An Investigation into the Teaching of English Phonetics and Phonology in Secondary Schools of N'Djamena in Chad

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Abstract

This study examines the influence of French pronunciation on the English speech of Chadian learners, focusing on secondary school teachers and students who study English in Chad. Using data collected from French-speaking learners, the research identifies common English pronunciation deviations affecting vowels, consonants, consonant clusters, and word stress. Guided by Cruttenden's (2001) phonological framework and Error Analysis, the study shows that learners struggle with English sounds absent in French and with letter sequences that have variable pronunciations, such as ch in chemist and spinach. Major difficulties include the pronunciation of consonant clusters, particularly CC and CCC clusters, which learners simplify through vowel insertion or addition. The findings also reveal systematic pronunciation of silent letters and a strong tendency to place stress on the final syllable, mirroring French stress patterns, especially in Romance-derived words. Overall, the study highlights significant phonological interference from French in Chadian learners' English pronunciation.

Keywords: Phonetics and Phonology, Chadian secondary schools, French, Arabic, English, local languages.

Une enquête sur l'enseignement de la phonétique et de la phonologie anglaises dans les écoles secondaires de N'Djamena au Tchad

Résumé

Cette étude examine l'influence de la prononciation du français sur la production orale de l'anglais chez les apprenants tchadiens, en se concentrant sur les enseignants et les élèves du secondaire qui étudient l'anglais au Tchad.

À partir de données recueillies auprès d'apprenants francophones, la recherche identifie des écarts récurrents dans la prononciation de l'anglais affectant les voyelles, les consonnes, les groupes consonantiques et l'accentuation des mots. Guidée par le cadre phonologique de Cruttenden (2001) et par l'Analyse des erreurs, l'étude montre que les apprenants éprouvent des difficultés avec les sons de l'anglais absents du français ainsi qu'avec des séquences de lettres à prononciation variable, telles que ch dans chemist et spinach. Les principales difficultés concernent la prononciation des groupes consonantiques, en particulier les groupes CC et CCC, que les apprenants simplifient par l'insertion ou l'ajout de voyelles. Les résultats révèlent également une prononciation systématique des lettres muettes et une forte tendance à placer l'accent sur la syllabe finale, reflétant les schémas accentuels du français, notamment dans les mots d'origine romane. Dans l'ensemble, l'étude met en évidence une interférence phonologique significative du français dans la prononciation de l'anglais chez les apprenants tchadiens.

Mots-clés : phonétique et phonologie, écoles secondaires tchadiennes, français, arabe, anglais, langues locales.

Introduction

Since 1942, the English language has been introduced in southern Chad through protestant missionaries who have settled there for many decades now where it has to compete with two official languages, that is to say, Arabic and French on one hand and over 120 indigenous languages on other hand. In this linguistic melting-pot, it is evident that the English language, which is used only in the classroom, undergo a series of processes at all levels of linguistic analysis. The purpose of this study is to examine what processes take place at the level of phonology, that is to say, the pronunciation of English words by these students, who are already competent in French, the language in which over 90% of their subjects are taught, and Arabic, the language of prayers as well as of education, for a substantial part of the population. A number of five questions were set to guide this research. They are among others what are the characteristic vocalic features of the English of Chadian learners? What are the characteristic consonantal features of Chadian learners? What are the typical stress patterns of the English of Chadian learners? Which languages tend to influence the English speech of Chadian learners? What can be done to improve the English pronunciation of Chadian learners?

Correspondingly, a number of five research objectives were generated to determine, describe, analyze and explain the characteristic vocalic features of the English of Chadian learners, to determine, describe, analyze and explain the characteristic consonantal features of Chadian learners, to determine, describe, analyze and explain the typical stress patterns of the English of Chadian learners, to determine the languages which tend to influence the English of Chadian learners and to propose solutions with respect to what can be done to improve the English pronunciation of Chadian learners This work is significant for various reasons. First, it will shed light on what has been going on as far as the teaching and learning of English in the country is concerned. Language teachers and school inspectors will use the findings of this study to assess what has been going on at the level of phonology for the past ten years and to work out what should be done next.

1. Framework of analysis

It is the systematic collection of learners' errors, the examination of these errors, their classification and a consideration of their possible causes. Errors are competence problems that learners face when they apply language rules in an act of communication while mistakes are performance problems that result from the fact that the learners may be tired or not attentive enough. Errors had always been an object of investigation; in the days of contrastive analysis, learners' erroneous structures when compared to well-formed structures in the target language under study. It was believed that learners' erroneous structures in the target language resulted from the differences between the learners' native language and this target language. It was therefore assumed that a contrastive analysis of the learners' target and native languages would predict potential areas of difficulty. With time it was realized that similarity in structure between the learners' native and target languages did not guarantee error-free speech and difference in structure did not guarantee error-rife speech. This led to the development of error analysis.

The turning point was S. Corder's observation 1967 that learners' errors were highly significant in the process of language acquisition. Actually, "a

learner's errors are significant in that they provide to the researcher evidence of how language is learned or acquired, what strategies or procedures the learner is employing in the discovery of the language". Many researchers including S. Corder et al. (1984) have identified five stages in the description of errors. These are: recognition, interpretation, reconstruction, classification, and explanation. The teaching of English phonetics and phonology is widely acknowledged as essential for intelligible oral communication. Crystal (1987, 2008) provides the theoretical foundation, emphasizing the central role of speech sounds, stress, and intonation in language competence. In multilingual African contexts, G. E. Echu (1983) and G. E. Echu and A. W. Grundstrom (1999) show that learners' pronunciation is strongly influenced by local and colonial languages, a situation applicable to Chad. Empirical evidence from M. I. H. Elkhair (2014) reveals that EFL learners commonly experience pronunciation problems such as sound substitution and stress errors due to mother-tongue interference and inadequate phonetic training. Focusing on Chad and Central Africa, H. Moussa (2012) and C. Ndjebet (2010) identify major challenges in English teaching, including insufficiently trained teachers, lack of materials, and the largely theoretical treatment of phonetics and phonology in secondary schools. At the policy level, UNESCO (2015) stresses the need for context-sensitive language education and improved teacher training in multilingual societies. Collectively, these studies highlight a gap between the importance of phonetics and phonology and their effective classroom implementation, justifying an investigation into their teaching in secondary schools of N'Djamena.

2. Methodology

This section describes the informants for the research, the instruments, the procedure for the collection of data, the materials, and the method of data analysis.

2.1. Informants

The informants for this study learners and teachers. Learners were drawn from the secondary schools of N'Djamena (Chad), with their teachers serving as research assistants. These informants come from different parts of the country and they speak different indigenous languages. They follow the French system of education and have therefore been using French from primary school, with English coming in when they reached secondary school. The time allocated for the English language in secondary schools is very limited; it is only three hours per week. In Chad, French and Arabic are the two official languages. English is viewed as a foreign language. At home, the main languages the informants use for their interactions are their mother tongues, French and Arabic. On school campuses, most informants interact in French and Arabic; in class, English is used only for lectures. Teachers from various secondary schools were contacted and 10 agreed to subject their pupils to this exercise during their English class period. In each school, several sets of three *Terminale* learners took part in the exercise, giving a total of three sets of data for each item considered. As there were ten teachers, there were therefore 30 different informants. In each set, there were three learners, two male and one female. Their ages ranged from 18 to 25. The second set included the ten teachers who agreed to take part in the exercise. They were asked to fill in a questionnaire.

2.2. Instruments

Data came from two sources: the pupils and their teachers. To collect the data from the pupils, we used a tape recorder that enabled us to record not only conversations but reading texts from which we extracted relevant words. Besides, we did a pronunciation test consisting of relevant words or expressions which were used to supplement the items found in the conversations. As for the teachers, a questionnaire was used.

2.3. Procedure

There were two sets of data: conversation and sentence reading. During the English class session, ten discussion topics were given by the teachers to pairs of students. As the students were conversing, we tape-recorded their interactions. The reading exercise was done by the whole class. The

sentences to be read were divided into three packs and the class into three groups, excluding the pupils who took part in the conversations. One person from the first group of pupils read the sentences in the first pack one person from the second group read the second sentence in the second pack and one person from the third group read the sentences in the third pack. Each person reading was asked by the teacher to sit near me, where the recorder was placed. The whole class took turns at reading the sentences. Recording ended when the last sentence was read but reading continued till the end of the class period.

2.4. Materials
Two sets of materials were used, one from the pupils and the other from their teachers. They are taken up in turn:

2.4.1. Data from learners
The materials from learners were words extracted from their conversations and relevant sentences extracted from the texts they read in class the previous year. These sentences are included in the tests below. They were chosen because they contained target words or expressions. Here a few of them:

Test N° 1. The bilabial plosives /p/ and /b/

The voiceless bilabial plosive /p/: as in (pan, apples, stop).

- Where is my red pan?
- I like to eat apples.
- You can stop here.

The voiced bilabial plosive /b/: as in (big, baby, Bob).

- You are a big man.
- Can you take care of my baby?
- His forename is Bob.

Test N° 2. The alveolar plosives /t/ and /d/

The voiceless alveolar plosive /t/: as in (take, actor, walked).

- Take care, please!
- He is an actor in the horror film.
- I saw him walked in the street.

The voiced alveolar plosive /d/: as in (dad, middle, spread).

- How are you today, Dad?
- The letter in the middle is L.
- Tell us about Arabic spread in Chad.

2.4.2. Data from the teachers

The material from the teachers was a questionnaire. Actually, the ten teachers who agreed to take part in this data collection process played a double role in their respective classrooms. First, they were used as research assistants helping with discipline. The pupils in each class were to remain silent, as recording was going on. Each pupil called out was to move to the seat near me, where the tape-recorder was placed; he or she was to read out a set of sentences and give the floor to the next pupil and this continued till all the data were read out. These teachers also helped in choosing the pair of pupils whose interactions were to be recorded. In short, the teachers ensure that each of the pupils in their classes took active part in the data collection process. The researcher alone could not have handled all of these activities. Secondly, these teachers were used as informants as they were asked to fill in a questionnaire including the following seven items:

1. In the course of your teaching, do you notice that your students usually mispronounce some English words? Write Yes, no or maybe.

2. Can you write any five words that your students generally mispronounce?

3. Do all the students in your class speak Arabic? Write Yes, no or maybe.

4. Do all the students in your class speak French? Write Yes, no or maybe.

5. Do they pronounce "picture" as "bicture" Write Yes, No or Maybe.

6. Do they pronounce "thin" as "tin" or as "fin"? Write Yes, no or maybe.

7. When these pupils mispronounce English words, which specific language do you think they draw more from: French, Arabic or indigenous languages?

3. Method of data analysis

The analysis was done within the structural theoretical frame, supplemented by insight from the error analysis tool. The reference model for analysis was RP and the work was contrastive in nature. To illustrate this method of analysis, let us consider the four words "pan", "apple", "stop" and "hiccough" which all contain the sound /p/ in Received Pronunciation (RP). In the table "C.E." stands for Chadian learners' English. The figure 30 stands for the 30 pupils who read these words i.e., three pupils per class and ten classes in all. Needless to say, the figure 100% stands for the percentage of realisation of a given sound.

RP	C.E.	Words	RP	C. E.		
//π/	/p/	Pan	πΘν	παν	30	100%
		Apple	Θπλ	απ↔ λ↔	30	100%
		Stop	στπ	στοπ	30	100%

As this table shows, the sound /π/ is rendered as /p/ in Chadian learners' English (C.E.). It is pronounced /p/ by all informants (100%) when it is represented by the letter P as in "pan", "apple" and "stop". All informants

realised it correctly surely because the sound /π/ is generally represented by the letter P in French, as the words "pot /po/" (jar), rappeler /{aple/" (remind) and "taupe" /τοπ/ (mole) show. All the data collected are analysed following this pattern.

4. Discussion of Findings

The Findings for this study revealed five key factors to determine mainly the Teaching methods, Teacher preparedness, Resource limitations, Influence of First Language, and Curriculum Emphasis.

Firstly, we found that the Teaching Methods for this study rely merely on the following: Grammar-Translation dominates, with minimal oral practice, the Audio-lingual and communicative methods are applied in some schools with audio resources, and Language laboratories are rare, mostly in urban schools. Secondly, the Teacher preparedness poses problem for many Teachers lack the specialized training in Phonetics and Phonology.

Thirdly, the Resources such as the audio materials, International Phonetic Alphabet (IPA) charts, and pronunciation guides limited to Teachers, leading them to poor teaching. Another element to be mentioned is the large class sizes, which impact the individualized feedback. Moreover, the Influence of First Languages and Indigenous languages impacts pronunciation, causing persistent phonological errors. Lastly, in the teaching Curriculum

Phonetics and phonology are treated as minor components. The teaching of phonetics and phonology in Chadian secondary schools is almost absent in some environments, but it is largely theoretical, with limited oral practice due to resource and training constraints in other environments. However, we notice that Urban schools with language laboratories show better outcomes. It goes without saying that Effective teaching requires practical exercises, teacher support, and curriculum adjustments to improve students' communicative competence and performance.

It was found that the vowels of English are hardly realized. They tend to be replaced by various vocalic sounds as the list below shows:

- monophthongs are replaced by other monophthongs like /I/ which is usually replaced by /i/ as in "till", /E/ as in "eclipse", /y/ as in "busy", /o/ as in "woman" and /a/ as in "village";

- some vowels are nasalized, like / â / which is pronounced /ant/ as in "ant";

- some vowels are diphthongized, especially when they are represented by a sequence of vowels like EO, which is pronounced /eo/ in "jeopardy, this being a clear instance of spelling pronunciation;

- long vowels are replaced by a short vowel followed by a consonant, like /A/ which becomes /aR/ in a word like "far" pronounced /faR/ instead of /fA/; some diphthongs undergo this same process, like /au/ which is pronounced /uR/ in flour";

- the central element of some triphthongs are replaced by the glides /j/ and /w/, with the central element / ɪ / becoming /j/ and /U/ becoming /w/; /a ɪ↔/ is rendered as /ija/ as in "fryer" but never /aI↔/ and /au↔/ rendered as /ower/ as in "power" but never /paY↔/.

Here are a few examples of common Chadian learners' vocalic sounds as we used the tape:

IPA	English Word	Chadian Student's Flaw	Correct Pronunciation	Cause of the Problem & Solution
/ɪ/	ship	/ʃiːp/	/ʃɪp/	Cause: French /i/ is long; confusion with English short /ɪ/. Solution: Contrast minimal pairs (*ship/sheep*); stress tongue laxness.
/iː/	sheep	/ʃɪp/	/ʃiːp/	Cause: Learners confuse short /ɪ/ and long /iː/. Solution: Practice length distinction; minimal pairs (*ship/sheep*).
/ʊ/	put	/pʊːt/ or /pʌt/	/pʊt/	Cause: French /u/ is longer; Arabic /u/ is tense. Solution:

				Focus on lax vowel; mouth slightly relaxed.
/u:/	boot	/bʊt/	/bu:t/	Cause: Short vs. long vowel confusion. Solution: Emphasize length; minimal pairs (***boot/but***).

RQ2. What are the characteristic consonantal features of Chadian learners?

English consonants are realized in various ways in Chadian learners' English, as the overview below shows

- some consonants are left out altogether, like /h/, which is never articulated;

- when a consonant is pronounced as it is written, it is realized correctly; for example, when /p/ is represented orthographically by the letter P as in "pen", this P is pronounced correctly when on the contrary, /p/ is represented by a different letter, it is mispronounced. This is the case with the word "hiccough", where /p/ is represented by the letters GH.

- interdental sounds are systematically replaced by /t, d/ at the initial position and /f/ at the final position as the words "think", "than", and "with" illustrate.

- affricate sounds are hardly articulated; /tS/ is replaced by /s/ as in "shell" while /dz/ is replaced by /z/ as in "jealous" and /g/ as in "margarine".

- /r/ is systematically replaced by /e/ as in "rain"; this foreign consonant is co-articulated with many vowels as in words like "door" and "journal".

- consonant clusters are generally simplified. One simplification technique consists in using the epenthetic vowel /↔/, transforming a CC cluster into a CVC structure as in the word "blue"; CCC clusters on the other hand, may be transformed into a VCCVC structure, like /skr/ which may become /eskren/as in the word" screen", pronounced /skrin/

Here are a few examples of common Chadian learners' consonantal sounds:

IPA	English Word	Chadian Student's Flaw	Correct Pronunciation	Cause of the Problem & Solution
/θ/	Think	*/tɪŋk/* or */sɪŋk/*	/θɪŋk/	Cause: /θ/ absent in French/Arabic → replaced by /t/ or /s/. Solution: Teach tongue between teeth; minimal pairs (***think/sink***).
/ð/	This	*/dis/* or */zis/*	/ðɪs/	Cause: /ð/ absent in French/Arabic → replaced with /d/ or /z/. Solution: Practice voiced/unvoiced contrast; repetition drills.
/ʃ/	She	*/si/*	/ʃiː/	Cause: Confusion with /s/; distribution differs in French. Solution: Contrast drills /s/ vs. /ʃ/; use French ***chic*** as reference.
/ʒ/	Measure	*/meza/* or */meʃa/*	/ˈmɛʒər/	Cause: Rare sound; absent in Arabic. Solution: Use French ***genre*** as anchor; listening practice.
/tʃ/	Church	*/ʃɔrtʃ/* or */tsurtʃ/*	/tʃɜːrtʃ/	Cause: Learners replace affricate with /ʃ/ or /ts/. Solution: Emphasize stop + release; minimal pairs (***chip/sheep***).
/dʒ/	Judge	*/ʒʌʒ/* or */dzʌdz/*	/dʒʌdʒ/	Cause: Affricate absent; replaced with /ʒ/ or /dz/. Solution: Tactile "stop + release" drills; contrast /ʒ/ vs. /dʒ/.
/ŋ/	Sing	*/sɪn/* or */sɪŋg/*	/sɪŋ/	Cause: /ŋ/ absent in French; replaced by /n/ or /ŋg/. Solution: Nasal drills; minimal pairs (***sing/sin***).
(silent l)	Calm	*/kalm/*	/kɑːm/	Cause: Letter pronounced in French. Solution: Silent l awareness; listen-and-repeat.

RQ3. What are the typical stress patterns of the English of Chadians?

English words systematically receive stress on the last syllable, especially Latin and French cognates. Here are a few illustrations:

Type	English Example	Chadian Student's Flaw	Correct Stress	Cause of the Problem & Solution
Word Stress (noun/verb pairs)	record (noun)	reCORD	REcord (noun)	Cause: French stress mostly final; learners stress last syllable. Solution: Minimal pairs practice; mark stress in IPA; highlight noun vs. verb.
	record (verb)	Record	reCORD	Cause: Confusion noun/verb; same word, stress shifts. Solution: Drill noun/verb stress pairs; color-code stressed syllables.
	address (noun)	Address	ADdress	Cause: L1 final stress influence. Solution: IPA marking; repetition drills.
	address (verb)	Address	adDRESS	Cause: Learners unaware of stress shift. Solution: Highlight stressed syllable; use minimal pairs.
	photograph	phoTOgraph	PHOtograph	Cause: French stress influence; last syllable preferred. Solution: Tap/clap stressed syllables; drill multisyllabic words.
Sentence Stress (content vs. function words)	I want to go to the market.	*I WANT TO GO TO THE MARKET* (all words stressed)	I want to go to the market	Cause: French & Arabic syllable-timed rhythm; learners stress every word. Solution: Listening drills; mark content words; shadow native speech.

RQ4. Which languages tend to influence the English speech of Chadian learners?

The answer to this question came from three sources. First the teachers were asked in the questionnaire to indicate which specific language they thought their learners drew from when they mispronounced English words, and they all said French (100% of the ten teachers). Second, the consonant systems of French and Chadian learners' English were compared and

contrasted, and it was found that Chadian learners tend to draw from the French consonant system when speaking English; actually, the foreign consonants identified in their speech come from French.

Third, the vowel systems of French and Chadian learners' English were compared and contrasted, and it was found that all French oral vowels are used in the English of Chadian learners. Actually, it can be said that they speak English with the French oral vowel system. Besides, of the four French nasal vowels, three occur in the English of Chadian learners, and they are used in the same contexts as in French. Finally, stress falls on the same syllable in French and English words in the speech of Chadian learners. In short, French is the language from which Chadian learners draw when they speak English.

RQ5. What can be done to improve the English pronunciation of Chadian learners?

As French is the language that influences the speech of Chadian learners, it is important to design comparative and contrastive exercises that tackle the various aspects of the sound systems of French and English.

6. Possible Solutions

In this work, a number of problems that affect the teaching and learning of English in Chad are identified. The syllabus includes various reading comprehension passages with little space given to pronunciation and speaking. The teachers are still undergoing training and are still learning how to teach pronunciation. The structure of the English paper in examinations makes it difficult for teachers to dwell on pronunciation and speaking since these skills are not assessed. On the basis of this, the following recommendations can be made. First, policy makers should authorize a revamping of the English syllabus in Chad so that some room should be made for the teaching of pronunciation and speaking. Second, school inspectors should ensure that besides reading comprehension, pupils are taught the skill of speaking and they should empower English teachers through seminars and workshops. Lastly, classroom teachers

should occasionally make use of oral materials in their classes. For example, a recorded conversation can be played back for pupils to simulate various roles; listening comprehension exercises based on topical news issues drawn from the BBC, CNN and Cameroon CRTV can be devised. Finally, pupils can be encouraged to anticipate situations they will encounter after class and practise speech that will be useful in such situations. Since the Teachers are the turning point in the system of training, if they are well trained it will be so for the trainees, in consequence, we recommend our stakeholders to create a Phonetic and phonological center for getting teachers specialized in such a field. We also recommend that our school inspectors review the teaching curriculum to prioritize pronunciation, stress, rhythm, and intonation. They should develop and provide resources, including IPA charts and audio materials. Moreover, we encourage peer practice and small group pronunciation exercises to enhance their accommodation of the English Language. Finally, leverage first language awareness to facilitate phonological learning.

Conclusion

This study has examined the pronunciation of English by Chadian learners. In Chad, English is taught as a subject from the first year of secondary education, and it goes on for seven consecutive years. It is a compulsory examination subject for all pupils doing the French-medium system of education, the other system being the Arabic-medium one. The data come from pupils and teachers. Data from the pupils were collected from the reading of isolated sentences and the discussion of selected topics while data from the teachers came from a questionnaire. The study was guided by four research questions and the analysis was contrastive in nature.

The findings arrived at are summarized here, some recommendations made and some potential subjects for future research on Chadian English suggested. Phonetics and phonology are underemphasized and less considered in Chadian secondary schools leading students to Language

interference and deviations from the norms, limiting their oral proficiency and listening skills. Strengthening teacher capacity, enhancing resources, and revising curricula are essential to improve language education. Effective phonetic and phonological instruction will better prepare students for higher education, professional communication, and multilingual contexts in Chad.

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