



Effects of segmental phonemes in learning English language: A case study at faculty of arts-Kordofan university

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Abstract

This study investigated the effects of segmental phonemes in learning English language. The study aimed to analyze and describe segmental phonemes for English learners in University of Kordofan - Faculty of Arts in the study period (2013-2015) to determine the difficulties, and facilitate them through description associated with diagrams and the influence of the Arabic language (L1) on English language (L2) phonemes. The study followed the analytical and descriptive approaches. The primary data was collected through different sources including personal observation, interview and recording test, while secondary data was gathered from references, books, and the internet. The sample size compromise (100) students selected from different levels of study second to fourth level using simple random sampling technique these represent (25%) of the total population (400) students. The data was analyzed through Statistics Package for Social Science (Version -15), the segmental phonemes analysis showed that, there were (44) English sounds and (26) Arabic phonemes. The results also reveal that, (64.17%) of the English language learners faced difficulties in pronouncing the segmental consonant phonemes, and (65.8%) for segmental vowel phonemes, which was recorded observed and analyzed as a result of mother tongue interference on English language phonemes. Thus, consonants phonemes scored percent were (/p/77%, /d/ 67%, /v/ 55%, /t/54%, /ʒ/ 70% and /ŋ/ 62%) while vowel phonemes were (/a:/ 68%, /ɜ:/91%, /ʊə/93%, /eə/77%, /ɪə/77%). The study recommended that, unfamiliar sounds which do not exist in the learners' language should be identified and given special consideration via teaching phonetics, phonology and International Phonetic Alphabet (IPA) symbols besides using modern methods of learning language as Acoustic Laboratory, Audio Library, T.V, Radio, and CD.

Keywords: phonetics, phonology, Acoustic, phonological

Introduction

Spoken English has always been a problem to non-native speakers, most especially in a second language environment. The problem of native language interference continues to threaten proficiency in the spoken English of non-native speakers of the language. This study is particularly about learners of English as a second language examining segmental phonemes which are vowels and consonants. Why do language learners face different challenges in their attempt to achieve Standard English speech? Although linguists have been at logger heads on different issues relating to language studies, they have unanimously agreed that the L1 significantly influences the acquisition of the L2 phonology. Therefore, at the segmental level, some pronunciation difficulties being faced by English language learners are quite attributable to the phenomenon of negative transfer, where Sounds of L1 are erroneously transferred into the target language... A speech generating and language study contains lots of special concepts and terminology. To understand how different speech and analysis methods work must be taken for granted to have some knowledge of articulatory phonetics; the basic theory of these topics will be discussed briefly via chapters. In this study English segmental phonemes are according to their articulatory features even postulated the existences of classes of phonemes then are discussed in functional terms emphasizing their contrastive value. But even when it is talked about classes of sounds (phonemes) it is considered as actually defining unique phonological units in spite of the phonetic variations displayed in

this study which should be chose to ignore. The research conductors analyze these individual, separate segments, phonological units in isolation. The study of such segments outside of a larger phonological context is the domain of segmental phonology.

Objectives of the Study

The main targets of this study explained below:

1. To find out the effects of segmental phonemes in learning language
2. To explain the problematic segmental phonemes and facilitated them.
3. Identifying classifying and analyzing human speech production in the area of segmental phonemes production.
4. Suggesting teaching procedures that might help learners overcome the areas of difficulty.

Significance of the Study

It is expected that this study will open up new vistas for English learners and researchers in a second language teaching/learning process, especially, the teaching and learning of pronunciation in English as a second language, so that neglected areas here is given attention. This will help to achieve at least, minimum standard for both national and international intelligibility. Its significance value associate with finding the effects of segmental phonemes in learning language and pronunciation of problematic

phonemes which help in communication intelligibly and it shows the problems area in speech production which may solve to most learners the pronunciation case.

Research procedure

Recording test and interview were made to estimate English language learners level in pronouncing segmental phonemes and the effects of this segmental phonemes in learning language.

Tools of Data Collection

It is known that the tool of any study is the instrument which any researcher uses for collecting the required data for the study. There are many types of tools used in the field of scientific research. In this research, the researcher depended on tape recordings (mobile – laptop) and observation to collect the data from the sample of the English learner and experts. On the other hand, a structured interview was used to collect the information from the sample of the learners and experts and taking notes then analyze and described via diagrams. The interview contained random items reflects the opinions and ideas of the learners about the mechanism and methods of human speech production which described precisely the target sounds. In the interview each learners or experts were asked to pronounce and utter English sounds then show how sound can be produced and described then observation take place.

The Sample

The samples of this study were chosen randomly from English language learners at faculty of Arts, university of Kordofan whom are specialized in English language in different levels of study, this simple random samples include a number of 100 students from the total of 400 which represent 25% percent.

Data analysis and Discussion

The researcher prepared some random words and sentences written on a paper in each sentence there was a target sound e.g. /ə/ in the word “about”, also in a sentence such as “service not advice” the target sound is the vowel /i/ in “service”. The research conductor asked them to describe the phonemes and help them to get correctly description through discussion. Each of the learners read this words and sentences aloud while the researcher was recording their pronunciations and taking notes. The whole process took about many days to complete.all Sounds such as /θ/, /ð/, /p/, /tʃ/ were included in the words and sentences to be pronounced by the learners and as target sounds in order to confirm or reject that the learners have problems in these sounds and to identify the exact consonants that learners and English language speaker do not pronounce correctly or which may replace them with others. After each of learners recorded their sound reading the sentences carry the target sounds loudly, the researcher later listened carefully many times to samples of the learners recorded pronunciations with sounds description and repeated this process a lot of times playing the recorded material at home within laptop and phone.A list of the recorded sounds was later written. The researcher wrote down the number of English language learners with the correct pronunciation and the number of the students with correct and incorrect pronunciation and their sounds description was recorded. Then the figures or

diagrams within this study were analyzed descriptively; this consolidated result of the observation and taking notes. Samples of the pronunciations were recorded on electronic device; then these recorded sounds were counted to see the total of the test, then the total of the incorrect answers was also compared and corrected then written and described with diagrams. In general, the whole data and the information collected were analyzed descriptively.

Segmental Consonant Phonemes Analysis

Tables 1: Plosive Consonant Phonemes

phonemes	Correct	Incorrect	Total with percentage
p	23	77	100
t	88	22	100
k	100	0	100
b	23	77	100
d	33	67	100
g	100	0	100

The table above contains plosive phonemes in which English language learners faced difficulties in pronouncing English phonemes like /p/, /b/ and /d/ which represent 77%, 88%, and 88% incorrect respectively. They pronounce /p/ as /b/ when it appears in the initial and final positions of a word, the other English learners who score 33%, 22% should practice this-phonemes for distinction and mastering.

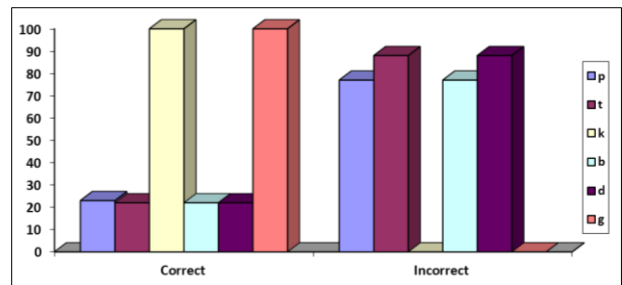


Fig 1: Plosive Phoneme

Table 2: Fricatives phonemes

Phonemes	Correct	Incorrect	Total by percentage
f	44	56	100
v	45	55	100
θ	33	77	100
ð	49	51	100
s	33	77	100
z	21	79	100
ʒ	49	51	100
ʃ	30	70	100
h	65	45	100

Most of the participants pronounce /tʃ/ as /ʃ/ when it appears in all three positions which represent 70% of students while; the /ʒ/ sound is sometimes replaced by /ʃ/, /s/ or /z/, when it is in medial position, scored 51% of students pronounced incorrect phonemes, other who don't have this difficulties their score mentioned in above table.

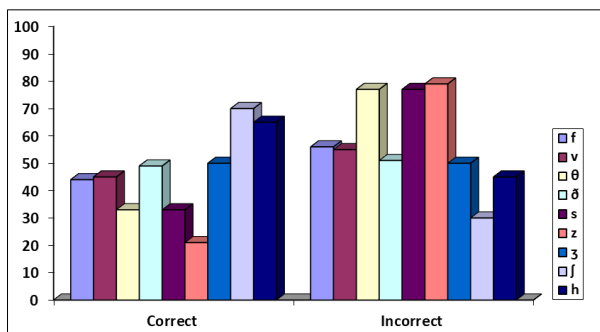


Fig 2: fricatives phonemes

Table 3: Affricates phonemes

phonemes	Correct	Incorrect	Total by percentage
dʒ	44	56	100
tʃ	36	54	100

The above table shows that, 56% of the English learners pronounced this sounds incorrectly and replaced by /ʃ/ and /ʒ/ because this phoneme is not included in the L1 language of english learners, but they pronounced correctly after they know these phoneme description while 44% of learners pronounce this sounds correctly.

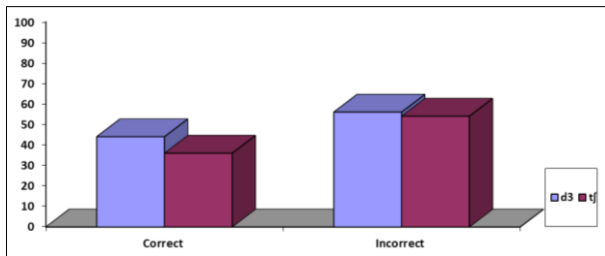


Fig 3: Affricates

Table 4: Nasal phonemes

Phonemes	Correct	Incorrect	Total by percentage
m	100	0	100
n	100	0	100
ŋ	38	62	100

The /ŋ/ sound in mentioned in the above table is sometimes replaced by /n-k/, and sometimes it is replaced by the /n-g/ sound when it appears in the final position of a word, 62% of learners pronounce incorrectly, because this sounds not their L1. While 48 % of them pronounced correctly a half of them after the second time.

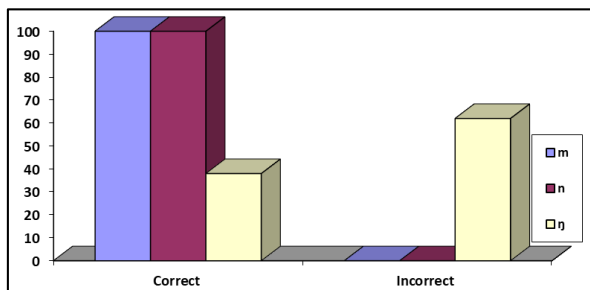


Fig 4: English Affricates Phoneme

Table 5: Lateral Phonemes

Phonemes	Correct	Incorrect	Total by percentage
L	99	1	100

The table above contains lateral sound /l/ which pronounced correctly by English learners except only one English learner who has natural language disorder unable to pronounce this phoneme correctly.

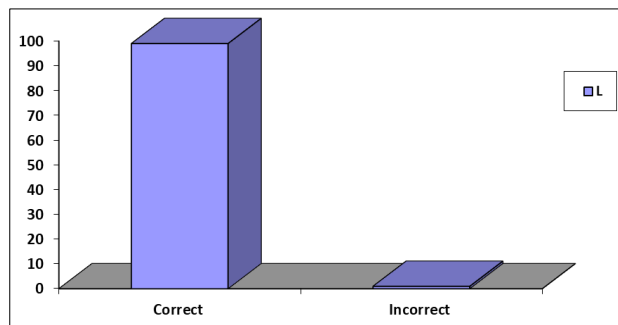


Fig 5: Lateral Phoneme

Table 6: Approximate Phonemes

Phonemes	Correct	Incorrect	Total by percentage
R	99	1	100
J	100	0	100
W	100	00	100

The table above contains approximate phonemes in which all respondents pronounce /w/ and /j/ and /r/ correctly while only one case unable to pronounce it correct due to language disorder.

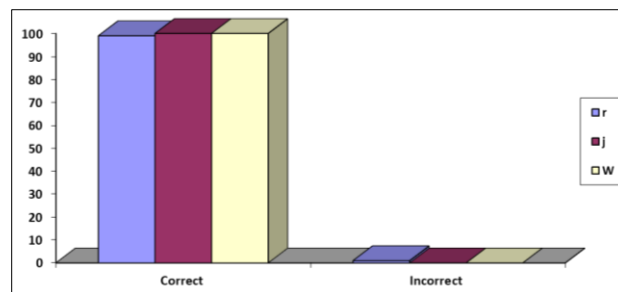


Fig 6: Approximate Phonemes

4.2. Problematic Vowel Segmental Phonemes

Vowel phonemes vary depending on where such vowel phonemes occur in words such that the way a particular vowel phoneme is pronounced in one word may not be the way it is pronounced in another. This is a fact that many of the subjects failed to grasp as many of them pronounced the same vowel phoneme the same way irrespective of where and how it occurs in words, thus leading to pronunciation problem. A simple descriptive statistic was used to record the number of correct and incorrect pronunciations of segmental vowels phonemes in the random sentences given to English learners using a simple table.

Table 7: The Pronunciation of [i] and [e]

Phonemes	Correct	Incorrect	Total by percentage
/i/	50	50	100
/e/	50	50	100

The vowel phoneme /i/ in above table was pronounced correctly by 50% of English learners while 50% was pronounced incorrectly and confused when they pronounce /i/ like /e/ in many different words given to them, There was failure on the part of the English learners to recognize that the letter ‘i’ has a different vowel sound in the word “rid” to be realized as a monophthong /i/ and no more a diphthong /ai/ as in the other words "ride", Whereas 50% pronounced /e/ incorrectly similar to /i/ phonemes.

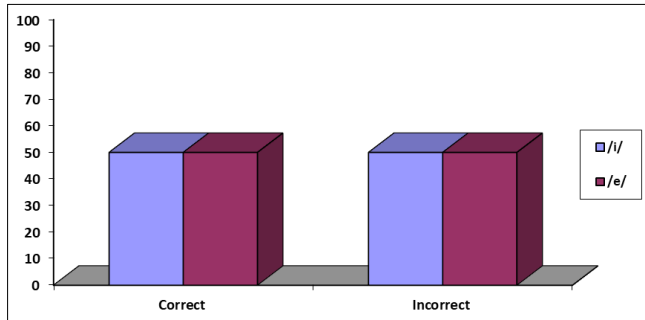


Fig 7: English phonemes i and e

Table 8: The pronunciation of a and a

Phonemes	Correct	Incorrect	Total by percentage
/a/	82	18	100
/a:/	32	68	100

The phonemes /a/ was pronounced correctly by 82% of English learner which same less problem where as 18% pronounced correctly as a result of vowel variation in words, as appeared in the word "bad" and "same", the other vowel phoneme /a:/ was pronounced incorrectly by 68% while 32% of English learners pronounced correctly.

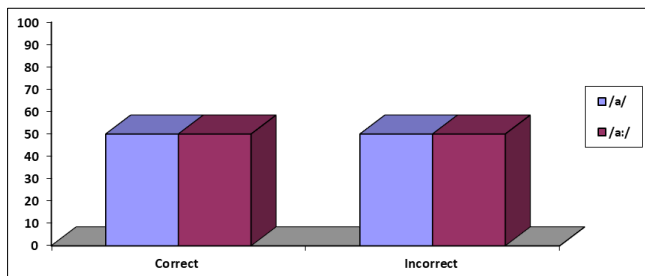


Fig 8: English phonemes a and a

Table 9: The pronunciation of æ and ɒ

Phonemes	Correct	Incorrect	Total by percentage
/æ/	50	50	100
/ɒ/	50	50	100

In table above, there is a problematic case, English learner confused in pronunciation of both English phonemes /æ/ and /ɒ/, 50% of English learners pronounced the phoneme /æ/ as /ɒ/ and vice versa, the best example mentioned in recorded test is a word as "hat".

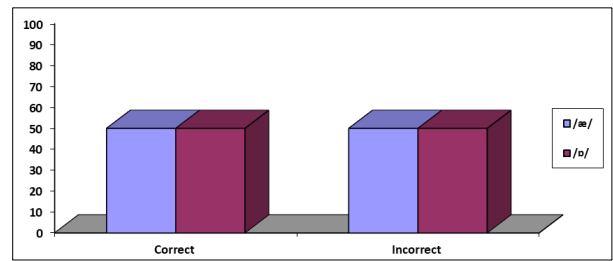


Fig 9: English phonemes æ and ɒ

Table 10: The pronunciation of |a:| which replaced by |ʌ| or |a|.

Phonemes	Correct	Incorrect	Total by percentage
/ a:/	50	50	100
/ʌ/	50	50	100
/a/	50	50	100

The phonemes /a: / replaced by /ʌ/ and /a/ scored similar 50% respectively which indicate that there is a problematic case in pronouncing of these third sounds.

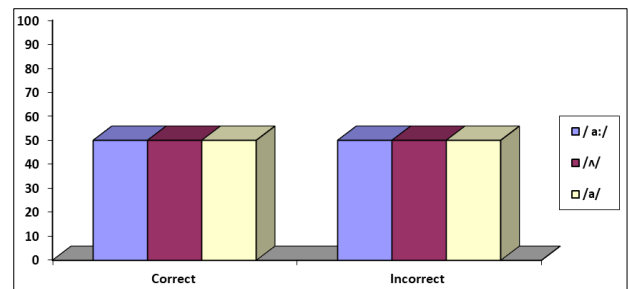


Fig 10: English phonemes a: replaced by ʌ or a.

Table 11: the pronunciation of |ei| is which replaced by Arabic non-diphthongal vowel |b3:t| "house".

Phonemes	Correct	Incorrect	Total by percentage
/ie/	30	70	100
/3:/	9	91	100

70% of English learners pronounced the sounds /ie/ as /3:/ in beer incorrectly, and 30% Pronounced it correctly in ward as (car). The respondents seem to recognize different vowel sounds represented by the same letters in different words, possibly because the words in which they occur are familiar. The segmental phoneme /3:/ is considered as very difficult sound to Arab English learners, 91% of them pronounced incorrectly while 9% of them pronounced correctly.

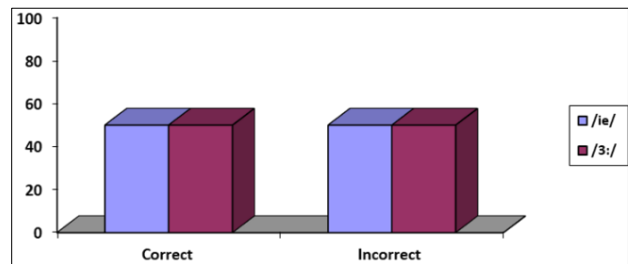
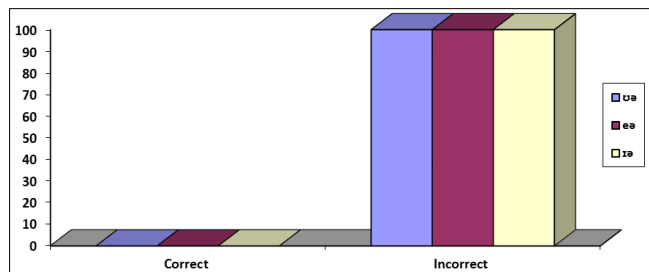


Fig 11: English phonemes ei is replaced by Arabic non-diphthongal vowel b3: t.

Table 12: The pronunciation of ʊ , e , ɪ , which replaced by the nearest vowel sound i: , e: , u: .

Phonemes	Correct	Incorrect	Total by percentage
ʊ	7	93	100
e	33	77	100
ɪ	33	77	100

The phonemes ʊ , e , ɪ , are replaced by the nearest vowel sound i: , e: , u: + r in above table was pronounced incorrectly by most of English learners at the ends of each words ending in /r/ .

**Fig 12:** The pronunciation of ʊ , e , ɪ ,

Acknowledgment

I thank my supervisor Prof. Ali Hamid Idris and everyone help in conducting this study

Conclusion

The production of segmental phonemes is very important for English language learners to develop their communicative efficiency like other English language skills or sub skills courses, such as reading, writing, grammar and vocabulary etc., It is one of the basic skills required for the learners in their English language learning. As shown in this study, certain English consonant sounds are difficult to pronounce or to know its mechanisms and methods of production. The sound analysis show that most of the English language learners faced problems while pronouncing the consonant sounds, /z/ , /p/ , /d/ , /v/ , /tʃ/ , and /ŋ/ . And failed to describe them, they pronounce /p/ as /b/ when it appears in the initial and final positions of a word. They pronounce /d/ as /d / when it appears in the medial or final positions. Accordingly to above data /v/ is replaced by /f/ when it appears in the medial and final positions. Most of the participants pronounce /tʃ/ as /ʃ/ when it appears in all three positions. The /z/ sound is sometimes replaced by /ʃ/ , /s/ or /z/ , when it is in medial position, and when it is in final position it is pronounced as /g/ . The /ŋ/ sound is sometimes replaced by /n-k/ , and sometimes it is replaced by the /n-g/ sound when it appears in the final position of a word. The present experimental study contributes to the identification of specific areas of difficulty which hamper communication through the mispronunciation of individual English phones and sounds. Awareness of the problem areas of human speech production provides a basis for future material planning, design and production. Teaching mechanics and methods of human speech production covers a range from basic sounds (vowel and consonant) Articulatory movement, air stream mechanism and etc. In the present study, the participants' problems with English sound production were the only area investigated.

Results: This study found out the followings

- English language learners faced difficulties in pronouncing the segmental consonant phonemes as a result of mother tongue interference on some English language phonemes (vowel and consonant) which was recorded and analyzed.
- The interference of mother tongue (Arabic) on English language segmental phonemes was only phonemes not found in their mother tongue, where as English language learners overcome other segmental phonemes difficulties after repeat this phoneme for the second and third time.
- Mother tongue phonemes (Arabic) are less than the target language (English) while there is majority of segmental phonemes have same phoneme in both language.
- Unfamiliar English phonemes influence the majority of learners' pronunciation beside other phonemes has the sameness of place and manner of articulation.

Recommendations and suggestions

- There should be good teaching and practice of IPA symbols.
- The learners should be given a basic knowledge of phonetics and phonology, IPA symbols, etc..
- The learners should be provided with a listening model by the teacher or some electronic devices, such as a tape-recorder or CD.
- The learners should be motivated to watch some English programmes on TV or other visual media, such as BBC English, etc.
- Oral communication classes should be encouraged in English teaching program.
- The learners should be asked to read aloud the text with the support of recorded texts. If a student commits any mistakes while reading aloud, the teacher should correct and practice it several times.

Acknowledgement

I thank those who help me to conduct this study especially my supervisor Dr. Hamid Ali Idres and every help me in completion.

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