The Impact of Text to Speech Software on Pronounciation for Students Senior High School

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Abstrak
Penelitian ini berjutuan untuk mengetahui pengaruh ucapan siswa melalui software text-to-specch ini dikembangkan di electrotechnical laboratiry, jepang pada tahun 1968. Penelitian inin menggunakan penelitian kuantitatif. Ini terdiri dari tiga langkah, yaitu pre-test, treatment, dan post-test. Subjek penelitian ini adalah seluruh siswa kelas x sirojut thalibin senior high school. Tesnya adalah pengucapan kata yang terdiri dari 20 kata pre-test dan post-test. Temuan penelitian menunjukkan bahwa text-to-speech signifikan dalam meningkatkan pengucapan siswa. Hal ini dibuktikan dengan skor rata-rata sebelumnya adalah 49,33 dan skor rata-rata setelah diberikan perlakuan adalah 78,67. Presentase peningkatannya adalah 59.47%. Artinya ada peningkatan terhadap pengucapan siswa.
Kata Kunci: Perangkat Lunak Text-To-Speech, Pengucapan, Diphtong

Abstract
The purpose of this research is to find out the effect of the student's pronunciation using text-to-speech software. This software was developed in an electrotechnical laboratory in Japan in 1968. This study used quantitative research. It consisted of wooden stairs for pre-, treatment and post-testing. The subjects of this study were all x scattered students of Thalib High School. The test was a spoken word consisting of 20 words for a pretest and a posttest. The result of the study showed that the text-to-speech function is important to improve students' pronunciation. This was demonstrated by the mean score before treatment 9.33 and after treatment 78.67. The recovery rate was 59. 7%. This means that the student's pronunciation will improve.
Keywords: Speech Conversion Software, Pronunciation, Diphthong

INTRODUCTION
English is the most important language in the world. Because English is a global language. It is spoken as a first or second language by many people around the world. English is also the key to scientific and technological knowledge, essential for the economic and political development of many countries in the world. English is the first requirement for job seekers. All schools in Indonesia teach English as a foreign language. It has been taught in educational institutions of all levels. When learning English, students need to learn four language skills, namely: listening, speaking and reading, and all English language skills are essential because all these skills are interrelated. This study will not focus on these four skills because they are used many times and require continuous effort. This research is only for one skill, speaking, and I chose the speech part as "Pronunciation". Pronunciation is an important aspect of the English language. According to Leohart (2018), pronunciation is the way in which a person or a language speaks in common. As a foreign language, English is difficult to pronounce because of the discrepancy between its symbols and pronunciation. In many cases, students understand the meaning but have difficulty articulating the words verbally because there are significant differences between the spelling and pronunciation of the words. In fact, according to the

author's experience, most students have difficulty speaking English because they have an extensive vocabulary and do not know how to pronounce it. Therefore, in teaching learning process most of students want to speak English in a good pronunciation, they want to have more media practice their English pronunciation not only from book or dictionary but also from the other media such as mobile phone, listen a song, or watch movie from television or from laptop.

Knowledge and The technology nowadays is become an important thing in human life. The technology has get into every aspects in our life including education aspect. For example, in the old days, people or students who learn foreign language is practicing how to pronounce a word by reading the sounds on the dietionary or listening to native speaker directly or by a certain recording and of course it's a little complicated to learn to pronounce a specific word. Text-to-speech software is a type of software used to learn pronunciation. Dutoit, T (1993) explains in his e-book that speech synthesis is the generation of speech by a machine that automatically transcribes sentences to be spoken. There are many reasons why someone might want to improve their pronunciation. At its core, clear articulation ensures clear communication, conveying confidence, competence and credibility. When doing business in an international environment, it is important to eliminate communication problems caused by differences in speaking styles. Text-to-speech programs like Google Translate can read any text in the accent and language of your choice. Start in English. French, German, etc. Google Translate is a text-to-speech conversion in any language. It works for a lot of people. Someone is learning a foreign language and wants to know how to pronounce it correctly, someone wants to practice reading in a foreign language, someone is too lazy to read long texts.They are translated for listening, not for reading.

Text-to-speech (TTS) software was originally designed to provide students with visual impairments access to printed texts until early proponents realized its potential for students with typing disabilities (Anderson-Inma & Horney- 2007). Elkind, Cohen, and Murray (1993) concluded that a text-to-speech program had a significant positive effect on reading comprehension in dyslexic students, but did not measure vocabulary size (as reported by Anderson Inma and Horney).

Wood, Moxley, Tighe, and Wagner (2018) concluded that using text-to-speech to present text orally had a positive effect on comprehension test scores for students with disabilities. Most studies used another text-to-speech program. The use of TTS not only benefits students with average IQ for comprehension, but also students with below average IQ (Lange, McPhillips, Mulhern, Wylie, 2006). The study by Lundberg, Montali and Lewandowski concluded that the frustration of inaccurate decoding for students with LD is reduced when text-to speech programs are used and text-to speech programs allow for a complete comprehension of text (as cited in Forgave). Schmit, Hale, McCallum and Mauck (2011), concluded from ther findings that the use of TTS for accommodating poor and dysfluent word decoding skills is not enough to improve reading comprehension of low-level readers when engenged with their grade-level material. Their study also conclude that the TTS program did not differently impact factual and inferential comprehension. On the contrary, Young from her findings, found that lowest readers benefitted more from TTS, as they outperform students with reading abilities not as low as theirs. Basically, in teaching, students communicate in foreign language understandably, the teacher's should be creative that can make the class enjoyable and interesting. As a result, students are excited and eager to learn. Researchers use text-to-speech software as a way to improve students' pronunciation, hoping that students will pay more attention and understand English pronunciation more easily than the teacher's during the teaching process.

This part deals with previous studies, especially those related to analysis, and there are three previous studies, the first by Dominicus Yabarmase and studies the Fishbowl strategy: an effective way to improve students' expressive skills, one using qualitative methods . According to the results of the survey, 26.6% of students passed the entrance test. After completing the fishbowl, 100% of the students in the class improved their speaking skills, as each had more opportunities to talk about things related to a particular topic. The second is Omar Fawzan's study on the use of improvisational techniques to improve the speaking skills of EFL students. Use qualitative methods. The results of the speaking test showed that students made progress, with the average pretest score increasing by 2.72 points, the average first round score increasing by 3.09 points and the average second round score round increasing by 3.76 points. These scores indicated the ability to move from "correct" to "good". The atmosphere in the classroom was also positive, with students actively participating in the teaching process, 6 % of students participated in the first year and 73.79% of students participated. In the second session. And the last is Muhammad saddam abubakar has studied Improving the second year students' speaking ability through project based learning (PBL) at MTSN Model Makassar, used qualitative methodes. The aims of this observation were to know the students" activity during the teaching and learning process, and to know the activeness of learning in improving the students" speaking ability, the second instrument was speaking test to measure the student"s speaking skill improvement, and the last instrument was questionnaire to know the students" attitude toward project based learning (PBL).

The difference between the author's research and previous research is through the method used by the author. Researchers are currently using The Impact of Text to Speech Software on Pronunciation for sirojuth thalibin Senior High School Students. Based on the previous background, the researcher formulated the research question as follow: (1) How is the impact of the students' pronunciation through the use of text-to-speech software at the student of sirojut thalibin Senior High School? (2) How do students pronounce correctly?

RESEARCH METHODS

Research methodology deals with how a particular method can be used to answer the research questions posed in the first chapter. According to Cohen, the Manion and Morrison 6 method is a strategy used in academic research to gather facts that can be used as a basis for inference, interpretation, interpretation, and prediction. This means that methods are the means used to discuss and study problems. In this study, the researchers used quantitative methods to analyze the data. The researchers used a pre-experimental research design with pre- and post-tests to measure students' articulation ability. The researchers also tested the earlier meeting to see how the students improved by using the text-to-speech software.

1. Research sample. The population of this study were 10th grade students of M.Sc. Syrogut Thalepen. The number of 10th grade students is 30. This study used a targeted technique where there were two classes within class X, namely XA and XB. Finder X grabs. According to the teacher, X belongs to the class whose pronunciation is weaker than the other classes. Classes are made up of 30 students. Therefore, the total sample size is 30 students.

2. Data collection. Master data; In collecting the data, the researchers performed the following steps: a) The researchers obtained approval from the class teacher. b) The researcher came to the classroom as a sample of this study for the pre-test. c) Once the preliminary test is completed, the researcher uses a voice synthesis program. d) After the treatment, the researcher will perform a post-test on the students in the final session. secondary data Secondary Data Sources Secondary data sources are direct data collected by the researcher to support the primary source. Structured data in the form of documentation can also be said

to be relevant to the problem under consideration. The secondary data of this qualitative research is data obtained from documents in the form of notes, audio recordings, photographs, etc., which can be used as supplementary data of Syrogoth Thalipin in the institute.

3. Data Analysis. In the analysis, the researchers used the data collected through pretest and posttest procedures as follows: 1. Calculate the average score of the students' answers using the following formula: or: X = average score X £ = Total points N = item number There are seven categories for evaluating student scores, used as follows:

Table 1. Classification of Score

Score	Classification
96 – 100	Excellent
86 – 95	Very good
76 – 85	Good
66 – 75	Fairly good
56 – 65	Fair
36 – 55	Poor
0 – 35	Very poor

RESEARCH RESULT AND DISCUSSION

After analyzing the pre-test and post-test data, the data is presented in the form of tables consisting of certain types of analysis namely categorical, fractional, frequency and percentage. Below are the results of the data analysis.

1. Predict the student's pronunciation

In this study, researchers used quantitative research to determine the effect on students' pronunciation using text-to-speech software at SIRIJUT THALIBIN HIGH SCHOOL in the academic year 2023. The results of the preliminary test can be seen below:

Table 2. Pre-test of the Student's Pronunciation

No	Classification	Pre-test	
		F	%
1	Excellent (96-100)	0	0%
2	Very Good (86-95)	0	0%
3	Good (76-85)	1	3.33%
4	Fairly Good	1	3.33%
5	Fair (56-65)	8	26.67%
6	Poor (36-55)	14	46.67%
7	Very Poor (0-35)	6	20%
	Total	**30**	**100%**

Based on Table 2 the percentage of the pre-test showed that there were no students (0%) who got Excellent Category (96-100) score and also for Very Good Category (86-95) score for the student's Pronunciation. For Good Category (76-85) score, there was a student (3.33%). There was a student (3.33%) who got Fairly Good Category (66-75) score. There were 8 students (26.67%) who got Fair Category (56-65) score. For Poor Category (36-55) score, there were 14 students (46.67%) and there were 6 students (20%) who got Very Poor Category (0-35) score. So the result can be concluded that the Students Pronunciation's pre-test was poor categorized.

2. Posttest of the student's pronunciation

The result of the preliminary test can be as follows;

Table 3. Post-Test of the Student's Pronunciation

No	Classification	Post-test	
		F	%
1	Excellent (96-100)	0	0%
2	Very Good (86-95)	8	26.67%
3	Good (76-85)	9	30%
4	Fairly Good	9	30%
5	Fair (56-65)	3	10%
6	Poor (36-55)	1	3.33%
7	Very Poor (0-35)	0	0%
	Total	**30**	**100%**

Based on table 3, the percentage of the post-test showed that there was no student (0%) of 30 students got Excellent Ctegory (91-100) score of the student's pronunciation. There were 8 students (26.67%) got Very Good Category (86-95), there were 9 students (30%) got Good Category (76-85), there were 9 students (30%) got Fairly Good Category (66-75), there were 3 students (10%) who got Fair Category (56-65). There was a student (3.33%) who got Poor Category (36-55) and there was no student (0%) who got Very Poor Category (0-35). So the result can be concluded that the student's pronunciation in post-test was good categorized.

3. Pre-test and post-test average

After students' scores are calculated, the average of the pretest and posttest can be as follows:

Table 4. Mean Score of Pre-Test and Post-Test

Kind of Test	Mean Score	Improvement
Pre – Test	49.33	59.47%
Post – Test	78.67	

The table above showed that the students mean score of pre-test was 49.33 while the students mean score in post-test was 78.67. It was analyzed that there was improvement of students' pronunciation after applying of text-to speech software in the classroom (59.47%).

4. Hypothesis Testing

The test variable (pre-test and post-test) are statistically different on alpha level (@) = 0.05, at the degree of freedom (df) N-1 = 29 to see the difference

Table 5. Hypothesis testing

Variable	t-test value	t-table value
X2-X1	10.1	2.043

Table 5 shows that the test value (10.1) was greater than the table value (2.0 3). This means that the students' pronunciation has improved.

5. The Use of Text to Speech

The text-to-speech software used to describe the data collection, as explained in the previous section, showed that the students were enthusiastic. This was supported by the frequency and percentage of the student's pre- and post-examination results. The students'

scores after the students pronounced some words in English using speech-to-speech software were better than before the students received the treatment. Based on the results, the students' pronunciation percentage before using text to speech showed that the students' pronunciation was weak. It was because most of the students could not pronounce certain words correctly. During the treatment, the researcher noticed at the first meeting that most of the students had pronunciation problems because most of the students still found it difficult to pronounce some sounds. From the second meeting to the last, they tried to pronounce some sounds well and also paid attention to the debriefing given to them by the researcher at the end of each meeting. After implementing the text-to-speech teaching and learning English until the last treatment session, the researcher conducted a post-test to measure the students' scores. After giving Pots-Test, the researcher tried to measure the improvement of the student's pronunciation. In the Pre-Test, the researcher got 49.33 as mean score and the Post-Test got 78.67 as mean score. The researcher found that the improvement of the student's pronunciation in the Pre-Test to Post-Test was 59.47%. It means that after giving some treatments by using text-to speech software, the students' pronunciation was improved.

6. Test of significance and hypothesis

Based on the test, the researcher found that the test value (10.1) was greater than the table value (2.0 3) at alpha level @ or significance level of p=0.05 with degree of freedom (df) 2. This is the result of teaching. pronunciation to students using a speech-to-speech program in the classroom. Based on the test result, the researcher found that the pronunciation of the students improved. This means that there was a significant difference in the text speech used in the classroom in the pre-test before and after the teaching and learning treatment, which could expand their new experiences and knowledge. Based on the data, it can be concluded that the students of sirojut tholibin high school have improved.

CONCLUSION

Based on the observations and discussion in the previous chapter, the researcher concluded: The pronunciation effect of Sirojut tholibin high school students improved. This was confirmed by the mean of the pre-test (9.33) and the mean of the post-test (78.67), which showed that the pronunciation of the students was higher in the post-test than in the pre-test, in addition, the test value (10.1) was higher than the table value (2.0 3). Students pronounce the word by learning the diphthong, vowel and consonant. They learn how to pronounce each word with an English teacher, use a text-to-speech program like Google Translate, and find the pronunciation in the Longman dictionary if they have difficulties.

Acknowledgements

BIBLIOGRAPHY

Anderson-Inman, L., Horney, M. (2007). Supported e-text: assistive technology through text transformations. Reading Research Quartely, 42(1)

Dutoit, T. (1993). An Introduction to Text-to-speech synthesis. Dordrecht: Kluwer Academic. 110-111.

Elkind, J., Cohen, K., and Murray, C (1993). Using computer-based readers to improve reading comprehension of students with dyslexia. Annals of Dyslexia, 43(1).

Lange, A. A., McPhillips, M., Mulhern, G., & Wylie, J. (2006). Assistive software tools for secondary-level students with literacy difficulties. Journal of Special Education Technology, 21(3)

Leohart, Joe. (2008), Learn English speaking. (Retrieved on September, 26 2018), 24.

Schmitt, Ara J., Andrea D. Hale, Elizabeth McCallum, and Brittany Mauck. 2011. "Accommodating Remedial Readers in the General Education Setting: Is Listening-while-Reading Sufficient to Improve Factual and Inferential Comprehension". Psychology in the Schools 48 (1)

Wood, S. G., Moxley, J. H., Tighe, E. L., & Wagner, R. K. (2018). Does use of text-to speech and related read-aloud tools improve reading comprehension for students with reading disabilities. A Meta-Analysis. Journal of Learning Disabilities, 51(1),