

# **A CORRELATION STUDY ON STUDENTS' ACHIEVEMENT OF ENGLISH AND INFORMATION TECHNOLOGY MASTERY**

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## **ABSTRACT**

This study aims (1) to investigate students' achievement in English, (2) to investigate students' mastery of Information Technology, and (3) to determine the correlation between two groups of data. The research applied descriptive quantitative approach and the samples are 43 students of Information System in the third semester of STMIK AKBA. The instruments are the final score of English and a subject related to information technology subject, Basic Data System. The result of the research showed that there are 42 (97.68 %) students passed the English subject and only 1 (2.32%) was fail. While information Technology subject, there are 41 (95.12 %) students passed and only 2 (4.64%) students didn't pass. And, the data indicated the significant positive correlation between students' English achievement and Information Technology mastery with comparison of the significance is  $0.033 < 0.05$  and between  $r$  test and  $r$  table ( $0.326 > 0.30$ ).

## **INTISARI**

*Tujuan penelitian ini yaitu (1) mengetahui kemampuan Bahasa Inggris mahasiswa, (2) mengetahui kemampuan teknologi informasi dari mahasiswa, dan (3) mengetahui korelasi antara kedua data. Data analisis menggunakan pendekatan deskripsi kuantitatif dengan sampel 43 mahasiswa dari jurusan Sistem Informasi di semester tiga STMIK AKBA. Instrument yang dipakai adalah nilai akhir dari mata kuliah Bahasa Inggris dan salah satu mata kuliah yang berhubungan dengan Teknologi Informasi, Sistem Basis Data. Hasil penelitian menunjukkan bahwa terdapat 42 (97.68 %) mahasiswa lulus dan 1 (2.32%) mahasiswa tidak lulus dalam mata kuliah bahasa Inggris. Di sisi lain, Mata kuliah teknologi informasi terdapat 41 (95.12 %) mahasiswa lulus dan hanya 2 (4.64%) mahasiswa yang tidak lulus. Dan, data juga menunjukkan bahwa terdapat korelasi signifikan yang positif antara kemampuan Bahasa Inggris mahasiswa terhadap kemampuan teknologi informasi mereka dengan perbandingan signifikansi  $0.033 < 0.05$  antara perbandingan  $r$  hitung dan  $r$  tabel ( $0.326 > 0.30$ ).*

## **INTRODUCTION**

People get socialized with others both in their own countries and from overseas in many aspects of life such as education, economy, politics etc. Then, Technology takes role to connect people who live in different and distant area to exchange information in order to get the latest one. The increasing number of population makes the need of social network also increases fast

Hamzah & Nina (2011:57) pursued tha information technology is a technology which used to process data including processing, analazing,, storing and manipulating data in order to get acurate information. Information technology (IT) is a discipline related to basic-based information systems in hardware, operating system (OS), application/software and data that is used to get an output called information. IT closely related to every part of business or personal life assists to provide accurate and fast analysis of information. In other meaning, having good proficiency in IT helps us to pursue information which is essential to decide the strategies that should be taken for the problem faced.

Accessing information using technology need many kinds of computing devices including laptops, mobile phone, tablets. Those devices are produced by various countries namely Korea, Japan, China, America. Where Every product is completed with manual whose language mostly used English. Basically, the use of English is not only attached in devices but also to the program applications and system of the device. Pudyastuti (2014) stated that most of computer programming are designed by using English. Therefore, English proficiency is needed to easily understand all the instruction given on computing devices or application. In Addition, Dang (2013) stated that English language education is one important factor in mastery information technology. The level of English competence of students influences the capability of the students to increase their capability in mastery information technology. The higher level of English competence they have, the better competence of information technology they get.

The students of Computer Science majoring Information System, of course, take a lot of subjects related to information technology. In STMIK AKBA, English is taught from semester 1 (one) to semester 4 (four) including basic English and English for Specific Purpose (ESP). The students spend a lot of time to involve with English and Subject related to IT. This research investigates the correlation of students' English achievement and the mastery of information technology

### **I. OBJECTIVES**

This study aims (1) to investigate students achievement in English, (2) to investigate students' mastery of Information Technology, and (3) to determine the correlation between students achievement in English and information technology mastery

## **II. LITERATURE REVIEW**

### **Information technology**

Information technology is a technology that functions to process data including setting, storing and manipulating data in various ways to offer useful and accurate information (Zulfa;2010). IT is essential aspect for human being in constructing relationship with technology and their social life related to economy, education, politics and culture. According to Meriam-Webster. Com Dictionary, “information technology is the technology involving the development, maintenance and use of computer system, software and networks for the processing and distribution of data”.

According to another scholar (Attaran 2003) ,“Information technology is defined as capabilities offered to organizations by computers, software applications, and telecommunications to deliver data, information, and knowledge to individuals and processes”. Besides that, information technology can be defined as recently it is stated by Tan et al. (2009) as application of Information and Communication Technologies tools including computer network, software and hardware required for internet connection.

### **The importance of information technology**

Alsayed & Bilgrami (2017) stated that Information technologies get well improved to modern society in all aspects of people life including education, commerce, engineering and entertainment. They believed also that people recently live more conveniently compared with previous life where the use of information technology was not as wider as now. Nevertheless they admit that technology has positive and negative side. The intelligence and ethical belief will guide the users to use technology wisely in order to emerge the positive effect of technology. The lack of intelligence and ethics will cause more negative impacts to the users and people around them.

Furthermore, Reza, Ghaznawi,& Alemeh (2011) offered that information technology has become inseparable part of community life especially in education aspect. The educators try to involved technology in their classroom instructions to pursue better result of students’ learning. They use various media such text, audio, video etc. to provide interesting strategies to deliver materials to the students. Additionally, Zoghipour & Ghaffari, (1384: 14) cited in Reza (2011) stated that because of the technology involvement in education sector trigger the country to equip the educational institution with computer and internet connection.

It is clearly understood that information technology is very beneficial in conducting all activities without spending much time and money with high performance. The collaboration between computing devices and internet connection make everything done fast, cheap and freely.

### **English Language and its Importance**

The long story of English language then become the most spoken language in the world. McCrum, Cran & MacNeil (1986) noted that the English story started from more than two thousand years ago until the present day when English is attached in commerce, science, education, technology and popular culture and it is used by almost one billion people. They even believed that English has become the language of the planet. It is not only as means of communication but also it has been encountered for informal daily vocabularies.

Furthermore, The existence of English as global language makes some non-English speaking countries encourage its citizen to master English. The massive programs are designed to learn the second or foreign language successfully. Brown (1994) believed that learning a new language is not easy step to reach high competence. The learners should struggle to involve totally with new language, way of thinking, feeling, acting , new culture.

Due to the importance of English language in global era, Skonivas (2019) postulates elements where English plays big role. They are science and technology, education, business, employment, travel and tourism, and Press media.

### **Correlation between English and information technology**

International English proposes the borderless relationship among people with different backgrounds such as businessman, educators, technologist and scientist. It is supported by the fast development of information technology that make the border of the counties disappear. English and technology become very close friends to conquer the world. Those who posse high competence in English and good skill in information technology will get the key of success in life. English can be essential tool to master the information technology that can lead to reach great achievement. Various computing devises and program software use Manuals written in English so the better English competences people have, the higher mastery of information technology they get (Vladislav)

Furthermore, Englishhelper wrote that English has become the lingua franca of internet. The vocabularies related to technology are mostly presented in English when the technology start booming with internet connection. Information stored are English. There are some vocabularies then appeared after the technology get closed with us. Social media is one example word tha now become familiar in our daily life and mostly used in having contact with others even from distant area (Tamra, Mandala & Mursalim 2019;106). In addition, it is also functioned in English language learning to produce interesting approaches of learning that lead the students to enjoy the learning process.

### **III. HYPOTHESES OF THE STUDY**

The hypotheses of this study are (1) Hypotheses Ho : there is no significant positive correlation between students' English achievement and Information Technology mastery in semester 3 of STMIK AKBA students in academic year 2020-2021. And, (2) Hypotheses Ha:: there is significant positive correlation between students' English achievement and Information Technology mastery in semester 3 of STMIK AKBA Makassar students in academic year 2020-2021.

#### IV. METHODOLOGY OF RESEARCH

**Research Design.** The research applied a quantitative approach using descriptive correlation to investigate the effect of students' English achievement toward information technology mastery. Students' English achievement in this study was categorized as independent variables, while information technology mastery was categorized as dependent variable.

**Population and Sampling.** The study was conducted in STMIK AKBA Makassar involving 130 students of Information System who register in the third semester. Total population is 130 students. The samples were 43 sample which were taken through purposively sampling technique

**Research Instruments.** The final score of semester III of English and a subject of information technology were used to analyze the influence of English achievement and Information technology mastery. The data were analyzed by using IBM Statistical Package for Social Science (SPSS) 20. Research Objective 1 is presented in descriptive data. And Research objective 2 is also presented descriptively. The data are then interpreted based on the institution standard of final scoring which can be seen in table 1 (STMIK AKBA, 2020;24)

**Table 1 : List of Scoring Standard**

Score Range	Mark	Value
$\geq 85\%$	A	4
80% to 84 %	A-	3.7
75% to 79 %	B+	3.3
70% to 74 %	B	3
65% to 69 %	B-	2.7
60% to 64 %	C+	2.3
55% to 59 %	C	2
45% to 54 %	D	1
$< 44\%$	E	0

Nevertheless, Research question 3 is presented in using person correlation as the most common tests now to measure a lot of analyses to take the conclusion from the data obtained. Steps taken to carry out the Pearson correlation test are

- a. **Specifying the hypotheses.** There are two kinds of hypotheses i.e  $H_0$  and  $H_1$ .  $H_0$  means that there is no correlation of two groups of data tested while  $H_1$  means that there is correlation between two groups of data tested in the recent study. The correlation interpretation both negative and positive shall refers to the table 2 (Sugiyono; 2013 )

**Table 2 : Interpretation of Correlation Level**

Size of Correlation	Interpretation
0.00 to 0.199 ( 0.00 to – 0.199)	Neglible correlation
0.20 to 0.399 (-0.20 to -0.399)	Low positive (negative) correlation
0.40 to 0.599 (-0.40 to -0.599)	Moderate positive (negative) correlation
0.60 to 0.799 (-0.60 to -0.799)	High positive (negative) correlation
0.80 to 1.000 (-0.80 to – 1.00)	Very high positive (negative) correlation

- b. **Specifying the significance level.** Significance level is the standard to accept or refused the hypotheses and here this study apply mostly used significance level i.e 5% or 0.05.
- c. **Applying test criteria.** The test criteria are if the significance is higher than 0.05,  $H_0$  is accepted but if significance is lower than 0.05,  $H_0$  is rejected.
- d. **Comparing significance test.** The result of the test is compared to the significance level chosen, 0.05.
- e. **Taking conclusion.** Conclusion is taken by considering the result of comparison between r test and significance level to decide accepted or rejected.

## V. FINDING & DISCUSSION

The data of the study were the final score of English and one subject related to information technology in semester 3 from 43 of STMIK AKBA Students in majoring Information System. There are two variables i.e. variable X and variable Y. Variable X is students' English achievement that reflected from the final score and Variable Y is students' mastery of information technology that reflect from final score of one subject related to information technology. The students' final score of English and Basic Data system, are analyzed based on homogeneity, normality and linearity test as prerequisite test before conducting deep analyses of data.

### **Descriptive Data of Student's Achievement of English**

The data of English score are analyzed to get mean, ideal mean, standard deviation and ideal standard deviation. The descriptive statistics of English subject which were analyzed by utilizing the IBM Statistical Package for Social Science (SPSS) 22 can be seen in table 3.

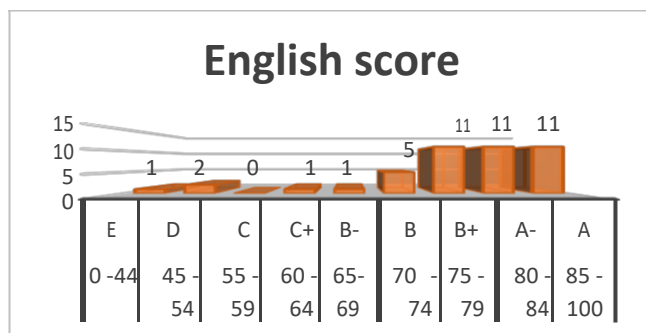
**Table 3 : Descriptive Statistics of English Subject**

	Number of Data (N)	Minimum score	Maximum score	Mean	Std. Deviation
English	43	47.00	88.00	76.79	10.04

Table 3 shows that the mean of students' English achievement is 76.79 with standard deviation 10.04. The ideal mean is measured by using the formula 60% of the maximum score ( $60\% \times 88 = 52,8$ ) while the ideal standard deviation is gotten by using the formula  $\frac{1}{4}$  of ideal mean ( $\frac{1}{4} \times 52.8 = 13.2$ ). It can be seen that mean is higher than ideal mean ( $76.79 > 52.8$ ).

The data of English score then are presented in bar chart. It can be seen in

Figure 1.



**Figure 1. Students' English Score**

The data shows that the maximum score is 88 and the minimum score is 47. There are eleven (25.58 %) students get the highest score and one (2.32 %) student get the lowest score the variable data of Students' English achievement then categorized using the scoring standard of STMIK AKBA (Table 1). The students pass the subject when getting 45 – 100 . Yet, when students get 0-44, they are categorized fail (E) in that subject so they should apply the same subject for the next year. Those scores are presented in A, A-, B+, B, B-, C+, C-, D and E. . Students passing the subject are 11 students (25.58%) got 85-100 (A) , 11 (25.58%) students got 80-84 (A-), 11 (25.58%) students got 75-79 (B+), 5 (11,6%) students got 70-74 (B), 1 (2.32%) student got 65-69 (B-), 1 (2.32%) student got 60-64 (C+) and 2 (4.64%) students got 45-54 (D).In conclusion, there are 42 (97.68 %) students passed the English subject and only 1 (2.32%) student didn't pass.

Even though, the students who get D can be included as passed students, they are still considered as low achievement students. It is related to the rules of

institution about the limitation number of score D when they prepare for graduation. Three Maximum subjects with D are accepted. C is also low score because when having more C will influence students GPA (Grade Point Average). Low GPA in certificate will influence the students to find job or to pursue higher education. Dividing the score into three levels (high/B+,A-,A, moderate/ C+, B-, B and low/ E,D,C), there are 33 of 43 (76,56 %) students who possessed high achievement, 7 of 43 (16.24 %) students who possessed moderate level of score and 3 of 43 (6.96%) students who are in low score. The data showed that only small number of students got low score for English subject in semester 3 in academic year 2020-2021.

**Descriptive data of Students’ mastery of Information Technology**

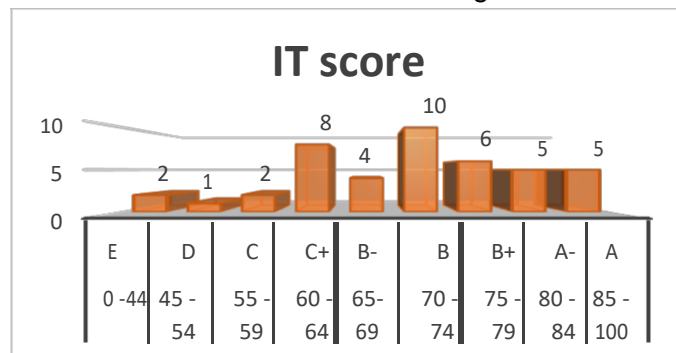
Table 4 shows that the mean of students’ mastery of Information Technology is 69.60 with standard deviation 14.75. The ideal mean is measured by using the formula 60% of the maximum score ( $60\% \times 95 = 57$ ) while the ideal standard deviation is calculated by using the formula  $\frac{1}{4}$  of ideal mean ( $\frac{1}{4} \times 57 = 14.25$ ). It can be seen that mean is higher than ideal mean ( $69.60 > 57$ ).

The data of students’ mastery of IT score then are presented in bar chart. The detailed information can be seen in Picture 2.

**Table 4 : Descriptive Statistics of IT Subject**

	Number of Data (N)	Minimum score	Maximum score	Mean	Std. Deviation
IT	43	10.00	95.00	69.60	14.75

The data of students’ mastery of IT score then are presented in bar chart. The detailed information can be seen in Figure 2.



**Figure 2: IT Score**

The data shows that the maximum score is 95 and the minimum score is 10. There are 5 (16.5 %) students get the highest score and two (4.64 %) students get the lowest score. the variable data of Students’ IT mastery are then categorized using the scoring standard of STMIK AKBA (Table 1). Students passing the subject are 5 (11.5%) got 85-100 (A) , 5 (11.5%) students

got 80-84 (A-), 6 (13.92%) students got 75-79 (B+), 10(23.2%) students got 70-74 (B), 4(9.28%) students got 65-69 (B-), 8 (18.56%) students got 60-64 (C+), 2 (4.64%) got 55-59 (C) and 1 (2.32%) students got 45-54 (D).In conclusion, there are 41 (95.12) %) students passed the English subject and only 2 (4.64%) student didn't pass.

Based on the level of achievement (high/B+,A-,A, moderate/ C+, B-, B and low/ E,D,C), the achievement of IT subject showed that there 16 of 43 (36,8 %) students who possessed high achievement, 22 of 43 (51.04 %) students who possessed moderate level of score and 5 of 43 (11.6%) students who are in low score. The data of IT mastery showed that only small number of students (about 11.6%) got low score in semester 3 in academic year 2020-2021.

**The correlation between Student's Achievement of English and information technology mastery**

**Test of Homogeneity of Variance.** The Test of Homogeneity of Variance of the data in this study use the IBM Statistical Package for Social Science (SPSS) 22. Table 3 shows the result of homogeneity test of the data.

**Table 5 Test of Homogeneity of Variances**

Variable	Levene Statistic	df1	df2	Sig	Conc.
English achievement and IT mastery	1.037	10	29	0.438	homogeneous

The data is homogeneous if  $F_{test} > F_{table}$ . It can be seen from table 5 that homogeneity significance is 0.438 which is higher than 0.05. Therefore, the conclusion is the test shows the homogeneity of the variance of English achievement and IT mastery with Levene statistic 1.037

**Test of Normality** .The test of normality is carried out by applying the IBM Statistical Package for Social Science (SPSS) 22 to measure the normality of data distribution. The tested data are English achievement and IT mastery in the form of the final score of students semester 3 in STMIK AKBA Makassar. The result is presented in table 6.

**Table 6 : Test of Normality**

Variable	N	Sig	Sig. level	Conc.
English achievement	43	0.093	5% (0.05)	normal
IT mastery	43	0.093	5% (0.05)	normal

The data shows that variables of English achievement and IT achievement are 0.093 with the level of significance is 0.05. Therefore, both the variables are distributed normally.

**Test of Linearity.** This test utilized (SPSS) 22 in order to find the regression line. Table 7 presents the result of linearity test.

**Table 7: Test of Linearity**

Variable	Db	F test	Sig.	Conc.
English achievement and IT mastery	15:26	1.686	0.118	linear

Based on the output of significance (sig) in table 5, the deviation score from linearity sig is 0.118 which is higher than 0.05 (sig level). It can be concluded that variable X and Y are linear. Moreover, output of F test shows lower than F table; F test 1.686 < F table is 2.07.

After conducting the pre requisite test (test of homogeneity, normality and linearity) as a requisite to do statistical analysis, the result showed that data of English achievement and information technology mastery are homogenous, normal distributed and having linear correlation. The results indicated that the data were feasible for next analysis i.e. proposed hypotheses test . the hypotheses of this study is there exist correlation between English achievement and information technology mastery of STMIK AKBA students in semester 3 of academic year 2020-2021. The data are then analyzed by applying correlation technique of Pearson where the results of the test is presented in table 8.

**Table 8: Pearson Correlation coefficient Test**

Variable	N	Sig (2-tailed)	r test	r table	Conc.
English achievement and IT mastery	43	0.033	0.326	0.30	Significant positive correlation

The used data in this correlation test are final score of English subject and Basic Data system. Both data were analyzed by using Pearson correlation test in SPSS 22. The significance correlation analysis results of English achievement and Basic data system is 0.033. Both comparisons of the significance is 0-033 < 0.05 and comparison between r test and r table (0.326 >0.30) shows that Ho is rejected. It means that there is significant influence of students' English achievement to IT mastery. Furthermore, The positive r test indicates positive correlation meaning the higher the English achievement of

the students, the better mastery of information technology the students get. When referring to the interpretation of the correlation test in table 2, the result is interpreted as low positive correlation.

In conclusion, the hypothesis H1 is accepted “ there is positive significant between English achievement and IT mastery of semester 3 of STMIK AKBA in majoring Information System in academic year 2020-2021 students” with coefficient correlation 0.326.

The low correlation between English achievement and IT mastery of students is closely related to students' activity in mastery the subjects, . English and IT are offered to improve students' skills. Otherwise, students should spend much time to practice the skills given. The more practice the learners do, the more skilful they will be. Furthermore, it is undeniable that Vocational School such as STMIK AKBA must provide more opportunities for the students to improve their capability in English. It is due to the improvement of other subjects related to IT mastery based on the result of this study.

## VI. CONCLUSION

The conclusions of the study are stated as follows:

1. Descriptive data of English subject shows that minimum score is 47, maximum score is 88 with mean score 76.79. There are 42 (97.68 %) students passed and only 1 (2.32%) student didn't pass.
2. Descriptive data of Information technology subject shows that minimum score is 10, maximum score is 95 with mean score 76.79. There are 41 (95.12 %) students passed and only 2 (4.64%) student didn't pass.
3. The hypotheses Ho is rejected. There is significant positive correlation between students' English achievement and Information Technology mastery with comparison of the significance is  $0.033 < 0.05$  and between  $r$  test and  $r$  table ( $0.326 > 0.30$ ) . Yet, the level of significant correlation is categorized low positive correlation

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