



## Evaluation of English language improvement program for Information System graduates using a comparative analysis method

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### ABSTRACT

STMIK Indonesia Padang seeks to improve the quality of its graduates by providing several academic training in information systems science and soft skills. One of them is training to improve graduates' English skills, including English I and II, English for career, and TOEFL training. The purpose of the study was to evaluate the success of the English language improvement program given to graduates of STMIK Indonesia Padang by comparing the scores for all English programs. This research method is explanatory. Data processing and analysis used descriptive statistics and comparative mean analysis techniques with Friedman test statistics on 4 data groups and Wilcoxon on two data groups. The sample of this study is a saturated sample (170 people) and dependent. The results of the test statistic showed that the value of sig. is less than 0.05. This shows that there is a significant difference between the average scores of English I, English II, English for Career, and TOEFL, either simultaneously or not. Based on descriptive statistics, it was found that the difference did not indicate an increase in the average score on English language skills. Several recommendations can be made in improving English, including (1) the implementation of continuous training, not only at the beginning of the semester and at the end of the semester for students, (2) Increasing the practice of communicating English such as participating in debate competitions, storytelling, and speeches.

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## INTRODUCTION

Competition in the business world and the world of work in the 4.0 revolution era is increasingly competitive. Many companies seek to expand on a global scale. It requires universities to be able to produce graduates who are adaptive and skilled in all aspects of life so that they can compete globally (Siregar & Manurung, 2018). In addition, university graduates must also be able to innovate and communicate about technological advances that are emerging today (Liriwati & Rulitawati, 2019). Communication skills are one of the aspects that must be possessed by graduates in the digital era, namely, English language skills. The ability of English, as an international language and recognized as one of the six official languages of the United Nations, has an important role in the world of work and the world of lectures, so the role of universities is very influential in preparing quality graduates. In multi-national companies, communication is an important skill to enable the company's operations, and the ability to speak English fluently makes communication between workers run well. Employers really need workers who are not only experts in their respective fields but also must have special skills that are complemented by English communication skills (Lie, 2007; di Gropello et al., 2011; Pandey & Pandey, 2014). Therefore, good

grades and English language skills will increase the chances of graduates getting accepted to work in companies that are applied for, either in multi-national companies or large global organizations.

STMIK Indonesia Padang is one of the universities located in the city of Padang with a scientific background in information systems and computers. Based on the IT scientific background, you must have English language skills. Students are required to attend lectures in English I and English II courses in semesters 2 and 3. The learning outcome of this course is that students can communicate actively orally and in writing using English. The criteria for success in oral communication are the amount of vocabulary mastered by students and being able to practice it with the right pronunciation in communicating in English. At the same time, the criterion for success in writing is the ability of students to write using appropriate grammar in the English language rules. After completing these two courses, students try to improve their abilities by participating in student activity units, namely the English Club, so they can continue to hone their English skills. Another program in improving soft skills, STMIK Indonesia Padang, facilitates English for career training and TOEFL training for students who have completed comprehensive exams. The English for Career program is an intensive one-week program to improve the English communication skills of prospective graduates in the world of work. The form of activity is in the form of briefing on making Curriculum Vitae, application letters, job interviews, and conducting workshops for the world of work. TOEFL training is an intensive program for one month to improve the listening, reading, and English structure skills of prospective graduates. In this TOEFL training, the instructor provides learning modules related to listening, reading, and structure materials, as well as tips and strategies to achieve a high TOEFL score.

Various efforts to improve the English language skills of prospective graduates provided by STMIK Indonesia Padang have been carried out. The existence of English scores I and II, English for Career, and TOEFL scores are interesting to compare in order to evaluate the English language proficiency improvement program that has been carried out. The purpose of this study is to evaluate the success of the English proficiency improvement program given to graduates of STMIK Indonesia Padang by comparing the grades of English courses I and II, English for Career, and TOEFL scores, whether the average scores of these four scores are significantly different and whether there is an increase the average value. If the comparison of these four scores has a significant average difference, and there is an increase in the average score, the program that has been carried out can be continued to the next prospective graduate. On the other hand, if the comparison of these four values does not have a significant difference in average or the comparison of these four values has a significant difference in average, and there is no increase in the average value, then other improvement programs are needed.

## METHOD

The research method used in this research is explanatory (explanatory research), namely, research that highlights the relationship between research variables and the influence of one variable on another variable through hypothesis testing. Explanatory case studies are a type of case study that attempt to explain causal relationships and answer 'how' and 'why' questions (Gerring, 2007; Cash-Gibson et al., 2021). In carrying out this research, the data used is secondary data in the form of reports on the value of English courses I and II, English for Career scores, and TOEFL scores. The population of this research is STMIK Indonesia Padang students in 2019 who have taken the TOEFL test, received English I and English II courses, and participated in English for Career, totalling 170 people. The sample of this study is a saturated sample, i.e., the entire population is the sample of this study. Paired samples (dependent) whose existence affects each other (Andrade, 2021). The flow of data processing and analysis is shown in Figure 1.

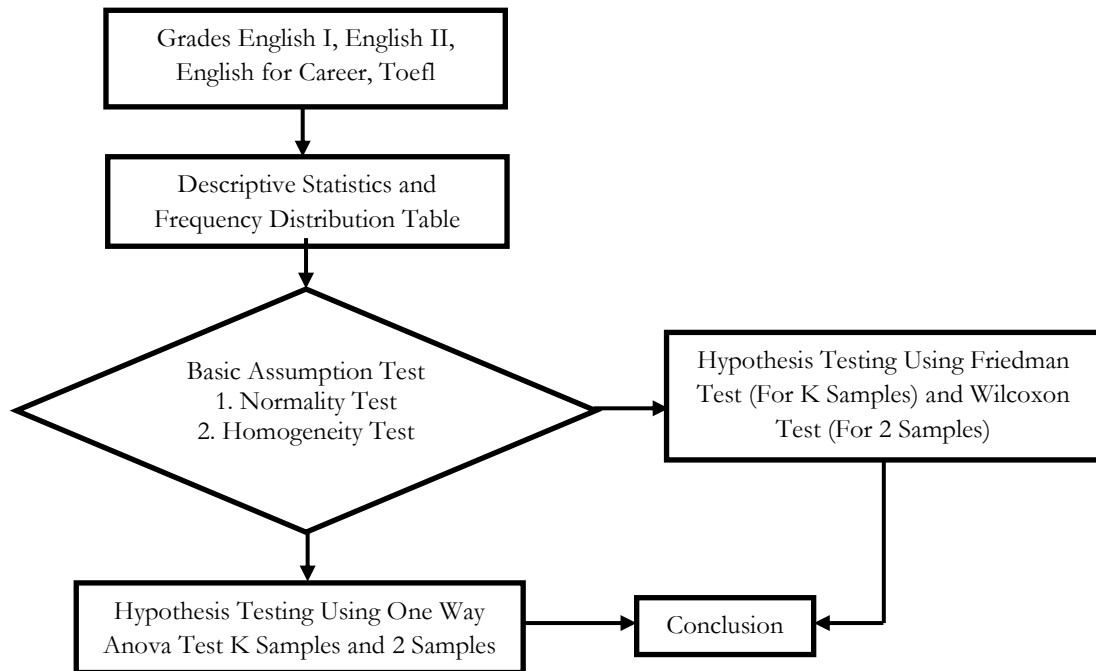


Figure 1. Data Processing and Analysis Flow

English scores I, II, English for career, and TOEFL were analyzed descriptively statistically and presented in a frequency distribution table. Descriptive analysis in this study describes the mean, standard deviation, maximum value, value, minimum, and average interval estimation at a 95% confidence interval. The frequency distribution table in this study illustrates the presentation of a table that lists the values of English I, II, English for career, and TOEFL accompanied by the appropriate frequency. Next, perform inferential statistical analysis and the data analysis technique used in this study is the comparison mean analysis technique. Furthermore, the basic assumptions were tested before testing the research hypothesis in conducting inferential statistical analysis. Testing the basic assumptions is carried out to find out what test statistics will be used in testing research hypotheses (Kadir, 2019). The basic assumption test includes the normality test and the homogeneity test of the dependent sample. If the basic assumptions are not met, the test statistic in testing the research hypothesis uses the Friedman test (for four samples) and the Wilcoxon test (for two samples). Friedman and Wilcoxon's tests are non-parametric hypothesis tests with the dependent variable (Al-Abboodi et al., 2019; Rey & Neuhäuser, 2011). However, if the basic assumptions are met, the test statistics use the one-way ANOVA test (for four samples and two samples) (Zhang, 2015, p. 827). The research hypothesis consists of a hypothesis for four samples and for two samples. The research hypotheses for the four samples are:

- H0: There is no difference in the average of the four score groups  
(English average I = English average II = English average for career = TOEFL average ( $\mu_1 = \mu_2 = 3 = \mu_4$ ))  
H1: There is a difference in the mean of the four groups of values

Meanwhile, the research hypotheses for the two samples are:

- H0: There is no difference in the mean of the two groups of values  
H1: There is a difference in the mean of the two groups of values

The two groups of scores in this case are (1) average English I with average English II, (2) average English I with average English for career, (3) average English I with an average TOEFL, (4) average English II with an average English for career, (5) an average English II with a TOEFL average, and (6) an average English for career with an average TOEFL average.

## FINDINGS AND DISCUSSION

### Findings

The determination of the chosen significance level is 5% ( $\alpha = 0.05$ ). The 5% significance level is used because it is considered adequate in comparing the two variables to be tested and is commonly used in social science research. Description of Data Values in English I, English II, English for Career, and TOEFL. Data scores for English I, English II, English for Career, and TOEFL from each of the 170 students were processed using SPSS software, and descriptive statistics were obtained (shown in Table 1), frequency distribution (shown in Table 2).

Table 1. Descriptive Statistics of Value

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					English I	170		
English II	170	73.2941	8.39318	.64373	72.0233	74.5649	55.00	85.00
English for Career	170	78.1997	6.45558	.49512	77.2223	79.1771	56.70	98.70
TOEFL	170	67.9674	8.31201	.63750	66.7089	69.2258	50.43	94.71
<b>Total</b>	<b>680</b>	<b>72.5638</b>	<b>8.55173</b>	<b>.32794</b>	<b>71.9199</b>	<b>73.2077</b>	<b>40.00</b>	<b>98.70</b>

Table 2. Frequency Distribution of Values

Score	English I Frequency	English II Frequency	English for Career Frequency	TOEFL Frequency
40-51	2	0	0	3
52-63	13	15	1	57
64-75	133	104	66	85
76-87	22	51	89	21
88-99	0	0	14	4
<b>Total</b>	<b>170</b>	<b>170</b>	<b>170</b>	<b>170</b>

Based on Table 1, there are differences in the average scores of English I, English II, English for Career, and TOEFL, with each standard deviation of 7.465; 8.393; 6.456; and 8.312. Table 2 shows that the results of most students' English I scores are in the class interval 64-75, with as many as 133 students. The results of most students' English II scores were in the 64-75 grade interval, which was 104 students. The results of most students' English for Career scores are in the 76-87 class value interval, which is as many as 89 students. The results of the highest student TOEFL scores are in the 64-75 class interval, which is as many as 85 students.

Second, the normality test is a population normality test, where the normality test of the data distribution is carried out using the One-Sample Kolmogorov-Smirnov Test. As a test criterion, if the significant value is more than 0.05, it can be said that the data is normally distributed. The normality test scores for English I, English II, English for Career, and TOEFL are shown in Table 3.

Table 3. Normality Test Value

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
English I	.248	170	.000	.865	170	.000
English II	.176	170	.000	.903	170	.000
English for Career	.059	170	.200*	.980	170	.014
TOEFL	.088	170	.003	.971	170	.001

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance

Based on Table 3, it can be concluded that only the English for Career score group has a normal distribution of data because it has a Sig score greater than 0.050, namely a Sig score of 0.200. Meanwhile, the other group data are not normally distributed.

Third, the homogeneity test is used to determine whether the population variance is the same or not. As a test criterion, if the significant value is more than 0.05, the variance of two or more data groups is the same. Basically, the homogeneity test is intended to show that two or more sample data groups come from populations with the same variance. The results of the homogeneity test of data scores for English I, English II, English for Career, and TOEFL using SPSS are shown in Table 4.

Table 4. Test of Homogeneity of Values

Levene Statistics	df1	df2	Sig.
6.460	3	676	.000

Based on Table 4, it can be seen that the data scores for English I, English II, English for Career, and TOEFL show a significance score of 0.00 because the significance score is less than 0.050. This means that the data to be tested has a variance that is not the same.

After testing the normality and homogeneity tests of the English I, English II, English for Career, and TOEFL scores showed that the data were not normally distributed and not homogeneous (basic assumptions were not met), so a hypothesis test was conducted using the Friedman test (for four samples) and Wilcoxon's test (for two samples). As Friedman's test criteria, if the significant value is less than 0.05, then it can be said that there is a significant difference in the mean of two or more data groups, and vice versa; if the significance value is more than 0.05, then there is no difference in the mean of the two data groups. or more groups. Friedman test processing results are shown in Table 5.

Table 5. Friedman's Test

N	170
Chi-Square	175.319
df	3
Asymp. Sig.	.000

a. Friedman Test

Table 5 obtained the value of Sig = 0.000 < 0.05. It shows that there are significant differences in the scores of English I, English II, English for Career, and TOEFL simultaneously. To find out more details about the composition of the differences that occur, further tests are carried out: (1) English I with English II, (2) English I with English for Career, (3) English I with TOEFL, (4) English II with English for Career, (5) English II with TOEFL, and (6) English for Career with TOEFL.

All of these tests were carried out using the Wilcoxon test. As a test criterion, if the significant value is more than 0.05, it can be said that the difference in the average of the two groups of values is the same, and conversely, if the significant value is less than 0.05, it can be said that there is a significant difference between the two groups of data.

Table 6. Wilcoxon Test

	English II - English I	English for Career - English I	TOEFL - English I	English for Career - English II	TOEFL - English II	TOEFL - English for Career
Z	-3.425 <sup>a</sup>	-9.146 <sup>a</sup>	-3.801 <sup>b</sup>	-6.373 <sup>a</sup>	-5.869 <sup>b</sup>	-9.719 <sup>b</sup>
Asymp. Sig. (2-tailed)	.001	.000	.000	.000	.000	.000

a. Based on negative ranks

b. Based on positive ranks

c. Wilcoxon signed ranks test

Table 6 shows that (1) the average scores for English I and English 2 differ significantly because the Asymp.Sig value =  $0.001 < 0.05$ . Table 1 shows that the average score for English I (70.79) is lower than the average score for English II (73.29). (2) The average score for English I and English for Career is significantly different because the Asymp.Sig score =  $0.000 < 0.05$ . Table 1 shows that the average score for English I (70.79) is lower than the average score for English for Career (78.2). (3) The average scores for English I and TOEFL differ significantly because the Asymp.Sig score =  $0.000 < 0.05$ . Table 1 shows that the average score for English I (70.79) is higher than the average TOEFL score (67.97). (4) The average scores for English II and English for Career differ significantly because the Asymp.Sig score =  $0.000 < 0.05$ . Table 1 shows that the average score for English II (73.29) is lower than English for Career (78.2). (5) The average scores for English II and TOEFL differ significantly because the Asymp.Sig score =  $0.000 < 0.05$ . Table 1 shows that the average score for English II (73.29) is higher than the average TOEFL score (67.97). (6) The average scores for English for Career and TOEFL are significantly different because the Asymp.Sig score =  $0.000 < 0.05$ . Figure 2 shows that the average score for English for Career (78.2) is higher than the TOEFL (67.97).

## Discussion

Based on the acquisition of the data analysis process that has been carried out, the results of this study indicate that there are significant differences in the English skills of graduates of STMIK Indonesia Padang in terms of the four English competencies provided, including English I, English II, English for Careers, and TOEFL. Based on the results of processing and analysis of structured data using the Friedman test and Wilcoxon test, it was obtained that the sig. is less than 0.05. This shows that there is a significant difference between the average scores of English I, English II, English for Career, and TOEFL either simultaneously or not. The average value of the four values is shown in Figure 2.

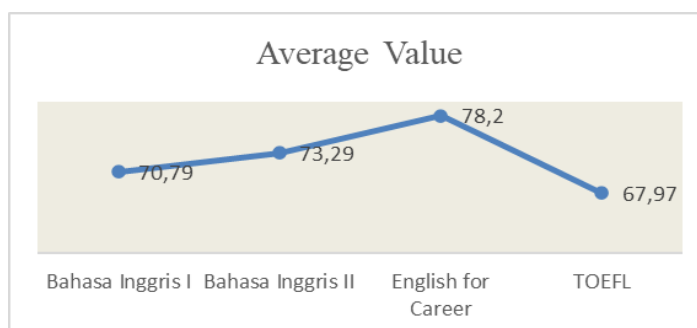


Figure 2. Average of All Values

Figure 2 shows a comparison of the average scores for all abilities: English I, English II, English for Career, and TOEFL. Based on the comparison data, the value of English I and English II shows that the average value of English II (73.29) is higher than English I (70.79). Judging from the learning process followed in line with the curriculum at STMIK Indonesia Padang in the Information Systems Study program, students study English I in semester 2 and English II in semester 3 for 16 face-to-face sessions. This means that students continuously obtain the learning process of English I and II. The focus of learning in the English I course is to improve students' communication or speaking skills associated with the world of technology because Information Systems students are required to be able to actively communicate using English. The difference in the student learning process in lectures which requires students to be more proactive in communication, makes the introduction of the English I course quite difficult for students because while in school, they study English in theory or passive English. This difference in the learning process of English I makes one of the factors for the low average score of 1 student in English. Meanwhile, English II focuses on continuing to improve English communication skills and learning

grammar in preparation for the TOEFL. Based on the statistical analysis carried out (Table 1 and Figure 2), the average value of English II of STMIK Indonesia Padang students is higher than English I because the implementation of English I and English II is continuously carried out so students already have basic skills that make it easier for them to practice speaking skills, plus an introduction to grammar. Thus, in English II, students tend to follow the lesson more easily.

The difference in value is then seen from the significant difference in the value of English 2 and the value of English for Career. Based on Figure 2, the average value of English II (73.29) is lower than English for Career (78.2), or the value of English for Career is higher than English II. English for Career is not a compulsory subject to be followed by STMIK Indonesia Padang students. English for Career is additional material provided as intensive training for five face-to-face meetings in the final semester after a comprehensive exam. Students are provided with this training with the material provided, namely speaking in the face of a job interview and how to prepare to make a cover letter and curriculum vitae according to the correct and creative content both in hardcopy and electronic form. In the training process, they are very focused and follow the process well because, in the near future, they will face the situation of the world of work after graduation. Moreover, by having passed the process of English courses I and II with the same goal and the existence of an English club organization on the STMIK Indonesia Padang campus, it will make it easier for students to improve their skills in English for Career so that the value obtained by students is also significant because they are still honing their communication or speaking skills.

Finally, the significant difference in English for Career scores with TOEFL scores shows that the average English for Career score is higher than TOEFL (shown in Table 1 and Figure 2). The TOEFL program is an additional program that is provided in the form of intensive training for 20 face-to-face meetings in the final semester after a comprehensive exam. The scope of the material in this TOEFL training is Listening, Written expression (Grammar), and Reading. At the end of this training program, students will take the TOEFL prediction test. Based on the results of the scores that students get, many students' TOEFL scores are still in the low-value category. Furthermore, based on the results of the program evaluation, students stated that it was difficult to understand the three TOEFL materials given because the training time range was short, so that not all tips and tricks in answering TOEFL questions were quickly understood by students.

There is an increase in the value that occurs from the English value of 1 to the value of English for Career. Besides, there was a decrease in scores from English for Career to TOEFL. In comparison, the TOEFL is an important value for prospective graduates. These results indicate that the program to improve the English language skills of prospective graduates has not achieved satisfactory results. Therefore, comparing criteria for success in learning English 1 and English 2 with a score of 70.7 and 71.0 shows that students' oral communication and writing skills are still categorized at the basic ability or the lowest level. Furthermore, the ability of English for Career shows an increase in ability, although it is not significant with the number 79.0. It proves that English 1 and English 2 courses have an effect on improving students' English skills, especially in speaking. Finally, the TOEFL score of 67.9 indicates that English courses 1 and 2 have little impact because the learning achievements of these two courses focus on speaking skills, while TOEFL requires comprehensive abilities, namely Listening, Grammar, and Reading.

## CONCLUSION

The results of the test statistics obtained show that the value of sig. is less than 0.05. It shows that there is a significant difference between the average scores of English I, English II, English for Career, and TOEFL, either simultaneously or not. Based on descriptive statistics, it was found that the difference did not indicate an increase in the average score on English language skills. Some recommendations that can be made in improving English include (1) the implementation of training that is carried out continuously, not only at the beginning of the semester and at the end of the semester for students, (2) increasing the practice of communicating English such as participating in debate competitions, storytelling, and speech.



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