An Analysis on Students' Pronunciation of a Scientific Text

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ABSTRACT

During the time of his study, the author realized that errors and mistakes in pronouncing English words were usually made by the author's colleague. This research was conducted to find out what errors the student made when reading a scientific text and the sources of those errors. The subjects of this research were 14 fourth-year-students of English Department of Teacher Training and Education Faculty of Tanjungpura University. The research methodology used in this research is Error Analysis. There were three steps that were done to find the result of this research, distribute, quantify, and analyze. The result of this research was all 14 subjects made errors when reading the text. Based on the analysis that was done during the research, it was concluded that the sources of errors occurred were intralingual and interlingual errors. Intralingual errors are errors that were made during the transfer process from L1 to TL. Interlingual errors are errors that are made because of the influence of external factors, such as L1 characteristics, slip of tongue, and habits. The author suggests that English teachers and students who are learning English as a second language or foreign language could use this research as a reference to acknowledge this situation and try to pay more attention to this occurring phenomenon.

Keyword: Error Analysis, Scientific Text, Fourth-Year Students

1. INTRODUCTION

1.1 Introduction

During the time of his study at English department, the author has heard his colleagues which were the subjects of this research, mispronounce English words frequently. The author realized that errors and mistakes in pronouncing English words were usually made by the author's colleagues during his study in college. His colleagues were around the age of 21 or 22 when the data was taken. They also have been exposed to English surely for more than 4 years.

The writer could easily point out mistakes in pronunciation made by his colleagues during presentations in front of the class or when they communicate with each other using English. Pronunciation is how words are sounded or pronounced. Broughton et al (2003, p. 49) further describes that pronunciation is a language skill that deals with two interrelated skills— recognition or understanding the flow of speech, and production or fluency in the spoken language. The importance of having a good pronunciation is described by Akyol (2013, p. 1456) as an integral part of foreign language learning since it directly affects learners' communicative competence also as performance. One of the components that is extremely important to build communication, is pronunciation. The situation that occurred to the writer correlated with what Suntornsawet (2018, p. 72) stated in his article which, in the international use of English, those from different L1s manifest indigenous sounds in their production of English. During the time of the writer's study at English department, the writer has heard his colleagues which were the subjects of this research, mispronounce English words frequently. The students do not only mispronounce words that are hard to be pronounced, but they also mispronounced easy words. The writer then started being curious of what happened during the transfer to English. To find out, the writer conducted this research. The results of this research validated the simple observation that the writer unknowingly did in classroom.

In the previous studies conducted by other writers, they found out that errors in pronunciation were occasionally made by the subjects for many various reasons. Faliyanti and Prasesti (2016, p. 26) in their journal found that most of the students made errors when they were asked to perform in a speaking activity. Khanadi (2019, p. 174) in her article also found that all middle-school students that were tested made errors when asked to perform in a speaking activity about a descriptive text. The type of error that was made by the students the most was omission error. This type of error happens when one or two sounds in a word are omitted intentionally or unintentionally. Tirabassi (2018, p. 25) from University of Bologna, Italy in her research titled also found that students that learn English, not as the first language (L1) committed errors when asked to produce sentences in English. In this research, the author explored the possible errors made by the subjects when asked to read aloud a text given by the writers.

This research was focused on finding out pronunciation errors made by the subjects when asked to read aloud the text given by the writer. Then, after the writer had found out the errors made, the writer compared the pronunciation errors made to the correct pronunciation in the

American English accent. The American English accent is used because it is the most commonly used accent in the world compared to the British English accent. The text that the researcher uses in this research is from the synopsis of a book by Neil deGrasse Tyson (2017) titled "Astrophysics for People in a Hurry".

1.2 Research question

Based on the problems above, the researchers formulated 2 questions of this research, what types of error students made when pronouncing words in a scientific text aloud and what are the sources of the students' incorrect pronunciation?

1.3 Significance of the study

The researchers supposed to make contribution to teaching English in all education levels. For English language teachers, this research showed that errors usually occur to English word pronunciation. For students which are learning English as a second or foreign language, they might find the correct way to pronounce certain English words. This research also showed them what the sources of errors in their pronunciation of English words are.

2. RESEARCH METHODS

2.1 Research Design

In this research, the author used Error Analysis (EA) method. EA is an approach to the study of Second Language Acquisition that tries to elaborate mistakes made by language learners when producing sentences in their second language. Kharmilah and Narius (2019, p.328) state that Error analysis is an activity to identify, classify and interpret or describe the errors made by someone in speaking or in writing and it is carried out to obtain information on common difficulties faced by someone in speaking or in writing English sentences. There are 6 steps taken in conducting error analysis according to Gass & Selinker (2008, p.103). They are collect data, identify errors, classify errors, quantify errors, analyze source, and remediate.

2.2 Samples/Participant

The participants of this research were eighth-semester students of English Education Study Program of the Language and Arts Education Department of Teacher Training and Education Faculty, Tanjungpura University, Pontianak. The total number of eighth-semester students in English Education study program was 65 students with varieties of mother tongue (L1). The subjects of this research were 14 of the 65 students.

2.3 Instruments

The tool that was used in this research was an audio recorder. The recorder was used to record the data collecting process between the writers and the subjects. However, since the data collection was done during COVID-19 pandemic, the audio recorder mentioned above was each provided by the subjects not the writers and was done online because it was not allowed to gather many people in one room together to help stopping the spread of the virus.

2.4 Data analysis

In this research, the researcher used indirect observation to collect the data. Indirect observation involves the analysis of textual material generated either indirectly from transcriptions of audio recordings of verbal behavior in natural settings (e.g., conversation, group discussions) or directly from narratives (e.g., letters of complaint, tweets, forum posts), that is why the author chose indirect observation as a method of data analysis. Indirect observation was done by the researcher himself. The steps were to collect data, identify data, quantify data, classify data, and analyze data. During collect data, the researcher gave the students a scientific text which in them contains varieties of words and sounds and ask them to read the text aloud, and then asked them to record the audio of themselves while reading the text. All subjects received the same text and in English. The next step was to identify the data. The researcher identified which parts of the text are pronounced incorrectly. Then, the researcher quantified the data to get the number of errors made by the subject and then classified the data into 3 main types of error. Lastly, the researcher analyzed the data to look out for the possible source of errors. The author then analyzed the data qualitatively. First, the author played the recording of the students when reading the text aloud. Then, he compared it to the correct recording. The author used tophonetics.com and Merriam-Webster Online Dictionary to help him find the phonetic symbols of the text and the correct way to pronounce every word in the text. tophonetics.com is a website that transcribes a written text to its phonetic symbols and also provides the voice transcription of the text. There are two choices of English major accents that can be used; British and American. The author used American English transcription as the standard measurement. The reason behind this was that the author realized that American English is the most spoken English accent in the world. This can be said by only looking the comparison of United States of America population and the whole Great Britain archipelago population combined. Therefore, it made the most sense to use American English accent as the standard measurement of this research.

3. FINDINGS AND DISCUSSION

3.1 Findings

Table 1. Errors Made

	Mistakes Made	Vowel Sounds	Consonant Sounds	Omitting Sounds	Unnecessary Sound
Student 1	16	13	3		
Student 2	18	9	1	8	
Student 3	25	15	5	4	1
Student 4	48	31	7	7	3
Student 5	43	17	11	13	2
Student 6	29	20	5	3	1
Student 7	31	19	8	4	
Student 8	23	12	9	2	
Student 9	19	14	1	1	3
Student 10	37	20	4	11	2
Student 11	38	21	9	6	2
Student 12	42	27	9	6	
Student 13	55	34	10	10	1
Student 14	34	24	5	4	1
Average	*33*	*20*	*6*	*6*	
Total	**458**	**276**	**87**	**79**	**16**

From Table 1, it can be said that after all the data were gathered, the students made a total of 458 errors. On average, each student made 33 errors with student 1 made the least amount of mistakes with only sixteen errors and student 13 made 55 errors making her the student who made the most errors while reading the text as shown in Table 1. The types of errors that the students made were mispronouncing vowel and consonant sounds, not pronouncing a certain sound in a word, and adding an unnecessary sound in a word.
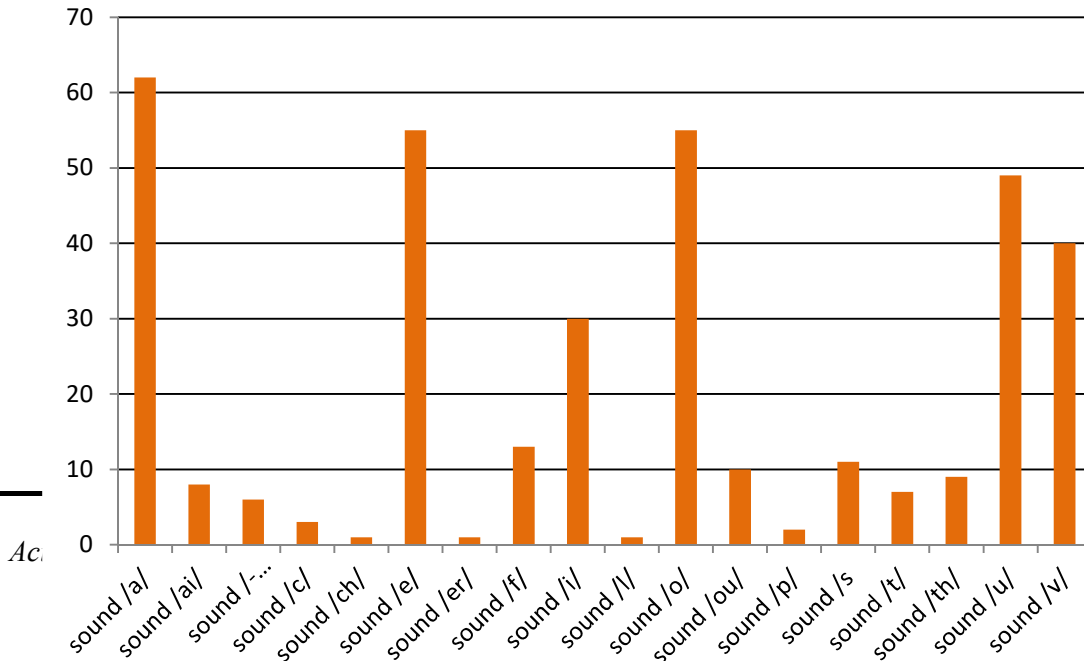
Based on Diagram 1, there were 18 sounds mispronounced during the reading of the text. The most mispronounced sound made by the students was sound /a/ with a total of 62 times followed by sound /e/ and /o/ with fifty-five times each. While sound /ch/ and /er/ were the least mispronounced sound with a total of one time each. Furthermore, the most mispronounced consonant sound was the sound /v/ as in the word universe [juːnɪvərs], television [teləvɪʒən], and festivals [festəvəlz] and it happened forty times to all students collectively.
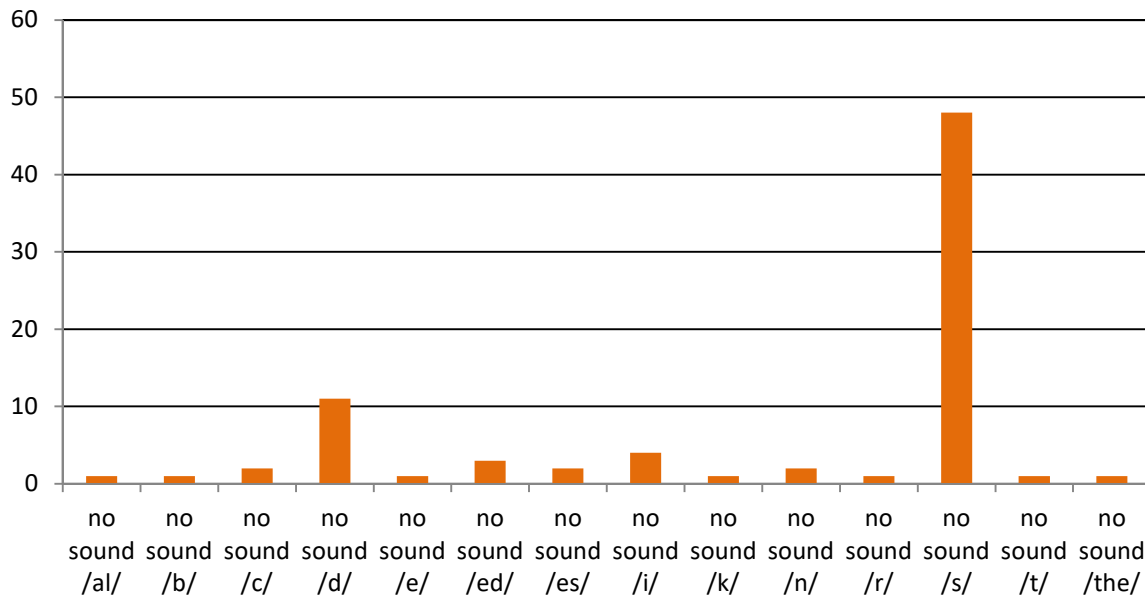

Diagram 2. Omitted Sounds

On the other hand, Diagram 2 shows that there was one specific sound that is regularly left unpronounced or omitted by the students which are sound /s/ and it occurred 48 times throughout the process of data collecting. All of them happened when the sound /s/ appears at the end of a word or as a suffix and combined with other consonants, for example, the word science [saɪəns], producers [prədusərz], and conventions [kənvenʃənz].

Table 2. Unnecessary Sounds Added

Adding Unnecessary Sounds	Frequency of Errors
Additional sound /e/	7
Additional sound /i/	1
Additional sound /k/	2
Additional sound /n/	4
Additional sound /s/	2

Meanwhile, 9 out of 14 students added an unnecessary sound in a word when they were not supposed to add it. Those students did this kind of errors 16 times with student 4 and 9 did it 3 times each. Furthermore, the most added sound in a word by the students was sound /e/ as it occurred 7 times throughout the process of data collecting and the rest can be seen in Table 2.

Table 3. Words Made Error	
Words	N
Astrophysics	23
Science	17
Documentaries, universe	16
Modern	13
Famous, genre	11
Hurry, nonetheless, scientist	10
Astrobiologist, expertise, foundational, success	9
Festivals, succeeded	8
Lately, looked, volume	7
Conventions, era, fluency, Media, worthy	6
Appetite, ascended, biopics, brought, conversant, coverage, offer, television	5
Branches, celebrated, film, genuine, recent, wondered, work	4
Absorb, cosmos, discoveries, field, gatekeepers, marquee, persistently, place, textbooks, top, unto	3
Culturally, evidence, featuring, inspired, interest, night, orbiting, producers, public's, theatrical, think, via	2
Abounds, actress, and, become, cosmic, developed, directors, discovery, features, ideas, increase, informed, planet, seek, shows, sky, starring, story, while, widespread, without, world, years	1

From Table 3, it can be seen that there are 85 words that were made errors by the students during the research. The word "astrophysics" was made errors 23 times in total which was the

most among other words and then was followed by "science" which was made errors 17 times. Following "science", there were "documentaries" and "universe" which were made errors both sixteen times. There were 23 words that were made errors by the students just only one time, among them are "abounds", "actress", "become", "cosmic", and "discovery".

3.2 Discussions

Based on the result, all students made errors when reading the text given by us. Mispronouncing vowel or consonant sounds can be classified into segmental errors. On the other hand, 13 out of 14 students tested in this research made errors by omitting or not pronouncing certain sounds in a word. This error is classified by Carl James as combinatorial error. James (2013, p. 140) also found in his research that his subject omitted certain sounds when reading the passage. Adding unnecessary sounds while they were pronouncing a certain word is also classified into combinatorial errors.

Based on the errors that have been previously discussed, it can be concluded that the sources of errors that were made by the students are interlingual and intralingual. We found that most of the errors made were heavily interfered with by the student's mother tongue (L1) which in this research is Indonesian. Unlike English language, the sound system in the Indonesian language is very simplistic and narrow. It can be seen from when the students were given the text and asked to read it aloud, there must be words that are not familiar to them with and they still tried to pronounce them. When pronouncing the unfamiliar words, they implied sounds from their L1 to the words in TL and it caused errors to happen, whether it is segmental or combinatorial. All of the intralingual errors occurred because of the lack of understanding and exposure of the TL. The lack of vocabulary knowledge reflects the English proficiency since vocabulary is an effective tool to predict the language proficiency (Lee, 2011). This statement is also supported by Ivone (2015) saying that the English proficiency in Indonesia was very low due to the lack of vocabulary size. Furthermore, Kweldju (2005) even stated that vocabulary is the single source of problem in learning English. For example, there are students that overgeneralized the use of "-ed" in a regular form of verb used in past tense. The findings of this research also occurred in the previous studies that were mentioned in Introduction. In this research, the errors made by the subjects were mostly interlingual errors where all of the subjects carried over the characteristics of their L1 when trying to pronounce words in the text. Similar things also occurred in Faliyanti and Prasesti's study (2016, p. 26) and Tirabassi's (2018, pp. 25-

41) where they also found that L1 played a big role when the students tried to speak in English. Faliyanti and Prasesti (2016, p. 27) state that this happened because the students didn't use or speak English enough in their daily communication, so that the English spoken was heavily influenced by their mother tongue.

Similar to Faliyanti and Prasesti, we also believed that this was one of the reasons of why errors were made by the students in his research. This type of errors are called interference in Nurhayati (2017, p. 43), Puspita (2017, p. 10), and Luo (2014, p. 1702). However, the difference between their researches and this research is that those were conducted using Contrastive Analysis and this was conducted using Error Analysis. Moreover, the types of errors that were found in this research are also similar to the result of Khanadi's study (2019, p. 174) where she found that the subjects of her research also omitted and added sounds in words while they were asked to conduct a speaking activity. Those were the most common errors that were made by the subject during the study. She also found that the sources of errors made by her subjects were interlingual error and intralingual error. Unlike this research, in her research, Khanadi (2019, p. 175) found out that intralingual error was the main source of error for her subjects, with over 60 percent.

4. CONCLUSIONS

4.1 Conclusions

Based on the discussion on the previous section, the author has answered the research questions which are to find types of errors made by the students while reading a scientific text and the sources of the errors. According to the findings, the students in general made 3 types of errors: mispronouncing vowel and consonant sounds, omitting a certain sound in a word, and adding an unnecessary sound in a word. All students made the first two types of error and only a handful made the third type of error. These 3 types of error then were classed into 2 categories, segmental errors and combinatorial errors. The writer concludes that the sources of those errors are because of the limitation to be exposed to the target language and the interference from their L1 may cause the foreign language learners.

4.2 Suggestions

This research can be used as an example of the importance of having a good pronunciation skill, especially for students that would like to speak using good English and for teachers that want to teach English using any available accent. This research shows them what

common errors that usually occur to people who study English as an SL or FL. The writer here would like to mention 3 apps that can be used to learn and teach the English. The first app is called "ELSA Speak: English Accent Coach". The second app is "Say It: English Pronunciation". The last app is "Sounds: Pronunciation App". All apps mentioned above are available on Play Store and App Store.

Considering the weakness of this research, the author suggests for other writers that might be interested in this field of study to use software or an app to support the result of the research. Since the analyzing process was all done manually by us, mistakes and flaws are very inevitable and easy to point at. It was because at the time this research was being conducted, there was no software or apps that could transcribe spoken language into phonetic transcription. So, that is why the author hopes shortly there will be a software or an app that can transcribe spoken language directly into phonetic transcription.

The other main problem of this research is that all the audio recordings that were analyzed in this research were individually recorded by the subjects of the research and the audio quality was inconsistent and very poor. This is the reason of possible flaws while analyzing the data. Audio quality plays a huge factor in this kind of research that can only be done by human manually through the sense of hearing.

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