International Journal of Humanities and Social Sciences Research
Vol.1, No.1, pp.24-42 March 2014
Published by British Research Institute UK (www.gbjournals.org)

EFFECT OF PODCASTS ON THE IGBO LEARNERS OF ENGLISH PHONETICS

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ABSTRACT: *This paper studies how increased input, especially, podcasts can affect students' pronunciation. The study is cast within the theoretical framework of Contrastive Analysis Hypothesis (CAH), which predicts that in situations where the structures in the first language (L1) and the second language (L2) differ, there may be difficulties in learning such structures. Postgraduate students taking General Phonetics in the University of Nigeria, Nsukka were used for the study. Some of the speech sounds found in the English language which are not in the Igbo language formed our focus. A total of seventeen sounds were used for the test. A pre-test was administered to the students to learn their abilities before the lectures began. The students were later split into two; those that were exposed to lectures only (henceforth, control group) and those that were exposed to both lectures and podcasts (henceforth, test group). After a period of three months, the two groups were administered a post-test. The results of this study showed that exposure to podcasts had a significant effect on the realisation of 13 of the 17 selected phonemes.*

KEYWORDS; Podcasts, Pronunciation, Pre-test, Post-test.

INTRODUCTION

English is learned as a second language in Igboland (and all over Nigeria). Teaching English in Nigeria is confronted with some challenges. One of the challenges according to Oluikpe (1978) is that English is not taught to solve the language problems relating to the linguistic peculiarities of Nigerian learners including the fact that rather than writing textbooks for commercial purposes as it is the practise in the country, they should be written for different language groups to solve their peculiar linguistic problems. Language teaching in Nigeria "like other parts of the world" involves teaching pronunciation, vocabulary, grammar and the culture of the target language. The place of pronunciation in L2 teaching is often relegated to the background when compared to the place of grammar, vocabulary and culture (Lord, 2008). Part of the reason for the relegation is that many teachers assume that with more input on the L2, students will learn pronunciation, or it will be acquired sometime later. Native-like pronunciation is needful especially now that the world is becoming a global village and considering the position of the English language in the globe. To be meaningful in the global village, effective communication is required. Thus, an L2 learner should strive to acquire native-like pronunciation to achieve intelligibility because it is a key factor for effective communication. To achieve this, the teacher requires a basic knowledge of the speech sounds (among other aspects of phonetic study) available in the languages and that efficient tools and techniques of language teaching be found and adequately applied.

CAH and L1 Transfer

Contrastive Analysis Hypothesis (Lado, 1957; Wardaugh, 1970) has been suggested to be a useful tool in teaching a second language. Particularly, it helps in eliminating L1 transfer to L2. The position of L1 transfer has for many decades now been a subject of discussion and

analysis in applied linguistics, Second Language Acquisition (SLA) and language teaching (Grami &Alzughaibi, 2012; Odlin, 1989). The history of the role of L1 in learning a new language was first mentioned by Sweet (1899) who believed that the best way to acquire a new language is to have adequate information of the features of the mother tongue. This view was widely accepted at that time though the role of transfer was not acknowledged (Olden, 1989). It was not until the 1950s that the behaviourist theory came up with the fact that L2 learning is the establishment of a new set of habit formation. As such, the role of L1 was very important since it majorly determined success or failure in L2 learning (Grami & Alghazibi, 2012). The role of mother tongue in facilitating or posing difficulties in L2 came to be a key issue in Contrastive Analysis Hypothesis. CAH has its primary task in predicting the linguistic difficulties experienced during the acquisition of a second language. The strong version of CAH claims among other things that the difficulty experienced in second language learning results from the interference of the learner's native language system. Hence, the difficulties encountered in second language learning are argued to derive from the differences between the new language and the first language of the learner. The higher the number of differences existing between the native language and the target language, the more the difficulty. To predict the difficulty, a systematic analysis of the two language systems is required. The result of the systematic analysis goes a long way in providing reliable tools for preparation of teaching materials, planning of courses, and improvement of classroom techniques to enable the L2 learners to minimise the amount of L1 transfer.

CAH was argued to run into problems for incorrect predictions (Ellis, 1985; Gas & Selinker, 2001; Odlin, 1989). This led to the establishment of a weak version to take care of the shortcomings of the strong version. The weak version became part of Error Analysis (Corder, 1967). Error Analysis posits that errors are important in SLA because they tell us the progress made in SLA. It divides errors into two: the interlanguage errors (which are related to mother tongue interference) and intralingual or developmental errors (which are associated with the target language interference). Corder (1978) further modifies the concept of interference to intersection. He argues that L1 may facilitate L2 if the L1 structures are similar to L2. However, the L1 learners experience difficulty in communication when L2 resources are lacking in L1; hence, they will resort to the resources of L1 to make up for the lack. Error Analysis is also faulted for heavy reliance on error which is argued to be inadequate for SLA process (Gas & Selinker, 2001). The notion of L1 transfer later received a new view shifting away from behaviourist view of habit formation to cognitive response. Two cognitive hypotheses became prevalent: Interlanguage Hypothesis (IH) of Selinker (1972) and Creative Construction Hypothesis (CCH) of Dulay and Burt (1973) . CCH claims that L1 has no bearing in L2 learning. This view is criticised for under-rating the role of L1 in learning L2 (Grami &Alzughaibi, 2012). IH believes that L2 learners use the language system different from both L1 and L2 in their learning process. It reconceptualises transfer within a cognitive domain and in the development of one's interlanguage. Although this hypothesis recognises the role of L1 in SLA, the L1 influence may rather than leading to positive and negative transfer, lead to over-use and under representation.

Kellerman (1979; 1983), on the other hand, believes that the role of L1 transfer in L2 learning cannot be ignored. He distinguishes potentially non-transferable features from potentially transferable ones. He considers two factors to be related to transfer. First, the learners' perception of L1-L2 distance (this he names psychotypology) and second, the degree of markedness of an L1 structure. Following Gass (1996), we believe that transferability in Kellerman's framework is a relative notion because it depends on the perceived L1-L2

distance and the structural organisation of L1 and, moreso, the idea of perceived distance may continuously change as the L2 input increases. This is in line with the usage-based theories of language acquisition) which stipulate that constructions are learned by involving oneself in communication. Thus, "usage leads to change" (Ellis 2009:11).

The advent of Universal Grammar (UG) particularly the parameter settings further motivated some L2 researchers to examine the interaction of UG and L1 transfer in SLA (Grami &Alzughaibi, 2012; Siegel, 2003). A comparison of transfer in UG and CAH is carried out in White (1992). He observes that transfer in UG relates to L1 in the levels of representation, clustering, interacting parameters and learnability. Gass (1996) and Whong Barr (2006) are of the opinion that transfer equates to the term, initial state. Gass (1996) postulates two views found in literature which are one, the issue of access to the UG of L2 learner, and two, the L1 transfer. Access to UG has two versions: the strong access and weak access. The strong access claims that UG is the starting point in SLA whereas the weak version stipulates that L1 is the starting point for L2 learners' development. Although these versions relate to CAH, yet many of researches emanating from the strong and weak access are in grammar and none in pronunciation. In line with Sharwood & Kellerman (1986), Odlin (1989; 2003) redefines transfer as the influence resulting from the similarities and differences existing in the already acquired language and the target language. Similarly, Ellis (1994a & b; 1997) avers that an SLA theory is incomplete without reference to L1 transfer.

Thus, the role of L1 transfer cannot be over-emphasised. It is imperative to note that one may not know the degree of transfer from L1 to L2 without comparing the structures of the two languages. It is only when one knows the structures in L1 and L2 that one may know the level of transfer. Following Eckman (1981), Larsen-Freeman & Long (1991), Major (1999) among others, L1 influences what and how fast the differences in L2 are learned. Once such differences are learned, the similarities become a walk-over task. Thus, CAH remains a useful tool for language teachers particularly pronunciation teachers in determining how well the L2 speech sounds are learned.

Concerning learning speech sounds, some researchers (like Flege, 1995; Flege, Schirru, MacKay, Piske, Flege, McKay, & Meador, 2002; Ian, 2003; Khattab, 2002; etc.) have noted that the speech sounds in one language influences another and that several factors determine the extent and direction of the influence. Some of the factors are the degree of similarities and differences between L1 and L2 (Aoyama, Flege, Guion, Yamada, & Akhane-Yamada, 2004; Best, 1995; Flege, 1995; Flege, MacKay, & Munro, 1999; Guion, Flege, Akhane-Yamada, & Pruitt, 2000).

Another factor is the age of L1 learner of L2. The early L2 learners seem to be less influenced by their L1, indicating that cross-language similarity plays a minimal role at early age than at later age (Aoyama, Flege, Guion, Yamada, & Akhane-Yamada, 2004; Baker, Trofimovich, Mack, & Flege, 2002; Flege, & MacKay, 1996; Flege & MacKay, 2011; Flege, MacKay & Meador, 1999; Munro, Mack & Trofimovich, 2001; Piske, Flege, MacKay, & Meador, 2002). Thus, at late age, L1 exerts greater influence on the L2.Three general types of explanation for age factor exist. They are, one, as one's age of first exposure to the L2 rises, maturation constraints help the mechanisms used in L1 to decrease (Mack, 2003; Patkowski, 1989; Scovel, 1988) two, the late learners of L2 get less sufficient L2 phonetic input than the early ones (Grosjean, 1982; Jia & Aaronson, 1999; Stevens, 1999) and three, as Flege's

Speech Learning Model (SLM) (Flege, 1995; 1999; 2002) states, the interaction of the two languages' phonetic subsystems influences each other.

From the above discussion, it is evident that input frequency, form, and function affect second language acquisition (Ellis, 2008; Ellis & Collins, 2009). Hence, with greater input from L2 by way of technology which is devised purposely for improving the L2 learner's pronunciation, a greater result may be achieved when compared with the traditional way of just leaving the learner to acquire an L2 with mere formal instruction. A review of formal instruction and use of technology in teaching pronunciation becomes necessary and follows subsequently.

Formal Pronunciation Instruction

The effect of formal instruction on L2 pronunciation has received quite a considerable number of studies. Some of them are Archibald, 1998; Arteaga, 2000; Castino, 1996; Cenoz and Lecumberri, 1999; Couper, 2006; Dalton-Puffer, Kaltenboeck, & Smit (1997); Elliott, 1995, 1997; Flege, Frieda, Walley, & Randazza, 1998; González-Bueno, 1997; Long, 1983; Lord, 2005; Major, 1998; Moyer, 1999; Munro & Derwing 1999; Smit, 2002; Smit & Dalton, 1997; and Terrell, 1989 among many others. For effective formal instruction on L2 pronunciation to take place, the opinions of the stake holders (such as the teachers, students, teacher educators and pronunciation specialists) involved in teaching and learning L2 pronunciation have to be taken into consideration so as to know the appropriate step to be taken. Specifically, in teaching and learning English pronunciation, the teachers, students, teacher educators and pronunciation specialists have varying perspectives. Pertaining to the teachers' opinions, Carthcart and Olsen (1976) investigated the perception of teachers on the most appropriate method of correcting pronunciation. They found out that they prefer the 'correct' model approach in pronunciation. Macdonald (2002) studied the Australian teachers' perspectives in teaching pronunciation and observed that inadequate ESL language policies and curriculum objectives, assessment instruments, material and teacher training hinder them from teaching pronunciation formally; instead, they do so in an ad hoc manner. Baker (2011) examined the beliefs and practices in teaching discourse prosody. Her findings reveal that teachers lack confidence in teaching some aspects of English pronunciation even though they took a pedagogy pronunciation course in their graduate education. On the other hand, Timmis (2002) found out that both native speakers and non-native speakers prefer the accent that is mutually intelligible to both native speakers and non native speakers. Sikafis and Songari (2005) studied the relation between pronunciation instruction and English as an International language (EIL) in Greek teachers of English. The results show that majority of the teachers opine that native-speaker norms were ideal models while some felt that intelligibility is more ideal. Jenkins (2007) reports an investigation of teachers' of English as a lingua franca (ELF) attitudes and beliefs about accents, perceived effects of accent-related experiences, and teaching EFL accents. They are of the opinion that EFL is better discussed in theory rather than in an impracticable classroom practice. Hismanoglu (2010) examined teachers' preferences in techniques for teaching their students pronunciation. Traditional techniques like reading aloud, dictionaries and dialogues) are the top three preferred techniques.

On the part of the students, in Derwing and Rossiter's (2002) investigation, students desire pronunciation instruction. Couper (2003) observes that ESL learners in New Zealand view pronunciation and its instruction important although they confess low confidence in

pronunciation. Concerning accents, many students desire to acquire native-like accents irrespective of where the instruction is taken (Derwing and Munro, 2003; Kang, 2010; Scales, Wennerstrom, Richard, & Wu, 2006; Timmis, 2002).

Perspectives of teacher educators and pronunciation specialists show that there are different factors that may positively or negatively contribute to the learners' ability in L2 pronunciation. Some of them are affective factors like the learners' emotional and attitudinal conditions (Avery & Ehrlich, 1992; Brown, 2008; Celce-Murcia, Brinton, Goodwin, & Griner, 2010; Kenworthy, 1987; Murphy, 1991; Scarcella & Oxford, 1994) learners' choice or involvement in instructional decisions (Celce-Murcia, et al., 2010; Levis, 1999; Pennington, 1996), speaker's age (Avery & Ehrlich, 1992; Celce-Murcia et al, 2010; Kenworthy, 1987; Pennington, 1996; Scarcella & Oxford, 1994), linguistic factors such as the influence of the learners' L1 on the L2 (Avery & Ehrlich, 1992; Kenworthy,1987), and socio-cultural factors such as the desire to maintain an L1 accent or acquire a native English accent (Avery & Ehrlich, 1992; Brown, 2008; Celce-Murcia et al., 2010; Kenworthy,1987; Scarcella & Oxford, 1994).

Closely related to learner factors are curriculum factors, which some teacher educators and pronunciation specialists have attributed to play crucial roles in both teaching and learning of pronunciation. Such curriculum factors are: assessing intelligibility (Levis, 2006); integration of pronunciation within the broader English language learning curriculum (Brown, 2008; Derwing & Munro, 2005; Levis, 2006; Levis & Grant, 2003; Murphy, 1991; Naiman, 1992); phonological hierarchies suggesting either a greater or lesser emphasis on suprasegmentals or segmentals, although dependent on native speakers/non native speakers context (Esling, 1994; Firth, 1992; Gilbert, 1987; Jenkins, 2000, 2002, 2007; Levis & Grant, 2003; McNerney & Mendelsohn, 1992; Seidlhofer & Dalton-Puffer, 1995); setting realistic goals for the learner (Avery & Ehrlich, 1992; Goodwin, 2001); and target pronunciation models like the ones that expose learners to a variety of native speaker and/or non native speaker models (Levis, 1999; Pennington, 1996; Pickering, 2006; Scales, et al., 2006).

Use of Technology in L2 Teaching

Many of the above studies have suggested ways of improving classroom activities for effective teaching and learning to take place. Granted that explicit instruction and classroom activities are important in learning pronunciation of L2, but teachers and even students themselves are aware that they need extra input and output activities to enable them to communicate effectively in L2 (Lord, 2008). The extra input and output activities can be got through the use of new technologies and techniques (Ashby, Feguera-Clark, Seo, & Yanagisawa, 2005; Stenson. Downing, Smith & Smith 1992; Eskenazi 1999; Hardison 2004). Technology is attractive to language teachers and learners because it does facilitate implicit and explicit second-language learning in providing diverse input and interaction, generating more opportunities for extensive student output and interaction, situating language learning in topical or disciplinary domains, providing metalinguistic explanation and translation, manipulating complexity of input and output, and diagnosing errors and offer feedback (Ellis & Bogart, 2007). Similarly, Solanki and Phil (2012) analyze the use of technology in language teaching and learning. They aver that multimedia technology is necessary in teaching English because such technology helps to cultivate students' interest in study, promotes students' communication capacity, widens knowledge to gain insightful understanding of another culture, improves teaching effect, enhances interaction between

teacher and student, creates a context for language teaching, and provides flexibility to course content. They note the problems arising from the application for multimedia technology in English teaching to include the following: major means being replaced by the assisting one, loss of speaking communication, restriction of students thinking potential, and abstract thinking replaced by imaginative thinking. Stenson et al 1992 report an improvement on students' English intonation with the use of technology. Eskenazi (1999) studied the use of automatic speech recognition in detecting and correcting pronunciation (specifically, prosodic) errors. Engwall & Balter (2007) suggest that pronunciation feedback can be effectively given with computer-assisted pronunciation training. On the other hand, Ashby et al (2005), emphasize the necessity of teaching phonetics by means of virtual learning environments (VLEs) through free online tutorials and exercises even though his result showed no definite potentiality of the technique. Similarly, Hardison (2004) examined the teaching of prosody with technology but had inconclusive results based on accuracy. She, however, found out that the technologies created higher awareness in the existing differences between L1 and L2 systems in addition to having greater confidence when the learner speaks L2. Pennington (1999) records the promise of using computer as a practical instructional tool for teaching pronunciation. Similarly, Neri, Cucchiarini, Strik and Boves (2002) explored the relationship between pedagogy and technology in computer assisted pronunciation training courseware and further investigated their authenticity. They found out that a large number of commercial systems appear to use technological novelties and ignore the pedagogical ones that language learners may benefit from. On the other hand, Morton and Jack (2010) conducted a cross-cultural empirical evaluation of two groups of students- French students in Scotland and students of English as a second language in China. They observed that the difference in their motivation towards studying the target language is related to the existing variation in their attitude toward the speech interactive Computer Assisted Language Pronunciation (CALP) program. One of the computer assisted language teaching/learning tools which this present research aims at investigating is podcasting.

Use of Podcasts in ELT

It is one of the new techniques and technologies which meet the learners needs of having additional pronunciation input outside the classroom. The net-generation students are often very busy and involve themselves in multitasking (Tapscott, 2009) and many of them have devices for playing audio files (Rainie & Madden, 2005; Schmidt, 2008). These reasons combine to make it needful for podcasts to be one of the tools used in delivering L2 materials to the students. Hence, Craig, et al. (2007) and Windham (2007) agree that many L2 learners find the use of podcasts motivating since many of them study through distant learning programs, and may not have enough time to attend language laboratory and classrooms regularly. Podcasts are important for teaching and learning phonetics. Knight (2010) avers that podcasts help in alleviating the difficulties students encounter in phonetics since they provide the students with an alternative audio-based exercise materials against the paper-based ones. The report of Thorne and Payne (2005) of Duke University's iPod projects reveals that podcasts projects in language classrooms are needful in developing oral skills. Lord (2008) engaged his subjects (undergraduate Spanish Phonetics class) in a collaborative podcasting project. The students were divided into small groups and were made to create and maintain their own podcasts channel where they uploaded recordings for their members to comment on. Pre- and post- semester attitudes and pronunciation abilities were tested. The result showed that there was an improvement on the students' pronunciation even though the factor(s) that influenced the improvement cannot be pinpointed. On the other hand, Ducate

and Lomicka (2009) tested the effectiveness of podcasting in honing American English students' pronunciation in German and French and records insignificant improvement although the students appreciated the tool. Knight (2010) investigated students' perception of podcasts in phonetics. The result showed that the students perceived podcasts to be useful in their learning of phonetics. In the same vein, Li (2012) examined the students' perception of podcasts and reports that the secondary six students perceived podcasts to be a useful tool which has enhanced their language skills. Chan, Chen, and Döpel (2011) studied two podcast projects organised at a university in Singapore, aimed to aid classroom instruction for Chinese and Koreans as a foreign language. They used a semi-structured interview to determine their perceptions of the podcasts' quality and usefulness. They observed that respondents who used podcasts on the move or outside their abodes had significantly positive attitudes towards podcasts and were also found to be interested in podcast-based learning after being exposed to the podcast course. Hasan and Hoon (2013) reviewed twenty journal articles to establish the effects of podcasts on ESL students' language skills and attitude levels. They found out that podcasts greatly facilitate L2 pronunciation among other language skills.

From these studies reviewed, it is obvious that podcasts can play a significant role in improving L2 pronunciation. This beneficial technique for improving L2 pronunciation to the best of our knowledge has not been applied to teaching and learning English as a second language in Nigeria. Consequent upon this, this study seeks to know whether podcasts can be used to improve the pronunciation difficulties of the Igbo students learning English phonetics in Nigeria.

METHODOLOGY

In seeking the ways to improve the spoken English of the Igbo students, this study sets out to respond to the following question. To what extent does greater input affect the students' pronunciation of English speech sounds? This study is cast within the theoretical framework of Contrastive Analysis Hypothesis. CAH predicts that the difficulties one encounters in acquiring a new language are derived from the differences between the new language and the native (first) language of a language user (Wardhaugh, 1970). It is against this theoretical assumption that the sounds targeted in this study are those speech sounds found in the English language which are not found in the Igbo language. The sounds are seventeen in number. The speech sounds are transcribed using the International Phonetic Alphabet revised in 2005. A total of four English as a Second Language Podcasts developed by Dr Jeff McQuillan of the Center for Educational Development, Los Angeles, Carlifornia were selected. The selected podcasts are ESLpod 745 'Welcoming a House Guest'; ESLpod 746 'Travelling over the Holdays'; ESLpod 747 'Visiting a Ranch'; and ESLpod 748 'Writing a letter of Enquiry'. There are very many podcasts for different purposes, but it is not all of them that are reliable for teaching pronunciation in second language. We have chosen those of McQuillan since they were founded on the premise of English as a second language, and English is studied as a second language in our study area.

The postgraduate (Master of Arts) students who were taking General Phonetics (LIN 511) were used. The MA students were chosen because a greater number of them owned their personal computers when compared with the undergraduates. On the other hand, when

compared with the PhD students, the MA students have a regular time that they stay in the university due to course work while PhD students do not do any course work, thus, they operate from wherever they wish. Fifteen native speakers of Igbo registered for the LIN511 and were involved in both the pre-test and post-test. Six of the subjects were in the test group and the other nine were in the control group. The choice of the six was determined by ownership of personal computers (PCs); consequently, they listened to podcasts through their computers. The words that bear such sounds were underlined only in the assessors' copies for easy identification by the assessors. The assessors were one lecturer who holds a PhD in phonetics and phonology and two PhD students in the same area of study. The podcasts were transcribed orthographically and the words that bear the targeted sounds were marked in the assessors' copies but were left unmarked in the candidates' copies. The aim of marking them was to make it easier for the assessors to rate. Forty-five copies of the written version of the podcasts were produced so that each assessor had six copies that correspond to the number of candidates who are called up for assessment. In each copy, any targeted sound the candidate pronounces closer to the ideal English phoneme than the Igbo one, it was indicated by (✓) and for the one with much difference from the ideal one, the mark (×) is placed against it. During the pre-test assessment, the copies (not marked) were shared out to all subjects. All of the fifteen subjects were asked to read them one after the other. This took each person about forty-five minutes to read through. A Sony voice recorder was used to record their speech. The recording took an average of four hours per day and lasted for three consecutive days before the phonetics lectures began. This recording was used for a pre-test assessment. The assessors relied solely on their perceptual abilities. Although there were variations in the assessors' scores, they were minimal. In situations of variation, an approximated mean score of the three assessors was used as the final score for each candidate. After the pre-test, the four podcasts were copied into the PCs of the test group and they were asked to listen to them (at least one of the podcasts) daily. They were also encouraged to copy them into other mobile formats they wished to, so as to enable them to listen to them whenever and wherever they wished to. Thereafter, the General phonetics class started. Although the test group was encouraged to listen to the podcasts as often as they could, yet in order to ensure that they listened to them, the six candidates had a one-hour period a day and thrice a week with the lecturer for the three months where they listened to the podcasts. After a period of three months, a post-test was carried out on the two groups, those exposed to lectures only and those exposed to both lectures and podcasts. Again, those words that bear the targeted sounds were marked with the aim of paying particular attention to them on pronunciation as in pre-test. The assessment was done in a similar manner to the pre-test.

DATA PRESENTATION

In using English as a second language in Nigeria, many speakers commit a number of errors. The majority of the errors are associated with wrong pronunciation (Babatunde, 1975, & Egbe, 1979). Mispronunciation of English words is prevalent among the Igbo learners of English (Okorji & Okeke 2009). The mispronunciation is often associated with mother tongue interference. Contrastive analysis hypothesis is a useful diagnostic tool in teaching L2 because CA involves a comparative description of L1 and L2 to determine their similarities and differences. The areas of similarities facilitate learning while the areas of differences inhibit L2 learning (Lado, 1957). Dunstan (1969) and Okorji and Okeke (2009) have carried out a contrastive study of phonology of English and Igbo languages and agree that English

has forty-four (twenty-four consonants and twenty vowels) speech sounds and Igbo thirty-six (twenty-eight consonants and eight vowels) speech sounds. The English consonants are /π/, /β/, /τ/, /δ/, /κ/, /γ/, /μ/, /ν/, /ŋ/, /ʧ/, /ʤ/; /ɸ/, /ϖ/, /T/, /Δ/, /σ/, /ζ/, /Σ/, /ʒ/, /η/, /λ/, /ρ/, /φ/, and /ω/. The English vowels are /i/, /I/,/u/, /ʊ/, /ɛ/, /ɜ/, /a/, /ə/, /ɔ/, /Θ/,/ʌ/, /ɒ/, /ei/, /əʊ/, /aɪ/, /aʊ/, /ɔɪ/, /ɪə/, /ɛə/, and /ʊə/. The following are the Igbo consonants; /π/, /β/, /τ/, /δ/, /κ/, /γ/ /μ/, /ν/,/ɲ/, /ŋ/, /ʧ/, /ʤ/, /ɸ/, /v/. /σ/, /ζ/, /Σ/, /ɦ/, /ɻ/, /φ/, /ω/, /l/, /**κ□π/, /γ□β/,** /kw/, /gw/, /ɣ/**,** and /ŋw/. The Vowels of Igbo include; /i/, /I/,/u/, /ʊ/, /e/, /o/, /ɔ/, and /a/. The following speech sounds are found to be similar in the two languages: /π/, /β/, /τ/, /δ/, /κ/, /γ/, /μ/, /ν/, /ŋ/, /ʧ/, /ʤ/; /ɸ/, /ϖ/, /σ/, /ζ/, /Σ/,/η/, /λ/, /ρ/, /φ/, /ω/, /i/, /I/,/u/, /ʊ/, /ɔ/, /a/. Differences exist in /T/,/Δ/, and /ʒ/ which are found in English but are not in Igbo and in /**κ□π/, /γ□β/,** /kw/, /gw/, /ɣ/**,** /ŋw/, and /ɲ/ which are found in Igbo but are not in English. The vowels; /ɛ/, /ɜ/, /ə/, /Θ/,/ʌ/, /ɒ/, /ei/, /əʊ/, /aɪ/, /aʊ/, /ɔɪ/, /ɪə/, /ɛə/, and /ʊə/ are found in English but are not in Igbo while /e/ and /o/ are found in Igbo although they are of different qualities in English.
The following speech sounds found in English which are not in the sound system of Igbo formed our target: /ɛ/, /ɜ/, /ə/, /Θ/,/ʌ/, /ɒ/, /ei/, /əʊ/, /aɪ/, /aʊ/, /ɔɪ/, /ɪə/, /ɛə/, /ʊə/, /T/, /Δ/, and /ʒ/. The candidates were tested on these seventeen sounds. Their scores are displayed in tables 1 and 2 below.

Table 1: Pre-test Results

Segments/no	**Candidates**														
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
ɛ (85)	62	60	75	68	72	66	64	62	66	67	65	71	62	63	66
ɜ (38)	01	00	04	02	06	03	00	01	04	02	00	06	03	03	02
ə (30)	15	12	15	12	13	09	12	12	16	06	06	14	10	11	10
æ (131)	28	08	40	24	41	12	11	10	21	17	05	42	18	21	25
ʌ (37)	00	00	05	01	07	02	00	00	04	04	00	12	05	02	00
ɒ (38)	31	30	36	34	36	33	33	31	32	33	33	34	32	36	34
ei (82)	21	18	34	22	38	22	21	14	26	28	23	32	14	23	30
əʊ (65)	06	01	10	03	08	05	02	01	03	05	01	10	00	03	06
aɪ (39)	27	25	30	30	32	27	23	21	26	28	26	30	18	24	28
aʊ (42)	34	32	38	38	34	33	35	30	33	38	34	39	33	36	36
ɔɪ (28)	27	27	28	28	28	28	28	17	27	27	27	28	27	27	28
ɪə (36)	12	08	14	11	12	08	10	10	12	13	12	13	02	11	13
ɛə (18)	10	08	11	11	11	10	11	10	08	11	11	13	06	10	10
ʊə (34)	00	00	08	02	00	00	03	00	02	04	01	08	00	02	04
ɵ (42)	03	04	06	02	00	01	00	00	05	06	00	04	00	01	01
Δ (19)	13	13	15	11	17	13	14	11	14	13	12	14	11	14	14
ʒ (8)	00	00	03	00	03	00	01	00	00	00	00	03	00	00	02

The numbers bracketed after each segment stand for the number of times the segment was tested in the selected podcasts.

Table 1 above shows the pre-test score of the fifteen candidates. Numbers 1-15 on the first row represent the candidates. The numbers that occur against each segment and each candidate represent the number of times that particular segment is 'correctly' pronounced by a particular candidate. Thus, the speech sound /ʌ/, for instance, was tested 37 times and their performances are: candidate 1 scored 00; candidate 2 scored 00; candidate 3 scored 05; candidate 4 scored 01; candidate 5 scored 07; candidate 6 scored 02; candidate 7 scored 00; candidate 8 scored 00; candidate 9 scored 04; candidate 10 scored 04; candidate 11 scored

00; candidate12 scored 12; candidate 13 scored 05; candidate 14 scored 02; and candidate 15 scored 00.

Table 2 Post-test Results

Segments /no	Candidates														
	c1	**2**	**c3**	**4**	**c5**	**6**	**7**	**c8**	**9**	**10**	**11**	**12**	**c13**	**14**	**c15**
ɛ (85)	77	66	83	71	79	70	66	72	66	70	67	80	79	65	76
ɜ (38)	21	11	31	12	28	18	08	21	12	18	12	20	18	09	22
ə (30)	22	15	25	18	23	16	17	21	19	16	14	19	20	16	21
æ (131)	89	28	119	48	107	31	24	73	37	37	32	61	91	39	82
ʌ (37)	17	06	20	11	19	08	05	18	08	10	10	17	14	08	18
ɒ (38)	38	36	38	37	38	38	35	37	35	37	36	38	38	36	38
ei (82)	71	43	74	51	68	43	39	61	39	38	42	52	54	39	64
əʊ (65)	26	11	33	10	35	13	10	20	11	16	09	14	18	08	21
aɪ (39)	33	32	39	35	39	35	31	38	33	36	33	37	31	34	38
aʊ (42)	42	42	42	42	42	41	41	42	42	42	41	42	40	40	42
ɔɪ (28)	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
ɪə (36)	25	13	27	16	20	15	18	28	18	15	19	17	15	17	21
ɛə (18)	14	10	14	15	15	11	13	14	10	12	13	15	13	12	14
ʊə (34)	18	09	21	12	22	13	14	20	10	13	11	18	15	14	20
ɵ (42)	33	24	34	22	30	25	27	23	21	24	21	23	26	16	31
Δ (19)	17	15	18	15	19	15	18	18	16	15	17	17	18	16	18
ʒ (8)	04	02	06	02	07	03	03	05	02	02	03	05	03	02	05

The c(computer) attached to some numbers are those that were exposed to podcasts in addition to lectures (the test group) whereas others were exposed to lectures only (control group).

Table 2 above shows the result of the post- test for the fifteen candidates against the seventeen speech sounds. Out of these fifteen candidates, six of them were in the test group and they have a letter (c) preceding their numbers. They are c1, c3, c5, c8, c13, and c15. The rest of the candidates; 2, 4, 6, 7, 9, 10, 11, 12, and 14 who did not own personal computers, formed our control group. For instance, the segment /**ʌ**/, the test group obtained the following scores: c1,17; c3, 20; c5,19; c8, 18; c13,14; and c15,18. The scores of the control group are 06 for candidate 2; 11 for candidate 4; 08 for candidate 6; 05 for candidate 7; 08 for candidate 9; 10 for candidate 10; 10 for candidate 11; 17 for candidate12; and 08 for candidate 14.

Table 3 Summary of Results

Segments/no	Pre-test	Control group	Test group	F-value	P- Value	Decision
ɛ (85)	65.93a	69a	77.67b	16.395	0.000	Significant
ɜ (38)	2.47a	13.33b	55.17c	5.506	0.010	Significant
ə (30)	11.13a	16.67a	53.67b	3.621	0.040	Significant
æ (131)	21.53a	37.44b	93.5c	67.821	0.000	Significant
ʌ (37)	2.8a	9.22b	17.67c	46.233	0.000	Significant
ɒ (38)	33.20a	36.44b	37.83b	26.167	0.000	Significant
ei (82)	24.4a	43b	65.33c	85.668	0.000	Significant
əʊ (65)	4.27a	11.33b	25.5c	57.843	0.000	Significant
aɪ (39)	26.33a	34b	36.33b	27.236	0.000	Significant
aʊ (42)	34.87a	41.44b	41.67b	44.451	0.000	Significant
ɔɪ (28)	26.8a	28a	28a	1.370	0.271	Not Significant
ɪə (36)	10.73a	16.44b	22.67c	31.658	0.000	Significant
ɛə (18)	10.07a	12.33b	14c	14.597	0.000	Significant
ʊə (34)	2.27a	12.67b	19.33c	101.147	0.000	Significant
ɵ (42)	2.2a	22.56b	29.5c	235.413	0.000	Significant
ð (19)	13.27a	16b	18c	29.805	0.000	Significant
ʒ (8)	0.8a	2.67b	5c	26.198	0.000	Significant

Significance level = 0.05, Means with the same alphabet do not differ significantly from each other or from one another while means with different alphabets differ significantly.

The results summarised in Table 3 above show that the segment /ɔɪ/ did not show a significant difference existing between the control group and the test group. While segments /ɜ/, /æ/, /ʌ/, /ei/, /əʊ/, /ɪə/, /ɛə/, /ʊə/, /ɵ/, /ð/, /ʒ/, /ɛ/, /ə/, /aɪ/, /ɒ/, and /aʊ/ had significant differences existing between the control group and the test group.

Interpretation of Results

Analysis of variance (ANOVA) was used to calculate the differences in the means of the scores of students for their pre-test, post-test lectures only, and post-test lectures and podcasts at 0.05 level of significance. Results in Table 3 show that of all the segments the students were tested on, only one (ɔɪ, with an F-value of 1.37 and a P-value of 0.271) did not differ significantly in the scores of the students in both control and test groups. The results show that all the other sixteen segments had significant differences in their means across the pre-test, control and test groups (with F- values ranging from 3.62 to 235.41 and P-values from 0.000-0.040).

A further analysis (Post-hoc test) of those segments found to be significant shows that for speech sounds /ɛ/ and /ə/, there was no significant difference between pre-test and post-test scores of the test group but the students' scores in the control group differ significantly. This shows that for these speech sounds, podcasts had a significant effect on the students' scores. While the speech sounds /ɜ/, /æ/, /ʌ/, /ei/, /əʊ/, /ɪə/, /ɛə/, /ʊə/, /ɵ/, /Δ/, and /ʒ/, had significant differences in the students' scores before they were taught, after they were taught, as well as after podcasts. That is, for each of the sounds, their scores differ significantly. Finally, for speech sounds /aɪ/, /ɒ/ and /aʊ/, the results show that significant differences exist only between the pre-test and post test while the two groups of the post-test do not differ significantly from each other. Thus, increased input by way of podcasts helped in improving students' performance in the thirteen sounds out of the targeted seventeen sounds. For the rest of the three sounds /aɪ/, /ɒ/ and /aʊ/, even though there was an improvement on the students' scores in post-test, the improvement is not attributable to podcasts, the improvement could be from greater input , timing, or any other reason other than podcasts. Thus, it is important to take time to teach the students how to pronounce the sounds of English and in addition, expose them to podcasts so that there will be greater achievement in their oral performance in their spoken English. Generally, in this study, podcasts made an outstanding difference in thirteen sounds. Therefore, statistically, podcasts have significant effect on the students' performance in the English phonetics in this study.

CONCLUSION

This work has studied the effect of podcasts on the Igbo students' performance in the English segmental production . The result showed that there was significant improvement on the students' performance in English phonetics. As in Knight (2010), this points to the fact that podcasting is one of the techniques used to enhance L2 pronunciation. The findings of this study support the fact that technology is essential in minimising L1 segmental transfer to L2. As such, we employ teachers of another language to encourage the use of authentic audio technology in native speakers' accent in delivering their learning materials. This kind of audio will equip the students more rather than solely relying on the teacher's production which may be affected by mother tongue interference. However, a limitation of this study is that, ideally, a study of this nature ought to have a 'proper' control group which would not have received instruction, so as to ascertain whether it was instruction or podcasts that had greater influence on their performances. But due to the tight schedule of the students and the university calendar, it was impossible to leave the students untaught for the semester just for the purpose of research. This may only be possible with the first year undergraduates that

have several batches of admission and some of them even report two weeks to the end of lectures. Again, they may likely see the podcasts 'distracting' them from getting their lecture notes up-to-date and reading for their forth-coming examination.

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