

An Analysis of Segmental and Stressing Errors Made by Elf Learners on Words with Stress Demanding Affixes: A Case Study

*Une analyse des erreurs segmentales et d'accentuation
commises par des apprenants d'anglais langue étrangère sur
des mots avec des affixes exigeant l'accent : Etude de cas*

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Abstract

The identification of segmental and suprasegmental errors of words with stress demanding affixes among English as a Foreign Language (EFL) learners has been an enduring objective in teaching pronunciation. Such records in pronunciation errors are identified by language instructors specializing in foreign and second language teaching. While these records are beneficial, they have deficiencies by overlooking or prioritizing certain errors. To enhance the inclusivity and accuracy of the pronunciation records, the present study conducts a phonological analysis focusing on segmental and stressing features of Congolese L2 learners of English speech by investigating their speech patterns. The findings, substantiated by empirical evidence, provide a comprehensive understanding of the enduring pronunciation hurdles that could affect the intelligibility principle. The findings reveal that pronunciation errors are significantly influenced by the first language interference and differences in spelling and phonological systems between Lingala and/ ou French, and English. Errors in segment such as /θ/, /ð/, /tʃ/, /dʒ/, /ŋ/, /v/, /z:/, /v/, /ʌ/, /aɪ/, /ɔɪ/, /aʊ/, /eɪ/, /əʊ/, /eə/, /ʊə/ and /ɪə/ were common due to their absence or variation in French and Lingala. Suprasegmental challenges included incorrect stress patterns. To avoid persistent pronunciation challenges in segmental features,

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educators should help learners distinguish between 2vowels and consonant sounds by following either the articulatory approach or using minimal pair practice. Regarding suprasegmental features, educators must employ communicative practices that focus on developing proper stress.

Key words : *segmental and suprasegmental errors, stress demanding affixes, second language*

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Résumé

L'identification des erreurs segmentales et suprasegmentales des mots avec des affixes nécessitant un accent chez les apprenants d'anglais langue étrangère (EFL) a été un objectif durable dans l'enseignement de la prononciation. Ces relevés d'erreurs de prononciation sont établis par des enseignants de langues spécialisés dans l'enseignement des langues étrangères et secondes. Bien que ces relevés soient utiles, ils présentent des lacunes en négligeant ou en donnant la priorité à certaines erreurs. Pour améliorer l'inclusivité et la précision des relevés de prononciation, la présente étude mène une analyse phonologique centrée sur les traits segmentaux et d'accentuation des locuteurs congolais apprenant l'anglais comme L2, en étudiant leurs schémas de parole. Les résultats, étayés par des preuves empiriques, offrent une compréhension approfondie des obstacles persistants à la prononciation qui pourraient affecter le principe d'intelligibilité. Les résultats révèlent que les erreurs de prononciation sont fortement influencées par l'interférence de la langue maternelle et les différences dans le système orthographique et phonologique entre le lingala, le français et l'anglais. Les erreurs segmentales, telles que /θ/, /ð/, /tʃ/, /dʒ/, /ŋ/, /v/, /z:/, /v/, /ʌ//aɪ/, /ɔɪ/, /aʊ/, /eɪ/, /əʊ/, /eə/, /ʊə/ et /ɪə/, étaient courantes en raison de leur absence ou variation en français et en lingala. Les défis suprasegmentaux incluaient des erreurs dans les schémas d'accentuation. Pour éviter des difficultés persistantes dans les caractéristiques segmentales, les enseignants devraient aider les apprenants à distinguer les voyelles et les consonnes soit en suivant l'approche articulatoire, soit en utilisant la pratique des paires minimales. En ce qui concerne les caractéristiques suprasegmentales, les enseignants doivent adopter des pratiques communicatives qui mettent l'accent sur le développement d'une accentuation correcte.

Mots clés : *erreurs segmentales et suprasegmentales, suffixes nécessitant l'accentuation, langue seconde*

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1. The Literature review

Second language analysis is one of the research interest areas of L2 acquisition, which focuses on the four main branches of linguistics. The main branches of linguistics involved in second language analysis are phonetics and phonology, morphology, syntax, and semantics. From these four main domains in second language analysis, the emphasis will be put on phonology (phonetics), especially on previous studies conducted on segmental and stressing errors.

Raihan Janitra Zaky (2019) conducted a study on segmental error analysis of the English language by freshmen of English study program. His study aimed at identifying and categorizing the kind of segmental errors that occur in English language learning process and at indicating factors which cause segmental errors. Besides, another article on pronunciation difficulties in segmental phonemes of multicultural grade 8 students by Elvie Lyka Lumanao Duran & Sophia B. Aloy (2023), examined the segmental difficulties in pronunciation by identifying the profile of the students in terms of the first language spoken (L1), second language spoken (L2) and ethnicity. The same study went on to examine the students' pronunciation difficulties on vowel and consonant phonemes in words.

Sandy Vitra Nugraha, Lalu Ari Trawan, Haerazi & Tina Orel Frank (2022), worked on an article entitled segmental aspects of pronunciation errors produced by EFL students in classroom. Their investigation confirmed that learners make errors while speaking English; as a result, learners substituted English sounds for Indonesian sounds. For example, EFL learners substituted the vowel sounds /ʊ/, /ɛ/ and the consonants /f/, /θ/ for the closest sounds in Indonesian; therefore, instead of pronouncing great /greɪt/, EFL learners pronounce /gri:t/ and instead of pronouncing

/kɒf/, they pronounce /kəʊf/. Eventually, the study identified three sources of errors: psycholinguistic, sociolinguistic and epistemic sources. As for psycholinguistics errors, students had difficulties in pronouncing English sounds because of the influence of their mother tongues and the first language acquisitions, it means that the learners' previous language and accents affect their pronunciation. With regard to sociolinguistics, the students were afraid of making errors while pronouncing words. Eventually, there was an epistemic source, this source indicates that students had limited knowledge of vocabulary.

Another study entitled causes of English pronunciation errors among senior high school students by E. Awukudzie (2014), realized that a number of factors influence students' pronunciation. E. Awukudzie's investigation confirms that poor pronunciation or pronunciation errors are the results of L1 influence or transfer, the inter-lingual phenomena, lack of teachers with expertise to teach pronunciation and absence of language laboratories and equipment for pronunciation. In addition to E. Awukudzie's study, R. Ayertey Lawer, Yvette Djabaki & Timothy Hattoh-Ahiaduvor (2025), investigated on the manifestation of English dental fricatives in Ghanaian technical University students' spoken English. The data obtained from this study revealed that there were numerous instances in the speeches of the participants of the study whereby the voiced and the voiceless dental fricatives were not correctly articulated, leading to mispronunciation of the words which contained these sounds. For example, instead of pronouncing three /θri:/, they pronounced /tri:/, thank /tæŋk/ instead of thank /θæŋk/, them /dəm/, instead of /ðəm/ and the /də/ instead of /ðə/.

Lyons (1970) states that structural the approach to the analysis of language involves the segmentation of utterances into elements in terms of two basic, and complementary, relations: syntagmatic and paradigmatic. It implies that structuralism is a methodological framework for analyzing and understanding complex systems, emphasizing the relationships between elements and the underlying structures that govern them.

In this study, we intended to examine whether or not the English utterances produced by EFL learners complied with the phonological

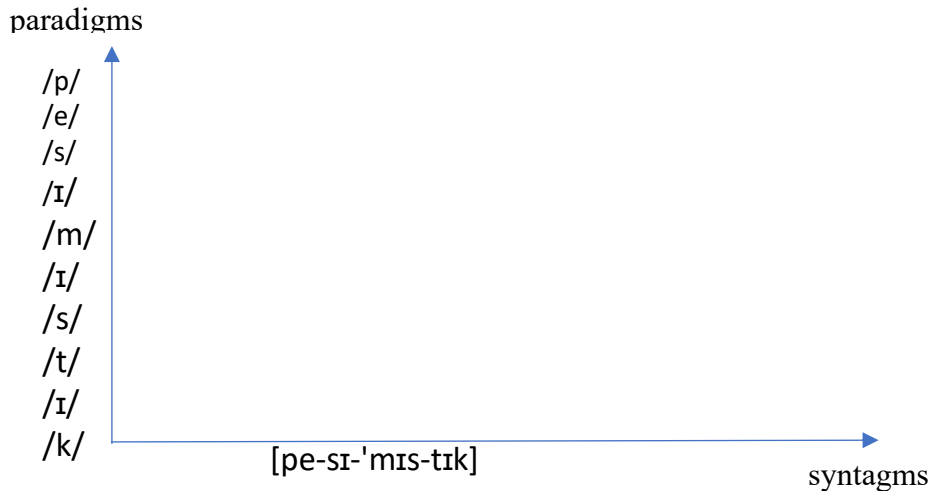
underlying structures of English and this process was done through paradigmatic and syntagmatic methods. In the same line, Lyons (1970) agrees that there is a common structure underlying the utterances which we produce when we speak a particular language. Utterances are instances of parole. The underlying structure in terms of which we produce them as speakers and understand them as hearers is the langue in question (English, French, Lingala etc.). It is important to acknowledge that parole which is referred to as the performance is the way someone produces utterances and langue is referred to as competence, it is the knowledge that the speaker has got of his language. In addition, Chomsky (1965) gives a distinction between competence, the fluent native speaker's tacit knowledge of his language and performance, what people actually say or understand by what someone else says on a given occasion). Competence is the speaker-hearer's knowledge of his language, while performance is the actual use of language in concrete situation. Very often, performance is an imperfect reflection of competence. According to Radford (1997) misproductions and misinterpretations are performance errors whereas competence is a term used to represent fluent native speaker's knowledge of the grammar of their mother tongue.

As for this study, EFL learners were presented with 7 words with stress-demanding affixes. The aim was to assess their pronunciation competence through their performance in pronouncing these words. Therefore, paradigmatic and syntagmatic methods were used in the analysis of phonological utterances produced by the informants (EFL learners). The following methods were used to analyse the linguistic data:

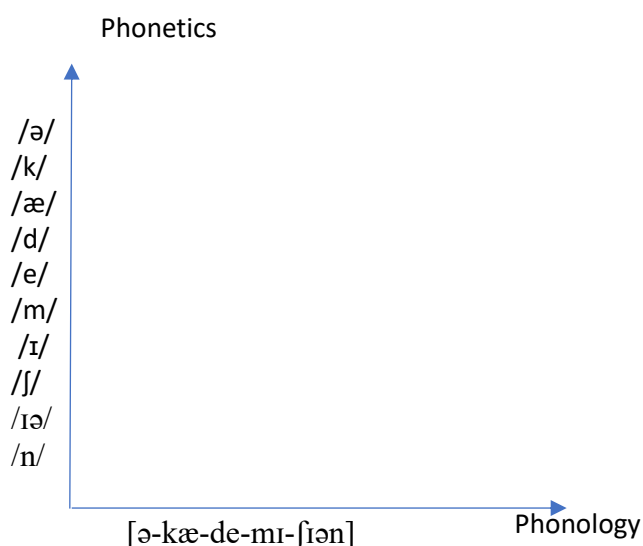
Lyons (1970) states that "sets of elements can be substituted one for another in a given context are said to be in paradigmatic relation ; elements which combine to form a larger unit are said to be in syntagmatic relationship". In the case of our study, we expected that the substitution of one element for another, the assimilation of one element to another, the omission and the addition of one element in the same context may do either of two things. It may change the larger unit into a different unit of the same classe. Or it may have no positive effect upon the larger unit.

In our study, paradigms are phonemes which stand vertically independently whereas syntagms are segments in order to form words.

For example, words with non-neutral affixes may have the following structure:



The paradigmatic concept can be related to phonetics and the syntagmatic concept can be related to phonology. Lyons (ibidem: 20) points out the distinction between a phonetic and a phonological interpretation of sound. It is obvious that each word is composed of a certain number of sounds. For example, the English word *academician* /ə/, /k/, /æ/, /d/, /e/, /m/, /ɪ/, /ʃ/, /ɪə/, /n/ is composed of ten sounds. From the phonological point of view, this statement might be interpreted in terms of the relevant paradigmatic and syntagmatic relation: in the case of our study, we can say that there are ten places at which the substitution of one sound for another, assimilation of one sound to another, the omission of one sound from the primary unit and addition of one sound to the primary unit could have the effect of changing one word into another. The set of sounds which results from the analysis of segmental and stressing errors at phonological level may be described as the phonemes of the language. In this work, the phonemes of English were considered as the minimal unit of segmental and stressing analysis. Therefore, phonetics differs from phonology in that it considers speech sounds independently of their paradigmatic oppositions and syntagmatic combinations in English.



A linguistic element is considered marked if it has a specific, distinctive feature or property that sets it apart from others whereas an unmarked element is the default, more common, or more neutral form. Chomsky & Hall (1973) state that certain aspects can be dealt with if we incorporate the Prague School notion of marked and unmarked values of features into our account in some systematic way. In the same line, Sommerstein (1977) points out that "linked, in the Prague School view, with the notion of neutralization is that of markedness. A privative opposition by definition sets the presence of some phonic peculiarity over against its absence, so that one of the terms of such an opposition is, as it were, positive and the other negative. The positive pole of a privative opposition is termed the marked pole (member, term) and the other the unmarked".

As far as this study is concerned, we expected to present the markedness and the unmarkedness of words with non-neutral affixes, words with neutral affixes, words with stress-demanding affixes, nouns derived from verbs by conversion, and verbs from which nouns are derived by conversion.

With regard to words with stress demanding affixes, they are marked by the stress which falls constantly on the ultimate syllable. E.g. question *['kwes-tʃən]* and questionnaire *[kwes-tʃə-'neə]*; employ *[ɪm-'plɔɪ]* and employee *[ɪm-plɔɪ-'i:]*. It is important to point out that words with stress demanding affixes are marked by the following suffixes: -naire */neə/*, -ee */i:/*, -eer */iə/*, -ese */i:z/*.

Lyons (1970) considers duality and productivity as characteristics of human languages. He keeps on arguing that by duality of structure (or double articulation) linguists refer to the fact that in all languages so far investigated one finds two levels of structures or patterning. There is a primary level, composed of meaningful units. These are words and there is a secondary level, the units of which themselves have no meaning, but which enter into the formation of the primary units. The secondary units of spoken languages are sounds and of written language, letters. By the productivity of human language (another term is creativity) is meant the ability that we all have to construct and understand an indefinitely larger number of sentences in our native language, including sentences that we have never heard before, and to do this, for the most part, naturally and unreflectingly, without the conscious application of grammatical rules.

In this study, we intended to verify whether or not informants were capable of pronouncing secondary units which are associated to form primary units. Because if they failed to pronounce secondary units correctly, it would be rather difficult for them pronounce English words correctly. In the framework of productivity, we subjected informants to words with different kinds of affixes because we wanted to check whether or not they could be able to pronounce correctly words they ever pronounced before. As for the productivity, the following are words with stress demanding affixes to which we subjected the informants:

Questionnaire	Congolese	Convalesce
Employee	Shampoo	
Mountaineer	Technique	

2. Methodology

During the pronunciation test, the researcher asked each informant to pronounce each word with stress demanding affix so as to check whether they were good or bad at pronouncing words with stress demanding affixes whose stress falls at the ultimate syllable. In addition to checking the stress position, the researcher had to check whether the informants were good or bad at pronouncing English vowel and consonants phonemes at the paradigmatic level.

Thus, 30 subjects were selected to participate in the study. The informants were students of 5th year of the Department of English and Business Computer of the Faculty of Arts and Human Sciences/ University of Kinshasa. With regard to testing their pronunciation, 7 words with stress demanding affixes were selected and eventually, the informants were asked to pronounce them. Errors were categorized according to phonological rules which were violated by the informants. For example, there were errors of assimilation, substitution, epenthesis and deletion that were detected in their pronunciation.

In addition, it was found that the majority of the informants made stress errors; that is to say, they failed to put the stress of the words with stress demanding affixes at the ultimate syllable as expected.

In this respect, the following analysis sorted out segmental errors by identifying the phonological rules involved in the processes. In the same analysis, the researcher detected stressing errors by showing the syllables on which the informants put the stress. The researcher put together the frequencies and the percentage of the informants who put the stress on the same syllable of a word regardless of the different segmental errors they did.

The analysis of the data obtained from the interview were guided by some relevant linguistic theories with which variables and values were linked. Concerning the linguistic theory, Lyons (1970) states that linguistic theory, insofar as it is scientific, must be developed on the basis of inductive generalization from the 2events that have first been observed and systematically described; and that the construction of a theory is subsequent to and determined by a description of linguistic data. It is

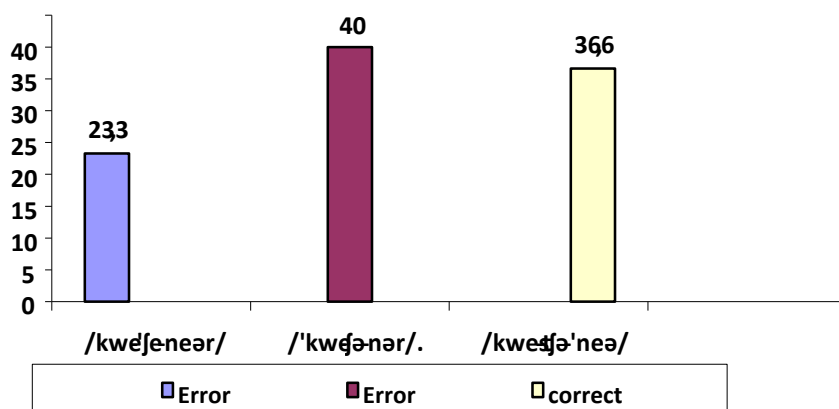
worth pointing out that the linguistic theories helped us determine and describe segmental and stressing errors made by EFL learners. The following were some of the theories that were linked to the data obtained from the questionnaire :

3. Analysis

3.1 Frequency, percentage, phonological processes and stress errors involved in the pronunciation of words with stress demanding affixes

3.1.1 "questionnaire"

Graphic 1: frequency obtained from questionnaire /kwes-ʃə-'neə/

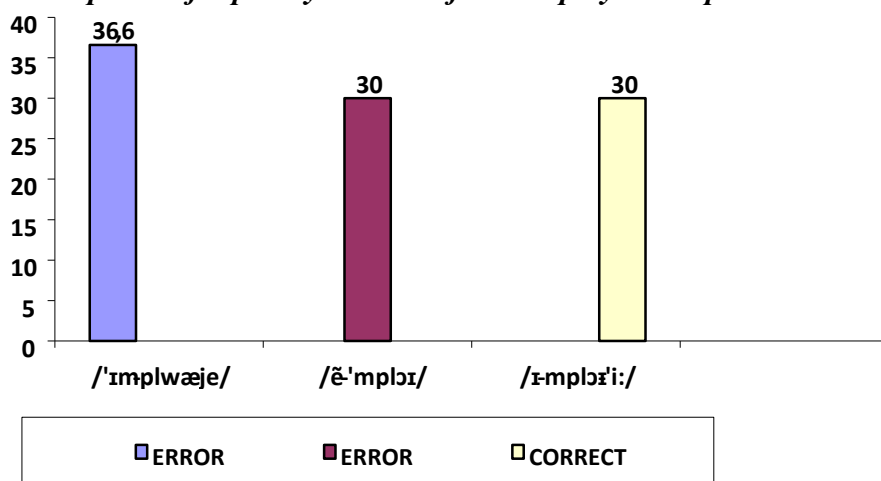


Narrative: 12 or 40% made errors of deletion; they deleted the voiceless alveolar fricative /s/ at the antepenultimate syllable. They also made an error of assimilation; they assimilated the voiceless post-alveolar fricative /ʃ/ to the voiceless palate-alveolar affricate /tʃ/ at the penultimate syllable. They also assimilated the short mid-central /ə/ to the short mid-front /e/ at the ultimate syllable. They eventually assimilated the French /ʁ/ to the English voiced palatealveolar /r/ at the ultimate syllable and they put the stress on the antepenultimate syllable instead of putting it at the ultimate syllable, as it is /'kwe-ʃə-nɛr/. 7 or 23,3% deleted /s/ at the

antepenultimate syllable, they assimilated /ʃ/ to /tʃ/ at the penultimate syllable and they substituted /e/ for the diphthong /eə/ at the ultimate syllable. They put stress at the penultimate syllable instead of putting at the ultimate syllable, as it is /kwe-'ʃe-neər/.

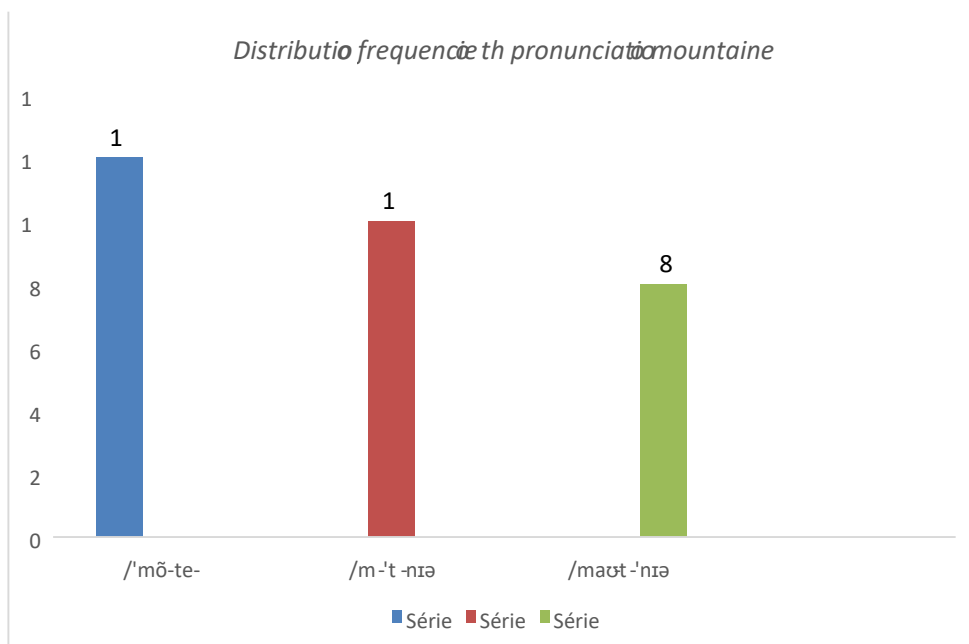
3.1.2 "Employee" /ɪm-plɔɪ-'i:/

Graphic 2: frequency obtained from employee /ɪm-plɔɪ-'i:/



Narrative: the pronunciation of "employee" revealed that there were two trends; that is to say, there was a group of informants which did not pronounce the word **"employee"** correctly and there was another group which pronounced it correctly. With this end in view, 11 or 36,6% substituted the glide plus the short low-front vowel /æ/ for the diphthong /ɔɪ/ at the penultimate syllable. This was due to the fact that informants pronounced **"employee"** the same way as it would be pronounced in French word **"employé"**. The same group of informants substituted the glide /j/ plus the short mid-front vowel /e/ at the ultimate syllable. Eventually, they put stress at the antepenultimate syllable instead of putting it at the ultimate syllable. The second trends were based on 9 or 30% who deleted the long high-front vowel /i:/ at the ultimate syllable and they assimilated the French nasal sound /ẽ/ to the short highfront /ɪ/ plus the nasal /m/ (/ɪm/) at the antepenultimate syllable, and eventually they put the stress at the penultimate syllable instead of putting it on the

ultimate syllable. The chart indicates that 21 or 70% of the informants did not pronounce the word employee correctly and 9 or 30% managed to pronounce the employee correctly.

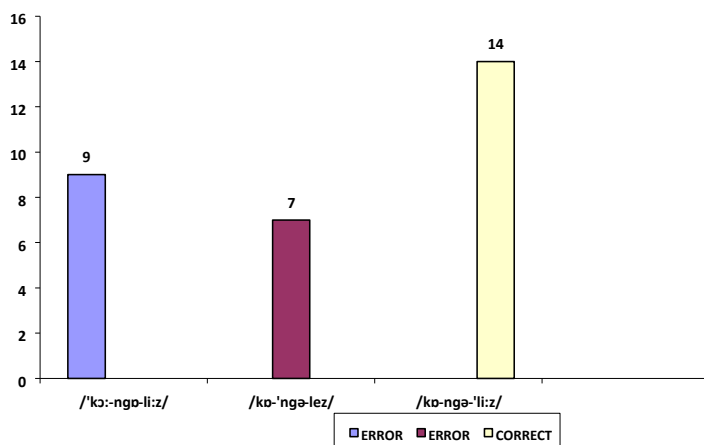


3.1.3 "Mountaineer"

Narrative: It is important to bear in mind that the word "mountaineer" was pronounced with different errors at different syllables; thus, 12 or 40% substituted the French nasal close midback /ɔ̃/ for the English diphthong /aʊ/ at the antepenultimate syllable. They also assimilated the short mid-front /e/ to the short high-front /ɪ/ at the penultimate syllable, and they substituted the short mid-front vowel /e/ plus voiced alveolar liquid /r/ for the English diphthong /ɪə/ at the ultimate syllable. The same informants put the stress at the antepenultimate syllable instead of putting it at the ultimate syllable. Moreover, 10 or 33,3% substituted the French nasal close mid-back /ɔ̃/ for the English diphthong /aʊ/ at the antepenultimate syllable. They also assimilated the short mid-front /e/ to the short high-front /ɪ/ at the penultimate syllable and they put stress at the penultimate syllable instead of putting it at the ultimate syllable. Looking at the results which are in chart above, it is

obvious that 22 or 73,3% informants did not pronounce the word mountaineer correctly (they made different types of errors) and 8 or 26,6% pronounced the word "mountaineer" correctly.

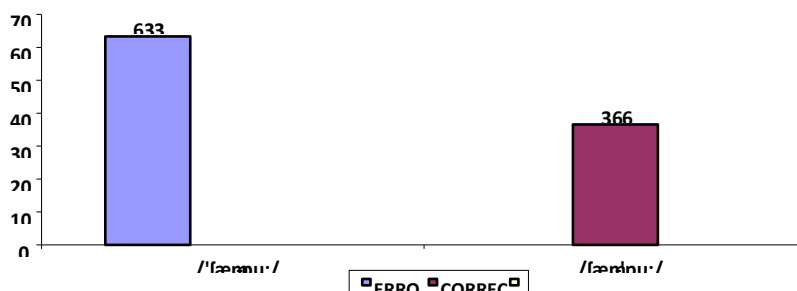
4.2.4 Congolese /kɒ-ngə-'li:z/



Narrative: The pronunciation of Congolese was complex on the ground that the majority did not pronounce it correctly and the minority pronounced it correctly; therefore, 9 or 30% assimilated the long mid-back vowel /ɔ:/ to the short mid-back vowel /ɒ/ at the antepenultimate syllable. The sounds /ɔ:/ and /ɒ/ are produced while the mouth of the speaker is half-open; thus, it is due to this feature that they can be assimilated to each other by the learners. In addition, the same informants assimilated the short mid-back vowel /ɒ/ to the short mid-central /ə/ at the penultimate syllable. It is also important to bear in mind that /ɒ/ and /ə/ are pronounced while the mouth is half-open and they are both mid vowels. It is due to this common feature that they can be assimilated to each other. With regard to the stress, they put stress on the antepenultimate syllable instead of putting on the ultimate syllable. Another group of 7 or 23,3% assimilated the short mid-front vowel /e/ to the long high-front /i:/ at the ultimate syllable. It should be remembered that /e/ and /i:/ are both, front vowels and it is due to this feature that they were assimilated to each other

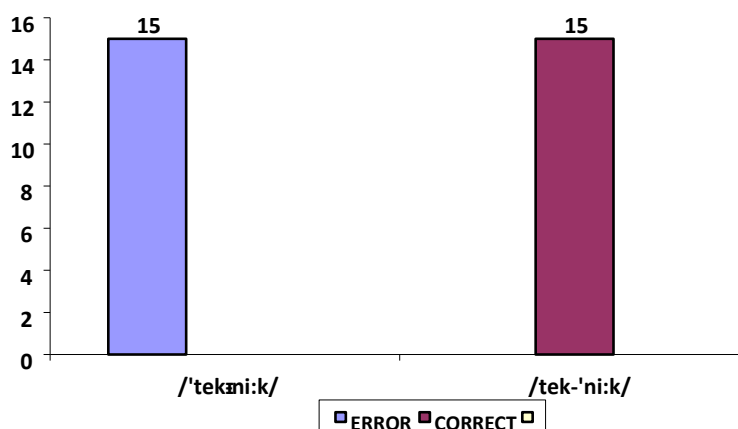
by the informants. In this respect, they put stress on the penultimate syllable instead of putting it on the ultimate one.

3.1.4 Shampoo /ʃæm-'pu:/



Narrative: The results obtained from the pronunciation of the word Shampoo /ʃæm-'pu:/ attested that 19 or 63,3% made a stressing error at the penultimate syllable. It is important to point out that the informants did not make any segmental error on the word.

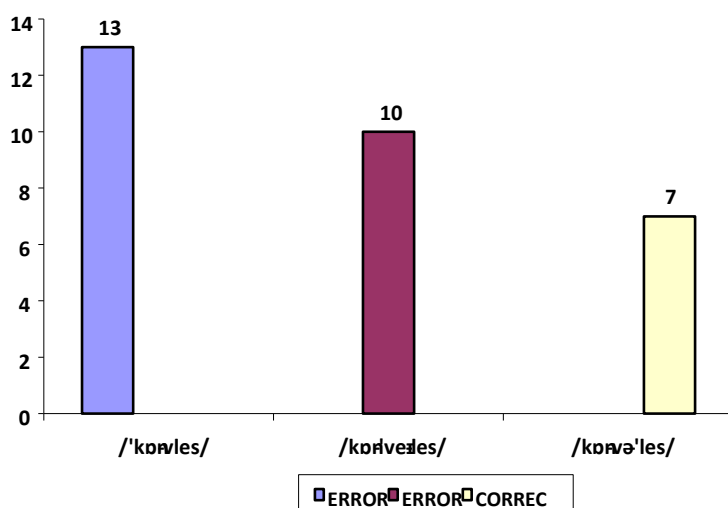
3.1.5 Technique /tek-'ni:k/



Narrative: looking at the results obtained from the pronunciation of the word "technique /tek-'ni:k/", 15 or 50% epenthesized the short high-front vowel /ɪ/ between the voiceless velar plosive /k/ and the voiced

alveolar nasal /n/. It is important to bear in mind that the English word technique /tek-'ni:k/ has two syllables but due to the epenthesis introduced between /k/ and /n/, the word has now three syllables instead of two. As for the stress, they put the stress 2on the penultimate syllable instead of putting it on the ultimate syllable.

3.1.6 Convalesce /kɒn-və-'les/



Narrative: Being a word with stress demanding affix, it has its stress on the ultimate syllable. However, the majority of the informants who were asked to pronounce the word during the oral test did not succeed in pronouncing the word correctly due to the fact that the informants failed to pronounce vowel and consonant phonemes and others put the stress on wrong syllables ; therefore, 13 or 43,3% deleted the short mid-back vowel /ə/ at the penultimate syllable and they made the mistake of putting the stress on the antepenultimate syllable instead of putting it at the ultimate syllable. Moreover, 10 or 33,3% substituted the diphthong /eɪ/ for the short back vowel phoneme /ə/ on the penultimate syllable and they put the stress on the penultimate syllable instead of putting it on the ultimate syllable. In short, it can be concluded that 23 or 76,86% made segmental

and suprasegmental errors while 7 or 23,3% succeeded in pronouncing segmental and suprasegmental elements correctly.

4. Interpretation

4.1 Summary regarding the scores obtained by each informant in pronouncing the ten words with stress-demanding affix

I would like to recall that the oral test of stress-demanding affix had 7 words and there were 30 informants who were exposed to an oral test where they were asked to pronounce 7 words with stress-demanding affixes. Every informant who succeeded in pronouncing one word had to score 1 but the informant who failed to pronounce a word he/ she had to score 0. Therefore, 1 informant had to pronounce 7 words with stress-demanding affixes and each word with stress-demanding affix had to be pronounced 7 times by 30 informants. The following table summarizes the scores of every informant:

Table 1: Synoptic table of all variables with stress demanding affixes

Words	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOT
Questionnaire	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	1	1	0	1	0	1	11
						8																									
Employee	1	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	1	0	11
Mountaineer	0	0	1	1	1	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	9
Congolese	0	1	0	0	1	0	1	0	0	1	1	1	1	1	1	0	0	1	0	0	1	1	0	1	0	0	0	1	0	1	14
Shampoo	0	1	0	1	1	0	0	0	0	0	1	0	1	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	10
Technique	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	14
Convalesce	0	1	1	0	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	9
Total	2	4	2	2	4	3	4	2	3	3	4	4	4	4	4	1	2	3	1	2	1	3		1	3	2	1	2	3	2	78

4.2 The mean of the answers given by the thirty informants to the seven words which contain stress demanding affixes

The sum expected of 30 Informants times seven words with stress demanding affixes was 210 but as the majority of the informants did not pronounce the seven words with stress demanding affixes, then sum obtained by thirty informants after the interview was 78 out of 210. Thus, gap between good pronunciation and bad pronunciation was 132; therefore, it implies that the expected mean was 7 but after the analysis, it was found that the arithmetic mean scored by all the informants was 2,6. In this respect, the arithmetic mean of the failure of all the informants was 4,4.

Table 2. summary of the results obtained from words with stress demanding affixes

Denominations	$\sum X_i$	N	$\bar{X}$
Marginal Expected value (sum)	210	30	7
Observed value (good)	78	30	2,6
Missed value (failure)	132	30	4,4

The observed arithmetic mean revealed that the EFL learners performed poorly in pronouncing words with stress demanding affixes. This statement could be explained by the fact that their score was very much below the expected arithmetic mean and the gap between the expected values and the observed values was very big. The mean of the gap was very much higher than that of the expected mean. Therefore, psycholinguistic, sociolinguistic and pedagogical efforts should be united and reinforced so as to empower EFL learners with correct pronunciation of words with stress demanding affixes. In fact, the arithmetic mean of the failure was higher than the arithmetic means of the success.

Conclusion

The conclusion of this introduction can be drawn from the statement which claims that all EFL learners living in a multilingual setting have a dominant language and make overt systematic errors; or, Congolese EFL learners live in a multilingual setting. Therefore, Congolese EFL learners living in a multilingual setting have a dominant language and make overt systematic errors.

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