Instilling Soft Skills in Engineering Learners through Language Learning

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Abstract

Does language learning have a role in developing engineering learners to become effective would-be engineers? Besides acquiring language skills which they can put to use in their daily interactions with members of the society and in their professional communicative acts with their colleagues at work in the future, a language learner at the tertiary level now gets to equip himself with other traits that make him a whole person. Since the introduction of the generic skills in all university courses, university courses have been somewhat revamped to incorporate several worthy attributes that mould undergraduates into more balanced individuals. This study looks at a language learning course with the purpose of determining if soft skills were successfully instilled in learners. Questionnaires were distributed to the research subjects comprising third-year engineering learners at a higher learning institution who were taking their third-level language course. This paper reports the role of this language course in equipping engineering learners with soft skills in an effort to mould them to become more effective engineers upon entry into their profession.

1.0 Introduction

Language courses at the university play a significant role in the development of the learner although the changes a learner undergoes may not be felt immediately. It is through the language course that a learner brushes up on his language command thus developing his communication skills. And because language-learning activities typically involve discussions and a lot of group work, team-working spirit is enhanced. In the process of achieving decisions which are agreed upon by all in the team, critical thinking skills and problem-solving skills are further nurtured in the language classroom. In the team, a leader would usually emerge as a result of having to have someone lead the discussions towards reaching the goals of the lesson

successfully. Thus, a number of generic skills would be successfully implemented in the language classrooms whilst the learners are carrying out their activities, although this is sometimes not too evident or observable.

The purpose of this study then, is to determine, if language courses are successful in instilling generic skills in learners. A language course, English for Career Search, was selected for this investigation. This language course is one of five elective English courses offered to third- and fourth-year students of the university. The students following this course would have successfully undergone the first two language courses, which are the requirements to be enrolled in this third-level language course. The 'English for Career Search' is offered mainly to equip undergraduates with effective skills at job-hunting upon graduation. Thus, it is deemed essential that the components of this course incorporate all the right attributes that would make the 'whole' and balanced undergraduate, equipped with right doses of required ingredients, prepared for the work-place.

The main objective of this study is to determine if the language course has successfully implemented all the seven attributes that are required of learners. How and in what ways, have these undergraduates enhanced their abilities as a result of the conscious effort of the course designers in incorporating the said attributes into the course?

This language course, English for Career Search, was introduced to UTM students in 2006. Over the past five semesters of the running of this course, the course has been popular among students opting to choose among the five electives of language courses offered. One of the reasons is that it offers a variety of teaching and learning approaches: for example, the job advertisement is analyzed in groups, the resume is written individually, the learning portfolio is presented orally individually and portfolios, in which learners reflect on their learning process, are also submitted in a form requiring some degree of computer literacy. Another component requiring students to interview a professional in their discipline in order to get information regarding their future profession, and assigned as team-work, involves field-work. Thus, this array of techniques adopted for this course seems to be the factor which has

led students to choose this course as their elective. An added factor is the assignments which are mostly done in teams; the field-work in which students interview a working professional, especially requires good team spirit for a successful completion of the task.

2.0 Generic Skills

Generic skills are defined as general skills, qualities, knowledge, abilities and traits that a person should possess to succeed in one's studies and career (Khairi Izwan, 2006). Across the globe, generic skills go by different names such as key skills in the U.K., essential skills in New Zealand, employability skills in Australia, and Canada, workplace know-how in the United States, critical enabling skills in Singapore, transferable skills in France, and trans-disciplinary goals in Switzerland. Thus, in general, generic skills would mean skills that would enable an individual to succeed at getting employed and at succeeding as an efficient and effective employee at the work-place.

Because of the demands placed by the industries on the requirements of employees they hire, higher learning institutions have decided to incorporate several generic skills to add value to the academic programmes offered at the university and also to ensure that their graduates meet the demands of the industries. There are two models proposed in imparting the generic skills to learners: The Diffusion Model in which the skills are taught explicitly in individual courses which teach these skills per se, and the Infusion Model, in which the skills are not taught explicitly to the students but merely infused in academic courses.

At Universiti Teknologi Malaysia, the Infusion Model is adopted whereby the generic skills are infused into the academic courses offered to students. A total of seven attributes and generic skills were identified to enable the university to churn out competent, creative and versatile professionals who would meet the demands of the job market and the work-place. The 7 generic skills and attributes are communication skills, critical thinking and problem-solving skills, ethics and integrity, leadership

skills, team-spirit/ team-working, life-long learning and information management and entrepreneurship skills.

Among the seven generic skills, I personally feel that team-working skills are one of the more important skills to incorporate into the academic programmes at the higher learning institutions. This is because these skills are much needed at the work-place, and thus learners need to be trained early on, to be able to work inter-dependently and harmoniously with others so that the tasks can be completed more successfully.

According to Khairiyah (2008), the performance of learners is enhanced when they work in teams as opposed to when completing tasks individually as peer pressure is stronger than lecturer pressure. And the results are even more enhanced when these teams are assigned by their lecturers as opposed to teams being formed through the learners' own selection (Khairiyah, 2008). This is because diverse opinions can be created when different people are grouped together compared to when friends group together as friends would have the tendency to think alike.

As it is clearly evidenced that team-working skills and other generic skills have an added value to learners' cognitive and personality growth, these generic skills are now clearly spelled out in the learning outcomes distributed to students at the beginning of each semester. With this, learners now know what is expected of them by the end of the semester and eventually, by the end of their academic programme.

These generic skills are not merely incorporated into the components of university courses but they are also assessed. This reflects then how important it is for students to acquire and equip themselves with the generic skills. Because these generic skills are assessed, course lecturers and designers are now required to develop descriptors for the soft skills that are introduced and assessed in the course. It is important to clearly spell out how learners are assessed in terms of their mastery of the generic skills. Learners need to be made known the assessment criteria that are used to evaluate them (Khairi Izwan, 2006) so that they can judge for themselves if they have acquired the individual generic skill being assessed.

It may look as though university learners have a lot more on their shoulders now as they are expected to learn everything in the short span of time they are in the university: the academic pursuits as well as the soft skills to develop their personality. It also looks as though university lecturers have an added responsibility now, that is to design more comprehensive learning modules that ensure the generic skills are incorporated in the courses, either implicitly or explicitly. Nonetheless, all these efforts go into building a more progressive nation comprising well-balanced graduates who would enter the nation's job market as well-developed professionals.

3.0 Methodology

The main research instrument used to collect data for this study is the questionnaires. The questionnaires consisted of 33 four-point Likert-scale items that represented the respondents' level of agreement with the statements. The four scales were 'Strongly Agree', 'Agree', 'Disagree' and 'Strongly Disagree'. Three open-ended items were also included to gauge the respondents' views on the issue of whether the 'English for Career Search' course had equipped them with sufficient generic skills. The generic skills that were covered in this study are communication skills, critical thinking skills, creativity, problem-solving skills, professional ethics, inquiring mind, integrity, leadership skills and life-long learning. These questionnaires were later analyzed qualitatively, using descriptive statistics or simple percentages to see the patterns that were occurring.

The questionnaires were distributed to forty research subjects who were third- and fourth-year engineering learners at a higher learning institution. These subjects were students who were taking the 'English for Career Search' course with the researcher. All of the forty students who were following this third-level language course in the class taught by the researcher were used as respondents for the study. The subjects comprised males and females of different races: Malay, Chinese and one Indian. There were slightly more Malays than Chinese in this class and the males definitely outnumbered the females in this engineering group of students.

4.0 Findings and Discussions

The findings of the study revealed that these engineering students felt that they had acquired several soft skills from attending this English course. The study gauged positive views from the engineering students on how the language course had instilled in them important soft skills required for their personality growth.

A total of 87.5% of the subjects felt they had learnt to build good team spirit while working on the group projects assigned to them in this language course. 85 % of them felt they had enhanced their creativity skills as a result of taking this language course. 82.5% were confident they had improved their English proficiency and the same number of subjects felt they had improved on their critical thinking skills. Other generic skills which they felt they had acquired as a result of taking this language course are problem-solving skills (80%) and the ability to express their ideas clearly (also 80%).

These high percentages proved that a majority of the subjects had acquired a variety of soft skills that were crucial in moulding them into becoming more well-rounded individuals and more importantly, preparing them to become better engineers of the future.

77.5% of the subjects also felt they had become more confident speakers as there were a number of assignments built into the course that required the learners to orally present the findings of their job search assignment, an analysis of job application letters and their learning portfolio. 77.5% of the subjects felt they had acquired the ability to think out-of-the-box. This was because the assignments incorporated into the English course required the learners to make decisions on their own as opposed to their engineering courses where much of the input would be delivered by their engineering lecturers in the traditional way.

One of the most important attributes which the researcher felt the learners had developed in themselves is leadership skills. It is interesting to note that 80% of the learners felt they were always made the leader of the group whenever there were tasks to be completed in groups. This indicates that most of the students would have gained

the opportunity to become leaders of the group and this marks a good beginning for them as the practice would facilitate professional growth in themselves. 72.5 % of the subjects revealed they enjoyed becoming the group leader. It was also good to discover that a high percentage of subjects, i.e. 72.5% thought they had good leadership skills as they were confident they were good at delegating tasks to their team members.

On how group leaders were appointed, there were several slightly opposing views. 37.5% complained that there was usually no particular leader to lead the group discussions, while 62.5% revealed that it was always them who were made the group leader; 75% were of the view that they usually took turns at becoming leaders while 35% complained that it was always the same person who was nominated the group leader. Although there were opposing views on how group leaders were nominated, it is felt that what is important is that the learners had sufficient opportunity in the English classes to develop their leadership skills and that all had an almost equal chance of becoming leader for at least one out of several group tasks assigned to them. This is important as working in groups; working in harmony and leading the group towards excellence is a good simulation of what goes on in the real working environment of professional engineers, thus it is crucial to provide them with such training at this phase.

Another interesting observation made on leadership skills is that while 72.5 % of the subjects admitted they enjoyed becoming group leaders, 35% felt they preferred to become merely followers. It was noted that these two groups of respondents were not exclusive in their views on this issue. The two groups (72.5% and 35%) did not add up to 100% and thus, upon further investigation, it was discovered that 40% of the respondents actually had mixed feelings on this issue; that is several of them reported that they enjoyed becoming group leaders as well as becoming followers. It is presumed then that these learners opted to take on either role, that is that of a leader or a follower depending on the task that is given. Factors such as the challenges that are posed by the task and the difficulty of the task would probably be considered before they decide to agree to lead the group or be resigned to the role of a follower.

This then indicates that the learners were flexible enough to take on roles depending on the task that lies ahead.

Although 87.5% reported that there is good team spirit as they worked on the group tasks, 57.5% claimed that there was a lot of argument taking place during group discussions. One of the reasons given for these arguments, as revealed by 63.2% of the learners, is that there was usually at least one team member who would not do his share of the work. In general, however, 82.5% of them were happy that there was usually fair distribution of the work, and this led to them being able to work harmoniously. 81.6% concluded that they enjoyed working in teams despite the hiccups they would sometimes face in the process of getting the assignments done.

On why they enjoyed team work, the learners revealed several reasons. 36.8% of them cited the fact that they could easily share their ideas while 15.8% felt it was easier to complete the given assignments in groups. Several other reasons revealed by the subjects are that “they could achieve better results through team work”, “the assignment became more interesting”, “it was easier as they could just distribute the work” and each would get a smaller portion of the work, they became “more confident when working on a task in groups”, they get to “develop leadership skills”, they get to “learn from others”, and that “we can’t live alone in this world”.

Although as reported earlier that 81.6% of the subjects enjoyed team work and group discussions, 23.7% did confess that they did not like working in groups. Since it was observed that these two groups were again not mutually exclusive and the two groups of percentages did not add up to 100%, a closer investigation was done. It was then revealed that a group of subjects (22.9% of them) had mixed reactions to team work: at times they liked group work and at other times, they did not.

The reasons for not having enjoyed group projects, as cited by several subjects, are that they “did not get to improve their skills”, “some team members did not give full cooperation”, “some team members were selfish”, “I will become selfish and not creative”, “there are passenger students”, “it is hard to finish”, they “can’t improve the quality of the work”, “I can’t get their ideas”, and “I don’t have time for group

discussions". To reinforce the fact that some students did not enjoy group assignments, a rather high percentage of them, i.e. 42.1 % asked to be given individual assignments instead, in future. Probably, a way to counter this problem would be to ensure the 'right' composition of the group and to allow the students the freedom to be with their own clique to ensure they have the right chemistry with other team members.

The questionnaire also sought to compare the English course and the learners' engineering courses in terms of how these courses facilitate the development of generic skills in the learners. When asked to compare the English course and the engineering courses in the development of each of the following soft skills, the percentages of learners who felt it was the language course, as opposed to their engineering courses which had enhanced their generic skills, are as follows:

1. 86.5% felt that the language course had helped them develop a more inquiring mind
2. 81.1 % felt the language course made them more ethical
3. 81.6% felt that the language course improved their communication skills
4. 81.6% felt that the language course improved their integrity
5. 73% felt that the language course taught them to become more business-oriented
6. 71.1% felt that the language course developed their critical thinking skills, and
7. 63.2% reported that their leadership skills were enhanced due to the language course.

It is apparent then, that this language course, as opposed to the learners' core courses, had a significant role in developing their soft skills, and in short, their personality, thus preparing them to become better professional engineers.

When asked for their comments on the role of the language course in building their generic skills, the subjects were of the opinion that it "is good for the future of the students", "it is very useful for their work environment" and that "the soft skills are incorporated in their engineering subjects but done half-heartedly and most lecturers lack them". Another subject commented that "UTM students have good knowledge in

technology but do not know how to deal with people". At least they are aware that good people skills, or, in other words, soft skills, are as important as good academic achievements in becoming a good engineer.

One respondent reported that he learned the engineering subjects only to get good academic results and not so much for the pursuit of academic knowledge, while another recommended that the university provides more courses to equip students with soft skills. Another interesting remark which came from one respondent, "all engineering subjects are not related to soft skills so it is really good when the university gives us opportunity to learn soft skills to improve ourselves", concludes that the learners regard the language courses as being the vehicle in instilling soft skills in them.

5.0 Conclusion

This study has confirmed the importance of incorporating generic skills in learners at the higher learning institutions. The learners felt that they do not only acquire and equip themselves with cognitive knowledge at the university but also other forms of knowledge, i.e. generic skills that make them better individuals

This study has also summed up the fact that the language course has an important role to play in the academic growth of the engineering students. As it is perceived that the engineering courses did not equip learners with much soft skills as compared to language courses, we now know that language courses have not only enhanced a learner's language proficiency but they have another role to play, that is in equipping learners with sufficient soft skills that will eventually mould them into becoming well-balanced and well-rounded professional engineers. This only goes to show that the social science and humanities have an equally important role as the engineers and the scientists, in building a better nation.

References

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