

The Effect of Using Charts on Students' English Speaking and Writing Ability

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Abstract

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The research problem of the study was how the implementation of using chart in teaching speaking and writing, while the objective of the study was to find out the significant effect of using chart on students' English speaking and writing ability. The study used a quasi-experimental design with pre-test and post-test. The participants of the study were 70 students. The data was analysed using independent sample t-test and paired sample t-test. Eta square formula also used to find an indication of the magnitude of the differences between the groups. Based on the data processing, the finding showed that there was a significant effect of using chart on students' English speaking and writing ability. The research finding showed that conducting the treatment by using chart gives significant effect 89% on the students' speaking ability and 92% on the students' writing ability. Based on the result of the research, it can be conclude that using chart is one of the ways which can be used by educators to improve students' speaking and writing skills.

Kata Kunci:

Bagan,
Kemampuan Berbicara,
Kemampuan Menulis

Abstrak

Masalah dalam penelitian ini adalah bagaimana penerapan penggunaan bagan dalam pengajaran Bahasa Inggris untuk kemampuan berbicara dan menulis, sedangkan tujuan dari penelitian ini adalah untuk mengetahui pengaruh signifikan penggunaan bagan terhadap kemampuan berbicara dan menulis bahasa Inggris mahasiswa. Penelitian ini menggunakan desain quasi eksperimen dengan pretes dan postes. Sampel dalam penelitian berjumlah 70 mahasiswa. Analisis data menggunakan uji Independent Sample T-test dan Paired Sample T-test. Rumus eta kuadrat juga digunakan untuk mencari indikasi besarnya perbedaan antar kelompok. Berdasarkan pengolahan data, hasil yang ditemukan

menunjukkan bahwa terdapat pengaruh yang signifikan dalam penggunaan bagan terhadap kemampuan berbicara dan menulis bahasa Inggris mahasiswa. Hasil penelitian menunjukkan bahwa pengajaran dengan menggunakan bagan sebagai media atau materi memberikan pengaruh yang signifikan sebesar 89% terhadap kemampuan berbicara mahasiswa dan 92% terhadap kemampuan menulis mahasiswa. Berdasarkan hasil penelitian tersebut dapat disimpulkan bahwa penggunaan chart merupakan salah satu cara yang dapat dilakukan oleh kalangan pendidik untuk meningkatkan kemampuan berbicara dan menulis mahasiswa.

INTRODUCTION

English speaking and writing skills should be mastered well in order to communicate well. English is the most common language spoken everywhere. Therefore, the importance of English cannot be denied and ignored. Concerning that fact, English is very important to be learned by whomever. In line with Ilyosovna (2020:23) “With the help of developing technology, English has been playing a major role in many sectors including medicine, engineering and education, which, in my opinion, is the most important arena where English is needed.” Based on the statement, it is clear that English has an important role as the international communication media that is not only a tool of communication for each school in countries in the world, but also as tool of communication in politics, economy, education, etc.

English is also one of the foreign languages which is taught at most institutions of education in Indonesia. It begins from the lowest level to the highest level, such as in kindergarten, elementary school, junior high school, senior high school and university. Based on some curriculum and BNSP of Indonesia, English is a subject being taught from primary schools up to university.

In learning English, there are four skills which must be mastered, they are: listening, speaking, reading and writing. Listening and reading skills are used for understanding and comprehending what people say or write. While, speaking and writing skills used for participating, submitting information, solving problem, and expressing what people want to express.

Most of students think that learning English is difficult, they have problem in understanding grammar especially tenses. It has been proved by their scores of English achievements. Most of students' English achievements are still insufficient. It caused by their knowledge in understanding and mastering tenses are still weak. Suryanto and Sari (2021:314) say "Even though English language is an international language, students still have many problems in learning English language." Based on the statement, it is clear that English is not easy. They need more proses and deep thinking to understanding the English lessons. Because of the difficulties of English, the teachers should have some strategies which can be done to improve students' English ability especially in speaking and writing.

Rianti et al. (2022:3705) "Chart is a suitable strategy to use in teaching writing, because the strategy is designed as attractive as possible, simple, and effective." Chart is one of easy ways to make students speak and write easily. Students can simply express their mind using chart directly in speaking or indirectly in writing. Using chart simplify students to speak and write some sentences based on tenses.

Bowen (1994:13) states that wall chart is large card displaying diagram or picture. And then, Doff (1988:87) explains that wall chart is large sheet of paper or card with writing, picture or diagrams which the teacher can either hold up for the class to see or display on the wall or blackboard used for more extended presentation or practice. Another definition is stated by Duminy (1992:17) that wall charts are collections of pictures, diagram or graphs, on large sheets of strong paper. Based on the definitions above, it can conclude that chart is a picture consist of some organized short information. Chart is useful to present some main information about some topics in learning. Chart gives simple information in understanding the materials. The teachers can use chart to explain the materials or information easily and completely.

According to Bowen (1994:13), there are some factors to select a good chart, as follows: 1) Appeal The picture should capture the interest and imagination of students; 2) Relevance The picture should be appropriate for the purpose of the lesson. It must contribute directly to the aim of lesson; 3)

Recognition The significant features of picture should meet the students' prior knowledge and cultural understanding; 4) Size The wall charts must be large enough to be seen clearly by all students in the classroom. For pair and group work, the picture can be smaller; 5) Clarity The relevant details must be clearly seen. The picture must have the strong outline and contrast in tone and color to avoid ambiguity.

According to McCarthy (1989:4) there are some advantages of chart, as follows: 1) Easy and inexpensive to make update; 2) Helping the speaker proceed through the material; 3) Good for interaction with audience; 4) Conveying information in addition; 5) Quick way for the audience; 6) Emphasizes main point; 7) Proves a point; 8) Compact way to convey information; 9) More interesting than just talk or point.

The research finding conducted by Nora Fitria, Samsu Ali, and T.M. Rafsanjani entitled "The Use of Wall Charts in Instruction to Improve the Eighth Grade Students' Vocabulary Mastery" (2020:726) showed that The implementation of the media can increase the students' vocabulary mastery. Furthermore, the research finding conducted by Lilis Patria, Sudarsono, and Eni Rosnija entitled "The Use of Wall Charts as Media to Teach Vocabulary" (2020:169) showed that the implementation of wall chart is a good medium for learning English vocabulary. The last, research finding conducted by Melanie Selvaraj and Azlina Abdul Aziz entitled "Utilizing Flow Chart in Writing Narrative Essay: English as Second Language Students' Perceptions" (2020:2) showed that the students are positive towards using the flowchart in the process of planning narrative writing.

Based on the theories and the results of the researches, it is clear that using chart has positive effect in teaching and learning English. What make this study different from previous research is speaking and writing ability. In some researches, using chart also used on students' writing ability, but none of the research focus on students speaking and writing ability.

Pertaining to preliminary research at Institute Technology and Business of Indragiri, it was found that all of the students have been studying English for more than twelve years. After learned English the students must have good ability in English. Beard and Wilson (2006:240) “When we as individuals learn something we add or change some of the neuronal connections within our brains.” It means that after the students have learned something, their ability or knowledge should increase. They add or change their mind, knowledge and ability became better than before. But based on the observation at Institute Technology and Business of Indragiri, it was observed that even though the students have been studying English since elementary school or more than twelve years, but most of the students still have problems in English especially in speaking and writing texts. The students of Institute Technology and Business of Indragiri have studied English for long time, but their scores in writing are still insufficient. That problem can be based on the background of English knowledge of the students or the difficulties of those lessons. Even though they have been studying English for long time, but their scores seem far from the target of the curriculum and standard competency which expect the students are able to express their idea orally or in writing. Base on the theory gap explained, it necessary to conduct a research using charts to improve students’ speaking and writing skills.

METHOD

The research design used in this study is Quasi-Experimental research which compare control group and experimental group to find the significant difference and effect of the strategy used. Nunan (1992) “Experiments are designed to collect data in such a way that threats to the reliability and validity of the research are minimised.” And Cresswell (2009) states that the purpose of experimental research design is to test an idea or procedure to determine whether it influences dependent variables. In addition, an experiment is the quantitative approach that provides the greatest degree of control over the research procedures. It is appropriate to the purpose of the study in which this research is conducted to find the differences of using chart on students’ speaking and writing ability.

The population of this research was the first year students of Institute of Technology and Business of Indragiri. There were six classes consist of 291 students. Two classes were taken as participants in this study. One class is as an experimental class and one class as a control class. Cluster sampling was used to determine the sample because it is impossible to disturb the teaching learning process. Parmjit (2006:128) “cluster sampling refers to randomly selected groups have similar characteristics.”

FINDINGS AND DISCUSSION

The students in experimental and control groups were given pre-test before giving treatment. Then, the treatment by using chart was given to the experimental group and none treatment was given to the control group. After that, the two groups were given post-test to obtain the progress of the groups. The data of students' pre-test and post-test of experimental and control group were analyzed by using SPSS statistical analysis. The result of pre-test and post-test were analyzed by using independent sample t-Test and paired sample t-Test. Pallant (2010:239) stated that independent-samples t-test is used for comparing the mean scores of two different groups of people or conditions. And paired-samples t-test is used for comparing the mean scores for the same group of people on two different occasions, or for matching pairs.

The Differences of Students' Speaking Ability Pre-Test Mean Score between Experimental Group and Control Group.

The following table shows the analysis results of students' speaking ability pretest score between experimental and control group.

Table 1: The Analysis of Independent Sample T-test of Speaking Ability Pre-test Score between Experimental Group and Control Group

Subject		Levene's Test for equality of variace		T-test for Equality of Means			
		f	Sig	t	df	Sig. (2tailed)	Mean Difference
Pretest Experiment & Control Group	Equal variances assumed	1.389	0.243	1.043	68	0.300	1.200
	Equal variances not assumed			1.043	65.064	0.301	1.200

Based on Independent sample t-test analysis for pre-test speaking ability score of experimental group and control group on Table 1 above, **equal variances assumed** used when sig value for Levene's test is larger than 0.05 and **equal variances not assumed** used when sig value for Levene's test is smaller than 0.05. Sig value for Levene's test in the table 1 is $0.243 > 0.05$. It means that the first line in the table which refers to equal variances assumed is used.

Based on the analysis in the table, $\alpha = 0.05 < \text{sig. (2 tailed)} = 0.300$. It can be concluded that "There is no significant difference on the students' speaking ability pre-test mean score of using chart and students' speaking ability pretest mean score of using non chart." It could be determined that the subjects in both groups are equivalent before giving the treatment.

The Differences of Students' Writing Pre-Test Mean Score between Experimental Group and Control Group.

The following table shows the analysis results of students' writing ability pretest score between experimental and control group.

Table 2: The Analysis of Independent Sample T-test of Writing Ability Pre-test Score between Experimental Group and Control Group

Subject		Levene's Test for equality of variace		T-test for Equality of Means			
		f	Sig	t	df	Sig. (2tailed)	Mean Difference
Pretest Experiment & Control Group	Equal variances assumed	1.010	0.318	0.698	68	0.488	0.886
	Equal variances not assumed			0.698	60.356	0.488	0.886

Based on Independent sample t-test analysis for pre-test writing ability score of experimental group and control group on table 2 above, **equal variances assumed** used when sig value for Levene's test is larger than 0.05 and **equal variances not assumed** used when sig value for Levene's test is smaller than 0.05. Sig value for Levene's test in the table 2 is $0.318 > 0.05$. It means that the first line in the table which refers to equal variances assumed is used.

Based on the analysis in the table, $\alpha = 0.05 < \text{sig. (2 tailed)} = 0.488$. It can be concluded that "There is no significant difference on the students' writing ability pre-test mean score of using chart and students' writing ability pretest mean score of using non chart." It could be determined that the subjects in both groups are equivalent before giving the treatment.

The Differences of Students' Speaking Post-Test Mean Score between Experimental Group and Control Group.

The following table shows the analysis results of students' speaking posttest score between experimental and control group.

Table 3: The Analysis of Independent Sample T-test of Speaking Ability Post-test Score between Experimental Group and Control Group

Subject		Levene's Test for equality of variace		T-test for Equality of Means			
		f	Sig	t	df	Sig. (2tailed)	Mean Difference
Posttest Experiment & Control Group	Equal variances assumed	0.567	0.454	-2.228	68	0.029	-2.543
	Equal variances not assumed			-2.228	64.973	0.029	-2.543

Based on Independent sample t-test analysis for post-test speaking ability score of experimental group and control group on table 3 above, **equal variances assumed** used when sig value for Levene's test is larger than 0.05 and **equal variances not assumed** used when sig value for Levene's test is smaller than 0.05. Sig value for Levene's test in the table 3 is $0.454 > 0.05$. It means that the first line in the table which refers to equal variances assumed is used.

Based on the analysis in the table, $\alpha = 0.05 > \text{sig. (2 tailed)} = 0.029$. It can be concluded that "There is a significant difference on the students' speaking ability post-test mean score of using chart and students' speaking ability post-test mean score of using non chart." It could be determined that the subjects in both groups are not equivalent after giving the treatment.

The Differences of Students' Writing Post-Test Mean Score between Experimental Group and Control Group.

The following table shows the analysis results of students' writing posttest score between experimental and control group.

Table 4: The Analysis of Independent Sample T-test of Writing Ability Post-test Score between Experimental Group and Control Group

Subject		Levene's Test for equality of variace		T-test for Equality of Means			
		f	Sig	t	df	Sig. (2tailed)	Mean Difference
Posttest Experiment & Control Group	Equal variances assumed	1.931	0.169	-4.520	68	0.000	-4.800
	Equal variances not assumed			-4.520	65.217	0.000	-4.800

Based on Independent sample t-test analysis for post-test writing ability score of experimental group and control group on table 4 above, **equal variances assumed** used when sig value for Levene's test is larger than 0.05 and **equal variances not assumed** used when sig value for Levene's test is smaller than 0.05. Sig value for Levene's test in the table 4 is $0.169 > 0.05$. It means that the first line in the table which refers to equal variances assumed is used.

Based on the analysis in the table, $\alpha = 0.05 > \text{sig. (2 tailed)} = 0.000$. It can be concluded that "There is a significant difference on the students' writing ability post-test mean score of using chart and students' writing ability post-test mean score of using non chart." It could be determined that the subjects in both groups are not equivalent after giving the treatment.

The Significant Difference of Using Chart between Students' Pretest and Posttest Score.

The following table shows the analysis results of students' speaking and writing pretest and posttest score of using chart.

Table 5: Group Statistic of Speaking Pretest and Posttest Score of Experimental Group

Subject	Research Groups	N	Mean	Standard Deviation	Standard Error Mean
Experiment Group	Pre-test	35	55.94	4.270	0.722
	Post-tes	35	72.00	4.229	0.715

Table 6: The Analysis of Speaking Ability Pre-test and Post-test Score

Research Groups	Paired Differences			t	df	Sig (2-tailed)
	Mean	Std Deviation	Std Error Mean			
Pretest and Posttes of Experimental Group	-16.057	5.688	0.961	-16.702	34	0.000

Based on the analysis paired sample t-test on table 6 above, $\alpha = 0,05 > \text{sig. (2 tailed)} = 0.000$. It means that “There is a significant difference between the students’ speaking ability pre-test and post-test mean score of using chart of experimental group.” It could be determined that the students’s pre-test and post-tes score in experimental group are not equivalent.

Table 7: Group Statistic of Writing Pretest and Posttest Score of Experimental Group

Subject	Research Groups	N	Mean	Standard Deviation	Standard Error Mean
Experiment Group	Pre-test	35	53.09	6.180	1.045
	Post-tes	35	75.60	39.57	0.669

Table 8: The Analysis of Writing Ability Pretest and Posttest Score

Research Groups	Paired Differences			t	df	Sig (2-tailed)
	Mean	Std Deviation	Std Error Mean			
Pretest and Posttes of Experimental Group	-22.514	6.806	1.150	-19.572	34	0.000

Based on the analysis paired sample t-test on table 8 above, $\alpha = 0,05 > \text{sig. (2 tailed)} = 0.000$. It means that “There is a significant difference between the students’ writing ability pre-test and post-test mean score of using chart of experimental group.” It could be determined that the students’s pre-test and post-tes score in experimental group are not equivalent.

To determine the improvement of students’ ability on speaking text mean score is as follow:

$$\begin{aligned}\text{Improvement} &= \text{posttest mean score} - \text{pretest mean score} \\ &= 72.00 - 55.94 \\ &= 16.06\end{aligned}$$

To determine the percentage of students' speaking ability improvement is as follow:

$$\begin{aligned}\text{Improvement} &= \frac{\text{posttest mean score} - \text{pretest mean score}}{\text{pretest mean score}} \times 100 \% \\ &= \frac{72.00 - 55.94}{55.94} \times 100\% \\ &= \frac{16.06}{55.94} \times 100\% \\ &= 0.2870 \times 100\% \\ &= 29 \%\end{aligned}$$

The improvement of students' pretest mean score to students' posttest mean score is 16.06 or 29%.

Then, to find out the percentage of significant effect between pre-test and post-test of experimental group by looking for the effect size or eta-squared as follows:

$$\begin{aligned}\tilde{\eta}^2 &= \frac{t^2}{t^2 + n - 1} \\ \tilde{\eta}^2 &= \frac{(-16.702)^2}{(-16.702)^2 + 35 - 1} \\ \tilde{\eta}^2 &= \frac{278.956}{278.956 + 34} \\ \tilde{\eta}^2 &= \frac{278.956}{312.956} \\ \tilde{\eta}^2 &= 0.89\end{aligned}$$

$$\text{Eta-squared} = \tilde{\eta}^2 \times 100\%$$

$$\text{Eta-squared} = 0.89 \times 100\%$$

$$\text{Eta-squared} = 89\%$$

The result of data analysis based on eta square inferential statistics identified that conducting the treatment by using chart gives significant effect 89% on the students' speaking ability.

To determine the improvement of students' ability on writing text mean score is as follow:

$$\begin{aligned}\text{Improvement} &= \text{posttest mean score} - \text{pretest mean score} \\ &= 75.60 - 53.09 \\ &= 22.51\end{aligned}$$

To determine the percentage of students' writing ability improvement is as follow:

$$\begin{aligned}\text{Improvement} &= \frac{\text{posttest mean score} - \text{pretest mean score}}{\text{pretest mean score}} \times 100 \% \\ &= \frac{75.60 - 53.09}{53.09} \times 100\% \\ &= \frac{22.51}{53.09} \times 100\% \\ &= 0.4239 \times 100\% \\ &= 42 \%\end{aligned}$$

The improvement of students' pretest mean score to students' posttest mean score is 22.51 or 42%.

Then, to find out the percentage of significant effect between pre-test and post-test of experimental group by looking for the effect size or eta-squared as follows:

$$\begin{aligned}\tilde{\eta}^2 &= \frac{t^2}{t^2 + n - 1} \\ \tilde{\eta}^2 &= \frac{(-19.572)^2}{(-19.572)^2 + 35 - 1} \\ \tilde{\eta}^2 &= \frac{383.063}{383.063 + 34} \\ \tilde{\eta}^2 &= \frac{383.063}{417.063} \\ \tilde{\eta}^2 &= 0.92\end{aligned}$$

$$\text{Eta-squared} = \tilde{\eta}^2 \times 100\%$$

$$\text{Eta-squared} = 0.92 \times 100\%$$

$$\text{Eta-squared} = 92\%$$

The result of data analysis based on eta square inferential statistics identified that conducting the treatment by using chart gives significant effect 92% on the students' speaking ability.

CONCLUSION

The research finding showed that there was a significant effect of using chart on students' English speaking and writing ability. The research finding showed that conducting the treatment by using chart gives significant effect 89% on the students' speaking ability and 92% on the students' writing ability. It is recommended for the future research for conducting the application of chart in listening and reading skills.

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