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# A TYPOLOGICAL ANALYSIS OF INTERFERENCE INDUCED INTERLINGUA ERRORS IN THE EXPRESSIVE LANGUAGE OF PHYSICS STUDENTS

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**Abstract**

*This study examined science students written expressions in English language in order to analyze the various Interlingua errors caused by interference of English language with the mother tongue. It employed descriptive interpretative design and subjects were drawn from four schools located in a rural area of Lagos state, Nigeria. One hundred and fifty-six senior secondary two (SS2) students' were selected by stratified sampling technique. The instrument used to collect data was an achievement test whose reliability established through test-retest gave a reliability co-efficient value of 0.87. Content analysis of the students scripts was carried out using error analysis approach to systematically examine both the words and the relations among words.. Findings revealed the preponderance of grammatical and lexical levels of Interlingua errors in virtually all written expressions.*

**Key words:** Science and Language, Interference, Interlingua Errors

## Introduction

English language is the official language of communication in secondary schools in Nigeria. The native language (mother tongue) which is the first language (L1) and the main language a child first acquires has been jettisoned for a second language (L2). This implies that the first language which most children

speak at home is different from the language of communication in school. The lack of reinforcement in school of the first language results in compartmentalization of language acquisition between the first language and the second language. Resolution of compartmentalized languages often results in interference of the mother tongue with English language.

Interference is an instant deviation of a new language from the original language. The phenomenon of interference can be viewed from the fact that the mother tongue and English language have elements that are either similar or dissimilar. The elements that are similar can be easily comprehended while those that are dissimilar can be extremely difficult to comprehend. In an environment where a child has to be exposed to a second language, there is usually the tendency to transfer habits from the first language to the second language. That is, the use of features belonging to one language while speaking or writing another in the inter-language process, a linguistic system which underlines second language speech or writing and is partially distinct from both the MT (Mother Tongue) and the Teaching Language (TL).

English language has gained worldwide prominence but not used exactly the same way everywhere( Awonusi ,2004).It is a well known linguistic facts that when two or more languages and cultures come into contact, different types of sociolinguistic interaction take place. In Nigeria English, these differences can be found in the sound segments and supra segments. Some of the features that make English in Nigeria different from that of the neighboring environment or that of the native speakers are faulty structuring ,deviance in correlative conjunction .wrong use of phrasal verbs ,omission of articles ,wrong use of pronouns etc This sometimes leads to language shift, attrition or even language death Dadzie (2007).For instance, there are instances of unclear differentiation in which speaker takes the semantic properties of the mother tongue and use along with an existing English word in an extended sense (Atolagbe, 2005). The levels of language at which interference in English Language

may occur include the following:

(a).    Phonological - This is the part that expresses the rules for producing and combining sounds. Phonological form consists of phones for example;/m/ ,/ae/ and /p/ of 'map'. The possibilities of combination on concurrence of phonological features in morphemes are expressed by phonological rules. In English for example, the feature (nasal) is present in vowels which precede nasal consonants as in the vowel of pan and bin as against those of pad and bid which lack the final consonant.

(b).    Syntactic - This is concerned with the arrangement of words as phrases and phrases as sentences. The possibilities of combination are strictly limited, so every language has syntax or sentence structure. Words come in different types based upon their possibilities of combination as the parts of speech: noun, verb, adjective etc. Nouns for example (such as dress, story, book) combine with determiners (such as the, this, my) and adjectives (such as big, red, extraordinary) to make noun phrases such as the big book, this red dress and my extraordinary story. Verbs combine with auxiliary. verbs such as can, might, will, have) and adverbs (such as always, then, surely) to make verb phrases such as has already eaten, will leave then, and surely can't go.

Syntactic rules specify the possible combinations of words and the agreement that holds between parts of a sentence. That is, if one part has a peculiar feature the other part also has to get that feature. If for example, the first part has a feature like 'singular' the other part has to show the number also. The rules of concord govern the relationship of various parts of a sentence.

(c).    Morphology:- This    expresses    the    possible combinations    of morphemes as words for example /d g/ and /z/ combine according to the rules of English to

produce the word /d gs/ - dogs. Other languages have different forms for similar meanings, for example Yoruba Aja, 'dog' French chien dog. All languages have the capability to express the meanings expressed in other languages.

(d).    Semantic:- This is concerned with assigning correct meaning and interpretations. For example nouns and phrases have various semantic roles in their relation to a verb. In the sentence 'Birds fly' for example birds is said to be in the role of agent of the verb.

(e)    Vocabulary/Lexical:- refers to the technical study and use of terms beginning with lexis or lexicon. It deals with acquisition of stock of words to recognize, understand and relate to overall background. It also distinguishes between receptive/latent and productive vocabulary.

The implication of interference of language according to Bamgbose (1995) is that the English language spoken has undergone modifications. It has been pidginized, naturalized, acculturated and twisted to express unaccustomed concepts and modes of interaction. These have far-reaching effects on students' comprehension of concepts taught. The situation is appalling with science students. Science students are less privileged to encounter new words or develop their vocabulary. Science subjects by nature develop students' computational skills and imaginative taught. Communication in science is not usually through long essays or arrays of written expressions. These adversely affect science students' proficiency in English language. Literature is replete with positive correlation between students' performance in science and English language (Edem, 2005; Omojuwa, 2005; Oliokpe, 2000 and Okebukola & Onafowokan, 2003). Students' understanding of science depends on their proficiency in the language of communication in school.

This study analyzed science students' written expressions in English language in order to identify the various levels of interference of English language with their mother tongue.

## Methodology

This is a descriptive - interpretative design which enabled the researchers to establish the contrasts in students' language expressions. Subjects were drawn from four schools located in a rural area of Lagos State, Nigeria. This was to ensure that the first language is indeed the mother tongue since most educated families rarely introduce the mother tongue as the first language to their children. One hundred and fifty six senior secondary two (SS.2) students were selected by stratified sampling technique. This was achieved by selecting only students whose mother tongue is Yoruba language. Yoruba is spoken mostly by people who originated from the western part of Nigeria.

The instrument used to collect data was an achievement test. The test was self-developed, essay in nature (short answers) and consisted of twelve items which covered the following areas of physics: 'concept of space, time and motion'; conservation principles; waves, fields and quanta. The achievement test was subjected to scrutiny by giving the draft copy to three physics teachers. They were to ascertain the relevance and difficulty index of the test items. These teachers expressed their satisfaction with the content of the test instrument. A test-retest reliability within two weeks interval gave a reliability coefficient of 0.87.

In test administration, researchers ensured that at the time of visiting the schools, the concept chosen had been taught. Physics teacher in the school along with one of the researchers conducted the test in each of the schools at the same time. Test administration lasted for one hour. Linguistic content analysis of the script was carried out to systematically examine both the words and the relations among words. It established how grammatically coherent the sentences are and not merely a

string of words taken out of context. In doing this, Error Analysis approach was adopted. This is an approach used by applied linguists to seek formal distinctions between the learners' first and second languages to predict errors. It suggests that many learner errors are produced by learners making faulty inferences about the rules of the new language. Error Analysis studies a large corpus of errors committed by speakers of the source language attempting to express themselves in the target language ($L_2$). It develops a typology of errors and classifies them according to the levels of language: phonological, vocabulary or lexical, syntactic, morphological and semantic errors. These errors can be committed in receptive language (activities involving hearing as in pronunciation, listening comprehension, dictation and responses to commands and instructions) or expressive language activities that involve expression in utterances, speeches, composition, translation, achievement tests and exercises. For example, verb concord in English states that a verb agrees with its subject in number and person as in He and his brother are identical. Findings of the study are discussed qualitatively.

**Results and Discussions**
Findings of this study revealed that interference of first language (Yoruba) with the second language (English) occurs at the levels of syntax, phonology and morphology in the scripts analyzed. Excerpts from students' scripts are quoted and discussed according to levels as follows:
Phonological Interference
Question: Identify the various types of lens.

This occurs with respect to spelling mistakes. Majority of the students presented 'lenses' as 'lensis1. This occurs because of the influence of first language. In the first language (Yoruba), students would have been judged to be correct with that spelling. Students wrote as if they were expressing themselves in the first language. They substituted the vowel /3/ for the short vowel /i/ because in the Nigerian Yoruba accents, one sound is

usually used in almost one-to-one correspondence; that is, a letter of the alphabet has a constant sound representing it in speech. However, English differs in this respect because it violates the phoneme-grapheme correspondence principle (Okebukola, 2005)

Also the concept 'human eye' was erroneously written as 'human eyes' by majority of the students (82%). This occurs because the concept human eye has undergone phonological rule of the language through borrowing from the mother-tongue ($L_1$) such that it fits into the morphological features of the language of expression ($L_2$).

**Syntactic Interference**
This occurs because of the inability of students to obey syntactic rules. In their response to the question on 'types of lens', majority of the students (79%) responded thus:
(i).     Types of lens is as follows, instead of, Types of lens are as follows.
(ii).    The major uses of lens is, instead of, the major uses of lens are.
This occurs because the learner through his first language ($L_1$) gains the verbal expressions of his thought in the second language ($L_2$) in accordance with the syntactic rules of his own language ($L_1$). In Yoruba which is the $L_1$ of the subjects, such verb concord does not exist e.g.
○ Omo na je iresi
○ The child eats rice
○ Awon omo na je iresi
○ The children eat rice

Other syntactic errors observed include:
(i)     Telescope lens help' instead of helps
(ii)    The light travel' instead of travels;
(iii)   When a person has short sight, 'he or she see' near objects clearly. Instead of sees
(iv)    'A converging lens are placed' instead of is placed.

## Morphological Interference

Majority of the students (87%) were unable to recognise lens as singular and lenses as plural. They erroneously expressed themselves thus:

(i)     'Lens are, 'instead of, lens is
        This error permeates the entire scripts of majority of the students. Other examples identified include:
        Energy which they often pluralize as energys

        Capillarity expressed as follows: 'examples of capillarities include'     Osmosis pluralized as: examples of osmoses are.........
        Spectra (plural) always written as spectrum (singular), for example; 'there are many spectrum of light'
        Quanta (plural) also misconstrued as Quantum
        In English language, pluralism is indicated by inflexion or the addition of plural morphemes |S|, |ES| etc. However in Yoruba, pluralisation is indicated by numeration. For example:

| Yoruba- | Omobirin kan | Omobirin mewa |
| English - | One lady | Ten ladies |

## Conclusion and Recommendations

The various levels of interference revealed in this study have a telling-potent on students thinking faculty. Interference brings about restructuring of language during assimilation because of the differences in linguistic heritage. The proficiency of writing is distorted by interference in view of the mix-up that accompanied such. In effect students form defective knowledge, pseudo-understanding and will eventually perform below their competence level.

This study revealed that the first language of the learner imposes a linguistic handicap on written expressions in English Language. These first language speakers' (sampled) expression in English language is very appalling. It is necessary to strengthen students' competence in English language through

grammar-translation method (This entails teaching of English language with emphasizes on forms of language) in addition to teaching the communicative use of the language. Science teachers should endeavour to give explicit explanation' of rules governing the use of structures and penalize students who default. Training workshop should be organized for science teachers generally to refresh and consolidate their understanding of English language.

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