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The Frequency of Phonological Fossilization of /u/ Sound among the Bengali Speakers in Their English Reading Speech

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Abstract

Phonological fossilization is a common occurrence among Bengali speakers of English. One example is the English long vowel /u:/, which is not available in Bengali. As such, Bengali speakers of English often replace /u:/ sound with the /u – উ/ sound, and it can lead to intelligibility issues for listeners. With this in mind, this study aims to analyze the fossilized /u – উ/ sound in the English speech of Bangladeshi adult speakers. A mixed method has been used in this study for data collection and analysis. Twelve adult English speakers who have Bengali as their first language were purposively selected and were provided an English dialogue containing 18 /u:/ sounds in different phonetic environments for data collection. The data were recorded, phonemically transcribed and later compared to British standard transcription. Findings showed that almost all the participants have made the phonological fossilization of /u – উ/ sound in their English speech. Thus, the level of frequency of phonological fossilization is very high in the Bengali speakers. In addition, the /u:/ sound in the middle position is more prone to be fossilized by the speakers. Results can benefit the pronunciation trainers and trainees in Bangladeshi EFL classrooms.

1. INTRODUCTION

Harmer (2007) pointed out that pronunciation is an extremely personal matter, and even in monolingual groups, different students have different problems, different needs and different attitudes to the subject of pronunciation. The main reason students are taught pronunciation is that they can be understood by others easily. The goal of pronunciation training is not native-speaker approximation but "comfortable intelligibility" (Abercrombie, 1991). This intelligibility is hampered due to the wrongly pronounced sounds/phonemes of the target language. Phonological fossilization of the mother tongue habit is one of the reasons for this incorrect pronunciation. Phonological fossilization is the repetition of phonological errors which result from the incorrect acquisition of pronunciation of L2, usually affected by L1 (Wei, 2008). Brown (2000) described the notion as a permanent error that interferes with the learner's foreign language competence. Specifically, it refers to incorrect linguistic forms which have become a habit of speech in a second language learner (Graham, 1981; Senowarsito & Ardini, 2019).

Fossilized errors in English pronunciation among teachers and students are a prevailing phenomenon in Bangladesh (Uddin, 2021). The distinct fossilized features of Bengali frequently intervene in their English speaking (ibid). Particular sounds or core sounds of English language, such as vowel like u/u:>u (Bashiruddin, 2016) is evidence of phonological fossilization in Bangladeshi EFL learners. According to Demirezen (2008), the core sounds are the sounds that are influenced by the mother-tongue association to the acquisition of some target language phonemes. Language fossilization is a broad term used to describe many forms of arrested progress in second language (L2) acquisition (Gardner, 2021). Selinker (1996) defines fossilization as "a process whereby the learner creates a cessation of inter-language learning, thus stopping the inter-language from developing…" (as cited in Han, 2004). Selinker (1972) further clarifies this concept, stating that "fossilizable linguistic phenomena are linguistic items, rules, and subsystems which speakers of a particular L1 tend to keep in their IL relative to a particular TL, no matter what the age of the learner or the amount of instruction he receives in the TL." Fossilization manifests at all levels of language study but records proved evidence of incessant occurrences at the phonological level (Selinker, 1972). It happens across geographical boundaries and affects speakers of any L1 background.

Senowarsito and Ardini (2019) found that the Javanese adult students have problems in pronouncing the word <the>. They tend to pronounce [(n)də] for the word <the> with the phoneme /n/ that precedes [də], instead of [də] alone. Such mispronunciation is caused by their cognitive dependence on L1 (Javanese) since they are used to pre-nasalize consonant [d] in initial Javanese words, such as <delok> [ndə.lɔk] 'see' or <demok>[ndə.mɔk] 'touch'. L1 learners have some difficulties in learning FL, particularly in learning sound systems since L1 has its own sound systems that are different from FL (Andi-Pallawa, 2013).

Turkish learners of English are found to apply the Turkish pronunciation rule and articulate English vowel phoneme /æ/ as /e/ which comes up as a fossilized pronunciation error for Turks (Demirezen, 2008). In case of consonant, the problem that Turkish EFL learners have when pronouncing /d/ is that in certain situations, primarily in final consonants, they tend to pronounce it as /t/. This can hamper intelligibility in many contexts. For example, the minimal pairs 'bad'/ 'bat' and 'bed'/ 'bet' will be completely misunderstood if the final /d/ is articulated like /t/. According to Khalilzadeh (2014), the two sounds /t/ and /d/ are alveolar in English but dental in Turkish language. So, the difference in the place of articulation is the origin of mispronunciation (Mahzoun & Han, 2019).

Ercan (2018) conducted a study in Cyprus on Turkish high school students at state schools. The findings demonstrated that the students had difficulty pronouncing consonants like /ð/, /w/, /v/, as well as certain vowels and diphthongs, such as /i/, /a/. The main origin of the problem was found to be first language interference, followed by insufficient exposure to the second language and proper training. Similar studies were carried out on speakers of other languages. For example, Alqunayeer (2016) identified Saudi Arabian university students' problematic areas in pronouncing the letter /g/. The students were commonly weak in articulating soft "g" when it was trailed by the vowel "e" and "y"; almost half of the students articulated "g" before "e" wrongly, and furthermore half misspoke "g" when it was trailed by "y". In addition, the vast majority of the students misspoke hard "g" before the vowel "a".

Similarly, Zhang and Yin (2009) investigated the pronunciation problems of English learners in China. Chinese learners of English fossilized many sounds in the place of the target sounds. For example, the sounds /r/ and /ʃ/ are totally different from the Chinese /r/ and /sh/. Vein, Du (2018) as in Rahal and Smaoui (2020) said some students fossilized /ð/ in the word then as /z/, some students fossilized /v/ in the word never as /w/, and some students pronounce /θ/ in the word thirteen as /s/. This phonological fossilization occurs due to both internal and external factors. While the factors like age, ear perception, aptitude, personality, attitude, motivation, identity, individual efforts and goal setting were accepted as internal factors, the factors like the L2 learner's native language, exposure to the target language and educational factors were accepted as external factors (Zhang, 2009).

Rochet (1995) studied the production of the French vowel /y/ by native speakers of Canadian English and Brazilian and Portuguese speakers as the native languages of these two groups constitute only the two high vowels /i/ and /u/, not the French vowel /y/. It was observed that the English group articulated the French /y/ as /u/ or an [u]-like vowel whereas the Portuguese learners produce it as /i/ or an [i] like vowel. Rochet noticed that the French vowel /y/ was produced akin to /u/ by English speakers whereas it was produced similar to /i/ by the Portuguese speakers. Rochet's study exemplifies that once a L2 sound is assimilated to an L1 category, it is produced according to the established phonetic rules of the L1.

Flege, Bohn, and Jang (1997) studied the impact of English language exposure on adult learners' production of L2 vowels involving a group of native speakers of German, Spanish, Mandarin, and Korean. They were grouped into "experienced" or "inexperienced" subgroups on the basis of the length of residence in the U.S. The study postulates that the exposure to L2 learning is a factor that contributes to framing certain vowels more accurately. For example, the production of the vowel /I/ of the experienced group was more native-like than that of the inexperienced group for each language, although the phoneme /I/ is absent in Spanish, Mandarin, and Korean languages. In contrast, no such significant impact was noticed with regard to the other three vowels, /i/, /ɛ/, and /æ/. The performance of the experienced group as observed by Flege et al. (1997) was not "completely where two languages contact commonly in social discourse has given birth to 'nativization' of certain phonological features which demonstrate more affinity to Sinhala phonology culminating in forming deviated forms from the SSLE.

Gunasekara (2005) on "The Post-Colonial Identity of Sri Lankan English" records that the High Prestige Dialect of Sri Lankan English is spoken by the Sri Lankan elite who have acquired the English language from birth and use English in their educational, social and professional spheres. On the other hand, she mentions that the Lower Prestige Dialect (LPD) which is referred by the term "Not pot English" is used by the majority of Sri Lankan speakers who have no access or very limited access to English from birth and rarely use English to achieve their educational, professional or social goals daily. Gunasekara (2005) states that the SSLE encompasses two /o/ sounds: the low back vowel /ɔ/ and the mid back vowel /o/. The lack of the low back vowel in Sinhala and the parity between the two vowels have prevented L2 learners forming the new vowel category /ɔ/. As a result, Sri Lankan L2 learners tend to substitute /ɔ/ for /o/ as in Premarathne (2018).

Sirsa and Redford (2013) studied the native language influences on Indian English spoken by Hindi and Telugu speakers as L2. They measured acoustic similarities and differences between Hindi (L1) speakers and Telugu (L1) speakers of Indian English. Some segmental and suprasegmental characteristics were chosen for analysis, including vowel quality (F1-F2), degree of retroflexion for /ʈ/ and /ɖ/, and the extent of aspiration for voiceless stops. The results revealed an influence of L1 on Indian English. The results revealed that there were effects of L1 on Indian English in vowel production, articulation of /s/, and on final lengthening. The study also highlighted that Hindi speaker produced speech sounds with a lower average frequency in Hindi-English than Telugu speakers. Thus, the literature for Indian English supports the idea that speakers from different native language backgrounds in India produce a similar IE (Indian English) variety, though some L1-dependent differences are also documented as in Chawla (2021).

In the context of Bangladesh, the Bangladeshi EFL learners also face these challenges to pronounce and articulate distinct English phonemes due to the phonological variation between Bengali and English. Specifically, the long and short vowel distinction is one of the challenges for the Bangladeshi EFL learners who grope in vain to pronounce them correctly. The absence of long vowel in Bengali phonemic inventory mostly creates this problem or confusion among them. The idea of pronouncing long vowel is rarely introduced to the EFL learners here. As the long vowel sound is alien to almost all the Bengali learners, they are habituated to articulate only short vowel that they have learned from the very beginning of their academic life. In this way, the short vowel sound habit has been permanent in them and they frequently make mistakes in producing the long vowel sound. Selinker (1972) and others coined this mistake as phonological fossilization. The frequency of phonological fossilization of /u/ sound among Bangladeshi EFL learners and what phonological environment of /u/ sound in the word is prone to be fossilized have been investigated in this study.

1.1.Research Question

a) What is the level of frequency of fossilized /u/ sound in the English pronunciation of Bengali speakers?

b) What position of /u/ sound in the word does accelerate phonological fossilization in the speakers?

2. METHOD

2.1.Research Design

This study is designed in mixed method that means both qualitative and quantitative technique have been applied in case of data collection and analysis. Following quasi-experimental research design, this study investigates causality by comparing data collected from the participants with pre-existing groups. This study follows comparative analysis as comparative research or analysis is a broad term that includes both quantitative and qualitative comparison. (Mills et al., 2006). The researcher analyzes phenomena and then puts them together to find the points of differentiation and similarity (Mokhtarianpour, 2016). The focus of this comparative study is on similarities and differences between units (Holt & Turner, 1970). This comparison helps the researcher to identify the frequency of fossilized /u/ sound in English pronunciation among the Bengali speakers. The goal of this study is to describe the phenomenon where the participants are involved. In this research, the data have been collected through reading task and analyzed quantitatively.

2.2.Sampling

To collect data for this research, purposive sampling technique has been used. The purposive sampling technique is the most suitable because the study targets a certain population in a certain environment i.e., Bengali speakers who speak English as their foreign language. Purposive sampling can be used in comparative research as it is useful if anybody needs to find information-rich cases or make the most out of limited resources. In this study, the researcher has selected the participants on the basis of the researcher's judgment and the purpose of the research (Babbie, 1995; Greig & Taylor, 1999; Schwandt, 1997), looking for those who "have had experiences relating to the phenomenon to be researched" (Kruger, 1988).

The participants of this study had to fulfill three main criteria which are adult speakers, speakers of Bengali as their first language, and students of the English department. Except the students of very few English medium schools, almost all the students from primary level to tertiary level in Bangladesh have pronunciation problem as there is no syllabus on pronunciation in overall educational institutions. The very students of English department let alone students of other department and general people have this problem. Though they have been studying English for twelve to thirteen years, their level of frequency of fossilized sound is subject to be investigated. Twelve speakers (five from honors 1st year and seven from honors 2nd year) have been recruited to participate in this study. Table 1 shows the demographic profiles of the selected participants.

Table 1. Participants' demographic profile

1. Age	17 to 19 years
2. Gender	M-7 and F-5
3. First language	Bengali
4. Year of learning English	12 to 14 years
5. Level of study	Tertiary level
6. Class	5 students from first year and 7 from second year

2.3.Data Collection Procédure

Participants were given a dialogue containing the target sounds and were asked to read the text aloud to identify some aspects pertaining to pitch movement, rising tone, falling tone, stress, intonation and aspects of overall supra-segmental features. The test in the current study has only one stage in it. The researcher once recorded the data during the period of data collection. The data were recorded by Xiaomi Poco M3 Android 10, planned upgrade to Android 11 (MIUI 12) mobile having loudspeaker (dual speakers), 24-bit/192KHz audio. The aim was to know how often they make the fossilized errors in pronouncing the /u:/ sound. The researcher asked the students to read the dialogue and specifically to pronounce the bold-faced words containing /u:/ sound in the dialogue to identify the phonological errors due to fossilization of /u-ঊ/ sound in them.

2.4.Instrument

The instruments of the study are 18 English words containing 18 /u:/ sounds. The words are part of an English dialogue which was given to the participants for reading. The English dialogue was taken from Ann Baker's (1996) book "Ship or Sheep?" page number 36. The dialogue is attached in Appendix A. In the dialogue, there are 18 words that contain 18 /u:/ sounds in various positions (i.e., first, middle or final) are made available. Table 2 contains the 18 target words with British standard phonemic transcription having 18 sounds. British English is still profusely used in Bangladesh and the syllabus and curriculum are designed on British standard. Data have been collected twice. According to researcher's convenience, firstly, the students of first year were tested with 18 words having 18 targeted sounds. Secondly, the students of second year were tested with 17 words having targeted 17 sounds.

Table 2. Research instruments

Target words	British standard transcription	Target words	British standard transcription
School	/sku:l/	Excuse	/ɪkˈskju:z/
Luke	/lu:k/	Chewing	/ˈʧu:ɪŋ/
Afternoon	/ˌɑ:ftə(r)ˈnu:n/	Shoe	/ʃu:/
Soup	/su:p/	Who	/hu:/
Two	/tu:/	Threw	/θru:/
Stupid	/ˈstju:pɪd/	June	/dʒu:n/
Sue	/su:/	You	/ˈju:/
Fool	/fu:l/	Rude	/ru:d/
Prue	/pru:/	Pool	/pu:l/

2.5.Data Analysis Procedure

The recorded data have been transcribed phonemically by the researcher after listening to the recording for several times and it has been compared to British standard transcription for identifying comprehensible pronunciation. The 18 targeted English words containing 18 targeted /u:/ sounds have been placed side by side with the 18 sounds from the data for comparison. Then the findings show whether the sounds are fossilized or not fossilized. The fossilization was also considered on the basis of the position of /u:/ sounds in the words. That means, this study also investigated the frequency of fossilized sounds in terms of the first, middle or final position of the phonemes in the targeted words. Table 3 shows the fossilized and non-fossilized sounds.

Table 3. Total number of fossilized sounds

Participants	Target words	British standard transcription	Transcription from data	Total number of Fossilized sounds
Participants 1-12	School	/sku:l/	/skul/	Fossilized
Participants 1-3, 5-12	Luke	/lu:k/	/luk/	Fossilized
Participant 4			/lu:k/	Not Fossilized
Participants 1-12	Afternoon	/ˌɑ:ftə(r)ˈnu:n/	/^fternun/	Fossilized
Participants 1-5	Soup	/su:p/	/sup/	Fossilized
Participants 1-11	Two	/tu:/	/tu/	Fossilized
Participant 12			/tu:/	Not Fossilized
Participants 1-12	Stupid	/ˈstju:pɪd/	/stupid/	Fossilized
Participants 1-4, 7-12	Sue	/su:/	/su/	Fossilized
Participants 5, 6			/su:/	Not Fossilized
Participants 1-12	Fool	/fu:l/	/ful/	Fossilized
Participants 1-3, 5, 6, 9-11	Excuse	/ɪkˈskju:z/	/ekskuz/	Fossilized
Participants 4, 7, 8, 12			/ɪkˈskju:z/	Not Fossilized
Participants 1-12	Chewing	/ˈʧu:ɪŋ/	/ʧuɪŋ/	Fossilized
Participants 1-6, 8-11	Shoe	/ʃu:/	/ʃu/	Fossilized
Participants 7, 12			/ʃu:/	Not Fossilized
Participants 4, 10-12	Who	/hu:/	/hu/	Fossilized
Participants 1-3, 5-9			/hu:/	Not Fossilized

The Frequency of Phonological Fossilization of /u/ Sound

Participants	Target words	British standard transcription	Transcription from data	Total number of Fossilized sounds
Participants 1-12	Threw	/θruː/	/θrə/	Fossilized
Participants 1-9, 12	June	/dʒuːn/	/zun/	Fossilized
Participants 10, 11			/dʒuːn/	Not Fossilized
Participants 2, 4, 5, 7, 9-12	You	/ˈjuː/	/ˈju/	Fossilized
Participants 1, 3, 6, 8			/ˈjuː/	Not Fossilized
Participants 1-12	Rude	/ruːd/	/rud/	Fossilized
Participants 1, 3, 6, 8-12	Prue	/pruː/	/pru/	Fossilized
Participants 2, 4, 5, 7			/pruː/	Not Fossilized
Participants 1-12	Pool	/puːl/	/pul/	Fossilized

Note: The instrument "soup /suːp/" has been used only for first-year students.

3. RESULTS

Phonological fossilization as is found from the analysis is that the repeated wrong production of phoneme of English is the cause of this fossilization due to the interference of the phonological and orthographic systems of Bengali language. Learning English as a foreign language denotes that the learners generally interact with some language aspects. Sound production by the learners will be more intelligible if it is similar or near to the native speaker's sound. Notwithstanding, it is observed that the Bengali learners have problems in pronouncing English words in reading text. The speaker's L1 is one of the crucial factors that affect them in producing FL sounds. Previous studies conducted in other areas in Bangladesh show the problems faced by EFL learners as the influence of their mother tongue. The Bengali speakers have some difficulties in learning FL, specifically in learning sound systems since Bengali language has its own sound systems that are different from English.

As English has long vowels which are absent in Bengali, some Bengali speakers pronounce /skul/, /luk/, /ʌfternun/, /sup/ and /tu/ instead of /skuːl/, /luːk/, /ʌfternuːn/, /suːp/ and /tuː/ which are the outcome of phonological fossilization of /u/ sound in them and it is the real phenomenon of English pronunciation in Bangladeshi context. Other sounds are more or less fossilized by other participants. This present study considered Bengali as mother tongue (L1) as the great

source of fossilization and interference on the participants' English pronunciation. The interference of phonological and orthographic system of Bengali (L1) on the English pronunciation of EFL learners in Bangladesh has been investigated. This study clarifies that the phonological and orthographic system of the participants' mother tongue (Bengali) is the main factor contributing to phonological fossilization of EFL learners. Although the phonological systems of the English language are known to them and they have been learning it for 12 to 14 years, they are used to articulate and pronounce some English sounds the way their mother tongue sounds are pronounced. Thus, fossilization of Bengali phonemes has been permanent in their English speech. In this study, phonological fossilization of Bengali speakers has been counted in the word level not in phrase or sentence level in the spoken English.

3.1.Frequency of Fossilized /u/ Sound

After analyzing the data and comparing with the British standard pronunciation, the researcher has got the finding of this research i.e., the comprehensibility level of pronunciation and the frequency level of fossilization in the participants. Total 17/18 /u:/ sounds have been considered as a unit of 100 and percentage has been calculated on the basis of this unit. Participant 7 pronounced only 4 sounds comprehensibly, participants 4, 5, 6, 8, and 12 pronounce only 3 sounds comprehensibly, participants 1, 2, and 3 pronounce only 2 sounds comprehensibly and participants 9, 10, and 11 pronounce only 1 sound. Table 4 clearly shows the percentage of phonological errors and on the basis of the percentage, the level of frequency of fossilized errors has been categorized as very high, rather high and high.

Table 4. Level of frequency of fossilized errors

Participants	Total /u:/ sound	Correctly pronounced word with correct sound	Fossilized sound	Percentage of errors	Frequency of errors
Participant 1	18	(2) who /hu:/, you /juː/	16	88.88%	Very high
Participant 2	18	(2) Prue /pru:/, who /hu:/	16	88.88%	Very high
Participant 3	18	(2) who /hu:/, you /juː/	16	88.88%	Very high
Participant 4	18	(3) Luke /lu:k/, Prue /pru:/, Excuse /ɪkˈskjuːz/	15	83.33%	Rather high
Participant 5	18	(3) Prue /pru:/, who /hu:/, Sue /su:/	15	83.33%	Rather high
Participant 6	17	(3) who /hu:/, Sue /su:/, you /juː/	14	82.35%	Rather high
Participant 7	17	(4) /ɪkˈskjuːz/, /ʃuː/, /huː/, /pruː/	13	76.47%	High
Participant 8	17	(3) /ɪkˈskjuːz/, who /huː/, you /juː/	14	82.35%	Rather high
Participant 9	17	(1) who /huː/	16	94.11%	Very high
Participant 10	17	(1) June [dʒuːn]	16	94.11%	Very high
Participant 11	17	(1) June [dʒuːn]	16	94.11%	Very high
Participant 12	17	(3) /ɪkˈskjuːz/, /ʃuː/, two /tuː/	14	82.35%	Rather high

The percentage of phonological errors in pronunciation among the Bangladeshi adult learners of English has been presented in Figure 1. This figure shows that participants 1, 2, 3, 9, 10, and 11 produced 9% fossilized sounds, participants 4, 5, 6, 8, and 12 produced 8% fossilized sounds and participant 7 produced 7% fossilized sounds.

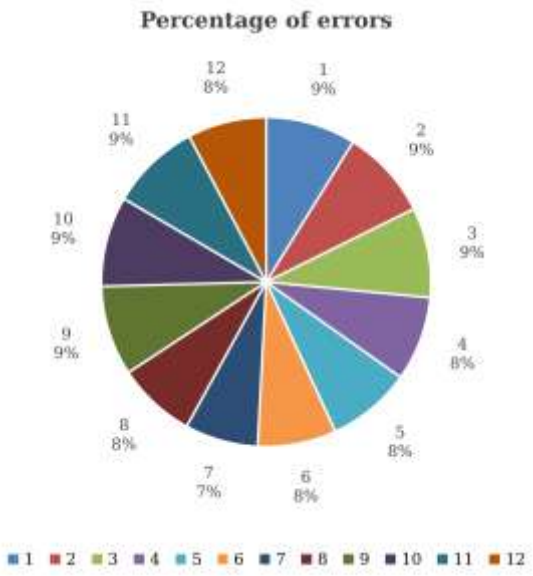


Figure 1. Percentage of phonological errors

3.2.Frequency of Fossilized /u/ Sound According to the Positions

It is seen from the data analysis that the /u:/ sounds in the middle position are prone to more fossilization than those in the final position. There is no initial /u:/ sound in the target words. Almost all the participants have made fossilized errors in case of pronouncing the /u:/ sounds which are in the middle position of the words. The number of participants pronouncing the /u:/ sound in the middle position is greater than those of pronouncing the /u:/ sound in the final position. So, the environment and position of sound in the words greatly influence on fossilization or defossilization in speaking English. It is also found in this study that the phonological environment of /u:/ sound is greatly responsible for unintelligible sounds of the users. The very /u:/ sound that precedes velar stop, alveolar nasal, alveolar fricative, alveolar stop, labio-dental fricative, post-alveolar affricate, alveolar approximant and bilabial stop is more flexible for fossilization than others. Table 5 is an illustration of the paradigm of this influence.

Table 5. Predominance of fossilization due to the position of /u:/ sound in the word

Position of /u:/	Target word	British Transcription	Fossilized/Not Fossilized	Participants
Middle	School	/sku:l/	Fossilized	All participants
	Stupid	/ˈstju:pɪd/	Fossilized	All participants
	Fool	/fu:l/	Fossilized	All participants
	Pool	/pu:l/	Fossilized	All participants
	Luke	/lu:k/	Fossilized	Participants 1-3, 5-12
			Not Fossilized	Participant 4

The Frequency of Phonological Fossilization of /u/ Sound

Position of /u:/	Target word	British Transcription	Fossilized/Not Fossilized	Participants
	Afternoon	/ˌɑːftə(r)ˈnuːn/	Fossilized	All participants
	Chewing	/ˈʧuːɪŋ/	Fossilized	All participants
	Excuse	/ɪkˈskjuːz/	Fossilized	Participants 1-3, 5, 6, 9-11
			Not Fossilized	Participants 4, 7, 8, 12
	June	/dʒuːn/	Fossilized	Participants 1-9, 12
			Not Fossilized	Participants 10, 11
	Soup	/suːp/	Fossilized	All participants
	Rude	/ruːd/	Fossilized	All participants
Final	Two	/tuː/	Fossilized	Participants 1-11
			Not Fossilized	Participant 12
	Sue	/suː/	Fossilized	Participants 1-4, 7-12
			Not Fossilized	Participants 5, 6
	Prue	/pruː/	Fossilized	Participants 1, 3, 6, 8-12
			Not Fossilized	Participants 2, 4, 5, 7
	You	/ˈjuː/	Fossilized	Participants 2, 4, 5, 7, 9-12
			Not Fossilized	Participants 1, 3, 6, 8
	Shoe	/ʃuː/	Fossilized	Participants 1-6, 8-11
			Not Fossilized	Participants 7, 12
	Who	/huː/	Fossilized	Participants 4, 10-12
			Not Fossilized	Participants 1-3, 5-9

Position of /u:/	Target word	British Transcription	Fossilized/Not Fossilized	Participants
	Threw	/θru:/	Fossilized	All participants

It is mentionable that the /u:/ sound in the only word, threw /θru:/, which is in the final position, has been fossilized by all participants. But the /u:/ sounds in the words like school /sku:l/, stupid /ˈstju:pɪd/, fool /fu:l/, pool /pu:l/, afternoon /ˌɑ:ftə(r)ˈnu:n/, chewing /ˈʧu:ɪŋ/, soup /su:p/ and rude /ru:d/ are in middle position and fossilized by all participants. The predominance of fossilized sounds according to the position of /u:/ sound has been highlighted in Figure 2. It indicates that 11 /u:/ sounds out of 18 have been fossilized 125 times by the participants. On the other hand, 7 /u:/ sounds out of 18 have been fossilized 63 times by the participants. It is clear from the diagram that the /u:/ sounds which are in middle position of the phonological environment are more flexible to be fossilized than those in other position. The larger portion of diagram is occupied by blue color which indicates middle position of the sounds in the words and smaller portion indicates final position and there is no space for initial position in the diagram as there is no initial sound in this study. Thus, the phonological environment in the words has a great impact on fossilization.

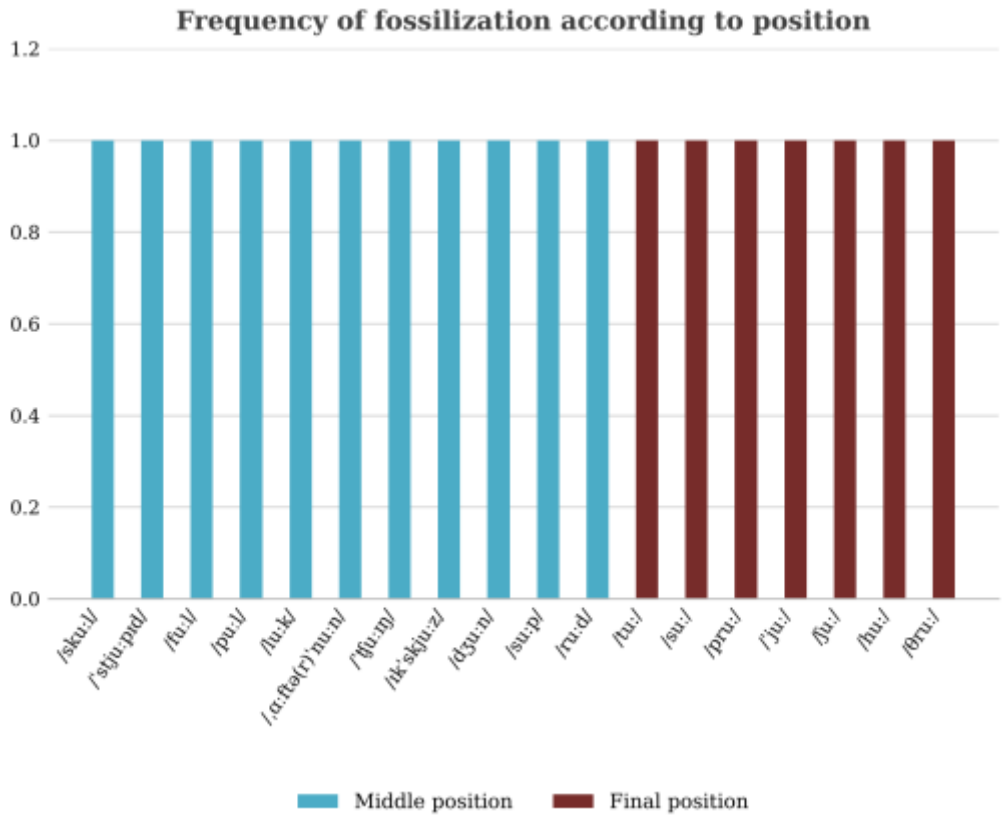


Figure 2. Frequency of fossilized /u/ sound according to the position

3.3.Reliability and Validity

Phonemic transcription was sent to another researcher to check for any agreement or disagreement on the accuracy of transcription to help with the reliability and validity.

3.4.Limitation and Delimitation

This study has been conducted on only one sound /u/. There are many other distinct Bengali sounds which remain unexplored in this study. There are also many other students of other institutions who are not recruited as participants in this study. Moreover, the teachers' competence, infrastructure of the institution and teaching materials are also considerable but this study delimited those. The recorded data could have been transcribed using modern equipment for minutely identifying pitch movement, stress, intonation, falling tone and rising tone but the data have been transcribed on the basis of researcher's own judgment and experience.

4. DISCUSSION

The Bengali speakers of English obviously make mistakes in pronouncing the English words containing /u:/ sound as they are accustomed to pronounce the Bengali words containing /u/ sound. Thus the /u/ sound has been fossilized in them. The phonological fossilization of Bengali sound in the Bengali speakers of English mainly occurs due to lack of awareness about phonological fossilization of both the teachers and students, lack of knowledge on phonological system of both the languages, lack of sufficient professional training of the teachers, lack of syllabus and curriculum on comprehensible pronunciation, lack of opportunity for interaction with native speakers, lack of proper classroom settings, lack of sufficient qualified teachers on pronunciation and lack of updated method of teaching pronunciation in Bangladesh. Even in the twenty-first century, the issue of phonological fossilization is not a matter of concern for the teachers, students, teacher trainees, educators and researchers in Bangladesh while this issue is a major concern for the teachers and researchers in other countries of the world. Besides the researchers like Selinker, Lakshmanan, Weinreich and Nemser at earlier period, a number of researchers and educators such as Zoran Vujisic in Rhodes University, Kathleen Dolan in San Francisco, Demirezen in Turkey, Han, Wei in China and Brown and many others have focused on fossilization at present. The academicians of Bangladesh must take into account this crucial aspect of phonological fossilization in the learners and must take necessary measures to defossilize the problem causing sound in their English pronunciation. This research will be helpful for them. Otherwise, the comprehensibility level in learners' pronunciation will not be improved.

5. CONCLUSION

This study shows that the Bangladeshi EFL learners frequently make fossilized errors in their English speech. Even most of the students do not know what phonological fossilization is and how they make errors in their pronunciation. Due to the absence of long /u/ sound in Bengali language, the Bengali speakers cannot differentiate between /u/ and /u:/ sound. That is why, the listeners hardly understand their speaking. Thus, this study is not only a new message of fossilization for the teachers and students in Bangladesh but also it will pave the way for further research. It will make teachers and students conscious of fossilized errors in their English pronunciation.

RESEARCH ETHICS

Recruitment of the students as participants in this study was granted approval by the authority of the institution. Once participants agreed to participate in the project, they were provided with information sheet. This information sheet explains the nature of this study and includes researcher's contact details. First meeting was held with each student and teacher to explain in

detail on the study's objectives and how data would be collected. The meeting also explained their rights throughout the study and their participation was confirmed. They were ensured about confidentiality and they have the right to withdraw whenever they want, can ask questions, and can answer to their satisfaction. Another thing to consider is the anonymity of the participants. The participants were informed that their actual names will not be used in the study. Their name and other personal details have not been mentioned in this study and any other related publications. Hence, each participant was assigned a suitable pseudonym while a code or symbol such as participant 1, 2... was used at the time of data analysis.

DECLARATIONS

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APPENDIX A

In a good school

Miss **Luke**: **Good afternoon**, girls.

Girls: **Good afternoon,** Miss **Luke**.

Miss **Luke**: This afternoon we're going to learn how to cook **soup.** Open your book at unit twenty two.

Prue: Excuse me, Miss **Luke**.

Miss **Luke:** Yes, **Prue?**

Prue: There's some **chewing** gum on your **shoe.**

Miss **Luke**: **Who threw** their **chewing** gum on the floor? Was it you, **Prue?**

Prue: No, Miss it was **June.**

Miss **Luke: Who?**

Prue: June Cook.

June: It wasn't me, **stupid**. It was **sue.**

Sue: It was **you!**

June : It wasn't me. You **stupid fool**. My mouth's **full** of **chewing gum.**

Look, Miss **Luke!**

Sue: Stop pulling my hair, **June.** It was **you!**

June: You!

Sue: You!

Miss Luke: Excuse me! You're being very **rude**. You **two** nuisances can stay in **school** this **afternoon** instead of going to the swimming **pool** (Baker, 1960)