

Challenges faced by English as a Foreign Language (EFL) learners in the perception and production of North American English vowels: A case of Rwandan students in various US universities

Emmanuel Uwambayinema
University of Rwanda- College of Education

Abstract

This study was meant to investigate the challenges that EFL learners from Rwanda encounter in the perception and production of North American English (NAE) vowels. The participants were Rwandan EFL learners attending various US universities in academic year 2013-2014. In order to gather the information needed to carry out this investigation, questionnaires were distributed to the concerned students. The results showed that Rwandan EFL learners in the US face various challenges in their effort to optimize the perception and production of NAE vowels such as their big number and highly complex character. The influence of their L1 vowels system was also found to be one of the thorny challenges.

Keywords: English as a Foreign Language (EFL), North American English (NAE), Vowels system.

Introduction

This research paper investigates challenges that Rwandan EFL learners in the US face in their effort to correctly perceive and produce North American English (Henceforth NAE) vowels. The study also casts some light on the causes that bring about and or aggravate those challenges and set some suggestions on how to reduce or completely eliminate the very challenges in order to make the learning and mastery of NAE vowels a success.

In fact, in 2008 the government of Rwanda decided to operate a shift whereby English was to replace French as a language of instruction in all its schools. Despite the fact that this shift was a right move because of various reasons, the capacity to implement it was still very truncated especially because the number of qualified teachers of English in Rwanda was still very low. It is in this framework that in 2011 the government of Rwanda in partnership with the embassy of the United States of America in Kigali, availed 8 scholarships under the Fulbright Scholarships Scheme to help Rwandan teachers of English improve their levels in the very language. They were chosen basing on their performance on various tests (Test of English as a Foreign Language (TOEFL), Graduate Record Examination (GRE), and oral examinations). They were then enrolled in a Master's of Arts degree (MA) in Teaching English to Speakers of Other Languages (TESOL), and this population constituted the focus of this study devised to check the challenges that these students stumbled on in their endeavor to learn and master NAE particularly its vowels because of their anticipated complex character.

Research questions

This paper was guided by the following research questions:

1. What are the main challenges faced by Rwandan EFL students in their endeavor to correctly perceive and produce NAE vowels?

2. What are the causes of these difficulties that prevent the smooth learning of NAE vowels?
3. From the students' perspectives, how can these challenges be reduced or completely eliminated?

Literature review

General works

Several researchers have dedicated their studies to the issue of number, complexity, variety and richness of the NAE vowels system. The majority of these scholars agreed that it is not an easy task for L2 learners to master this vowels system due to the issues mentioned above. There are a number of reasons making NAE vowels hard to learn by L2 learners especially those in an EFL situation. This includes, but not limited to the fact that most L2 learners' L1 has a fewer number of vowels as compared to NAE (3-5 vowels as opposed to 14 and more in NAE) and in most of the cases the orthography of their L1 vowels corresponds to their spoken version (what they see equals what they hear) which is not the case in NAE. Those researchers agreed on the fact that foreign language (L2) learners whose mother tongue (L1) has fewer number of vowels than the ones in the North American English (NAE) version, often find it very difficult to master this kind of vowels. It was also proven that the fact that most L2 adult learners have already assimilated and/or mastered their L1 vowels system which is, in most of the time, very different from the North American English ones, renders their effort to learn NAE vowels very difficult. (Celce-Murcia, Brinton & Goodwin, 1996).

See table 1 and 2 below and compare the two vowel systems (NAE vowels versus Kinyarwanda vowels).

Table1: *Table showing NAE vowels.*

The Vowels of North American English and Their Phonemic Symbols (Based on the symbols used in <i>Teaching Pronunciation</i>)			
Phonemic symbol	Examples	Phonemic symbol	Examples
/iɪ/	beat, see, machine	/uʊ/	boot, blue, shoe
/ɪ/	bit, him	/ʊ/	book, full
/eɪ/	bait, made, they	/oʊ/	boat, home, blow
/ɛ/	bet, leg, head	/ɔ/	bought, saw
/æ/	bat, has, apple	/ɑ/	box, car, father
/ʌ/	but, mother	/aɪ/	bite, sight
/ə/	sofa, until, combine	/aʊ/	about, cow
		/ɔɪ/	boy, noise

Source: https://www.google.rw/?gws_rd=cr,ssl&ei=hapVVbOoE8OzsQGLi4DgAQ#q=North+American+English+vowels

Table2: *Table showing Kinyarwanda vowels.*

The vowels of Kinyarwanda		
Phonemic symbol	Examples	Gloss
/i/	ikibirirti	'Lighter'
/u/	umuntu	'man'
/o/	umuhoro	'machete'
/a/	Kanama	'August'
/e/	lhembe	'Horn'

Source: Author, 2013.

As it stands out, there is a very huge difference between NAE vowels and Kinyarwanda ones. (14 individual vowels of NAE as compared with 5 vowels in Kinyarwanda). Even if all Kinyarwanda vowels can occur in long and short form, the distinction is only phonemic and does not affect the quality of a vowel. This big number of NAE vowels compounded with their highly complex characters render the learning and mastering of NAE vowels system very challenging.

In the same vein, Derwing and Munro (2005) emphasized the need to explicitly teach not only NAE vowels but also the correct English language pronunciation since they realized that it is very hard for L2 learners to master this pronunciation without going through explicit and objective-oriented pronunciation courses. This is because, according to them, some education practitioners are reluctant to teach pronunciation in order to raise mutual intelligibility and control "social ramification" of accent which can, in some extreme conditions, prove to have some negative effects on communication.

On the other hand, some researchers even if they do not exclude or discard what Celce Muricia et al. and her followers stated, decided to include some other reasons behind the failure to attain perfect pronunciation of the English language in general and the adequate mastery of American English vowels in particular. Among these authors, Best and Tyler (2007) take the lead with their campaign "earlier is usually better" and argue that the age at which most L2 learners start learning the English language, Age of Learning, (AOL) is the factor number one that prevents them from attaining a highly adequate mastery of NAE vowels which in turn, hinders their overall performance as far as North American English pronunciation is concerned. In fact, they state that the majority of American English learners arrive in the US, at an already adult age, Age of Arrival, (AOA) and emphasize that at this age not only the capacity to optimize the learning of a new language is reduced but also L1 systems and patterns have already fully developed and both these factors constitute an added disadvantage to fully assimilate L2 pronunciation. This is also why they mentioned that L1 and L2 similarities are likely to facilitate the learning of an L2 whereas complete dissimilarities block its smooth learning. On the same issue see also (Flege, 1997; Flege & MacKay, 2004; Flege, MacKay, & Meador, 1999; Højen & Flege, 2006; Munro, Flege, & MacKay, 1996).

Specific works

A couple of scholars conducted research studies that looked at how a particular L2 learners' population perceive and produce North American English vowels. In this view Bion, Escudero, Rauber, and Baptista (2006) undertook a study concerning how Brazilian L2 learners perceive and produce English high front vowels. The study used three experiments as follows:

- (i) a production test measuring the first two formants of the participants' English front vowels,
- (ii) an oddity discrimination test investigating the formation of vowel categories, and
- (iii) a discrimination test with synthetic stimuli which assessed the participants' reliance on spectral quality when perceiving English vowels.

The results of this study generally showed a strong relationship between vowels perception and production and it was clarified that vowels perception precedes vowels production. The results also suggested that some acoustic cues like vowels duration etc. of NAE vowels make this vowels system hard to learn for Brazilian learners of English. This means that if vowels perception precedes vowels production, L2 learners who fail to clearly perceive individual vowels, which are the case in most of the time, will also have difficulties producing them.

Paradoxically, Wang (1997) conducted a detailed research on the effects of the L1 vowels system on native Mandarin speakers' production and perception of English vowels in which she concluded that the relationship between vowels perception and production is vague and unclear. This conclusion was based on the fact that she found out that similarities between Mandarin vowels and English ones had a positive effect on the production of English vowels but there was no clear evidence of the same effects as far as vowels perception is concerned.

Cenoz and Lecumberri (1999), being aware of how difficult it is for native speakers of Basques and Spanish learners of English to clearly perceive and produce NAE vowels, devised a study to see if intensive training can help them improve their English vowels perception and production. The participants were 109 university students who received an intensive training course in English vowel phonetics and were asked to complete some questionnaires and vowel perception and production test thereafter. The findings confirmed positive effects of training on the perception of English vowels and that effect was related to the desire to produce them in near native accent.

The positive effects of training on the perception of English vowels above can be linked to what was suggested by Levey and Cruz (2004), that practice and continuous use of the target language can improve the ability to assimilate English vowel contrasts. In fact those authors carried out a research study in which they compared the ability to discriminate English vowel contrasts between bilingual speakers of Spanish and English and English monolinguals and estimated the correlation between their discrimination and production of these vowels.

As was expected, discrimination accuracy was significantly greater for native English-speaking participants than for bilingual participants for vowel contrasts. Significant errors also appeared in the bilingual participants' productions of certain vowels. They concluded that earlier age of acquisition, absence of communication problems, and greater percentage of time devoted to communication in English contributed to greater accuracy in discrimination and

production of English vowels. This basically means that those Spanish speakers' English vowels discrimination and production capabilities are somehow diluted by the use of Spanish in their everyday life whereas those who only use English in their daily life increased their chances to gain and maintain mastery over English vowels.

Read More: <http://www.amsciepub.com/doi/abs/10.2466/pms.99.2.445-462>

Methodology

Participants

This study involved 8 Rwandan EFL learners enrolled in various universities across the US in the academic year 2013-2014. These students were teachers of English back in Rwanda (3 of them were Tutorial Assistants in Higher Learning Institutions (HLIs) and 5 others were teachers of English at the secondary school level but all of them were holders of a BA degree in English. They then were awarded J. William Fulbright Scholarship under the program of educational exchange between Rwanda and the United States in order to help them get advanced degrees (MA in Teaching English to Speakers of Other Languages (TESOL). This scholarship was meant to boost the teaching and learning situation of the English language in Rwanda as a way of phasing out the French language in the Rwandan educational system. All of these students had a Test of English as a Foreign Language (TOEFL) score higher than 550 as this was the sine qua non condition to be given the scholarship.

Data collection methods

Given the fact that the participants were located in different regions of the US, questionnaires constituted the only research instrument of this study. These questionnaires were sent to the participants via e-mail and they were asked to freely provide answers to the questions and return them to the researcher via the same means. No interviewing or recording of sound was needed because the analysis of speech sound was not included in this study. The US teaching staff was not involved in the study as the researcher only wanted to hear the story from the students' perspectives, since they were the ones who were in a better position to explain more what their experience was, as far as the subject under discussion was concerned.

Data analysis and interpretation

The data were analyzed by looking at the participants' answers to the questions contained in the questionnaires. The answers were presented in tables and were analyzed descriptively and this provided a clear picture of the challenges that Rwandan students faces as far as the learning of NAE vowels is concerned. Through descriptive analysis of the content of the same tables, it was also made clear on how to eliminate those challenges and hence make the learning and mastery of NAE vowels a success.

Results and discussion

This section essentially presents this research study findings in a detailed way. The findings are presented in tables one by one following the order of the research questions already put forward at the beginning of this paper.

Table 3

Table showing challenges faced by Rwandan students in the perception and production of NAE vowels.

Q1: What are the main challenges faced by Rwandan students in their endeavor to correctly perceive and produce NAE vowels? (S= Student)

Problems	S1	S2	S3	S4	S5	S6	S7	S8	Tot/8
Their big number	1	1	1	1	1	1	1	-	7
Their complexity	1	1	1	1	1	1	1	1	8
L1 vowel system	1	1	1	1	1	1	1	1	8
Difference written and spoken form	1	1	1	1	1	1	1	1	8
All of these	-	-	1	-	-	-	1	-	2
Other	-	-	-	-	-	-	-	-	-

Source: Primary data, 2013

The findings here prove to be very tight as all the problems prove to be significant for almost all respondents. This is actually interesting because it shows how hard or how challenging it is for L2 learners from Rwanda to learn and master NAE vowels system. In fact it is not really surprising to find out that the complexity of NAE vowels, the discrepancies between their written and spoken forms, and L1 vowels system, were marked by each and every respondent in this study (8/8), given the fact that some other prominent researchers have pointed out similar issues.

Furthermore, the big number of NAE vowels is another non negligible problem as it was marked by 7 among 8 respondents. This basically makes sense because Kinyarwanda has only 5 vowels /i,u,o,a,e/ and it is natural for someone familiar with only this number of vowels to get overwhelmed by 14 and in some cases 15 vowels constituting NAE vowels system. This finding here can be well matched with remarks made by Celce- Murcia et al. (1996) about NAE vowels system and L2 learners in which they emphasized on the fact that the relatively big number and complexity of NAE vowels are likely to complicate their smooth learning by L2 learners.

Table 4

Table showing the causes of that brings about problems that prevent the smooth learning of NAE vowels.

Q2: What are the causes which bring about and exacerbate these difficulties that prevent the smooth learning of NAE vowels? (S= Student)

Causes	S1	S2	S3	S4	S5	S6	S7	S8	Tot/8
L1 vowel system	1	1	1	1	1	1	1	1	8
Weak foundation	1	1	1	1	1	1	1	1	8
Age of learning (Adult)	-	1	1	1	1	1	1	-	7
Lack of qualified teachers	1	-	1	1	1	1	1	-	7
Medium of instruction	-	-	1	1	1	-	1	1	5
All of these	-	-	1	-	-	-	1	-	2

Source: Primary data, 2013.

The mother tongue (L1) together with weak foundation stands out as the underlying causes of the difficulties that Rwandan L2 learners face in their effort to gain mastery over NAE vowels. As was mentioned above, L1 vowels system is a potential threat to learning and mastering L2 vowels especially when the two languages' vowel systems are different to some extent.

The issue of weak foundation is self-explanatory given the educational system that the respondents went through for their primary and secondary education. In fact, the educational system in African countries is generally known to be weak given the fact that the number of qualified teachers is still low and school infrastructures are not very well developed. When it comes to the English language, things become even more pathetic because Rwanda's educational system has always been dominated by French until 2008, when the government decided to phase out French as a language of instruction and embark on English. This basically means that competent English teachers are still very scarce which has a negative effect on the students' level of English. It is worth noting that this problem of lack of qualified teachers can be viewed as the "mother-problem" because even if NAE vowels are numerous and complex a competent teacher is able to step by step explain, teach and make students become familiar with a new system. On the other hand a teacher who does not master the NAE vowels system is himself confused and there is no way that such a teacher will help students with something he/she is not conversant with.

Age of learning (AOL) also proves to be a very significant cause that brings about the challenges and stress as far as NAE vowels' correct perception and production is concerned. As matter stands today, Rwandan students start learning English in primary and some in nursery schools. But for all the respondents in this research study, it is clear that they started learning English for the first time in their lives at the secondary school level.

Reasonably speaking, at secondary school level, a Rwandan student is too adult to be able to achieve a native like accent of English because in the recent past, all Rwandan students were obliged to do 8 years of primary education before they are allowed to move to the secondary level. Consequently a learner who started his/her primary school at the age of 7 and took all the 8 years of primary school (with a high rate of retaking the year) reached his/her first year of secondary education at the age of between 15 and 17 which is very high with respect to the optimal age of learning an L2 successfully. This issue of age of learning (AOL) was also on the agenda in a study by Best and Tyler (2007) with their campaign "the earlier, the better" mentioned earlier.

The medium of instruction was mentioned by 5 respondents in this study which means that it is also an issue to be given some consideration. In fact, since the colonial period till 2008, Rwandan educational system was exclusively backed against the French language and English was only taught as a subject and to only those students who were doing their literary option. This contributed a lot to the fact that the English language was consistently felt as a very distant language in Rwanda. Hence the French vowels system being very different from the NAE ones could be taken as the reason why some of the respondents mentioned medium of instruction as one of the reasons that aggravate the problems about NAE vowels optimal learning.

Table 5: *Table showing how to eliminate the challenges that Rwandan students encounter in the learning of NAE vowels*

Q3: From the students' perspectives, how could these challenges be reduced or completely eliminated?

(S=Student)

Suggestions	S1	S2	S3	S4	S5	S6	S7	S8	Tot/8
Phonetic training	1	1	1	1	1	1	1	1	8
Teachers' role	1	1	-	1	1	1	1	1	7
Extra classes	1	-	1	-	1	1	1	-	5
More interaction with native speakers	1	-	1	1	1	1	1	1	7
Paired listening contrasting vowels	-	1	1	-	1	-	1	-	4

Source: Primary data, 2013.

From the students' perspective (Staff was not involved), the table above suggests that the explicit phonetic training about NAE vowels is the key issue to address in order to reduce the difficulties faced by Rwandan EFL learners in the perception and production of NAE vowels since this concern was marked by all respondents. The teachers' role, followed by more interaction with native speakers stand out with 7-7 numbers of respondents who marked them respectively. Paired listening which contrasts vowels (minimal pairs) with 4 respondents also deserves a little bit of consideration since 4 respondents who marked it constitute a half of all respondents.

Phonetic training which stands out as the suggestion number one to reduce all the problems against the undisputed success in the learning of NAE vowels (which can be compounded with extra class item) was also found to have a positive effect, especially on the perception of NAE vowels in a research done by Cenoz and Lecumberri (1999) referred to earlier in this study.

Generally speaking all these findings above have a very strong pedagogical implication and can play either a positive or negative role on the overall teaching and learning of NAE pronunciation in general and NAE vowels perception and production in particular. American English teachers should take into account both the different levels of English and the various backgrounds of their L2 learners and act accordingly. In fact there are so many techniques to use when dealing with a multilevel class. Otherwise weaker learners would experience a constant frustration and this would affect negatively the overall level of enjoyment and achievement in the English language as a whole.

Conclusion

This research study brought to light challenges that Rwandan EFL learners face in their effort to learn and master NAE vowels. The study checked these challenges at both perception and production level and it was confirmed that there are many hitches that prevent those students from achieving an uncontested success as far as perception and production of NAE vowels are concerned. Various problems were pointed out from the students' perspectives notably their big number, their complexity and the negative influence/transfer of L1 vowels system. Furthermore it was also pointed out that the overall weak foundation in English and lack of adequate educational infrastructure back home, constitute the main reasons underlying this failure. Finally the study cast some light on how to reduce and why not to completely eliminate the challenges against the smooth learning of NAE vowels as far as Rwandan EFL learners are concerned. It was found out that some practices such as having extra phonetic training in NAE vowels, extra classes, increased interaction with native speakers and paired listening contrasting vowels would play a paramount role in eliminating the very challenges.

References

- Avery, P., & Ehrlich, S. (1992). *Teaching American English pronunciation* (p. 77). Oxford: Oxford University Press.
- Best, C. T. & Tyler, M.D. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. *Language experience in second language speech learning: In honor of James Emil Flege, 13-34.*
- Bion, R.A.H., et al. (2006). Category formation and the role of spectral quality in the perception and production of English front vowels. In *Proceedings of Interspeech 2006*. PA: ISCA.
- Celce-Murcia, M., et al. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages*. Cambridge: Cambridge University Press.
- Cenoz, J., & Lecumberri, L.G. (1999). The effect of training on the discrimination of English vowels. *IRAL-International Review of Applied Linguistics in Language Teaching, 37(4), 261-276.*
- Derwing, T.M., & Munro, M.J. (2005). Second Language Accent and Pronunciation Teaching: A Research-based Approach. *Tesol Quarterly, 39(3), 379-397.*
- Flege, J.E. (1997). English vowel production by Dutch talkers: more evidence for the “similar” vs. “new” distinction. *Second language speech, 11-52.*
- Flege, J.E., & MacKay, I.R. (2004). Perceiving vowels in a second language. *Studies in second language Acquisition 26(1), 1-34.*
- Flege, J.E., et al. (1999). Native Italian speakers' perception and production of English vowels. *The Journal of the Acoustical Society of America, 106 (5) 2973-2987.*
- Højen, A., & Flege, J.E. (2006). Early learners' discrimination of second-language vowels. *The Journal of the Acoustical Society of America, 119(5), 3072-3084.*
- Levey, S., & Cruz, D. (2004). The discrimination of English vowels by bilingual Spanish/English and monolingual English speakers. *Contemporary Issues in Communication Science and Disorders, 31, 162-172.*
- Miller, S.F. (2000). *Targeting pronunciation: The intonation, sounds, and rhythm of American English*. Boston: Houghton Mifflin.
- Munro, M.J., et al. (1996). The effects of age of second language learning on the production of English vowels. *Applied Psycholinguistics, 17(3), 313-334.*
- Wang, X. (1997). *The acquisition of English vowels by Mandarin ESL learners: A study of production and perception*. (Doctoral dissertation, Simon Fraser University.)