THE IMPROVEMENT OF ENGLISH LANGUAGE ABILITY FOR INDUSTRIAL ENGINEERING STUDENTS THROUGH NON-ENGLISH LANGUAGE COURSES AT UNIVERSITY OF POTENSI UTAMA

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ABSTRACT

English language ability is very important in globalization era. Especially if someone want to work in multinational companies, English language ability is the most important requirement. Among students at University of Potensi Utama, there is a lack of awareness indication English learning, especially the Industrial Engineering study program. The aims of this research is to identify students' motivation and their abilities in English by learning process. Another purpose is to develop their English ability. The subjects of this research were second semester Industrial Engineering students. This research was carried out from February 2020 to August 2020. Type of this research is descriptive qualitative. Technique of data collection by using a questionnaire and document review of teaching materials, questions and exams to reveal how the improvement of non-language students' English ability and their motivation in the use of English. The data analysis model that used by researcher is the triangulation technique model. The research result shows an increase in students' motivation and English ability. The value of the increase in high students' motivation from 30.19% to 64.05%, the increase in high students' ability from 15.03% to 39.21%, this is also evident from the change of the pretest average score of 50.49 to the average value of posttest 71.09.

INTRODUCTION

Concerning of regarding the importance of mastering foreign languages, a German philosopher Johann Wolfgang von said, "Those who know nothing about foreign language, they nothing about their own." This proverb implies the importance of foreign language education, apart from the mother tongue and the national language. Some examples show that English is important for this globalization era is almost all technological tools use English language. In addition, if somebody wants to work in a multinational or foreign company, automatically English language skills are highly questionable and be the most important requirement. Therefore, in this context it is necessary to have a thinking paradigm about the importance of English Language and this ability can also be used as an investment (Handayani, 2016).

English Language is an important international language that can connect the peoples with the world in various aspects including aspects of education. This has been shown by government regulations that make English as a compulsory

subject to learn from primary school to college (Megawati, 2016). In university, all study programs must provide English courses for first or second semester even though the major that taken is not related to English. This condition shows the importance of mastering English as a cicerone to success in someone academic field and to support their career (Sinaga, 2010).

To increase the suceesesful of somebody's academic and to produce a certain quality human resources, university institutions must improve their quality of faculty, curriculum and facilities to fulfil international standards (Handayani, 2016). This improvement can be done by increasing the ability of students to communicate by using English both orally as the working language and writing such as teaching materials and student assignments. At the University of Potensi Utama, the use of English as theworking language in learning process both spoken and written has not been done for the entire study program, including in Industrial Engineering study program. Among students at this university, there is a lack of awareness indication to learning English especially in non-language courses. Students' English ability do not appear in the learning process outside course of non-language.

To achieve success of producing human resources who are able to use English optimally in non-language classes, including in Industrial Engineering study program is not an easy task. A lecturer should know the level of language mastery of each students besides of having sufficient mastery of the material. If all conditions are generalized, it will be difficult to achieve the expected learning objectives because according to Stanford (2003) in (Megawati, 2016) basically every student have different characteristics including learning techniques and the portion of the absorption of knowing subject matter. Therefore it is necessary to research the causes of the lack of motivation and ability of non-language students towards English in the teaching and learning process and how to improve it.

The experiences and observations above are in accordance with the research results of (Zaim, 2013, Simbolon, 2014, Wilujeng, 2014, and Syafah & L. Handayani 2015). These four researches discuss about the assessment and evaluation of learning in English ability. The focus of this research just lies on the assessment and evaluation of student learning abilities. There are also the research results of Megawati (2016) on exploring the obstacle that experienced by students

when learning English who are not from the English department or commonly called ESP learners. However, the research results do not provide specific and comprehensive information on how to improve the English language ability and motivation of students that take non-language studies. That is why researchers are interested in researching this title.

MATERIALS AND METHOD

A. Materials

The Material of this research are industrial engineering students of University of Potensi Utama in second semester in morning and evening classes. This sample was selected by purposive sampling.

B. Method

The type of research is descriptive qualitative research, where the purpose of this research is to identify, to describe the phenomenon of how to improve the Industrial Engineering students' ability of English language in learning of non-English (Material Engineering) course at University of Potensi Utama. The data were collected by using a questionnaire, and document review of teaching materials, questions and exams to reveal how the improvement of non-language students' English ability and their motivation in the use of English. The data analysis that used in this ressearch is the triangulation technique model that consisted of three stages, namely data reduction, data presentation, and drawing conclusions or verification.
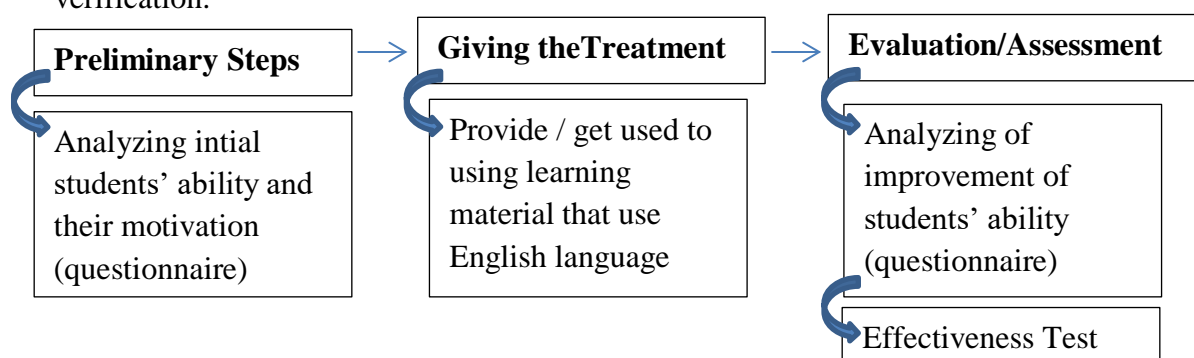
Figure 1. Research Plot

RESULT AND DISCUSSION

The process of this research was carried out in several cycles. The research steps that have been carried out for preliminary studies in improving students'

English ability starting from 1) planning step, 2) implementing step, 3) observing and evaluating step, and 4) analysis and reflection step, where these four steps are form a cycle starting from the planning step until reflection step. The first and second steps are part of descriptive research where the researcher creates a questionnaire and collects data regarding the current conditions of students' motivation and their ability and the second, third and fourth steps are qualitative research in which researchers and students assess their English language ability in the learning process.

Cycle 1 (Preliminary Steps)

The aim of this preliminary study is to analyze English language ability and students' initial motivation in learning English with non-English courses (Material Engineering). This cycle consists of three steps, namely planning step, implementation step and evaluation step. The three steps will be described below:

1. Planning Step

    Planning step was carried out in several stages, such as: (a) identifying students' interest or motivation in learning English. (b) Identifying the problems that faced by students in learning English. (c) Designing questions to be a questionnaire.

2. Implementation Step

    Implementation step is continued by arranging a questionnaire that can see the interest or motivation of students and the problems that students face in learning English so that preliminary data can be obtained. The questionnaire was made with 17 questions in the form of open questions and closed questions. Questions was made based on 4 main points, namely: (1) questions concerning about motivation consisted of 5 closed questions, (2) questions concerning about the environment that supported learning English consisted of 3 closed questions, (3) questions concerning about the ability of students to assess themselves about their ability in English consisting of 3 closed questions, and (4) open questions, the students' responses about the motivation and what difficulties that they face while learning English were 6 open questions. After making the questionnaire, the implementation step is continued by giving the questionnaire to students.

3. Evaluation Step

After distributing the questionnaire, data was obtained to analyze the ability and initial motivation of students where the first questionnaire proposed 17 questions with 11 closed questions and 6 open questions. From the 51 (fifty one) sample of students who received the questionnaire, the percentage results of the initial state of both motivation, environment and initial ability of students based on their groups can be summarized in table 1 to table 3 as follows:

Table 1. Presentation of Initial Motivation of Industrial Engineering Students

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 1	0	0	7	13	31	51
Question 3	15	22	12	2	0	51
Question 4	4	12	19	13	3	51
Question 9	5	25	12	8	1	51
Question 12	7	22	16	5	1	51
Total	31	81	66	41	36	255
Average	0,12156	0,31764	0,25882	0,16078	0,14117	1
Percentage (%)	12,156	31,764	25,882	16,078	14,117	100

Table 2. Presentation of the initial environment whether supports or not of Industrial Engineering students to stimulate their English ability

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 6	2	19	17	12	1	51
Question 8	5	18	16	8	4	51
Question 11	9	21	16	4	1	51
Total	16	58	49	24	6	153
Average	0,10458	0,37908	0,32026	0,15686	0,03922	1
Percentage (%)	10,457	37,908	32,026	15,686	3,921	100

Table 3. Presentations of Initial Ability of Industrial Engineering Students

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 2	6	15	25	5	0	51
Question 7	6	16	19	9	1	51
Question 10	10	14	19	6	2	51
Total	22	45	63	20	3	153
Average	0,14379	0,29412	0,41176	0,13072	0,01961	1
Percentage (%)	14,379	29,411	41,176	13,071	1,960	100

From the first questionnaire researcher found students' difficulties in learning English. Most of the students stated that the lack of vocabulary and connecting the meaning of one word with another word to get the real meaning of a sentence was their main difficulty in learning English. As a result of this difficulty, their motivation to learn and their environment that is less supportive of learning English makes them apathetic to improve their English ability.

Cycle 2 (Giving the Treatment)

Starting from the results of the first cycle, the second cycle was carried out in two steps, namely the implementation step and the evaluation step. These two steps are described below:

1. Implementation Step

Implementation step was carried out in several stages, such as: (a) lecturer prepares students by motivating them to learn non-English (Material Engineering) using English. (b) Lecturer begins the stages of the learning model by familiarizing students with reading Engineering Materials teaching materials that use English. (c) Lecturer familiarizes students to read English journals related to the assignment that was given (d) Lecturer familiarizes students with answering assignments and quizzes by using English (e) Lecturer familiarizes students to take the conclusions from reading material or journals that they were read (f) Lecturer provides explanations, guidance and feedback to students. This step was carried out repeatedly for forming new habits of students. The beginning of the step and the end of the step were taken the score to measure the improvement of students' English language ability, namely the pre-test and post-test scores. At the end of the lecture, a second questionnaire

is given whose the content is almost same as the first questionnaire and its added with the abilities that their acquired during the learning process.

2. Evaluation Step

Before forming a new habit for students to read English literature, this research began with giving a pretest then followed by giving treatment and ended with gave a post test to measure students' abilities. The pre-test and post-test results obtained by students can be seen in Table 2

Table 4. Results of Pre-test and Post-test English language ability of Industrial Engineering students

No.	Test	Total	Nilai Rata-rata
1.	Pre-test	2575	50,49
2.	Post-test	3626	71,09

From the results of the pretest and posttest, it can be seen that there is an increase the score of students' abilities when learning materials engineering with a new habits that have been done. After the post test was held, a second questionnaire was distributed and data was obtained to analyze the ability and motivation as well as the problems faced by students while learning English. These research process was done by asking a questionnaire that contain 20 questions with 17 closed questions and 3 open questions. From 51 (fifty one) samples of students who received the questionnaire, the percentage result of the final state both motivation, environment and ability of students based on their groups can be summarized in table 5 to table 7 as follows:

Table 5. Presentation of Motivation at the end of lectures Industrial Engineering Student

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 1	0	0	0	17	34	51
Question 3	0	3	17	18	13	51
Question 6	2	13	22	10	4	51
Question 7	1	10	21	13	6	51
Question 9	0	10	15	17	9	51
Question 10	0	3	8	16	24	51
Question 11	0	2	15	17	17	51
Question 16	0	2	21	19	18	51
Question 17	0	0	9	15	27	51
Total	3	43	119	142	152	459

	Point 1	Point 2	Point 3	Point 4	Point 5	
Average	0,00654	0,09368	0,25926	0,30937	0,33115	1
Percentage (%)	0,653	9,3681	25,926	30,936	33,115	100

Table 6.Presentation of the final environment whether supports or not of Industrial Engineering students to stimulate their English ability

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 4	0	5	12	23	11	51
Question 5	0	10	19	14	8	51
Question 13	0	8	15	18	10	51
Question 14	7	9	15	15	5	51
Total	7	32	61	70	34	204
Average	0,03431	0,15686	0,29902	0,34314	0,16667	1
Percentage (%)	3,431	15,686	29,902	34,313	16,666	100

Table 7. Presentation of Final Ability of Industrial Engineering Students

Question / Answer	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Question 2	0	16	21	12	2	51
Question 8	0	12	21	14	4	51
Question 12	0	5	22	18	6	51
Question 15	0	3	24	13	11	51
Total	0	36	88	57	23	204
Average	0	0,17647	0,43137	0,27941	0,11275	1
Percentage (%)	0	17,647	43,137	27,941	11,275	100

From this second questionnaire, there were not students' difficulties found in learning English. It's just that it is still difficult to interpret new words that are not familiar to students, but this difficulty can be overcome with the habit of repeating and continuing to get used to reading English literature. As a result of new habits that force students to learn and improve their ability in English, this difficulty is made as motivation for them to learning. In that condition researcher still found that there are many student who also confess that they learn English just to get good grades from lecturers. This motivation and a supportive environment in learning English make them no longer apathetic to improve their English ability.

Observation and Evaluation of Cycle I and Cycle II

Observation and evaluation steps was carried out in three stages, namely (a) when observing the results of the first questionnaire is taken to see students' ability and initial motivation (Table 1 - Table 3). (b) When carrying out the research took place, namely seeing the increasing of students' score during learning that familiarize themselves with English teaching materials (Table 4). (c) When observing the results of the second questionnaire that was taken to see an increasing of students' motivation (Table 5-Table 7)

From the observation, it can be seen that the difference produced by the first questionnaire and the second questionnaire as well as from the pre-test and post-test results. To make it easier to see the results of the questionnaire which consisted of 5 points, the researcher grouped the abilities into 3 such as points 1 and 2 were grouped into low abilities, point 3 was grouped into middle abilities and points 4 and 5 were grouped into high abilities. From the comparison of the first questionnaire and the second questionnaire it can be concluded as in Table 8 - Table 10 below

Table 8 . Comparisons of Students' Early and Late Motivations

Questionnaire (KW)	Motivation	Total	Average	Percentage (%)
Questionnaire 1	Low Motivation (1,2)	112	0,439216	43,921
	Middle Motivation (3)	66	0,258824	25,882
	High Motivation (4,5)	77	0,301961	30,196
Questionnaire 2	Low Motivation (1,2)	46	0,100218	10,021
	Middle Motivation (3)	119	0,259259	25,925
	High Motivation (4,5)	294	0,640523	64,052

From the table above, it can be seen that there is a changing value that shown by the first questionnaire and the second questionnaire. In the first questionnaire the highest score was found in low motivation,its means that there were still many students who chose points 1 and 2, namely as many as 112 (43.92%), while high motivation showed low scores, still few students chose points 4 and 5, namely 77 (30.19%). In the second questionnaire, motivation seems to have increased. It can be seen from the increase value of high motivation to 64.05%.

Table 9. Comparison of Environments whether support or not at the beginning and at the end

Questionnaire (KW)	Environment	Total	Average	Percentage (%)
Questionnaire 1	Unsupport (1,2)	74	0,48366	48,366
	Middle (3)	49	0,32026	32,026
	Support (4,5)	30	0,19607	19,607
Questionnaire 2	Unsupport (1,2)	39	0,19117	19,117
	Middle (3)	61	0,29902	29,901
	Support (4,5)	104	0,50980	50,980

From the table above, it can be seen that there is an increasing value shown by the first questionnaire compared to the second questionnaire. In the first questionnaire the highest scores were found in the environment that was not supportive for students to improve their English language ability, it means that there were still many students who chose points 1 and 2, namely as many as 74 (48.36%) while the supportive environment showed low scores, still few students who chose points 4 and 5, namely 30 (19.60%). In the second questionnaire students have stated that their learning environment supports improving their English language ability. It can be seen from the increase of students who chose points 4 and 5 to 50.98%.

Table 10. Comparison of initial and final students' abilities

Questionnaire (KW)	Ability	Total	Average	Percentage (%)
Questionnaire 1	Low Ability (1,2)	67	0,437908	43,7908
	Middle Ability (3)	63	0,411765	41,1764
	High Ability (4,5)	23	0,150327	15,0326
Questionnaire 2	Low Ability (1,2)	36	0,176471	17,6471
	Middle Ability (3)	88	0,431373	43,1373
	High Ability (4,5)	80	0,392157	39,2156

From the table above, it can be seen that there is an increasing value shown by the first questionnaire compared to the second questionnaire. In the first questionnaire the highest score was found in low ability, it means that there were still many students who chose points 1 and 2, namely 67 (43.36%), while high abilities showed low scores, still few students chose points 4 and 5, namely 23

(15.03%). In the second questionnaire, it seems that an increase value can be seen from the increase of students who chose points 4 and 5 to 39.21%.

CONCLUSION

From the results of research on The Improvement of English Language Ability for Industrial Engineering Students through Non-English Courses at University of Potensi Utama, can be concluded that:

1. The initial condition of students'ability and motivation of Industrial Engineering study program towards the use of English in teaching and learning process is still very low due to motivation; the student's environment is not yet fully supportive of improving their English ability.

2. The way to start cultivating the use of English for Industrial Engineering students who are non-English language students is to familiarize the students to get used to reading of literature, subject modules that use English and familiarize students to take the conclusion of the literature or modules that they have read.

3. Providing of teaching materials and assignments that using English to cultivate English in Industrial Engineering study programs is effective for improving students' English language ability.

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REFERENCES

Handayani, S. (2016). *Pentingnya Kemampuan Berbahasa Inggris Sebagai Dalam Menyongsong ASEAN Community 2015*. Ikatan Sarjana Pendidikan Indonesia (ISPI) Jawa Tengah Volume 3 Nomor 1, Mei 2016

Megawati, F. (2016). *Kesulitan Mahasiswa Dalam Mencapai Pembelajaran Bahasa Inggris Secara Efektif*. Jurnal Pedagogia ISSN 2089-3833 Volume. 5, No. 2, Agustus 2016

Megawati, F., Mandarani, V. (2016). *Speaking Problems in English Communication.* Artikel dipresentasikan pada the FIRST ELTiC Conference. Universitas Muhammadiyah Purworejo, Jawa Tengah. 30 Agustus 2016.

Simbolon, N. (2014). *Pengaruh Pendekatan Pembelajaran dan Kemampuan Verbal Terhadap Kemampuan Berbicara Bahasa Inggris Siswa SMA Negeri 14 dan 21 Medan.* Cakrawala Pendidikan, Juni 2014, Th. XXXIII, No.2

Sinaga, F. (2010). *Peranan Bahasa Inggris Dalam Era Globalisasi*. Tersedia: http://kursusinggris.wordpress.com, diakses tanggal 12 Agustus 2019

Stanford, P. (2003). *Multiple intelligence for every classroom*. Intervention in school and clinic, 39(2), 80-85. Peranan Bahasa Inggris

Syafa'ah, H. K., L. Handayani. (2015). *Pengembangan Metacognitive Self-Assessment mengukur Keterampilan Berpikir Evaluasi Membaca Teks Sains Berbahasa Inggris.* Unnes Physics Education Journal. http://journal.unnes.ac.id/sju/index.php/upej

Wilujeng, T. T. R. (2014). *Metode Self-Assessment Sebagai Metode Alternatif dalam Melakukan Evaluasi Belajar Mahasiswa*. Jurnal Ilmiah Bahasa dan Sastra ISSN:23557083 Volume 1 Nomor 1 Juni 2014

Zaim, M. (2013). *Asesmen Otentik: Implementasi dan Permasalahannya dalam Pembelajaran Bahasa Inggris di Sekolah Menengah*. Proceeding of the International Seminar on Languages and Arts FBS Universitas Negeri Padang