

**HOW FINAL YEAR CHEMICAL ENGINEERING STUDENTS COPE WITH
LEARNING IN ENGLISH**

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ABSTRACT

There seems to be little information found in reports regarding the final year chemical engineering students' situation of learning in English. Since the students' learning condition in English is unknown, this issue has captured the interest of the researcher and there is a need for further investigation on the topic. The focus of the research is on the existence of problems faced by final year chemical engineering students when learning in English and strategies of overcoming them. A total of 90 final year chemical engineering students and two lecturers from the Faculty of Chemical Engineering and Natural Resources Engineering were involved in the study. The data needed for the research were collected via questionnaires and interview sessions. The questionnaires used contained 38 questions and the interview sessions consisted of ten questions. The data gathered were analyzed using descriptive statistics where percentages were used to show the results of the research. The overall findings indicate that the final year chemical engineering students were able to cope well with learning in English.

ABSTRAK

Dapat dikatakan bahawa tiada banyak maklumat yang menerangkan situasi pembelajaran dalam bahasa Inggeris yang dihadapi oleh para pelajar tahun akhir bidang kejuruteraan kimia. Oleh kerana keadaan pembelajaran dalam bahasa Inggeris yang dilalui para pelajar ini tidak diketahui, isu ini telah mendapat perhatian daripada penyelidik dan kajian yang lebih mendalam diperlukan bagi menjelaskan isu ini. Tumpuan kajian adalah terhadap kehadiran masalah dalam pembelajaran dalam bahasa Inggeris pelajar tahun akhir bidang kejuruteraan kimia dan strategi yang digunakan bagi mengatasi masalah yang timbul. Seramai 90 orang pelajar tahun akhir bidang kejuruteraan kimia serta dua orang pensyarah dari Fakulti Kejuruteraan Kimia dan Kejuruteraan Sumber Asli telah mengambil bahagian dalam kajian ini. Data yang diperlukan telah dikumpul melalui soal selidik serta sesi temubual. Soal selidik yang telah digunakan mengandungi 38 soalan manakala temubual yang telah dijalankan megandungi sepuluh soalan. Data bagi kajian ini dianalisis menggunakan analisis statistik deskriptif dengan mengambil kira peratusan bagi menghasilkan keputusan. Penemuan keseluruhan menunjukkan bahawa para pelajar tahun akhir bidang kejuruteraan kimia dapat menangani pembelajaran dalam bahasa Inggeris dengan baik.

CHAPTER 1

INTRODUCTION

It is a well known fact that English is the most important language used in the area of science and technology. Therefore, university students who are majoring in the field of science and technology would have to learn in English. This situation signals that engineering students would also have to learn in English. However, this study will only focus on final year chemical engineering students. The aim of this study is to find out how final year chemical engineering students are coping with learning in English. The study will seek out possible problems faced by these students when learning in English and strategies used by them in overcoming those problems.

1.1 Background of the Study

In Malaysia the English language has gained the status of a second language which is important in higher education and professional fields. This is because, English

is considered as a vital tool for communication as the world progresses into the era of globalization and technological advancement. English is used widely in international communication because it is the lingua franca in the field of science and technology, business and also education. Consequently, the importance of English in Malaysia has increased and therefore, Malaysians are required to possess the skill of communicating using English in order to compete successfully in the local and global arena.

As Malaysians need to have the ability to communicate effectively in English, it is important that citizens are given sufficient exposure to the language. This is especially true for university graduates who have experienced learning in institutions of higher education and will be working in professional positions. Besides that, being able to communicate effectively in English is one of the many attributes that should be possessed by university graduates. The reason for this is that, in institutions of higher education, English is not only taught for academic purposes but it is also taught to prepare graduates for the work environment.

Nowadays, universities and institutions of higher learning in Malaysia are adopting English as a medium of instruction especially for science and technology related subjects. As a result, students who are majoring in science and technology related courses would have to learn in English. It is important for these students to learn in English because they need to understand the contents of their subjects better. Besides that, they also need to learn in English because, by learning in English, they will identify more with their field of study. Moreover, the skill of learning in English would also help them perform better in their future professions. In addition to that, another reason why it is important for students to learn in English is because, competence in English is considered as one of the attributes of successful university graduates.

As mentioned earlier, students who are majoring in the field of science and technology would have to learn in English. This implies that engineering students would also have to learn their content subjects in English. Engineering students would have to study in English because most of their course subjects are instructed in English. Besides that, studying in English will help prepare them for their future working environment where they would have to perform in English. Learning in English would also help them build their competence in the English language and this skill would give them an advantage to further develop their professional expertise where they would have to communicate using English.

An example of a group of engineering students that needs to learn in English would be chemical engineering students. This is mainly because all of the course subjects in chemical engineering are taught in English. The reason behind this is that, most of the references needed for their studies are produced in English. As a result, chemical engineering students would have to manage a great deal of contents which are presented in English. Besides that, chemical engineering students also have to deal with some experiment procedures and write lab reports using English. Apart from that, chemical engineering students are also required to use English to answer examination questions on their course subjects. Therefore, it is crucial for chemical engineering students to learn in English.

Based on the previous discussion, we can see that it is important for chemical engineering students to learn in English. This is especially true for those students who are studying in their final year. This is because the final year chemical engineering students need to study in English since they would have to use English to complete their bachelor degree project. Besides that, these students would also have to present their bachelor degree project using English. Furthermore, final year chemical engineering students would also have to complete their plant design project in English. Finally, it is important for final year chemical engineering students to learn in English as it can help with their

English communication skills. This is crucial for final year students because they will have to undergo interviews in order to join the workforce. Consequently, learning in English would definitely benefit these students.

It is now clear that final year chemical engineering students need to learn in English because it is important for their academic and professional lives. However, there is a question whether the students are able to cope and excel in their studies or otherwise. Subsequently, there is a need to determine how final year chemical engineering students cope with learning in English. This is because the students' progress and performance could have an impact on their academic achievement and preparation of joining the workforce.

1.2 Statement of the Problem

The English language has long been the most dominant language for communication in the field of science and technology. This is true as numerous research, references and publications in this field are available widely in English. Besides that, many professional experts in the field of science and technology are also speakers of the English language. For this reason, professionals who desire to gain success in this field should be able to communicate and work using English. Therefore, it is also important for chemical engineering students to learn in English successfully and excel in their studies as their success will have an impact on their professional lives in the future.

Recently, the government has made an emphasis on the use of technical English in education. In response to this situation, universities and institution of higher learning in

Malaysia are using English as a medium of instruction for science and mathematics subjects. This shows that there is an importance of learning in English among university students. Apart from that, another reason why it is important for university students to learn in English is because most of the main references on their course subjects are available in English. Therefore, students need to learn in English in order to understand what they are studying. Besides that, students also need to learn in English because it is necessary for them to join the workforce. This is true, as it is mentioned before that, being able to perform competently in English is an important attribute that needs to be acquired by successful university students.

At the university level, learning in English could be interpreted as performing academic tasks using English. The learning activities which students have to carry out in English are mainly listening to lectures and doing revisions. Other than that, they would also have to complete assignments using English which means that, they will need to read references in English. Some students also have to use English to do tutorials, perform experiments and write lab reports. Apart from that, most students who are taking their subjects in English would have to study and answer their examination questions in English. Nevertheless, learning in English is crucial for final year students especially for those who have to do their bachelor degree projects in English. Furthermore, final year students also need to learn in English to prepare themselves for their future profession.

As mentioned earlier, final year chemical engineering students are learning their entire course subject in English. However, these students are not enrolled in any English language courses at the moment. Consequently, it is important to know how well the students are doing in their studies. Therefore, we need to find out how chemical engineering students cope with learning in English. In addition to that, we also need to determine whether the students face any problems in their learning and also identify the solutions used by the students to overcome the difficulties they face while learning in English.

1.3 Purposes of the Study

As most of the content subjects for the chemical engineering students are taught in English, the students need to be able to cope with learning in English. It is unclear whether the students are able to cope in their studies or not because these students are currently not taking any English classes to supplement their learning. Besides that, these students used to learn science and mathematics in *Bahasa Malaysia* when they were in school. However, they would have to adapt to the new environment of learning their course subjects in English at the university level.

In response to the situation mentioned above, there is a need for a research to be conducted to discover how the chemical engineering students are coping with learning in English. The main purpose of this study is to find out how final year chemical engineering students cope with learning in English. Consequently, this study would research on the existence of potential problems faced by the final year chemical engineering students when learning in English and also to identify the possible strategies to the problems.

1.4 Objectives of the Study

The Objectives of this Study are:

1. to determine whether final year chemical engineering students face problems with learning in English
2. to find out the problems faced by final year chemical engineering students when learning in English
3. to identify the strategies used by final year chemical engineering students to overcome problems when learning in English
4. to suggest possible strategies to the problems faced by final year chemical engineering students when learning in English

1.5 Research Questions

This study will provide answers to the following questions:

1. Are there any problems faced by final year chemical engineering students when learning in English?
2. What are the problems faced by final year chemical engineering students when learning in English?
3. What are the strategies do the final year chemical engineering students currently use to cope with learning in English?
4. What are the other possible strategies to the problems faced by final year chemical engineering students when learning in English?