals, which can help us design quality English for Specific Purposes (ESP) courses for nurturing engineering talents.

Index Terms – Content-based teaching, English for Specific Purposes (ESP), problem-based learning, task-based learning, technical communication

INTRODUCTION

University graduates' communication skills and English language proficiency have long been a concern of employers in Hong Kong. Since the return of sovereignty of Hong Kong from the United Kingdom to China in 1997, there has been an obvious decline of English proficiency in Hong Kong. According to a recent global survey conducted by a language education company in 2011, the English language skills of Hong Kong people ranked only 25th out of 54 non-English-speaking countries, dropping from 2nd in the previous survey in 2009 [1]. This phenomenon may be explained by the fact that students in Hong Kong have less exposure to English with the implementation of mother-tongue teaching as well as a growing emphasis on the learning of Putonghua after the handover. Nevertheless, the sharp decline within only a few years is a wake-up call for Hong Kong, as it is losing its competitive power to some Asian countries, especially Japan and South Korea.

University students in an international city like Hong Kong need to have a good command of English for their studies and future careers. However, undergraduates in the science and engineering faculties do not have ample exposure to everyday English once they have entered university and begun to focus on their major studies. Lacking time and practice to refresh and enhance their language proficiency, these students may find their commands of English retrogressing, even for those who have obtained good results in English exams in secondary school. Worse still, language learning is not the priority for many engineering majors, as their interests are more in technology. Without proper motivation and guidance, they may lag behind in study due to their weak English proficiency and communication skills, which affects their personal development in the future. To equip engineering undergraduates with the expected English language and communication skills in the workplace, the Centre for Applied English Studies (CAES) of The University of Hong Kong (HKU) and the English Language Teaching Unit (ELTU) of The Chinese University of Hong Kong (CUHK), in collaboration with the universities' Engineering Faculties, have designed tailor-made English for Specific Purposes (ESP) courses for engineering majors.

This paper attempts to demonstrate how the Professional and Technical Communication courses offered by the two universities achieve their aims. A comparison and appraisal of the pedagogy will be presented, illustrated with empirical data and examples of classroom practice. As the courses are on-going, formative and summative evaluations on the programmes are conducted. In addition, the duration of university education in Hong Kong is extended from three years to four years from 2012 onward [2]. The English language courses for engineering majors are being renewed to suit the changing curriculum. This paper is a work-in-progress paper, as ongoing research to compare the effectiveness of the old and the new curriculums is underway.

It is hoped that this paper will stimulate insights from technical communication professionals, which can help refine our future designs of ESP courses for nurturing engineering talents.

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COURSE DESIGN

With the rapid advance of technology and communication, engineering students are faced with tremendous challenges in the modern world. The designs of the English language courses offered to engineering majors by CAES and ELTU are based on the belief that engineers play many significant roles in real life–as problem-solver, innovator, pioneer, researcher, educator, designer, facilitator, to name but a few. It is therefore essential for them to possess language and communicative competence, so that they can make their contributions to improve the quality of modern life. The courses are designed to enable them to play these roles well.

We aim to raise the students' awareness of a variety of engineering issues and applications in the field, to introduce the English language expectations of the engineering world, to teach them the appropriate format, register and language for professional communication, to enhance their English vocabulary in the field, to improve their accuracy in speaking and writing, and to raise their confidence in giving oral presentations.

Our course materials are content-based. The students are provided with a realistic English environment in which they learn the skills of writing various technical genres which are relevant to engineering studies, including proposals, minutes, technical specifications, projection descriptions and oral presentations.

We adopt a problem-solving and task-based approach in the design of learning activities with a view to developing the students' problem-solving skills, which are representative of the engineering discipline. Through task-based activities, they learn to communicate for a purpose using the foreign language. As team work is significant in the engineering profession, collaborative learning is encouraged. One example of a task-based problem-solving activity is that the students work in groups to propose ideas to improve their university campuses by examining any existing problems or inadequacies there.

The ability to communicate with people from all walks of life is an essential skill an engineering professional must possess. Like most English language lecturers at universities, we, though being teachers of the professional and technical communications courses, are language and education professionals without any technical or engineering background. One may doubt if we are qualified for the job. However, the fact that we are there to teach the engineering students is more an advantage than a disadvantage. Simply because we are non-experts, our engineering students must learn the appropriate strategies to communicate technical knowledge to laymen like us, which is what engineers have to do in their work contexts.

COURSE EVALUATION

In order to evaluate the effectiveness of the courses and improve the pedagogy, we conduct course and teaching evaluations at the end of each semester. Feedback is collected from the students in the form of questionnaire and reflective writing. They need to evaluate the course structure, course effectiveness, learning outcomes, students' participation, their collaboration with the peers, effectiveness of the activities, teacher effectiveness, and their satisfaction with the course.

The students' ratings are generally high. In the first semester of 2012-13, the students' ratings on all the above evaluation criteria range from 78% to 96%, which is very encouraging. They also give some positive feedback on the course through reflective writing. Some examples of their comments include "I learned many technical communication skills that I can use in future," "I like the activities to define and describe a product in technical ways," "The project work is interesting," "This course is well-organised," "My English has improved after taking this course," and "I am very satisfied with this course."

ONGOING CHALLENGE

The Professional and Technical Communications courses offered to engineering undergraduates by HKU and CUHK have been a success in helping the students develop their English language competence and communication skills. However, there is room for improvement in the level of interest in and stimulation from the courses, as reflected in the comparatively lower ratings by the students.

With the implementation of the New Senior Secondary (NSS) Curriculum, future undergraduates are studying for one more year at university. They are required to do foundation English language courses in Year 1 and more intensive faculty-based ESP courses in Years 2 and 3. The impact of the national curriculum renewal on our courses is that we have to cater for the needs of students from more mixed-ability backgrounds as they are leaving secondary school one year earlier. It is essential that the contents of our materials be updated frequently with the rapidly changing technology in the modern world so as to stimulate the students' interest and motivation to learn. These have been taken into consideration in our new course designs for the first cohort of students in the Engineering Faculties who commenced their university studies in September 2012. Moving forward, we are interested in comparing the old and the new courses, so that improvement can be made in our curriculum designs to face the challenges ahead.

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CONCLUSION

In preparation for their future career as technical professionals, engineering students in Hong Kong need a strong English language competence to communicate with others. HKU and CUHK, playing a leading role in providing quality education in the international city, are offering thoughtful Professional and Technical Communications courses to help nurture potential engineers. They aim at developing the students' English language and communication competence through content-based, problem-based and task-based teaching in realistic learning contexts. In the course evaluations conducted every semester, the students have been showing positive feedback on the courses. To sustain quality English language education for our engineering majors, we will persist in researching into the new programmes designed for university entrants under the NSS Curriculum from 2012 onward. We appreciate advice and comments from technical and engineering professionals, which will certainly offer us insights to improve our pedagogy.

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Yee Lin Li is a lecturer at the English Language Teaching Unit of The Chinese University of Hong Kong. She teaches Foundation English, English for Academic Purposes (EAP) and English for Specific Purposes (ESP) courses to students at all levels and from various disciplines. She has been teaching Technical Communications to engineering students for over ten years. Her research interests are English for Specific Purposes, academic writing, issues-based learning and task-based learning.

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