The Use of Computer Assisted Approach in Teaching English Pronunciation in Urban Kigali Secondary Schools, Rwanda

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Abstract: This study is about the use of computer assisted approach in teaching English pronunciation in the Urban Secondary Schools in Kigali, Rwanda, using the mixed research method through a self-administered questionnaire and an interview guide. Quantitative data was analyzed through descriptive statistics while qualitative data was analyzed through the thematic approach. Teachers considered the computer assisted approach useful due to its ability to provide proper pronunciation, to enable students find appropriate word sounds and to correct pronunciation errors and mistakes. The use of the approach enhanced proper pronunciation by boosting the number of words pronounced correctly. The study recommends that teachers should use the approach not only for class preparation but also in the actual classroom teaching and learning so as to improve the pronunciation of words. School managers are called upon to provide Computer Assisted Approach facilities so that both teachers and learners may have access to and actually use the same to enhance accuracy in words pronunciation.

Keywords: Computer Assisted Approach; British e- dictionary; English pronunciation.

Introduction

For several decades, researchers have investigated the way Computer Assisted Approach can be used in teaching and learning language skills. The method has been hailed by researchers due to its ability to stimulate effective teaching and learning (Ghasemi, et al. 2011). Ongo'onda and Muindi (2016) established that computers supported the pronunciation teaching.

In countries where English is used as a Foreign Language, teaching it was challenging due to factors such as lack of interaction with target language and lack of fluent teachers and motivation (Asante-Nimako, 2018; Essien & Plailek, 2021; McCrocklin, 2014). In Rwanda, this issue has exacerbated as a result of teachers' education background. Many of teachers had faced recurrent change in the

education system. Teachers trained in French have been struggling to adopt English (McGreal, 2008) not only as a subject but also as medium of instruction (Munyandamutsa, 2005; Niyibizi, 2015; Sibomana, 2014; Tabaro, 2015; Kayigema & Mutasa, 2017; Basheija, 2015; Rwirahira, 2017).

Therefore, the significance of computer assisted approach in teaching pronunciation is not in doubt. According to Rogerson-Revell (2021), computer assisted training adds value to traditional learning methods by maximizing opportunities to a broader variety of spoken language including first language (L1) and second language (L2) accents.

This study sought to establish whether computers may be used to improve the teaching and learning of English pronunciation.

Literature Review

Stephen Krashen's theory of second language acquisition states that learners' language improves when they receive a comprehensible input that is a bit higher than what they already know while affective filter hypothesis states that when lack of motivation, fear and anxiety are higher, language learning is negatively affected (Abukhattala, 2013). That being the case, a teacher who wants to improve the way he/she teaches pronunciation should adopt the Computer Assisted Approach because it is able to provide authentic input and improve students' mood in pronunciation lessons.

According to Summers (1988), using British e-dictionary offers a clearer explanation of segmental features of English language in terms of vowels, consonant sounds and suprasegmental features like stress, intonation and rhythm. It also reduces affective filter (lack of motivation, self-confidence and learning anxiety) linked to poor language learning while increasing their speaking skills (Samuelson & Freedman, 2010).

Computer assisted approach refers to machines such as artificial intelligence aided with internet, software to facilitate learning. Computer-assisted approach in language learning is explained by Tafazoli and Golshan (2014) as applications of computers in language teaching and learning. Teachers consider computer assisted approach as a necessary teaching and learning tool that improves teaching methods by providing students a mundane of language inputs and widens students' everyday learning opportunities. Through computer assisted approach, teachers gain the chance to attract learners' focus by the use of voices, pictures, colors and various kinds of letters (Ongo'onda & Muindi, 2016).

The input hypothesis of Krashen states that language is acquired by receiving "comprehensible inputs" slightly above one's current level of competence (Liu, 2015). If a teacher uses the Computer Assisted Approach, it acts as an authentic pronunciation resource and when learners make an effort to pronounce vocabulary like it does, their speaking get improved. On the other hand, the Affective Filter Hypothesis, states that fear, anxiety and low confidence are blocks that prevent comprehensible language input from reaching the mental Language Acquisition Device, (Nath, et. al. 2017). In the same vein, Dalton and Seidlhofer (1994) stated that effective pronunciation is a result of meaningful sound which results from a person's efforts and attitude. Pronunciation as a skill is one of the paths which lead to intelligible communication. It assists in distinguishing dialects and speeches and it bridges the gap between phonetics and phonology and this results in a better reading and speaking ability (Reed & Levis, 2019).

Since the ninetieth century, two approaches of teaching pronunciation have been used as complementary: (1) an intuitive imitative approach which depends on the learner's ability to listen and imitate the sound and (2) an analytic linguistic approach which deals with the use of apparatus, phonetic alphabets and charts of vocal apparatus (Purwanto, 2019). By viewing pronunciation teaching in light of Krashen's input hypothesis, the use of computer assisted approach in English may solve phonological issues by emphasizing sounds and stress placement, hence equipping students with a better knowledge of sound than what they already know.

British e-dictionar

Ordinarily, an electronic dictionary is used to denote any data collection in the electronic form concerned with spelling, meaning or use of words (Nesi, 2009) and these dictionaries are of three types, namely hand-held dictionaries, dictionaries on CD-ROM and Internet dictionaries. As for a British electronic dictionary, it is a list of words of a British English language stored in a device form that provides information about spelling meaning and pronunciation.

According to Hilary (2000) and Dziemianko (2017), the term electronic dictionary can be used to refer

to any list of words of a language stored in a device form that provides information about spelling, meaning and the way one can use words. Its main feature is the system of storage and retrieval. Metruk (2017) supports the use of electronic dictionary for students who learn English as their foreign language. It is a very useful tool in teaching pronunciation of English language whenever students learn new words. Incorporating the use of electronic dictionary in pronunciation facilitates the teaching and learning of phonology of words and provides the sound teachers and students need to improve their pronunciation skills.

Summers (1988) contends that dictionary is the only reliable source for EFL (English as a Foreign Language) teachers and learners who have individual pronunciation problems. Hence, English pronunciation is supported by the use of electronic dictionaries. Additionally, smart classrooms provide the teaching and learning activities with the help of technology. Using Electronic Dictionaries during pronunciation lessons may be a solution to those students who would have preferred silence rather than becoming a laughing stoke because of mispronouncing words. Again, using Electronic Dictionary addresses challenges faced by some teachers of English who would have preferred to teach other skills of English rather than pronunciation (Mushimiyimana & Dushimimana, 2021; Uwantege et al., 2021).

Methodology
Research Design
This study is an action research that adopted a mixed research method. Both qualitative and quantitative methods were used to determine the contribution of the computer assisted approach to enhance proper pronunciation of words. A self-administered questionnaire and an interview guide were used to collect data from teachers and Deputy heads of studies, respectively.

Population and sampling
In this study, the researchers collected data from two schools (G.S Rusheshe and G.S Ayabaraya) which were purposively selected in Kicukiro District Kigali City. At G.S Rusheshe, 10 English teachers were purposively sampled while among 96 students of S3, only 28 were randomly sampled. In a similar manner, at G.S Ayabaraya, seven teachers of English were purposively sampled while among 55 S3 students, only 16 were randomly sampled.

Validity and Reliability
In order to ensure that the instruments used are valid, the researchers conducted a pilot study in two schools to improve chances of getting clear outcomes. Research tools to be used were handed to other researchers who provided opinions to improve its validity. Data triangulation, the use of two aforementioned sources of data ensured the reliability of the study findings.

Statistical Treatment of Data
Quantitative data was analyzed through descriptive statistics in terms of frequencies and percentages while qualitative data through interview was analyzed through the thematic approach to support the quantitative data findings.

Ethical Considerations
The research proposal was submitted to the University of Rwanda (UR) Ethics Committee for approval before the interview and questionnaire were used. Consent forms were provided to participants in order for them to register their willingness to participate. The researchers maintained anonymity in that names of respondents were not exposed.

Results and Discussion
This section presents the results of the study, guided by research questions.

Research Question 1: To what extent is the Computer Assisted Approach used in teaching English pronunciation in selected Secondary schools in Rwanda?

This question sought to establish the extent to which Computer Assisted approach is used in English pronunciation learning. Respondents were therefore required to indicate the level of effectiveness in the use of the approach to enhance pronunciation in English language, a second language in the context of Rwanda. Respondents had to indicate the level of effectiveness in the following three options: High effectiveness, average effectiveness and low effectiveness.

As indicated in table 1, none of respondents considered high effective use of the Computer Assisted Approach while 13.4% of the respondents indicated average effective use of the Computer Assisted Approach and the majority (86.4% indicated low effectiveness. This suggests that the use of Computer Assisted Approach for English pronunciation is low. Through interview with

Deputy Heads of studies, it was revealed that English teachers sometimes used e-dictionaries as part of preparation to teach the English course. Computer-Assisted Pronunciation Teaching (CAPT) assisted EFL teachers with more choices to help learners who are slow in learning pronunciation. CAPT also provided the EFL learners with independent and conducive environment where they could have access to an immense amount of input and repetitive practices of pronunciation at their own pace (Saleh & Gilakjani, 2020). Underutilization of the Computer Assisted Approach in teaching pronunciation may lead to poor achievement in the mastery of pronunciation in English language.

Table 1: The Use of Computer Assisted Approach in English Pronunciation

Effectiveness application level	f	%
High effective use of the Computer Assisted Approach	0	0.0
Average effective use of the Computer Assisted Approach	2	13.4
Low effective use of the Computer Assisted Approach	13	86.6
Total	**15**	**100.0**

Table 2: Perceived Contribution of the Computer Assisted Approach

The use of computer assisted approach ………	f	%
helps students to know proper English words pronunciation	5	33.3
enables students to find appropriate word sounds	4	26.6
helps the students to correct pronunciation errors and mistakes	3	20.0
provides correct British received pronunciation	2	13.3
improves students' speaking skills	1	6.7
Total	**15**	**100.0**

Research Question 2: What is the perceived contribution of the Computer Assisted Approach in the teaching and learning process?

This research approach called for establishment of perceived contribution of the Computer Assisted Approach in the teaching and learning process as appears in table 2.

The table indicates that respondents considered the power of the Computer Assisted Approach in teaching pronunciation. Particularly, knowledge of proper pronunciation was most cited as an advantage of using the approach, followed by enabling students to find appropriate word sounds, helping the students to correct pronunciation errors and mistakes, providing correct British received pronunciation and improving speaking skills. In line with Neri, et. al. (2008), using the computer-assisted pronunciation approach with a simple automatic speech recognition component leads to improvement in pronunciation.

Research Question 3: What is the effect of Computer Assisted Approach in pronunciation mastery?

This research question sought to establish the effect of Computer Assisted Approach in pronunciation mastery. To accomplish this goal, learners were required to pronounce words before and after the use of the Computer Assisted Approach as reflected in table 3. Twenty-six words used to test the level of proficiency were damage, altering, neutral, research, substitute, structure, weather, workload, loan, apprehensive, activist, prejudice, assassinate, thought, democracy, serial, radio, television, watch, editorial, bulletin, scene, nevertheless, management, roads and deabates.

Table three indicates the record of learners' pronunciation of 26 words before the use of the Britch e-dictionary. Before the use of the British e-dictionary, learners managed to pronounce 420 out of 1,144 (36.7%) correctly and 724 out of 1,144 (63.3%) incorrectly. This indicates that the incorrect pronunciation dominated during the initial pronunciation of words before the use of the e-dictionary to facilitate proper pronunciation of words. On the contrary, after the use of the e-dictionary, learners managed to pronounce 964 out of 1,144 (84.2% (words appropriately and only 180 out of 1,144 (15.7%) incorrectly. The results indicate that the use of the e-dictionary enhanced proper pronunciation of selected words by boosting the percentage from 36.7 to 84.2. Therefore, the use of the Computer Assisted Approach and particularly the use of the e-dictionary is an effective means to enhance proper pronunciation of words.

Table 3: Effect of Computer Assisted Approach in Pronunciation Mastery

Words	British Pronunciation				
	Phonology/ appropriate sounds	Before using British e-dictionary		After using British e-dictionary	
		Correct	Incorrect	Correct	Incorrect
Damage	/ˈdæmɪdʒ/	18/44	26/44	39/44	5/44
Altering	/ˈɑːl.tɚ/	20/44	24/44	42/44	2/44
Neutral	/ˈnuː.trəl/	12/44	32/44	27/44	17/44
Research	/ˈriː.sɜːtʃ/ /rɪˈsɜːtʃ/	21/44	23/44	44/44	0/44
substitute	/ˈsʌb.stə.tuːt/	30/44	14/44	36/44	8/44
Structure	/ˈstrʌk.tʃɚ/	29/44	15/44	35/44	9/44
Weather	/ˈweð.ɚ/	11/44	33/44	30/44	14/44
workload	/ˈwɜːk.loʊd/	9/44	35/44	40/44	4/44
Loan	/ləʊn/	29/44	15/44	42/44	2/44
Apprehensive	/ˌæp.rəˈhen.sɪv/	16/44	28/44	37/44	7/44
Activist	/ˈæk.tə.vɪst/	20/44	24/44	44/44	0/44
Prejudice	/ˈpredʒ.ə.dɪs/	7/44	37/44	32/44	12/44
Assassinate	/əˈsæs.ə.neɪt/	11/44	33/44	38/44	6/44
Thought	/θɑːt/	13/44	31/44	31/44	13/44
Democracy	/dɪˈmɑː.krə.si/	10/44	34/44	33/44	11/44
Serial	/ˈsɪr.i.əl/	13/44	31/44	39/44	5/44
Radio	/ˈreɪ.di.oʊ/	34/44	10/44	44/44	0/44
Television	/ˈtel.ə.vɪʒ.ən/	22/44	22/44	40/44	4/44
Watch	/wɑːtʃ/	18/44	26/44	39/44	5/44
Editorial	/ˌed.əˈtɔːr.i.əl/	15/44	29/44	32/44	12/44
Bulletin	/ˈbʊl.ə.t̬ɪn/	16/44	28/44	40/44	4/44
Scene	/siːn/	2/44	42/44	29/44	15/44
Nevertheless	/ˌnev.ɚ.ðəˈles/	4/44	40/44	34/44	10/44
Management	/ˈmæn.ədʒ.mənt/	16/44	28/44	41/44	3/44
Road	/roʊd/	23/44	21/44	44/44	0/44
Diabetes	/ˌdaɪ.əˈbiː.t̬əs/	1/44	43/44	32/44	12/44
Percentage		**(420/1,144) = 36.7%**	**(724/1,144) = 63.3%**	**(964/1,144) = 84.2%**	**(180/1,144 = 15.7%**

Conclusions and Recommendation

Conclusions

Computer Assisted Approach was perceived to be useful due to its ability to provide proper pronunciation, to enable students find appropriate word sounds and to correct pronunciation errors and mistakes. The approach enabled teachers to help learners who were slow in pronunciation. However, the use of the approach was low since teachers mostly used e-dictionaries for teaching preparation and not in the actual classroom settings. After the use of the e-dictionary, learners managed to pronounce words correctly. The use of the approach enhanced proper pronunciation by boosting the number of words pronounced correctly. Therefore, Computer Assisted Approach is an effective means to enhance proper pronunciation of words.

Recommendations

Based on findings and conclusions, the study recommends that since Computer Assisted Approach is an effective means to enhance proper pronunciation of words, teachers should use the approach not only for class preparation but also in the actual classroom teaching and learning so as to improve the pronunciation of words. School managers are called upon to provide Computer Assisted Approach facilities so that both teachers and learners may have access to and actually use the same to enhance accuracy in words pronunciation.

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