THE PERCEPTION OF ENGLISH VOWELS BY SESOTHO SPEAKERS OF ENGLISH AS A SECOND LANGUAGE: THE CASE OF THE GRADE 8 AND GRADE 9 LEARNERS.

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DECLARATIONS

I, Reitumetse Charles Masasa declare that the Master's degree dissertation entitled "The Perception of English Vowels by Sesotho Speakers of English as a Second language: The Case of the Grade 8 and Grade 9 Learners" contains information that is original and has not been submitted in any entirety, or in part to any institution for any qualification before. The references used in this study have been indicated and acknowledged fully.

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.Masasa, C, Reitumetse

CERTIFICATION

This is to certify that this dissertation has been read and approved as having met the requirements of the Department of English in the Faculty of Humanities, National University of Lesotho for the award of Master of Arts Degree in English Language and Linguistics.

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DEDICATION

I wish to dedicate this dissertation to my late grandmother, 'Mapalesa Justina Janefeke who passed on days before this dissertation was completed. She had the time and the strength to pray for me even when I did have enough sense to pray for myself. The love she had for me reflected in her eyes, in her words and in her actions. She has always wanted me to make something better of myself. It is a pity she would not be there to see me graduate for my Masters' degree. She would have been very proud. Although death has taken her away from me, there is one place it can never take her away from me, which is my heart. Her sweet memories will continue to live in it for as long as I have breath in my lungs.

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Abstract

The current study investigated how Sesotho speakers of English as a second language perceived English vowel sounds. It also investigated how first language (Sesotho) interfered in the perception of English vowels and the effects of failure to perceive the vowels correctly. The study followed a quantitative approach because the data and it analysis was in numerical form. The population was the high school learners of Nyakosoba Harmony High School and Moruthane A.M.E High School. The study opted for stratified random sampling strategy because the population of interest was the grade 8 and 9 learners. The study sampled 53 participants who were boys and girl ages between 13 and 17. A native English speaker's voice was used to investigate how L2 speakers perceive English vowels uttered with a native English accent. This study discovered that Sesotho speakers have a problem of perceiving English vowels because they perceived various vowel sounds for each vowel sound uttered. In some cases, they perceived consonant sounds in place of vowel sounds. The study also found out that learners' L1 interferes with the perception of English vowel sounds. Lastly, it revealed the effects of perceiving the uttered vowel sounds incorrectly.

Keywords: speech perception, vowel speech sounds, second language, first language, transfer interference.

CHAPTER ONE: GENERAL INTRODUCTION

1.1 Background to the study

This chapter explicitly breaks the research topic into fragments with the aim of familiarising the reader with meaning of the research topic, grounds that the study is going to cover and define terms that the reader needs to be familiar with before going through this chapter. In order to cover all these, the chapter gives a more detailed background of the study which is specifically aimed at familiarising the reader with what is discussed, key factors that can influence either positively nor negatively how listeners perceive speech sounds, and the motive behind conducting this study. Finally, the chapter state the hypotheses on which the study is based and its scope. All these are done to prevent ambiguity which if unattended would certainly hinder the delivery of information that the researcher wants to bring to the attention the reader.

Globally, English language is gaining a lot of status since it is associated with the elites, and it is ascending at a rapid rate in terms of being prioritised. Lesotho has two official languages which are; Sesotho and English language. There are other languages which both the constitution along with the language policy does not consider, which are languages of the minority ethnic groups of the Abathembu, Ndebele and Baphuthi. The curriculum stipulates that from grade one to three, Sesotho language should be a medium of instruction, while from grade four upwards, English language should be the medium of instruction. English language being a foreign and a second language comes with pros and cons. Ekanjume (2015, 1157) points out that the teaching of English language does not pose challenges for students only, but for teacher too. Among the limitations of crowning English as a medium of instruction is its ability to hinder content delivery, to narrow comprehension chances and promote language barriers between the instructor and the scholar. Ekanjume (ibid) asserts that most English teachers in Lesotho who are at high school level are themselves poor in the language. She goes on to point out that a portion of them has been assigned to teach English language as a foreign language without undergoing proper training. This is reported to be the case in mostly the public schools. If a teacher has not fully acquired English language, expecting accurate production and perception the English speech sounds from such a teacher is unreasonable. The learners who are taught by such a teacher would also not be expected to do any better. There is one factor which teachers have mostly neglected and that is; speech perception.

Moreover, Speech perception refers to the ability to perceive linguistic structure in the acoustic speech (McRoberts, 2008). Mitterer and Cutler (2006) assert that for listeners to comprehend the intended meaning, they must recognise the words that compose a spoken utterance. There are various factors that influence perception of speech sounds. These could be; interference of the mother tongue and accent of the speaker and of the listener or the speaker's body movement and facial expression. The manner in which learners are taught the language also has impact in how they perceive speech sound.

Furthermore, in studying phonetics, auditory phonetics is the least explored area the scholars tend to venture out into, rather much focus is placed on the articulatory part. Auditory phonetics is the branch of phonetics which is concerned with the hearing of speech sounds and with speech perception. It studies the relationship between stimuli and a listener's responses to such stimuli. It is more scientific as it analyses sound wave signals along with their frequencies (Ello, 2020, 1). It focuses on how listeners perceive the sounds of language (Szczegielniak, 2001, 1).

This neglect can also be identified in the teaching and learning situation where teacher are concerned on mostly what learner write rather than what they perceive. However, listening plays a vital role as it is the first and foremost language skill because for one to know how to speak, one must hear. Husain (2015, 2) states that listening and reading are receptive skills, while speaking and writing are productive skills. Poeppel (2015) asserts that speech sounds are typically studied using single speech like; vowels or syllables, spoken words, or connected speech.

1.2 Speech sounds

According to Szczegielniak (2001, 1) human being can utter sounds that are not speech sounds in English but, are in other languages. This implies that speech sounds differ from one language to another. O'Grady, Dobrovolsky, and Katamba (1996, 724) define a speech sound as any sound used in human speech. The term 'speech sound' is also used interchangeably with the term 'phone'. Speech sounds are; nasal consonant, stop, fricative, affricate, voice, vowel, consonant, approximants, velar, liquids, tap and flap consonants, semi-vowel, bilabial, diphthongs, glottal consonants, trill consonants and sibilants. Two major divisions of speech sounds are vowels and consonants (The Editors of Encyclopedia, 2021). These two major divisions are defined below beginning with consonants.

(i) Consonant speech sounds

Ferguson (1988, 1) defines consonants as sounds produced with a degree of obstruction of the vocal tract. When dealing with consonant speech sounds, articulatory phoneticians concentrate on place of articulation and place of articulation of speech sounds. These are two ways of classifying these speech sounds. Place of articulation is any point at which a speech sound can be modified to produce different sound. The lips, in the oral cavity, the pharynx and at the glottis are places of articulation. Speech sounds produced are named after their places of articulation. Places of articulation refer to places within the oral tract where sounds are produced. Places of articulations are; labial, dental, labio-dental, interdental, alveolar, palatal, palate-alveola, velar, uvular, pharyngeals and glottal sounds because of their place of articulation. Manner of articulation on the other hand refers to how speech sounds are produced. Alterations can be done through positioning the lips, tongue, velum and glottis in different shapes to produce various sounds and this is called the manner of articulation. Some sounds are produced in a manner of stops, nasals, fricatives, affricates, liquids and glides (O'Grady, Dobrovolsky and Katamba, 1996, 26).

In addition to place and manner of manner of articulation, there is also the aspect of voicing. The term 'voice' is defined by Garellek (2019, 1) as sounds produced by the vocal folds including but not limited to vocal folds vibrations. Voiced speech sounds are described by Encyclopedia of Biometrics (2009) as sounds generated by the modulation of the airstream of the lungs by periodic opening and closing of the vocal folds in the glottis or larynx. All English vowels and nasal consonants are voiced. Voiced consonants require the use of vocal cords to produce their sounds (Beare, 2019). In the production of [n], [m] and [ŋ], the vocal cord is in use so it is fitting that it is regarded as voiced nasal consonants. Since these are the only nasal consonants used in English language, it is reasonable to state that there are no voiceless nasal consonants in English language. Voiced consonants are described by D'Alquen (1979, 1) as sounds produced by longer vowels than voiceless consonants are and the vowel before constituents are longer than before stops. Other consonants sounds which are voiced are; [b], [p], [g], [j], [l], [r], [v], [ð], [w], [y] and [z]. However, voiceless sounds are speech sounds that do not use the vocal cords to produce their hard, percussive sounds. Instead, they are slack, allowing air to flow freely form the lungs to the mouth, where the tongue, teeth and lips engage to modulate the sound (Beare, 2019). In English language, consonants sound which are voiceless are; [ʃ], [ʧ], [θ], [s], [t] and [k]. For example: The palate-alveolar fricative [ʃ] in _shame_ and _sheep_ and the alveolar stop [t] in t_in and _tot_ are voiceless.

(ii)   Vowel speech sounds

This study focuses on discovering how vowel sounds are perceived Sesotho learners of English language as a second language. Vowels are defined by The Editors of Encyclopedia (2021) as sounds in which the flow of air from the lungs passes through the mouth, which function as a resonance chamber, with minimal obstruction and without audible friction. These five vowel letters which are easily confused with vowel sounds are; [a], [e], [i], [o], [u]. Children in primary and high school levels are taught that there are only five vowels. However, this is not the case as some learners who will take interest in pursuing linguistics at tertiary institutions will discover that there are numerous vowel sounds that they were oblivious to due to lack of knowledge. They will also learn that those letters are used to represent the vowel sounds in orthography not a phonetic transcription. Inevitably, learners might fail to perceive such vowel sounds. Only then will they also discover that each and every language possesses its own set of vowels it utilises. Vowel sounds are classified by how high or low the tongue is, how front or back, mid or central. They are also classified in terms of whether they are long or short, pure, gliding, diphthongs, triphthongs, tense, lax and whether or not the lips are rounded (Rosen, 2019, 1).
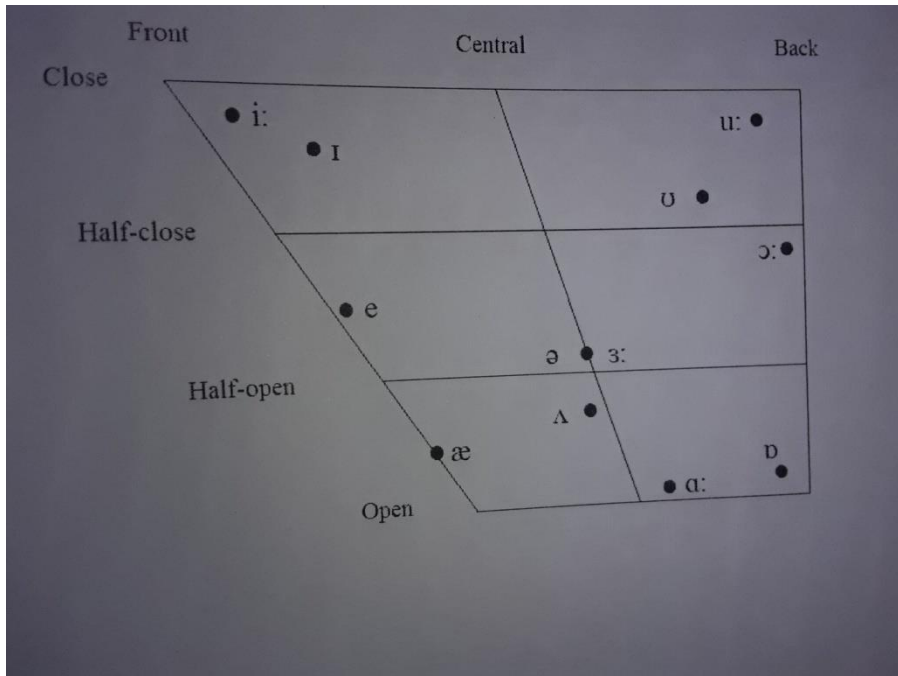
Figure 1: English Pure vowels according to Koma (2018 cited Roach, 139)

As a result of this classification, there are different categories of vowels. Beginning with the high vowels, these speech sounds are pronounced with the tongue arched towards the roof of

the mouth (The editors of Encyclopedia, 2020). Vowels produced in that manner are [+ high]. Examples of English high vowels are; [i] in p*i*n and the [u] in b*u*ll. On the contrary, Low vowels are made with the tongue body distinctly lowered from a central position in the oral cavity (O'Grady, Dobrovolsky and Katamba, 1996, 100). Such vowels are said to be [+ low]. Examples of low English vowels are; the [a] in h*a*d, [e] in b*e*ll and the [o] in b*a*ll. Then there are front vowels which are also known as the bright vowels. These are vowels that are articulated with the tongue positioned in front of the oral cavity (O'Grady, Dobrovolsky and Katamba, 1996, 714). They are [+ front]. Their examples are; [i] as in /beet/, [ɪ] as in /tit/, [e] as in /bet/ and [æ] as in /bat/. On the other hand, there are mid vowels which are produced with the tongue neither raised, nor lowered. [e] as in 'well', [ɛ], [ə] as in 'about' and [o] are mid vowels. There are back vowels which are defined by Tsur (1992, 20) as sounds produced with the highest point of the tongue positioned relatively back in the mouth without creating an obstruction that would be regarded as a consonant. Back vowels are sometimes called dark vowels. English back vowels are; [u] as in 'r*u*le', [ʊ] as in 'b*oo*k', [o] as in 'p*o*le', [ɔ] as in 's*o*rt' and [a] as in 'm*a*n'. All English back vowels are rounded except the vowel [a]. There is a vowel that is neither front, nor back and it is a central vowel. The vowel in concern here is the 'schwa' sound. The phonetic transcription of a schwa sound is; /ə/. This vowel sound is found in words such as; again, *a*way, wher*e*, loc*a*l, *a*bout, tir*e* and g*o*. A schwa is defined as the lax vowel that can be identified by shorter duration than any other vowel (O'Grady, Dobrovolsky and Katamba, 1996, 728).

All of the vowels described above are also known as pure vowels. Pure vowels are also called monophthongs. /Mono-/ means 'one' therefore, monophthongs are vowels which are in their singular form. They are also vowels that are in their simplest forms. The following vowels are the pure vowels /iː/, /I/, /ʊ/, /ɜː/, / ɔː/, /uː/, /æ/, /ɒ/, /ɑː/, /ə/, /e/. (O'Grady, Dobrovolsky and Katamba, 1996, 36) adds by stating that they do not show any noticeable change in quality. A pure vowel refers to the vowel whose articulation at the beginning and the end is relatively fixed and does not glide up or down towards the position of a new position of articulation. The feature of pure vowels is that their quality does not change over a period of time. The monophthongs can be contrasted with diphthongs (Liddell et al, 1943). Unlike pure vowel, there are vowels that are a little complex to articulate and perceive and 'glides' are examples of them. Glides or semi-vowel are speech sounds that are produced with an articulation like that of a vowel but move quickly to another articulation (O'Grady, Dobrovolsky and Katamba, ebid, 100). This implies that in the initial uttering of such sounds, they sound like consonants

but soon in the process start sounding like vowel sound. These sounds are [j] in the word; '*yes*' and 'bo*y*' and [w] as in '*w*in' and 'co*w*'. The transition of a vowel from one sound to another is the reason why diphthongs are also known as glides. Glides are in various forms; diphthongs and triphthongs just examples of such forms. /Di-/ means two therefore, in the context of diphthongs, this implies that two vowels are involved here. Some speakers believe that diphthongs are just long vowels but there is more this than just length. There is proof that there is a transition from one vowel to another and that it felt in the position of the tongue and he jaw. Second language speakers tend to reduce the diphthongs into monophones to ease their articulation. (Emilda, 2019, 1). The five major diphthongs are; [eɪ] as in late, [oʊ] as in ar*ou*nd, [aɪ] as in time, [aʊ] as in *ou*t and [ɔɪ] as is *oi*l. Contrary to this, a group of three vowels form triphthongs (Farooq and Mahmood, 2017, 184). The vowels smoothly glide from one vowel to the next one and finally, to the next vowel, and acting like one long simple vowel. The prefix /tri-/ means 'form three', or 'three times'. English triphthongs are [aʊə] as in /hour/, [aɪə] as in /fire/, and [eɪə] as in /layer/, [əʊə] as in /lower/, and [aɪə] as in /wire/.

English vowels can also be classified as long and short. Length and quality shows distinction between British and American pronunciation. Mid-jaw position vowels are mistaken for long vowels by L2 speakers. In most cases learners who learn English as a second language have trouble identifying long and short vowels due to differences between the morphological and phonological structure of the English language and their first language (Abbasi, 2017, 9). In phonetic transcription, long vowels are identified by colon at the vowel. O'Grady, Dobrovolsky and Katamba (1996, 75) affirm that; in English language, length is not a tool used to differentiate vowels. However, there are exceptions of [ə] and [ɜ:]. Long vowels are produced by raising part of the tongue whether below or behind any position of the tongue (Abbasi, 2017, 11). Examples of long vowels in words are; [ɔː] as in /sp*or*t/, [u:] as in /c*oo*p/, [a:] as in /p*ar*t/and [i:] as in /mean/. Vividly, it is detectable that the production duration of the italicised letters (long vowels) is longer than the production of other speech sounds in the examples above. There are other ways which vowels can gain more length which is called compensatory lengthening. Crowley (1997, 46) asserts that compensatory lengthening a phonological process that occurs as a make up to a loss of a consonant, syllabic coda, or of a vowel in an adjacent syllable. For example: If the word 'children' looses coda, and in the process turning into 'child' then, the [i] will be lengthened to compensate for the loss.

However, short vowel is defined by Fleming (2019) as a vowel that appears in the middle of a word. The [e] in /wet/, Complementary vowel shortening happens when syllables are ended by

two or more consonants to lengthen a word in word. The example used above on long vowels might come in handy when indicating how lengthening and shortening differ. That is; adding the code /-ren/ to the word /child/ calls for a shortened vowel [i] with the aim of complementing for the reduction done (Abbasi, 2017:11).

Another way of classifying vowels is in relation to how tense or laxed they are. Matthews (2014, 403) defines lax vowels as speech sounds that are produced with greater tension in the tongue. Something tense vowels may appear at the word of words. The following are examples of lax vowels; [I] as in /t*i*t/, [ɛ] as in /y*e*ll/, [ʊ] as in /br*oo*k/, [ɔ] as in /s*a*w/, [ɔɪ] as in /b*o*y/, [æ] as in /h*a*t/, [ʌ] as in /h*u*t/, and finally, [ə] as in /*a*round/. This set of vowel can be found in closed stressed syllables, in open stressed syllables, or exclude from syllables closed by [ŋ] (O'Grady, Dobrovolsky and Katamba, 1996, 79). On the other hand, the production of lax vowels differs from that of tense vowels as there is less tension on the tongue than there is on tense vowels. It is crucial to note that both tense vowels and lax vowels may occur at the end of the words. Examples of tense vowels are; [i] as in 'l*i*ps' and 's*i*t', [e] as in 'm*e*n', [u] as in 'g*oo*d', [o], [a] as in 'm*a*n', [ai] as in [aʊ]. O'Grady, Dobrovolsky and Katamba (Ibid, 79) state that lax vowels are similar to tense vowels in that both are found in closed stressed syllables, but they are excluded from open stressed syllables and are found in syllables closed by [ŋ] which is not the case with tense vowels,

Moreover, vowels can be classified in terms of whether they are rounded or unrounded. According to Szczegielniak (2001, 1) rounded vowels are vowels that produced with the rounding of lips and English language has only the back rounded vowels, while other languages like French and Swedish possess front back round vowels. English rounded vowels are [u] as in 'r*u*le', [ʊ] as in 'b*oo*k', [o] as in 'n*o*te' and 'l*oo*k' and [ɔ] as in 's*o*rt'. Round vowels are centralised. However, rounded vowels contradict with the unrounded ones as their production does not involve the rounding of lips, and tongue is positioned in the front of the oral cavity to articulate front vowels (Szczegielniak, Ibid). The following are examples of unrounded vowels; [a], [ʌ], [i], [e], [ɛ], [æ], [i:], [I], [ə] and [ai].

Stress is another element used in classifying vowels. Stress is an umbrella term which represents combined effects of pitch, loudness and length. Syllabic segments which are perceived as comparatively prominent to others are said to be stressed. In most cases, English stressed vowels are higher in pitch, longer, and louder than unstressed ones. This implies that stressed speech sounds are stronger that unstressed ones. The fact that in English, almost all

syllables have vowels makes it hard to talk of stress in isolation form syllables. Therefore, stress and syllables are closely linked. (O'Grady, Dobrovolsky and Katamba, 1996, 48). There two ways to mark stress in phonetic transcription are:

1. The most prominent stress which is also called the primary stress is marked with [´], while the second more prominent or secondary stress is marked with [`]. For example: présént (verb, prèsènt (noun). In the example above, stress specifies whether the word in concern is used as a noun or a verb. However, the use of these marks should not be confused with the use of diacritics marks used in tone in tone languages.

2. Placing numbers over the stressed vowels is the other way of marking stress. The number '1' is used to mark the most prominent (primary) stress, while the number '2' is used to mark the second (secondary) most prominent stressed vowel. This could be exemplified by; pre^{1}se^{1}nt (verb), pre^{2}se^{2}nt (noun) (O'Grady, Dobrovolsky and Katamba, Ibid).

On the other hand, the reduced energy level of unstressed vowels is made up of perceptibility of vowel distinctions leading to the neutralisation of the same of the distinctions (Burzio, 2007, 154). The schwa is the neutralised vowel. According to Indrayani and Nugraha (2020, 960) a schwa [ə] is a short vowel with mid-central quality. They are called unstressed vowels or reduced vowels. Examples of unstressed vowels are found in the following words; M*a*donna, *a*gain, vitamin, p*e*tition and cel*e*brate.

Finally, nasalization is another feature attributed to vowels. All English vowels can be nasalised by appearing before nasal consonants (Ruhlen, 1973, 3). The statement above shows that vowels can be molded by the surrounding sounds. Ruhlen (Ibid) states that nasalisation of vowel is regarded by some linguists as determined by the environment created by other sounds. This implies that nasalisation is the effect that a nasal consonant can have on an adjacent vowel. Vowels can be nasalised due to company of nasalised sounds. For instance: The vowel [æ] can be nasalised by the company of nasal consonant [m] and [n] to form the word 'man'. O'Grady, Dobrovolsky and Katamba (1996, 722) define nasalisation as the nasalising effect that a nasal consonant can have on an adjacent vowel. According to Lotz (1969, 43) glides are defined as phonetic category comprising consonants whose articulation is closely associated with vowel articulation. English glides too undergo the process of nasalisation. For instance: the glide [y] becomes nasalised in the production of the word 'yankee' and 'yerk'. The glide [w] experience a nasalisation process in the production of the word 'wag'.

1.3. Linguistic interference or transferring

With globalisation at its highest peak, people are urged to learn more than one language, as a matter of fact, the more languages one learns, the merrier. To support this; Apeltauer and Shaw (1993, 273) state that teaching people to be multilingual can assist in bringing down the linguistic and custom barriers. However, learning more than one language may impact negatively the production and perception of speech sounds (Best 1994, as cited in Bronwen and Alshangiti 2018). They also state that vowel duration is another factor that meddles with the production and perception of speech sounds because language differs from one language to another.

Transfer is another form of interference. The two are so closely linked that they are inseparable. It has been over-explored that there are countless benefits of learning multiple languages, there are pros and cons that come along with it. Learners may apply a feature or a rule of their language on the second language. This over-generalisation or over-applying is called 'transferring' (O'Grady, Dobrovolsky and Katamba, 1996, 504). In accordance with Sirbu (2015, 374)'s description, shifting elements of one language to another in terms of lexis, grammar, phonology or orthography alterations is transference. An illustration of how lexis can cause interference; this will involve spelling alteration of L2 word likening them to L1 words. The orthography of words will also be affected. The grammar of a the L1 may interfere with the learning of the L2 in the level of pronouns, determiners, verb tense, mood, double negation and word order. In terms of phonology, the intonation, pitch, accent, speech sounds from can influence the learning of the second language. Transference can also happen in a form of borrowing.

1.3.2. Accent

On more regular basis, whether during the heat of the moment, or in just casual talks, we come across statements like:

1. I just love your accent!
2. You have a strange accent.
3. You are putting on a false British accent.
4. You speak funny (referring to the speaker's accent).

These statements may be heart-warming or sometimes hurtful depending on the context. There are a lot of listeners who can learn more from a speaker's speech than from just the message

delivered, and among them are the speakers' identities and backgrounds. Chakraborty (2017, 57) asserts that accent is regarded as an honest signal that gives out the speaker's identity or indicated that the speaker belongs to a certain group. That is; listeners can detect the nationality, ethnic group or the area the speakers originate from by their accents. This can even happen if both the speaker and the listener are not physically present in the same place and there are no visuals available, just like; in radio broadcasts. Apart from revealing the speakers' identities, accent also shows how speakers fit into some social grouping while not fitting comfortably into others. According to Levis and Zhou (2018, 1), accent refers to a special manner in which a language is produced, whether by native or non-native speakers. A single language might have various spoken varieties and those varieties are called accents of a language. Accent is often a subset of dialect (The editors of a dictionary, 2005).

Many studies have made discoveries that the accent of native language affects the perception of the L2 speech sounds (Vasiliev 2013, 42). This implies that the listeners' L1 accent could interfere with perceiving the L2 speech sounds. Accent is one aspect that most speakers are oblivious to. This is according to Yuan, Jiang and Song (2010, 1) who elucidate that L2 speakers perceive a relative smaller degree of foreign accent than L1 speakers do. Therefore, boldly pointing out that L2 speakers have particular accents may spoil good relations between the critic and the people concerned. The critic is likely to be regarded as a rude person or even worse; 'a racist'. For instance:

> A dialogue between a salesman with a Japanese accent, and a potential buyer with an African accent:
>
> A speaker with Japanese accent: I am selling this bag for 200 Lanta.
>
> A speaker with African accent: You mean '200 Ranta?'
>
> A speaker with Japanese accent: Yes, like I said, "200 Lanta"

In the examples above, the salesman is unaware of his foreign accent that might hinder his intended meaning. An effort to make him aware of the use of an appropriate sound /r/ was unsuccessful because in his mind, the /r/ sound was uttered, rather than the /l/ that he substituted the word with. Further attempts might make him suspect mockery coming from the African man's mouth. Yuan, Jiang and Song (2010, 1) elucidate that the Japanese have trouble trying to make a distinction between the sound /L/ and /r/.

According to Powesland and Giles (1975, cited in Anderson 1995, 2), accent is a manner of articulating words in a proportionally different way from the standard language, culture and grammar. Accent is the basis on which the teaching and learning of first and second language process is based. For this reason, it may affect the process of teaching and learning positively or negatively (Levis and Zhou, 2018, 1). In teaching a L2 language a teacher might use an accent which the learners are familiar to ensure success in teaching and learning. This will be accordance to a principle that teaching should start from what learners already know to what they do not. Learners may not comprehend the speech sound produced just because they are articulated in an accent which they not recognise thereby, making it impossible for teaching and learning process to take place. This happens mostly because learners might have only been exposed to one accent in class so much that they fail to adapt to the other accents, especially foreign. To support this, White (2016, 1) points out that; not only does lack of exposure to various dialects poses problems for children in schools, but it leaves university graduates unprepared for the outside world.

Accent can be used to help listeners to trust or not trust in the source of information, and to feel either safe or not around the speaker. Kirtesz et al (2012) state that native-English-speakers' children prefer native English speakers over foreign-accented speakers. This, however, does not mean that the L2 English speakers who are partially educated and the educated treat all English accents the same. Only the standard British and the standard American accents are prioritised. Chakraborty (2017, 57) declares that in the US, speakers with nonnative accent are deprived off assess to employment opportunities, housing options, health care service, credibility, and unfair trials. Moreover, Listeners may seem to doubt the authenticity of the information delivered in the speaker's first language accent.

1.3 Statement of the problem

This research aims at finding out how the Sesotho learners of English language perceive vowel sounds. There is a possibility that learners have trouble perceiving vowel sounds. Flege's 1995, cited in Jeska, 2012) asserts that many studies have shown that the perception of second language sounds is affected by previous language experience. Assessing the interaction between the first language and second language is one way of predicting difficulty of accurate perception of second language speech sounds (Best and Tyler, cited in Jeska 2012). This research will find out if the Lesotho learners encounter difficulty in perceiving the vowel sounds produced. If this research does not see the light of the day, it is possible that the

education system might continuously be unfairly blamed for the poor quality it is now notorious for, while as a matter of fact, learners fail to perceive speech sounds produced by the instructors. There also would be a reasonable answer to why there are numerous cases of misinterpretation in formal and informal situations. This research will also shed some light on why there are communication barriers. Pupils are taught that there are only five vowels which are; /a/, /e/, /i/, /o/, /u/. This interferes with their perception of vowel sounds that were not included from that list.

1.4 Research questions

Thomas and Hodges (2010, 39) state research questions are alternatives for research objectives whereby the key issues are stated in question form. Mattick, Johnston and Croix (2018, 105) state that a good research question can make readers pause and see things in a different perspective, or can motivate them to learn more through the discussion. They also emphasise that a good research question should be narrow or specific. According to Khoo (2005, 25) a good research question should be important and relevant, interesting to the researcher and others, simple, feasible, clear and succinct, it is original and the answer should benefit and has implication to clinical practice or advancement in science. She also adds on to state it takes a long time develop a good research question. The research questions will be compared against the findings of the current study if they were answered on not. The current research questions for this study are:

1. How learners who use English as a second language perceive vowel speech sounds?
2. How L1 interferes with the perception of speech sounds?
3. What is the effect of failure to perceive speech sounds?

1.5 Objectives of the study

According to Thomas and Hodges (2010, 39), research objectives refer to specific statements indicating the key issues to be focused on in the research project. Research objectives are formulated from the research questions. They go on to state that research objectives indicate clearly the specific research topics or issues the study intend to investigate and building on the main theme stated in the research aim. Khoo (2005, 25) points out that objectives should be specific and reflect the research question. Trigueros (2019, 1) state that research objectives begin with an infinitive and pretend to achieve a gold in mind. Rojon and Saunders (2012, 2) declares that in comparison, research objectives are comparatively more specific than

questions. Research objectives will be paired against the findings in chapter 5 to see if it they were achieved.

The study is aimed at the following objectives:

1. To investigate how learners can perceive English vowel sounds.
2. To investigate how the first language interferes with the perception of vowel sounds.
3. To unearth the effects of failure to perceive speech sounds.

1.6 Hypothesis

According to Thomas and Hodges (Ibid), research hypothesis refers to a prediction of a relationship between two or variables. On the other hand, Dayanand (2018, 78) defines a research hypothesis as a statement of the researcher's expectation or prediction about relationship among study variables. She goes on to state that a hypothesis forms the base of a study. Just like research questions and objectives, research hypothesis will be revisited in chapter 5 where it will be checked against the findings of the current study for accuracy in what the study hypothesised.

The study hypothesises that:

1. Learners will perceive different English vowel sounds the vowel sounds in question.
2. Their knowledge of Sesotho language tempers with the perception of speech sounds.
3. Failure to perceive the exact speech sounds produced has negative effects.

1.7 Rational of the study/significance of the study

When we talk of rationale we are simply referring to the justification that one makes for undertaking a particular research. The purpose of this study is to investigate whether Sesotho learners are able to perceive the exact English vowel sounds produced as they were produced by the sources. It also aims at discovering the speech sounds that learners perceive when sounds are been uttered. This study will unearth how the pupils' first language tampers with their perception of speech sounds. It will also try to discover the effects of the inability of learners to perceive the vowel sounds. Motor theory as one of the theories of speech perception which indicates that there is more to speech perception than meets the eye which means that more focus should be paid on speech perception. There are treasures awaiting to be discovered in conducting studies on perception of speech sounds and Liberman et al, 1954, 1) supports this

idea by explaining that the examination of the Motor theory led to a discovery that successive consonants and vowels overlap in time with another. The statement above indicates that this research with unearth such overlaps. The teacher of L2 in the country will know if the input they are making is good enough or not. If it needs be, make the necessary adjustments. Since English language is a medium of instruction, a lot of sectors will know if there are constraints in communication and take steps to do away with them.

1.9 Scope of the study

This study will be conducted among Sesotho native speakers pupil who are presumed to be around the age 13-15 years old in two schools which are geographically distinct to achieve unbiased results. The schools names are Nyakosoba Harmony High School in Roma and Moruthane A.M.E High School in Morija. The data will be collected from the pupils who are currently doing grade 8 and 9 exclusively. The focus of the study will be on how Sesotho speakers of English as a second language perceive vowel sounds. The grade 8 and 9 prioritised because they have been taught in English language for 4 to 5 years tops as the medium of instruction, and relay entirely on what the teachers feed them. This is why they are sometimes given assessment on listening comprehension paper rather than a read one. At such test, they listen to what the teacher reads to them and then answer the question later on about a passage which was been read to them.

1.9 Limitation of the study

No study is immune to limitations, and mine is no exception. Firstly, the sample consists of only the grade 8 and 9 learners, and critics might argue that the outcomes of the data analysis will be unreliable since others will not be considered. However, my decision to exclude them was to avoid acquiring too much data than I would need. Secondly, the fact that the learners at the level of 8 and 9 are drilled into following the instructions makes both grades suitable for the study because failure to perceive the speech sound uttered implies that learners can not follow the directives issued. The current study will not focus on consonant speech sounds even though, data on consonant will be available for analysing because consonants are beyond its scope. Lastly, cases of hearing and sight impairment will be excluded from this study; neither will cases of psychological problems as they are beyond its scope.

1.10 Conclusion

This chapter offers a general picture of the whole study. Auditory phonetics is a branch of linguistics that focuses on speech sounds perception. Since the area is least explored, stakeholders in the teaching and learning departments are unaware of how crucial this area of linguistics is, and repercussions the education system might have to go through if the speech perception is not prioritised. Not only does perception have influence on the outcomes of result in school, but does on a broader margin affect the lives in general. This is because communication is meant to pass messages with exact the meaning intended by the speaker. Now, if the listener fails to perceive them then the purpose of communicating becomes pointless. Speaking is producing speech sound and combining and splitting up them to formulated words that deliver certain meaning to the speakers of the languages concerned. In this chapter, the speech sounds have been defined and explain to refresh the reader's memory. The speech sounds in concern here are the English vowel sounds as this study aims at finding out how they are perceived by the L2 speakers. In light of the state's language policy which regards English as second and official language, the study has taken in accounts factors that affect the perception of English vowels; unearthing advantages and disadvantages of the English language based on speech perception.

The study has stated its research questions and objectives in line with the hypothesis that the researcher expects to confirm or refute during the course of research. The purpose of the study and its significance justify the motive for conducting the study and why it is an essential quest to take on. The scope of the study lays out the boundaries of the study because each study must live within its lane as to exhaust the necessary areas in order to achieve the aims and objective of the study.

CHAPTER 2: REVIEW OF RELATED STUDIES

2.1 Introduction

This chapter confers a review of the literature relevant to the present study. According to Webster and Watson (2002, xii), a literature review is a crucial part of study that formulates a

solid base and knowledge of a study a researcher aims at studying. This is because it facilitates theory development, explores the topic in a wider sense and fills the gaps that have been left by those who have walked the same path before. Acknowledging the work of others indicate that the researcher has done a thorough research in the area of interest. Learning a lot from predecessors assists the researcher in selecting a more convenient methodology to use and the kind of participants to use. The researcher will also familiarise himself with the theories and hypothesis that the past researchers based their studies on, and maybe decide which one is best suited for his or her study. This literature review is structured thematically, but within each theme, a chronological order of studies according to years of publication is presented; starting from the oldest studies to the most recent.

Moreover, there is no need to repeat what has already being researched, but going through other people's studies and discovering the gaps in their studies is important. Reviewing existing studies assists the researcher to develop the study accordingly, choose the right methodologies, the appropriate participants and number, and the right materials to use. A research gap refers to things that need to be done or learned in an area of research. It is more like a missing piece in a puddle (Wylli 2019, 1).

Most studies on speech sounds have focused on the production of speech sounds. This probably happens because producing speech sounds phonologically to make sound words which will be grouped to formulate comprehensible sentences and paragraphs is very important in academic and daily lives. Studies done on speech perception are comparative fewer than those done on production so are those on both production and perception. Finding out studies done speech perception

The current study was motivated by the motor theory of speech perception. With some theorists advocating that is hypothesis rather than theory that Liberman claims it to be, this theory views communication in a different way, focusing on the perceptual part of communication. Liberman et al (1967, 431) argue that people perceive spoken words by identifying the vocal tract gestures with which they are pronounced rather than by identifying the sounds patterns that speech generates. The theory is that language originated as a transfer from or translation of the elements and system of combination of elements of the neural motor system, with the expression of motor programs which originally developed for the co-ordination of vertebrate movement being redirected from the skeletal muscles to the muscles of the mouth, throat and chest (Allott, 1992, 105). Liberman et al (1967) state that motor theory of speech perception

deals with the recognition of phonemes which are either from an acoustic or visual speech signal, which are considered as the phonetic gestures of the speaker. According to this theory, speech is special which is not practical. This theory prioritises the importance of vision and body movement in communication. However, the study that I am working on does not consider eye-contact and gestures importance as it will make use of an audio device in collecting data rather than bring along an L1 English speaker to utter the words.

To begin with, Martinez, Goad and Dow (2021, 1) conducted a research which was set on testing whether learners can perceive consonants sounds that might be present or absent in their L1. In addition to this, the study was born out of a thirst to discover how different characteristics of the vowels and consonant systems of L1 which are vividly distinct from L2 can be incorporated in building new vowel systems for L2. The L2 languages in concern here are; French, English, Caribbean Spanish and non-Caribbean Spanish languages and that itself is gap I managed to infiltrate through because the languages the researcher focused on are quite a handful and data collected might be too limitless and general to produce conducive results. Therefore, getting more data than the researcher can handle is a factor that can affect the authenticity of the study.

Admittedly, this article provides a crystal clear guidance strategy on how the researcher should conduct the study. There are some major aspects that the researchers feel that needs to be explored: Geographically, the article is centralised on the Brazilian nationals who are based in Brazil and speak Portuguese as their first language.. Brazilians who speak indigenous Brazilian language were not included, neither were the Sesotho speakers who speak English language as a second language. Furthermore, Martinez, Goad and Dow (Ibid) state that in their quest for acquiring the required data they resorted to a method that involves utilising the questionnaires which participants were required to fill after under-going a short training. However, in the present study, there would be no need for questionnaires, neither will there need to be any training as study participants will be instructed to transcribe words that they hear on audio device. The participants in their study were between the age of 18 and 35 years. People who are range between such are regarded as adults therefore, are expected to have graduated from high schools. This study did focus on how high school learners perceive English vowel speech sounds. This is where this current study comes in to fill that gap.

Flege, Mackay and Meador (1999, np) assert that native English speaking participants were instructed to identify English vowels from Italian subjects who speak English as a second

language. The production of English vowels by L2 speakers does not fall among the things my study wishes to discover but Flege, Mackay and Meador's research actually base their study on those two. Due to the fact that this research will be using an online dictionary equipped with a speaker button for words articulation, the number of participants will be cut down.

Moreover, not only will the dictionary provide an English native speaker's accent, but also a similar voice for articulation which would prevent misunderstandings that could be brought about by altering speaker's gender and voice. Bringing along a device instead of real people when collecting data shows that the researcher complies with the stipulations of Covid-19 precautions that among others advise against excessive traveling and putting large numbers of people in one place. The participants were instructed to adjust the volume of the device a level that suits them (Flege Mackay and Meador (Ibid). However, in a study that to be done, the researcher will switch the volume to its peak to ensure that participants get the same volume.

Morrison (2006) conducted a research on the perception of English and Spanish vowels. Morrison's study combined production and perception in a single study while mine on focuses on perception exclusively. Morrison (2006, 20) points out that participants will be offered questionnaires to fill, and those questionnaires will be used to test whether participants are familiar with their language background, or not. That is, to find out which languages they speak and their proficiency in those languages. Nevertheless, participants in this study would not be handed questionnaires to complete because the study will use survey method of data collection. It is true participants will be issued papers on which to transcribe the sounds which they will perceive from the audio device, but that does not imply that those papers could be labeled questionnaires.

Moreover, In Morrison's (2006, 20) study participation of participants was ruled out if they gave responses that indicated that they are proficient in other language than English and Spanish as well as those who had acquired multiple languages at an early childhood along with those who have hearing impediment). In this study, no participant would be denied participation in the research just because they have acquired more languages than the two official languages. The official language in question here are English and Sesotho language. These two are the only languages that the constitution of Lesotho recognises although minorities languages which have been ignored the existence of minority languages in Lesotho. This study will not discriminate participants for multilingualism reasons.

Apart from that, Morrison's (Ibid) study aimed at discovering the production and perception English and Spanish vowels. Morrison (Ibid) states that the participants are divided into groups; English L1 speakers with a Canadian dialect, L2 English speakers, Spanish L1 speakers and Spanish L2 speakers. Each division is broken into smaller units; 18 monolingual participants recruited from members of a club and friends, 23 monolingual English participants who are University students, and finally, 41 L2 Spanish-English participants recruited from the University and the surrounding community. This however, seems to be a heterogeneous population that might cause way too much data which can potentially confuse the researchers. Therefore, I have opted for a topic that will generate enough data that can easily be handled and used by this study. It also aimed at finding the practical implications that the perception of vowels may have towards the language teaching and learning. Contrarily to this, this study focuses on the perception of only the second language which is English language without looking at Sesotho language which is the L1 of the participants. Morrison (Ibid) asserts that geographically, the study is based in Canada and clearly, the results gathered can not be used to elucidate how Basotho perceive English vowel sounds.

Finally, author points out that researchers felt the need to control the participants' dialect in English and Spanish. In the present study, the researcher will not be bordered about controlling the participants' dialects of the languages in concern, but will rather stick with using the same online dictionary to provide audios with identical voices.

Pereira (2013, ii) conducted a study on the perception and production of English vowels by Chilean learners of English. The study focused on the effects of auditory and visual modalities. Pereira (Ibid) points out that he divided the participants in three groups and all those groups comprised of university students. The first group was made up of freshmen who were native-Spanish-speakers, the second one was basically made up of fourth year students who are advanced group, and finally, the third and the very last group comprised of university with Standard Southern British English accent. This research however, aims at utilising high school pupils who are all Basotho as participants for the data collection.

Pereira (Ibid) elucidates that the ages of the participants in his study range from 18 to 28, but present study focuses on younger people who range from 13 to 15 years of age in grade 8 and 9. This implies that this study focuses on the age group and level of education which the Pereira's study did not consider. Regarding the grouping of participants, this study divided them according to regions. This implies participants will be divided into two groups; one from

an urban areas and one in the rural areas. In addition, Pereira (Ibid, 60) asserts the participants have undergone extensive training aimed at being the proficient in English language and have received adequate testing to true see to it that they have grasped the concepts. On the other hand, the participants in the current research have not received any equivalent training due to their lower level of education and intellect. Pereira (Ibid) was quick to point out that participants were rewarded with small amount of money for their participation. However, this would not be the case in this study because it is believed that giving hand-outs will compromise the genuineness of the data as participants might manipulate the data with the hope of winning the heart of the researcher leading to getting some form of reward. Finally, Pereira (Ibid) states that his study focused on Spanish learners who speak Chilean as a first language, and English language as a second language to them. The participants in Pereira's study are all studying in the Universities of London, but in this research, all the participants will be high school learners who are teenagers. London is on the other side of the world so one can not align the results of the data analysis of Pereira's study and the findings to Sesotho speakers of English as a L2.

Romig (2013, ii) conducted a qualitative study on the Production and perception of English vowels by native speakers of Brazilian Portuguese. Right away, one can tell from the title of the study that it focused on both the production and the perception English vowel. Therefore, a study needs to be conducted with the aim of doing away with the generalization, and narrowing down the topic to focus on the perceptual part, in exclusive of the productive part. This would limit the possibility of acquiring more data that the research was hoping for. Romig (Ibid) indicates that the study is based on the production and perception of the English vowels (i, ɪ, e, ɛ, æ, ʌ, ɒ, o, ʊ, u). However, this study seeks to discover whether the learners can perceive different types of English vowels.

One similar aspect in both Romig's (Ibid) study and the present one is that the participants in both studies are grouped in two. However, the division of Romig (Ibid) is based on race namely the Brazilian living in Victoria and native Canadian while in the present study the participants of the same race whose levels of educations are similar and levels of acquisition, and learning of Sesotho and English language are presumed to be the same. The criteria for the division of the participants is mainly geographical. Therefore, the results acquired from the data analysis will determine the perception of English vowels by the entire grade 8 and 9 of this state who speak Sesotho as a first language and English language as a second language.

In addition to this, the participants in the research are not migrants from other countries, but are local citizens who were born and raised in Lesotho, while in Romig's study, some the participants are migrants from five Brazilian states. Romig (Ibid, 26) elucidates that in his study, the participants were men and women aged between 24 and 39, while in this study, the participants will be children who are expected to be between 13-14 years. Finally, Romig's research focused on utilising participants that are educated and have acquired qualifications of higher learning. Most of them also were earning a living through their respective qualifications. On the contrary to these, the participants for the present study will be pupils who have just begun their quest and have no prior or current working experiences.

Foote (2015, iii) conducted a study about the pronunciation and pedagogy and speech perception. The author declares that his study sought to discover how L2 speakers perceive L2 speech sounds and how the perception of L2 language learners differs between what they utter and what they actually meant to say. This study also investigated to what extent do L2 speakers perceive L2 speech sounds. Thirdly, the study looked at how language background influences the perception and determining what was said and what it implies. Finally, the study looked at the efficacy of shadowing which is a usual pronunciation practice technique.

Foote (Ibid) states that in his study, 15 participants who are L2 speakers of English were recruited. University students from Montreal participated in this study. They were all with a mean age of 25 years. All the participants were male to minimise any difficulty brought about by gender. These participants had enrolled into different programmes and the qualifications that they sought to achieve were different. They had different backgrounds too, including; Farsi, Telugu, Chinese, French, Aka, Arabic. A gap that is notable from Foote' study study is that the participants do not share the same background, and the same level of education. Conducting a study to investigate how the Lesotho high school learners who are L2 speakers perceive English vowels is important too. Foote (2015, 19) also states that the participants had studied English for a mean of 12.4 years. The mean of 7 years is the duration that the participants have been in the country. Freshmen were recruited during their first semester at the university. Foote (Ibid) also states that native-English speakers who were 10 in all were called in to participate as listeners. They were at the mean age of 15 years and students of the same university. 4 of the participants were females, the other 6 were males. The author continues to indicate that the 10 been born and raised in English speaking homes and should have been exposed to English language from birth. The other rule was that the one or both parents of the each participant should be a native-speaker of English. However, the current

study plans to recruit only Basotho children who have been living in the country for more than ten years. They will also be high school learners. 40% of the participants will be male, while 60 will be female.

2.3 L2 Sound Perception

Evans and Alshangiti (2018, 15) did a study on the perception and production of British English vowels and consonants by Arabic learners of English from a range of proficiency levels. The study investigated whether the hypothesised vowel perception problems were also applicable to the vowel production. However, the current study does not share above hypothesis. The results of the study revealed that the consonants are easily identifiable that vowels in a quiet and noisy environment. Evans and Alshangiti (2018, 17) states that 35 learners participated in the study. 26 of them were L1 Saudi Arabic speakers who were born and raised in Jeddah. 12 Native Riyadh speakers were tested in the perception of English vowels and consonants in quietness and noise and the production of English vowels. The study called in nine native Standard Southern British English (SSBE) listeners to control and complete a subset of the perception tasks to give normative data. The SSBE listeners completed identification and ratings tasks for the English production by Arabic participants. All participants were aged between 18-35 years with the medium of 26. Neither did any participant report a speech problem nor hearing impairment. All the participants were London citizens at the time that the study was being done. They all participated to volunteer to participate in the study and were rewarded with some things to show appreciation (Alshangiti 2018, 17).

On the contrary, the current study plans to have 53 participants. They will be divided into 4 groups. They are also estimated to be between 13 and 16 years old. All the participants will be Lesotho citizens who have been born and raised in Lesotho. They also should have been living in the country for the past 10 years. The participants will participate in the study willingly, not out of being lured with gifts. That way, the study would not face the challenge acquiring a manipulated data aimed at impressing the researcher with the hope a making a good impression which would lead more gifts being offered.

Moreover, Nimz and Khattab (2015) conducted a study on perception of accent speech. Nimz and Khattab (2015) affirm that there is a relationship between L2 sounds perceptual ability and orthography. Nimz and Khattab (2015, 1) Two experiments were used to answer the relations between these two with concerning the discrimination and representation of German long vowels by Polish learners of L2 German and a native speaker control group. They continue to

state that the first experiment tested phonetic discrimination abilities nonsense words, whereas the second experiment was a judgement task that was designed to get into the lexical representations. The judgement task was divided into two parts of the test. While the first half were real words that contained vowels that were explicitly marked for length in the orthography, the second one the remaining items stayed explicitly unmarked (Nimz and Khattab 2015, 1). Nimz and Khattab (2015, 1) state that this study was based on the hypothesis that in German, vowel length may be represented by the vowel the 'lengthening h'. This representation may enable German-as-a-foreign-language learners in the constructing phonological representations of vowel length when the feature is not used in their L1 language.

Moreover, Nimz and Khattab (2015, 1) point out that their method of choice for this study used participants for both the discrimination and judgement task were recruited at a Polish high school in Poland and at a German high school in Germany. This study succeeded in recruiting 20 Polish learners which comprised of 4 males who were at the age of 18.5, while in Germany, it managed to get 20 German native speakers to participate in the discrimination task. There were 6 male participants who averaged the age of 17.9. The discrimination experiment was done via PRAAT. In order to find out whether each vowel was same or different, each vowel pair had to be judged 8 times (Nimz and Khattab 2015, 2).

Furthermore, Hao and Jong (2016, 151) conducted a study which lay out that speech perception and production are problematic for speakers and listeners. This is what gave birth to many studies. These studies utilised a speech imitation task. This task used two experiments. The finding from two experiments on L2 learners and compares the performance in an imitation task in identification and Read-Aloud tasks. Experiment 1 focused on L1 speakers of English language who are learning Mandarin tones, whereas experiment 2 tests how English consonants are acquired by Korean learners. The author asserts that the study recruited L2 learners of Mandarin Chinese to be participants. The group of participants comprised of 10 native English speakers, 8 of whom were male, while the other 2 were females. All the participants were students at a university in USA. Hao and Jong (Ibid) add on that the average age of the participants was 22.9 (SD=6.4), while their average length of learning was 2.68 years (SD=1.91). Out of ten students, seven had begun learning Mandarin in college while the other three had started in high school. The English speakers had learnt Mandarin in the USA and did not get the access to interact with native Mandarin speakers on truly environment contexts. For the identification task, the participants were made to sit individually in a quiet room, and listened to the stimuli through the headphones. The participants were provided an answer sheet

with the stimuli spelled in Pinyin but without tone marks. They were also instructed to mark the tone of every syllable of the stimuli. Before this task was done, the participants were asked to select ways which they might be comfortable for marking notes. They all chose the tone marking scheme used in Pinyi (Hao and Jong 2016, 154).

On the contrary, the current study will not be conducted in the USA, rather it will be conducted in Lesotho. The collection data will be done at the local high schools, and learners will be participating. The participants are expected to be between 13 and 16 years of age. Unlike in Hao and Jong (Ibid)'s study, participants for the current study will all be native Sesotho speaker who have been introduced to Sesotho from birth. Participants will also be hand answer sheet on which they will be required to write down the words played on the audio device.

Moreover, liquids sounds are the consonant sounds [l] and [r]. They are commonly found in most languages (O'Grady, Dobrovolsky, and Katamba 1996, 33). Sally and Fon (2007, 1721) conducted a study to investigate the effect of phonetic distance, the learning context and the learners' proficiency on L2 perception of English liquids. They also state that the two English liquids are difficult for Mandarin speakers to differentiate. Since the study was done on English liquids sounds there is a necessity to conduct to investigate the perception of English vowel sounds. This study was done in Taiwan. Therefore, the results got gives picture of how the Taiwan citizens perceive English vowel sounds.

Furthermore, Sally and Fon (2007, 1722) point out that 135 people participated in the study. 27 of the participants were native speakers of English, 108 college students were L2 speakers of English language. According to the EPT, half of the 108 students reflected proficiency in the English while the other half did not. Bringing in 135 participants in for participation might pose trouble for the researcher because that might lead to getting more data than the researcher needs. Not only will processing such data be difficult, but analysing it as well. Therefore, the current study will use only the maximum of 60 participants.

Additionally, Vasiliev (2013, ii) conducted a study which aimed at investigating the initial state for California English listeners' perception of two different small vowel inventories which are; Spanish and Portuguese, before any perception learning has taken place. The author affirms that this study aims at investigating the initial state for Californian English listeners' perception of Spanish and Portuguese vowels prior to having undergone a perceptual learning of those vowels. Judging by the aim of this study, there is still a need to conduct a study which will aim at investigating how L2 speakers of English language perceive English vowels. In the current

study, L1 English speakers are the ones who were tested on how they perceived L2 vowel sounds. Bringing in Basotho learners to participate in studies on speech perception for a change would be beneficial. The author asserts that the objective of this study is to determine how Californian English listeners' native vowel inventory of ten phonemes affects their no-native perception of the five Spanish and seven Portuguese vowel phonemes, while the currents study's objective is ti find out how L1 Sesotho perceive English vowel sounds. In the quest to control the native dialect, only monolingual speakers of English language were chosen to participate in the study. The author goes on to say that the study gathered 6 male and 12 female and they were all undergraduate. The participants were between 18 and 30. The gap in this study is that there is a dire need to conduct a study on the high school learners who are below the age of 18. The participants in this study were born in Southern California and have lived in Southern California for the most of their lives. Background questionnaires was utilised as a tool to determine which participants were allowed to participate in the study and which ones were not (Vasiliev Ibid, 42). Nonetheless, the current study will use answer sheets instead of questionnaires to collect data. The study recruited Southern California speakers who spoke variety of American English exclusively. The study opted to participants Southern California variety because it differs from the variety spoken in the Northern region. The other reason is that the testing was done it Los Angeles and there was not enough participants from Northern California. However, the current study used L1 Sesotho pupils from the local high schools.

2.4 Interference and transference

According to Lipski (1976, 229) in a multilingual situation, languages tend to interact and influence one another. This interaction is said to be inevitable. Transference, on the other hand refers to over-applying the rules of one language (L1) on another language (L2) (O'Grady, Dobrovolsky, and Katamba 1996, 733). Ryu (Ibid) did a presentation on the effects of L1 transfer and L2 experience on perception of Korean vowels. The author declared that the goals of the study was to discover how adult Mandarin and English learners of Korean perceive Korean vowels /ɨ, ʌ, o, u/. The three goals that the study investigated were the effects of L1 vowel inventory size, effects of cross-language acoustic similarity, and finally, effect of L2 experience. On the contrary, the present study seeks to investigate the perception of English vowel sounds by Sesotho L1 speakers. Moreover, Ryu's (Ibid) study hypothesises that English listeners with a broader inventory system may have a precise ability to pick out all Korean vowels over Mandarin listeners with a smaller vowel inventory system. This is hypothesis number 1. On the other hand, this study hypothesises that learners will fail to perceive the

English vowel sounds. The second hypothesis that Ryu (2018, 8) asserts is that acoustic similarity between L1 and L2 vowels can estimate difficulties in perception for Mandarin and English listeners. However, this study hypothesises that the listeners's knowledge of Sesotho language tempers with the perception of speech sounds. This process is called interference in socio-linguistics.

Finally, the author made a hypothesis that if both English and Mandarin learners as L2 gain more proficiency in Korean, they acquire the perceptual abilities that Korean native speakers process. This third hypothesis is not similar to the one in the current study which states; failure to perceive the exact speech sounds produced has negative effects on the learners' studies. While on the subject of hypothesis, research questions are slightly related to hypothesis. Therefore, it is important to point out that Ryu research questions are different from those stated in the present study. The methodology used by Ryu is different. This is because he specified that the overall number of participants in his study is 82, and they were all female. 40 were Mandarin, 29 Korean learners, and 13 native Korean speakers. The 82 participants were divided in two groups depending on their duration in Korean language programs at the university. However, the current study plans to use 60 participants in all. All the participants will be at a high school level and they will be picked from two schools that are geographically different with the aim of acquiring adequate data that is no biased. Grade 8 and 9 has been reserved for data collection. Over 60 percent of the participants will be females and 40 and below will be male learners.

Ryu (2018, 21) elucidates that 92 monosyllabic Korean words which included the four target Korean vowels were used. On the contrary, learners in this study will be tested on whether they can perceive the two English vowels from each type of vowels. This implies that the learners will be tested on whether they are able to perceive two of the high, low, front, back, central, monothong, gliding, diphthongs, triphthongs, long, short,tense and lax vowels. Ryu (2018, 21) also points out that a 46 year old man who is native Korean speaker was recorded in a Phonetic Linguistics department laboratory and the recordings were used when collecting data. However, the study that is underway, will a voice on Google's English dictionary which is provided by Oxford Languages. This cuts down on the number of participants by one. Since the said dictionary uses the same voice in all its pronunciation, learners will adapt to the voice easily yielding desired results.

Moreover, numerous critics have stated that accent has impact on the production and perception of speech sound. Accent can yield the passing of a message or hinder it completely. Yuan, Jiang and Song (2010, 1) conducted a study that compares English and Chinese Mandarin listeners' assessment of foreign accent in spontaneous English spoken by speakers of eight spoken native languages. Thirteen of these L1 Mandarin speakers were asked to talk about themselves in English for twenty minutes. Three speakers of English as a L1 were granted four-point scale to judge the utterances of the participants who are L2 speakers of English language. The 4-point scale was comprised of different levels of accent detected from the L1 Mandarin speakers' English utterances. The 4-point scale basically was meant to measure; negligible / no accent (denoted as '1'), mild accent ('2'), strong accent ('3'), and very strong accent ('4'). In the process of comparing Yuan, Jiang and Song's (Ibid) study the present study, the first realisation is that both studies are based on perception. The authors also acknowledge that accent is one of the key factors that affects the production and perception of speech sounds. The only difference is that the study does not direct all its focus on the accent of the participants, but rather, focuses on speech sounds perceived by the participants. However, Jiang and Song (Ibid) is based on perception of foreign accent and using 4- point scale to measure the quantity of accent detected from the participants' speech. Accent formed the basis of this their hence it is given more credit for having influenced what was perceived by the judges.

Furthermore, the authors assert that their study included eight languages; three tone languages - Cantonese, Mandarin, and Vietnamese; four stress languages German, French, Spanish and Russian and one pitch language which is Japanese. In terms of numbers, they have a larger number of languages included in their study compared to the two languages (English and Sesotho) which the study focuses on.. A study which is over-supplied with data might make it overwhelming to collect, store, process and interpret the data acquired. Failure to handle the data collected has the potential to harm the study and its findings. It is also crucial to note that Yuan, Jiang and Song's study investigated the perception of people who speak languages of eastern and western countries. Participants who speak Sesotho as a L1 language were not included in the study. The study too was done in the United States of America which implies that Lesotho has to be covered too in the perception L2 speech sounds.

Cali (2015) conducted a study which was aimed at discovering the influence of phonetic features on the perception of accented speech. The study was conducted to give evidence to that each language has speech sounds that are distinct and those phonetic differences affect how we produce speech sounds and what listeners perceive (Cali 2015, 8). The author asserts

that he brought two speakers; one a monolingual English speaker, and the other; Spanish-English bilingual to be part of a test. Two speakers from each language background produced a token three times. The speakers were instructed to an English paragraph filled with words that are hard to pronounce as to check the level of accent in their speeches. However, the current study aims at discovering how L1 Sesotho speaker perceive English vowels as L2. The study does not check the accent of the participants because unlike in Cali's study here participants do not speak, but rather they transcribe on paper the speech sounds they perceive from the magnified audio device. The researcher does not bring a voice recording device to record the words uttered by the participants, but rather brings a device that utters the sounds that the participants need to right down.

Furthermore, Cali (Ibid) used participants who are adults between the ages of 19 to 45. The fact that his research does not say anything about teenagers between 13 and 15 who are in high school means the current study is well situated. Similarly important, Cali's study was conducted in the United States of America, while the present study is done in Lesotho using Basotho children. The procedures that Cali (2015, 10) lays out for collecting data are that participants have to click on screen words that they heard through the headphones that were attached to their ears. They had to select those words from minimal pairs that were placed before them. The participants will press the red button for the wrong word, blue for the right word, and green if the word is not present. However, in my study, the procedures will be different as participants will sit in one room and transcribe on paper the words that they perceived from the amplified sound device. Unlike Cali' study which tests whether accent could affect perception and production of English words, mine is a test of how L2 learners of English language perceive English vowel sounds. Cali (2015, 10) points out that four factors were manipulated in the study. The initial factor is language background of the speakers presented to the participants. The second one is the voicing of the stop consonants to the participants. The manipulation of the position of the voicing is the third one. Finally, the different visual alternatives presented to be participants. The researcher in the study on vowel perception of English vowels by Basotho L1learners did not manipulate any factor as that was deemed unnecessary.

He goes on to state that the participants will all be female to do away with any gender effects. On the hand, this research believes that engaging one gender into the study may lead to acquiring biased data. Therefore, both genders will participate in the data collection on the study. Cali (2015, 8) states the both the speakers and the participants were tested before the

engaging them study. The speakers were tested on the degree of their accents, while the participants' language backgrounds were put the test through making them fill a demographic form. However, there was no need to test the participants' language in this study because of putting trust The Examinations Council of Lesotho and the schools decisions to promote them to those grades. It is crucial to mention that the dictionary uses the similar speaker will the same accent so there will be no perception challenges brought about by altering voice, gender or accent of the speaker.

Moreover, Cali (2015, 8) points out that four participants were denied participation in the data collection process just because of their prior and wider experiences with Spanish. In construct with this statement, not a single participant will be was excluded from participating in the present study because they have been extensively exposed to either Sesotho or English language. Cali (2015, 9) states that all those who participated in providing data for the study were given something in return as a token of appreciation for their participation. Those offers were in a form a five dollar reward or course credits. This certainly will not be the case with the current study because no participant will be granted any form of reward as that might motivate them to manipulate the data in order to impress the researcher. One way in which they might do this is by copying from those they regard as brilliant students. The results outcomes might be identical, thereby, giving out inaccurate data.

2.5 English vowel perception

This section looks at studies that are related to the perception of vowel sounds. Phonotactic constraints are restrictions of the speech sounds that a particular language allows to occur next to another in order to form words (Nordquist 2020, np). Rochet and Rocket (1999, 1443) conducted a study on the effects of L1 phonotactics constraints on L2 speech perception using sixteen adult native speakers who were European French. The task they were assigned was to identify one of the three vowels /i/, /e/, or /ɛ/. Authors used good quality earphones of a microcomputer to present the tokens. This was carried out through perceptual test programme which was developed by the authors. During the trials, the programme randomly selected stimuli from the set of 320 tokens without replacing them and played them twice with a 20 millisecond-second silence interval. In addition to this, Rochet and Rocket (Ibid) hypothesised that three vowels categories would be perceived as /i/, /e/, or /ɛ/ in free syllable tokens. It also hypothesised that the two categories which are /i/ and /ɛ/ would only be perceived in checked

syllables. The current study, however believes that the participants will perceive a number of vowels which are not similar to the one uttered.

A study was done in The University of Alabama to examine the perception of English vowels by native Italian speakers (Flege and MacKay 2004, 1). Flege and MacKay (2004, 1) declare that discriminating between the vowels; /ɒ/,/ʌ/, /ɛ/-/æ/, and /i/-/I/ is difficult for students who have lived in Canada. This study hypothesises that the difference between native and nonnative perception may obstruct the articulation of some phonetic parts (Flege and MacKay Ibid). This study was done to with aim of providing better understanding of L2 vowel sounds' perception. The focus of this study was to discover whether or not adults have acquired L2 during their earlier childhood can or can not perceive L2 vowels like native speaker can. 18 Native (NE) English speakers and 72 Native Italian (NA) were recruited to participate in the study. The NI participants that the study used should have been born in Italy and migrated to Canada between the ages of 2 to 13, and have were also expected to have been introduced to English language earlier in their lives; not later than 15 and 26 years. The participants were also expected to state that they used Italian between 1% and 15% low L1 use, or between 25% and 100% high L1 use of the time. The amount of time that the participants been residents in Canada was taken to consideration too. The NI participants were grouped into four groups of 18 members per group and have their percentage use of Italian language self-reported. Furthermore, the authors pointed out that 90 participants were test individually in all the experiments. The NI students were tested on the campus of another university, while the NE students were tested on another. This involves spending more time with the participants. The researcher must have taken a longer time to collect data. 90 participants is a large number to deal with, especially if it is dealt with individually. Flege and MacKay (Ibid) add on to state that the all the instructions will be issued in English.

Moreover, the present study recruited exclusively Basotho students who are bilingual speakers of English and Sesotho. These participants should have been born and raised in Lesotho. Neither are they expected to have lived within a multilingual society, nor should have lived outside the country in past ten years. In order to collect and process data easily, the present study intends to use a number of participants that would not exit 60 participants.

Escudero, Simon and Mitterer (2012, 280) carried out a study on the perception of English front vowels by North Holland and Flemish Listeners: Acoustic similarity predicts and explains cross-linguistic and L2 perception. The study was based on the hypothesis that the level of

acoustic similarity between L1 and L2 sounds predicts cross-linguistic and L2 performance. The study investigated whether regional differences in the native languages, and tested the hypothesis by examining the perceptual difference between /ɛ/ and /æ/ in the speech of L1 Dutch speakers of the dialect spoken in Netherlands and Belgium. The author conducted two studies, one in English and the other in Dutch. The study recruited 59 participants who were all native speakers of Dutch living in the Netherlands or Belgium at the time of testing. Their study is related to the current study since it investigates the perception of English vowels by Basotho learners. Escudero, Simon and Mitterer's participants were students at the University and had undergone an English instruction and English-medium courses for a year and five months. 42 of the participants were all picked for analysis according to their regional background and the tests scores they got on English language comprehension papers. The 42 were divided in to two groups based on the regions they came from. Test was done in two regions. The first group was tested in Amsterdam, while the other was tested in Ghent (Escudero, Simon and Mitterer 2012, 282). However, the current study plans to recruit the maximum of 60 participants who are in the high schools. The participants will be divided into two groups. The grade 8 and 9 learners will participant in the data collection. Data will be collected from two schools, one in the rural, one in the urban area.

In addition to this, (Escudero, Simon and Mitterer's study stated that a vowel perception test was preceded by a general comprehension test which the participants had to take. The participants were granted a written multiple choice question about the content of the fragment at the bottom of the screen. During the test, they had to listen to short speech parts, and then listen to the fragments once and mark their responses. The outcomes of the test determined which participants will be selected for the analysis of vowel perception and which participants will be eliminated from the list. The participants who scored C2, C1 and B2 were picked for the analysis. Questionnaires also had to be filled by the participants to weigh their language background. The participants were given a book voucher as a token of appreciation for their participation. Nonetheless, in the current study, participants will be given answer sheets on which they will write down words that they hear from the amplified audio device. No testing would be done prior collecting data to test participants' capability because the current study believes that doing so would lead to acquiring biased data, neither were questionnaires used to weigh participants' language background. This is because the participants were all bilingual speakers of Sesotho and English language. The present study also did not offer participants

incentives or gifts as a way of showing appreciation for their input because study believes that doing so would encourage participants to manipulate the data in order to impress the researcher.

Garcia (2014) conducted a study on the perception of American English vowels by the Spanish speaking L1 speakers. The study was conducted in America and its focus was on challenges in the perception and acquisition of the American English vowels [a] and [ʌ] as in the word /hut/ versus /hot/. These vowels are the ones the study focused on. According to this study, existing studies were solely interested in how the vowel [i] as in /sheep/ and [I] as in /ship/ are perceived by L1 speakers of American English. There is still a need to investigate how the Basotho pupils perceive English vowel sounds because the finding of Garcia can not apply on Basotho pupils. Since Garcia was only interested in the perception of [a], [ʌ], [i] and [I] adding other English vowels to the list of vowels whose perception need to be investigated in a new study would be more beneficial. Moreover, Garcia's study and the literature reviewed do concentrate on the Spanish American exclusively. Garcia in the study had recruited participants to part-take in the data collection process that are college students from Columbia University. Above all, they had to emerge from the Spanish-speaking communities. The sampling might produce biased results as there are not enough participants. Most importantly, they more or less share the same educational level and occupation. The participants have taken slightly identical career paths. Studies have to be conducted to unearth how high school learners perceive English vowels especially in Lesotho. Finally, all of the participants are in the same geographical place. The data collected and analysed in this research might be biased because it only gives a picture of the perception by college students of Columbia University not the whole Spanish-speaking communities in United State of America.

Perwitasari (2018) did a study on the perception of English vowels by the Javanese and Sundanese speakers. The researcher is convinced that Javanese and Sundanese have vowel systems that interfere with the perception of ten English vowels. Therefore, the aim of Pirwitasari was to discover how Javanese and Sundanese as first languages obstruct the perception of the five English vowels. In light of his aim, one can conclude that the researcher has already concluded that learners can not perceive the five English vowels before conducting a study on it. He must have conducted studies in the past to backup his point of view or probably, had looked into other peoples studies. The researcher also focused on unearthing how L1's interference hinders vowel perception that do not appear in their native language vowel system. There are numerous factors involved in obstructing perception of speech sounds but Perwitasari's study seems to put all its focus on interference. This act is likely to lead to finding

inadequate data. Additionally, his study only focused on certain English vowels. Therefore, there is a need to discover how L2 speakers perceive English vowels and how L1 interferes in the perception of all the English vowels.

Rehman (2019) conducted a study on Urdu vowel system and perception of English vowels by Punjabi-Urdu speakers. Right away, one can tell that the study focused only on the residents Punjab in Pakistan who are Urdu native speakers. It should also be noted that the study was centralised within the boundaries of Pakistan. This implies that no one else was considered, not even the Pakistanis who live or stay in any region or state other than Pakistan. This is a huge gap that this research aims at filling because there is need to investigate how other the Sesotho speakers of English language perceive English vowels, hence the current study. Rehman (2019, 25) explains that 26 speakers participated in the experiment and they were between 18 and 84 years of age. Participants younger than 18 years were not allowed to take part in the data collection process. This is a gap that needs to be filled by other researchers. All the speakers who participated in the experiments turned to be multilingual who spoke a minimum of three languages which are Punjabi, Urdu and English (Rehman 2019, 25). The study did not include bilingual participants like it is the case in Lesotho. Rehman (Ibid) asserts that the all participants were highly educated individuals who were at the top of the middle class. All but three of the participants had only secondary level qualifications from Pakistan. Researchers have to discover how pupils who are on the journey of getting their secondary qualification perceive speech sounds. All the participants were migrants living in America (Rehman 2019, 26). Finding out how L2 speakers perceive speech sounds when they are on their own land instead of those who have migrated to foreign countries in search of greener pastures is crucial. Rehman (Ibid) points out that most of the participants were intimate couples and they have taken similar career paths. Intimate lovers tend to behave unpredictably at times. This may have negative impact on the data collected. Including participants who are not emotionally attached to one another might be beneficial to achieve adequate results.

Rato and Carlet (2020) conducted a study on 'Second language perception of English vowel sounds by Portuguese learners: The effect of stimulus types'. They based the study on discovering whether learners can perceive the following English vowels; /iː/, /ɪ/, /ɛ/, /æ/, /ɜ/, /ʌ/. The current study is different in that focuses on a wider range of English vowel sounds. This implies that the vowels; /u/, /ʊ/, /uː/, /e/, /ɔː/, /aː/, /ɒ/, /iə/, /ei/, /ʊə/, /ɔɪ/, /əʊ/, /ea/, /aɪ/, and /aʊ/ are included. Rato and Carlet (Ibid) used questionnaires to collect data, whereas this method would not be used in the present study since it simply would not work. Instead, the

current study has opted for the survey method for it will be most convenient. In addition, they used adult learners aged between 18 and 22 years in the data collection process. On the contrary, learners aged between 13 and 14 will participate in providing data for the present study.

Kogan (2020) conducted a study on the effects of first language on the discrimination of non-native vowel contrast: investigating individual differences. This researcher was worried that most of the studies seem to pay less attention to role of individual differences within the same L1 perception, but rather direct most of the focus on the native language background. This study was conducted to fill that gap and to investigate how individual differences L1 perception affect the perceptual difference between two members of a novel contrast that do not exist in the learners' native language. Kogan (Ibid) argues that speakers with various native languages have different perceptual abilities for the task of non-native perception. He also asserts that speakers that share the same native language differ in how their native phonological categories are represented in the perceptual space. This study was build under a hypothesis that the compact native language categories provide the first advantage in differentiating non-native differences.

Moreover, data for the study was collected with PsyToolkit and TurkPrime. These two were used to acquire a bigger sample size over a short period of time. On this study, online data collection assisted the researcher to connect to a specific population of participants who are Spanish monolinguals from central Spain. Stoet (2017, cited in Kogan 2020, 56) defines Psytoolkit as a free web-based service developed for task for programming, running and analysing cognitive-psychological experiments and online surveys. Both PsyToolkit and TurkPrime allow online data collection, storage, analysis and retrieval. On the other hand, TurkPrime is an internet based research platform that facilitates the process of crowdsourcing data collection (Litman et al, cited in Kogan 2020, 57). Equally important to point out to share is that; TurkPrime is usually utilised to recruit participants in various fields of study in the social sciences. The study had recruited Spanish and Russian participants for the study. Out of the 109 normal-hearing Spanish adults who participated in the study, 91 completed all the tasks. 23 were denied participation probably because they did not meet the requirements of the study. These participants were perfect speakers of foreign languages, were not born in Spain or they also had studies Russian before. The second group of participants comprised of 68 European-Spanish monolingual speakers. They were not proficient in Russian. Testing was done to check whether learners were proficient in any language other than Spanish. Eleven participants stated

that they were not proficient in conversing in any L2 at the intermediate level. Fifty-seven participants reported basic knowledge of English that is lower than the intermediate level. The participants also reported to have studied Basque, Catalan, French, Galician, Italian and Valencian. One participant mentioned studying German and Japanese in the past, while another student reported to have little knowledge to Romanian (Kogan 2020, 59). In addition this, Russian participants were recruited to take part in the data collection. A group of 16 Russian L1 speakers provided baseline data for the L0 rated dissimilarity task that used the Russian as stimuli (Kogan 2020, 60). The author used numerous social networks, mainly Facebook to recruited and screen online participants. Participants were educated about the significance of the study, experimental procedures, risks and benefits. Volunteers were granted anonymous questionnaires to feel which sort their linguistic background. Issuing of questionnaires was aimed at controlling the language background, such as Russian-speaking parents, place of birth, residence, and exposure to and use of other languages. The data collected from the Russian Speakers was analysed and put against that of the Spanish speakers for comparison. Finally, the instruments that the research utilised were questionnaire with the big inventory, serial non-word recognition task, target sound recognition task, rated dissimilarity task, and goodness task.

Conclusion

This chapter has revealed that the studies the researcher has perused through studies that are related to the current one, and the areas that those studies failed to address as well as and what the researcher should include, or be aware of. A general overview of the gaps detected was that most of the studies related to the current one were conducted in the western and the east countries of the world. The research did not come across any study related to or carried out in Lesotho or on Sesotho speakers of English as L2 who live in a foreign country. There were no studies done in Africa in general. This indicates that nothing or less has been done on the perception of English speech sounds by L2 speakers in this part of the globe. All the reviewed studies that the researcher came across utilised adult participants who either occupied working positions or are students who are furthering their studies in tertiary institutions. Of all the studies reviewed, only one had fewer female participants than male. This implies that women participated more than men. The researchers chose participants who were 18 years and above. Therefore, teenagers or youngsters were not included in the data collection process. The said study were conducted in times when there were covid-19 restrictions that strongly advise against mobility of people and having too many people under the same roof for a long time.

Therefore, the number of participant had to be limited and a number of schools to collect data from to curb the spread of the virus.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This section presents the methodology that the researcher utilised in this study. It outlines and explains the research design and approach, the population and the study location, the sample and sampling technique, method of data collection as well as data analysis. This section also exhibits the research ethics which the conducting of this study was based on. According to Gage 1964, cited in Gowin and Millman 1969) methodology includes ways of measuring variables and of collecting and analysing data. Igwenagu (2016, 4) define a research methodology as a systematic, theoretical analysis of the methods applied to a field of study. She also defines methodology as a general strategy that provides guidelines of how a study could be done, and picks a suitable method to be used. The following are advantages of a research methodology; it increases the wealth of people, it offers tools needed to conduct a study, develops critical and scientific attitude, disciplined thinking to observations, improving the research process and provision of chance for in-depth study and understanding of the subject, helps to inculcate the ability to evaluate and use research results with reasonable confidence and in decision making, and inculcates the ability to read and think critically.

3.2 Research Design and Approach

The Research Design definition is a framework or blueprint for doing a study. It is a guide that informs the researcher about the steps needed to acquire hinds to design or solve the research

problems. The research design also forms the basis conducting a study (Patra 2017, 83). Fleming and Zegwaard (2018, 206) state that factors, such as the researcher's ability, the level of the findings or resources, time availability influence the decision on how the study is designed. Research approach on the other hand is in three ways; qualitative approach, quantitative approach and mixed methods. Grover (2015) points out that quantitative approach includes positivism and post-positivism world view, while qualitative approach includes constructivism and transformative world view. According to Mohajan (2018, 24) Qualitative approach is a form of research action that places emphasis on the way of people interpret and make sense of the experiences to understand the social reality of individuals. Mohajan (Ibid) also explains that qualitative approach best deals with people's believes, experiences, and meaning systems from the perspective of the people. Quantitative approach deals with quantifying and analysing variables in order to get results. It involves using and analysis of numerical data utilising specific techniques (Apuke 2017, 40). However, Terell (2012, 254) states the mixed method approach involves the incorporation of both qualitative methods and quantitative methods in one study. The advantage of this method is that offers the researcher many design methods which involves a range of sequential and concurrent strategies.

Quantitative approach was utilised in the present study although this approach has its pros and cons. Profillids and Botzoris (2019, 89) asserts that possible advantages of using the qualitative methods are; accuracy, rationality, numerical values, forecasting ability, and control at the time of the validity. However, the disadvantages of utilising this approach are; difficulty in taking into account all the variables and provide correct values in numerical application, human beings take respond differently, it over-generalises assumptions, no freedom of choice options, and there is interference of the subjectivity factors.

The study aimed at discovering how Sesotho L1 speakers perceive English L2 vowels. The study focused on the high school learners. Prior to collecting the data, the researcher visited the school which the data was to be collected from to inspect if the internet was abundantly accessible through Vodacom Company Lesotho network. This was to ensure that on the set date, the data collection process will run smoothly, and even if there were internet problems, they would not be severe enough to totally hinder the process. The researcher went to the two local high schools that are in different locations to collect the data.

The data was collected from Nyakosoba Harmony High School in Roma and Moruthane A.M.E High School in Morija. Participants were recruited from grade 8 and 9. 60 % of them were

females, 40% were males. The participants were divided according to grade and instructed to sit separately to minimise eye-peeking. This was to ensure that each learner wrote the sounds perceived rather than copy from classmates. Participants were reminded that the experiment was not a test of excellence but a test of perception. This revelation was meant to calm them down and to ensure that they would not be anxious about failing or passing.

Furthermore, Answer sheets were issued to the participants, labelled with numbers from 1 up to 12. This is because the experiment had 12 tasks to fulfil on the 12 types of English vowels. These English vowels were: high, low, front, back, central, monophothongs, gliding, diphthongs, triphthongs, long, short, tense vowels. A computer with amplified battery-powered speakers connected to it was brought along to be used in the experiment. An online dictionary was accessed through a laptop computer that was connected to the internet. The researcher typed words on the dictionary search slot and clicked on the pronunciation button for the words to be pronounced. The pronunciation of each word was repeated four times to accommodate the slow participants. Participants had to write the words that they perceived for the audio. The research was only interested in the perception of the vowel sounds rather than the consonants sounds.

3.3 The Population

Welman, Kruger and Mitchell (2005, 52) define population as the study object consisting of individuals, groups, organisations, human products and events or conditions to whom they are exposed. According to Majid (2018, 3) the population of interest is the study's target population that it intends to study or treat. According to Shukla (2020, np) population refers to the set group of all the units on which the findings of the study are to be applied. Types of population are finite and infinite population, homogeneous and heterogeneous population, existent and hypothetical population, known and unknown population. Finite population refers to the population in which number of units is finite and can be counted precisely. homogeneous and heterogeneous population is population where all the units of population are identical or similar in certain characteristics. However, such a population is not found in social sciences. Units of population that have physical existence are called existent population. If the parameters of the population are known, then the population is known, if not, ii is unknown. In light of the above explanations of population, the current study used Finite and Infinite population.

The population of the present study comprised learners of two high schools in the country namely Nyakosoba Harmony High School, and Moruthane A.M.E High School in Morija.

Nyakosoba Harmony High School is located in Roma. The school is 40 km from the capital city, Maseru. Roma is in the southern part of the country. On the other hand, Moruthane A.M.E High School is located in Morija. It is based next to the Main South Road that leads to Mafeteng. The school is located within 27 km radius from Maseru. Both schools have mixed genders in classrooms. Participants from grade 8 and grade 9 were recruited for the study. The participants were all Basotho children, born and brought up in Lesotho. They had not being exposed to multilingual societies, nor lived in another country for the past ten years. These participants all spoke Sesotho a L1 and English language as a L2. Therefore, they were all bilingual pupils during the time when the data was collected. They are all the products of the new syllabus which dictates that no learner shall be compelled to repeat a grade due to improficiency. This was meant to minimise the dropout rate in schools. The age of the participants ranged from 13 to 18.

3.4 The Sample and Sampling Technique

According to Bhardwaj (2019, 185) sampling refers to a procedure used to select a sample either from an individual or from a large population group for purposes of the study. He goes on to state that sampling is one of the key elements that determine the accuracy of the study. Sampling helps the researcher to save time and money by not including each individual that the research seeks to collect data from. A chosen few represents the masses of people. Sampling is also defined by Majid (2018, 3) as selecting a statistically representative sample of the population that the researcher needs to study. The significance of sampling is that helps the researcher to select to participants from wider population and them to answer research questions. Sampling strategies are defined by Majid (Ibid) as ways that the researcher can use to get representative sample from the population of interest. However, sampling has its pros and cons, but its advantages outweigh it disadvantages in as long as research is concerned.

Sampling strategies are; convenience strategy, simple random, stratified random and cluster strategy. He goes on to define the strategies as follows: Convenience strategy involves making use of the most accessible or available participants. Simple random is used when whole population has individuals who equally have the same chance of being selected, while stratified random simply refers to randomly sampling participants according to predefined subgroups. Finally, cluster strategy involves simply random sampling according to occurring subgroups that are natural. The present study opted for stratified random sampling strategy because the population of interest was the grade 8 and 9 learners. Two high schools were also selected and

the selection was done according to geographical grounds. The study needed to ensure that the results of the study are not biased by collecting one study in a rural school and another in an urban area. Moruthane A.M.E High School in Morija and Nyakosoba Harmony High School in Roma were the schools of interest. According to Majid (2018, 5) the sample size of a research study should have enough power to importance allowing the researcher to be confident that the findings of the study can not be attributed to random variations in the population of interest. The study recruited 53 participants who were all able to participate in the study. 60% of them were female, while 40% were male because in schools, the number of girls exceeds that of boys. All the participants were native Sesotho speakers who born and raised in this country. Above all, they should have been in the country in the past 10 years. They all are bilingual speakers of Sesotho and English language. They all were L2 speakers of English language and have not yet mastered the language. They all have not stayed in a multilingual society before the present study was conducted.

3.5 Data Collection Procedures

Fleming and Zegwaard (2018, 206) assert that the purpose of the study and the nature of the research questions determine the choice of the methodology to be used. Upon arriving at the schools that data was to be collected from, the researcher produced a letter from the supervisor points out that such a researcher is a post-graduate student at the NUL. The letter explained that the researcher needs to collect data for purposes of a research. The researcher collected data from Nyakosoba Harmony High School in Roma and Moruthane A.M.E High School in Morija. The participants in both schools were 40% male learners and 60% female learners. The researcher had use for on 30 participants per school. This was to avoid acquiring more data than the researcher needed. Collecting more data than it is need may bring along problems with processing and analysing such a huge data. Even though more learners volunteered to participate, the study had only space for 30.

Moreover, the learners were educated on what the researcher wanted to achieve and what was expected of them. They were also told that they were not sitting for a test of excellence. Therefore, not a single learner was going fail. The participants realised that there was not need to copy from the brilliant learners. Still, they were made to sit separately to ensure that learners did not share answers. Participants were strictly instructed not to repeat after the words they heard from the amplified audio-player as doing so would cause confusion for other participants. However, this had to be repeated numerously throughout the data collection process as some

had that tendency, especially if they could not understand the words uttered. They were also notified that the audio-player will play the same sound 4 times only. The participants were issued answer-sheet labelled with numbers from 1 to 12 to have space for the 12 vowel sounds that they needed to perceive. Instead of vowel sounds in isolation, the researcher utilised words which consisted of those vowel sounds. Finally, learners had to write down the words that they perceived on the answer sheet. At the end, the answer sheets were collected for processing of the data.

3.6 Data Analysis Procedures

Data analysis is defined by LeCompte and Schensul (1999, cited in Kawulich, 2004) as the process of reducing huge amounts of accumulated data to make sense of them. According to Ashiwadam (2014, 1) data analysis could briefly be defined as a method of putting together facts and figures to solve the research problem. Taylor (2016, cited in Koma 2018, 65) defines data analysis as a process of systematically applying statistical and logical strategies to describe and illustrate, condense and recap, and evaluate data. It is also crucial in finding answers for the research question. Interpretation of data is yet another vital part of a study which taken from analysis of the data to make inference and conclusions cited in Koma 2018 (Ashiwadam 2014, 1). Polit and Hungler (2001, cited in Koma 2018, 56) asserts that data analysis means to organise, provide, structure and elicit meaning.

The collected data could be in different forms. It could in numerical or quantitative form, or qualitative form. Moreover, quantitative data is a numerical measurement expressed which is not expressed by means of natural language description. Quantitative is always associated with a scale measure. Ordinals, intervals or ratio scales are utilised to represent this kind of data (Ashiwadam 2014, 5). Quantitative method of data collection and analysis is the method that this study needed because it seeks to uncover the perception of L2 learners and the data was analysed numerically. Ashiwadam (Ibid) declares that the most helpful and common tools for conducting a study are; survey, questionnaire, focused study group, interview.

The current had the participants were divided into 4 groups. Each school had two groups; one of grade 8 and another of the grade 9 learners. The answer sheets of each group were analysed separately from the other groups'. The study put together all the participants' responses

together and lays out all vowels that the participants perceived the vowels as. The present study checked which responses were accurate and those that were not. The number of times that each participant perceived each sound was recorded. The number of participants who perceived each vowel correctly was recorded. The researcher also recorded the vowels perceived the most and those that least perceived. Charts were inserted onto the word pages and the information of the analysed data was inserted into the graphs to make the data less complex to read and understand. Each graph was followed by a brief statement that explained what the graph means.

3.7 Validity and reliability

Ghauri and Gronhaug (2005, cited in Taherdoost 2016, 28) state that validity explains how well the collected data covers the actual area of investigation. In simpler terms, validity refers to 'measure what is intended to be measured Ghauri and Gronhaug (Ibid). On the other hand, Joppe (2000, cited in Koma 2017, 66) asserts that reliability refers to the consistency over a long period of time and accurate representation of the total population under the study. That is, the findings of the study should able to stand the test of time. It should be a realistic, not a onetime or one day only truth or reality. Therefore, the researcher in the present study had collected data appropriately, processed and analysed it correctly to ensure that there is reliability and validity.

Moreover, a research study is trustworthy when it explicitly demonstrates reality and the ideas of the participants. Krefting (1991, cited in Koma 2017, 66) asserts that trustworthiness consist of the following elements; credibility, dependability, conformability and transferability. All of those incorporated into the current study to ensure that the study is suitable for academic writing level and can withstand any academic scrutiny that may come its way.

3.8 Ethical considerations

Conducting a research must follow an ethical process. The researcher should adhere to certain norms and practices that ensure that the study does not harm the participants, the researcher and any other person who might be involved. Burgess (1989, cited in Koma 2018, 66) declares that ethical consideration prevent the making up of falsifying data and promotes the researchers to seek for knowledge and the truth which is what basically a research is meant for. The researcher did not manipulate the data or make data up, but rather relied on the authentic data that the participants provided.

This study was conducted through the authority of The National University of Lesotho. The researcher presented the letter from the University that affirms the researcher was indeed a student and needed to collect data for educational purposes. Prior to the experiment begun, the participants were educated about what the study sought to uncover. Procedures of the study were also presented before the recruited participants. The data and the information collected during data collection process were confidential. Since the participants were minors, their school principals authorised their right to participate in the study. For confidentiality reasons, the following precautions were utilised:

- The list consisting of the names of the participants were kept safely locked.
- The answer sheets that the learners transcribed on were also locked away in a safe place.
- No one, not even an English teacher was allowed into the classrooms where the data was being collected.

3.9 Conclusion

This chapter has provided the reader with the insight on the research design and approach, the population and the location of the study, the sample and the sampling technique. It also outlined and explained the method of data collection the researcher utilised, the data analysis, validity and reliability. Finally, the research ethics were also presented.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents both the analysis of data and the findings of the study. To begin with, data that the researcher collected is analysed and presented for purposes of showing how Basotho learners of English as L2 perceive English vowels. This is done through the use of graphs and the interpretation of those graphs to drive the message home in a less complex manner. Secondly, findings that the researcher acquired are also presented.

4.2 Data Analysis

Data analysis is defined by Ghosh (2017, 1) as a process of applying statistical practices to organise, represent, describe, evaluate and interpret data. According to Nduka, Uchenna and Ogeke (2022, 233), using statistical tools to perform different relevant tests on the prepared data is called data analysis. The authors go on to state that some statistical tools needed to analyse data may consist of either manual computation or computer software like; SAS, MatLab, SPSS, Minitab, Excel, R, Python, Graphpad Prism, gnuplot, and many more tools that have not been included in the list. Having mentioned all these, the current study used graphs and Microsoft Excel to analyse the data. Mohindru and Banka (2022, 1) state that data analysis helps readers to understand the data and the direction that the research is taking and unearth implied message. According to Ashirwadam (2014, 1) data analysis is done to identify, transform, support decision making and bring a conclusion to a study.

Three ways of presenting data are; textual, tabular and graphical presentation. Textual data presentation is a method of presenting data in paragraphs form. The data is written and read. This method entails a combination of texts and numbers. Sridhar (2012, 1) clarifies that textual presentation is suitable for use if the data is not too large and could easily be understood by the reader. Therefore, there is no need to use diagrams while using this presentation. Tabular presentation on the other hand is a method of presenting data using the statistical table. It also

uses a systematic organisation of data in columns and rows. Finally, a method of representing data in pictorial and diagrammatic form is graphical presentation. Types of Graphs and charts are; bar, linear, pie, pictograms, statistical maps and ratio charts graphs. Graphs simplify complex information by using images and emphasising data patterns or trends. Quantitative data is easily summarised, explained, explored through the use of graphs (In and Lee 2017, 268). Since this study collected quantitative data, using graphs to present this data analysis would be most convenient.

Therefore, the current researcher used the graphical presentation with bar charts to present the data. The decision to go for this method other than going for others is because the data was too challenging to comprehend due to its complexity. Therefore, utilising graphs was a way of making data easier for the readers to understand. To justify the selection of the bar chart, In and Lee (ibid) indicate that a bar chart indicates and compares values in different categories or groups and the frequency or other measurement parameters. They also point out that bar charts may be created vertically or horizontally according the researcher's preference. Therefore, for this study, vertical graphs were used to present the data. Data for this study was collected from Nyakosoba Harmony High School in Roma and Moruthane A.M.E High School in Morija. 12 grade 8 learners and 13 grade 9 learners from Nyakosoba Harmony High School participated in the present study, while 15 grade 8 learners and 13 grade 9 learners from Moruthane A.M.E High School participated in the present study. Participants from grade 8 and 9 were tested on how they perceived vowel sounds from the following vowel types; high, low, front, back, central, pure, gliding, diphthongs, triphthongs, long, short, tense and lax vowels.

The researcher in this study placed the interpretation of data below each and every graph. The interpretation shared the same label as the graph title. Since the main objective is to make sure that the graphs and interpretations are on the same page at all time, interpretation had to follow immediately after the graphs to avoid causing confusion for the reader.

4.3 Graphical data presentation

The grade 8 participants from both schools were tested on how they perceive English vowels. A single word was picked for use to test the vowel perception in each type of vowel. The words were mostly mono-syllabic with a few bi-syllabic words. The following words were used for experimenting; p*i*n, b*e*ll, b*ee*t, r*u*le, t*i*re, b*ea*n, *y*es, ar*ou*nd, h*ou*r, sp*o*rt, w*e*t, br*oo*k and l*a*p. Each sound that the participants perceived was noted and a number of occurrences were also stated in a graphical manner. However, the grade 9 were tested on the perception of vowels in

these words; p*u*ll, b*a*ll, t*i*t, s*o*rt, *a*way, b*ea*t, w*i*n, *oi*l, f*i*re, c*oo*p, s*e*t, s*a*w and t*a*b. Each word contains a vowel that represents a type of vowel that the researcher needed to test how it is perceived.

Grade 8
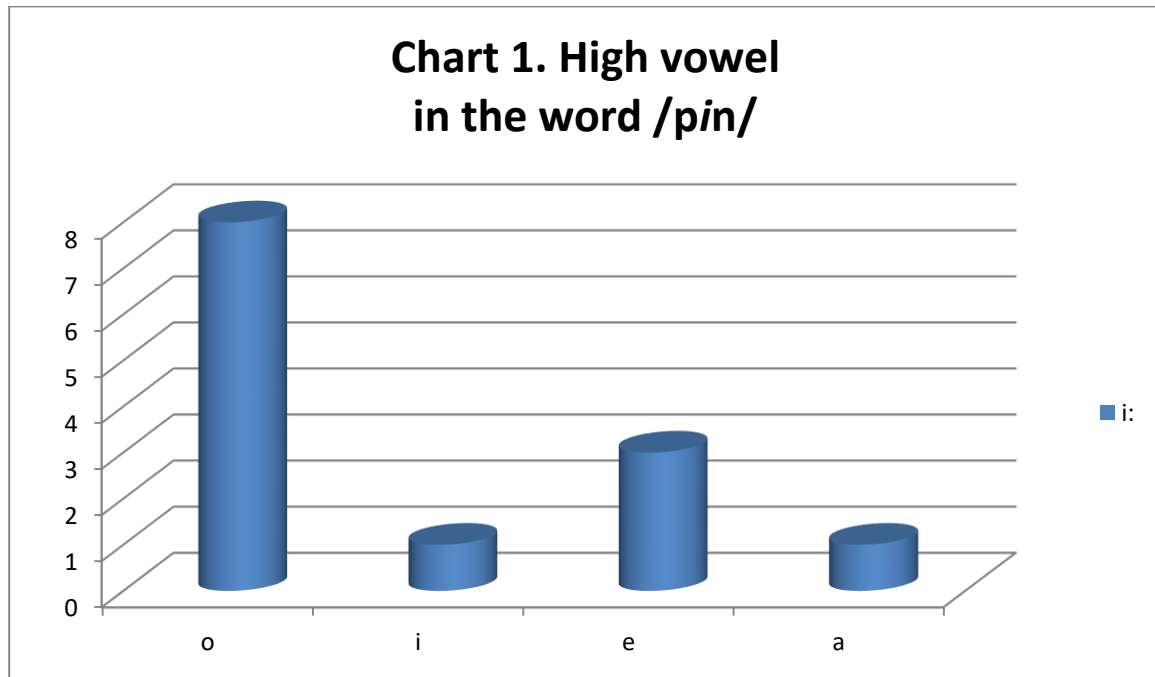
Chart 1 presents that 8 participants perceived the vowel [i:] as [o], 1 as [i:], 3 as [e] and 1 as [a].
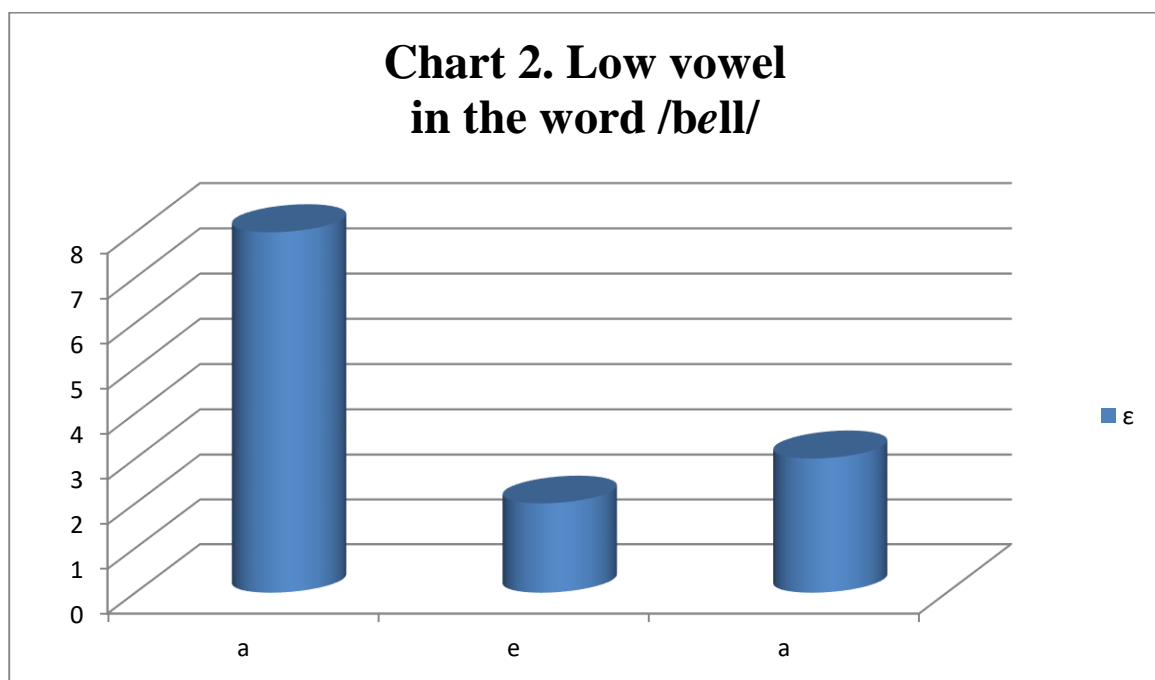
Chart 2 indicates that 8 participants perceived the vowel [ɛ] as [a], 2 as [e] and finally, 3 as [a].

Chart 3. Front vowel in the word /b*eet*/
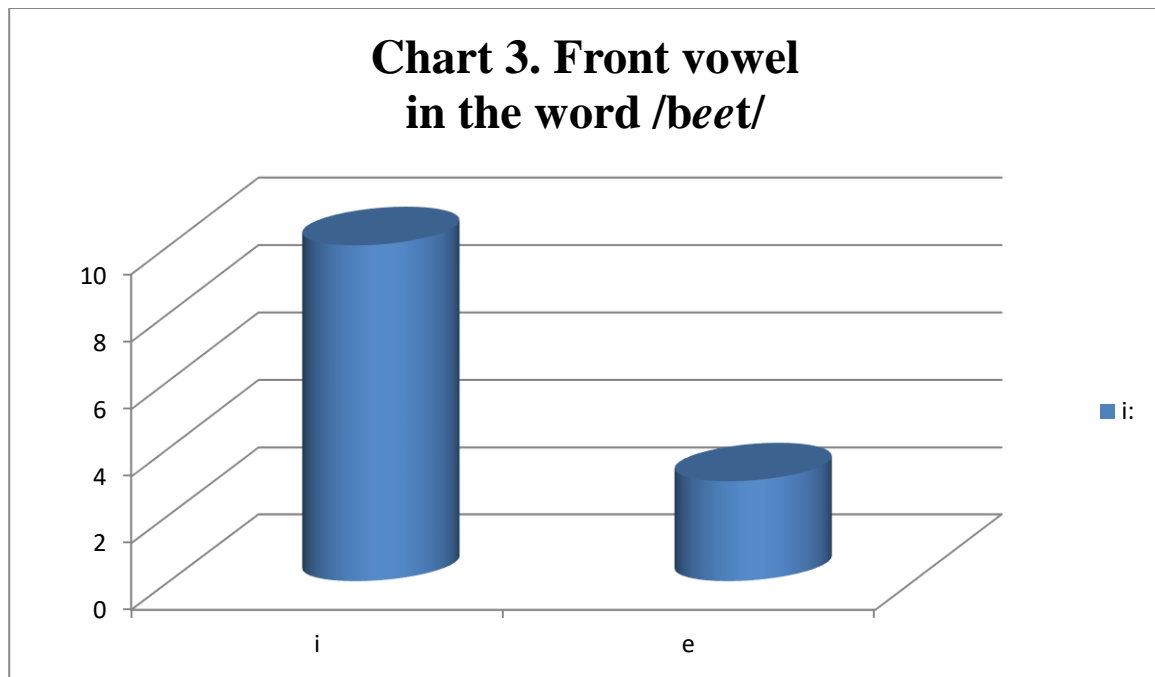
As observed in graph 3, there were 10 participants who perceived [i:] as [i:], while 3 participants perceived the vowel as [e].

Chart 4. Back vowels in the word /r*u*le/
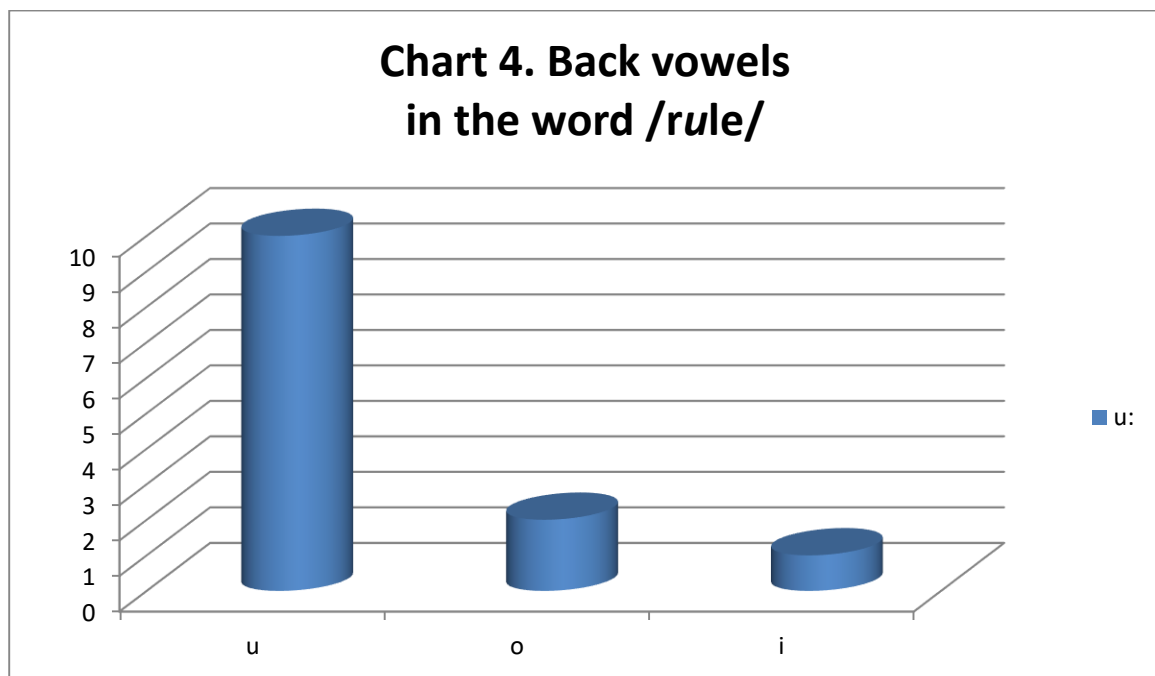
As reflected in the chart, 10 participants were able to perceive the sound [u] as it is, 2 perceived the vowel as [o] and 1 as [i].

Chart 5. Central vowels in the word /t*i*re/
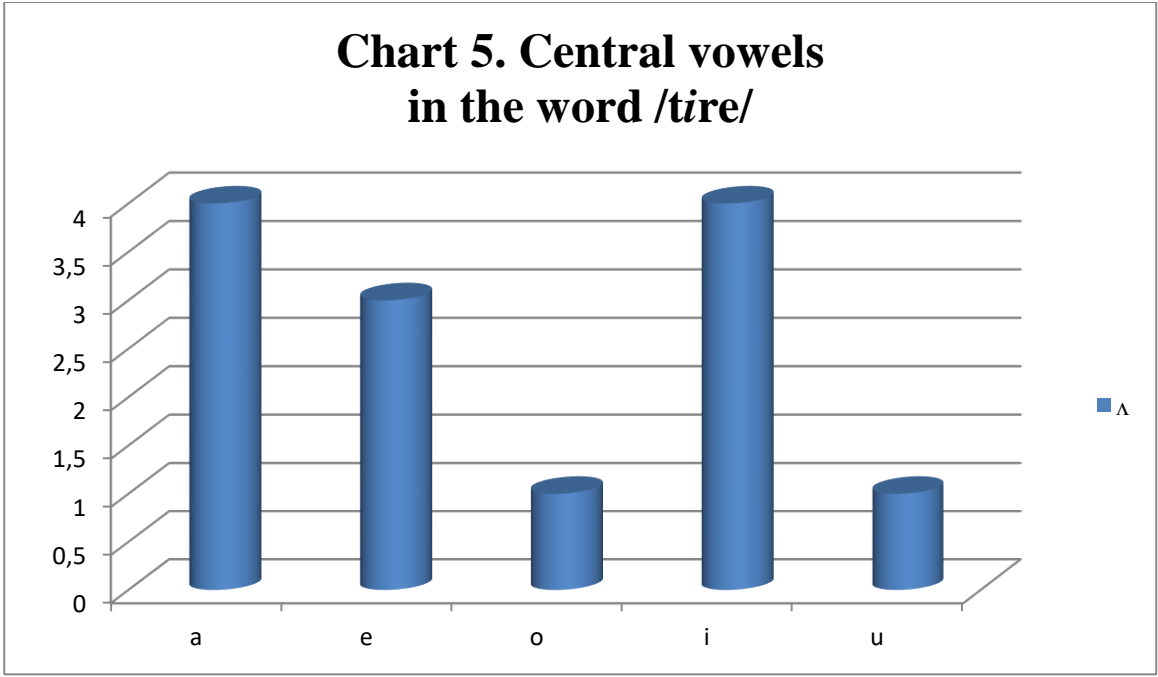
The illustrative chart above shows that 4 participants perceived the [ʌ] as 4, 3 as [e], 1 as [o], 4 as [i] and 1 as [u].

Chart 6. Pure vowels in the word /b*ea*n/
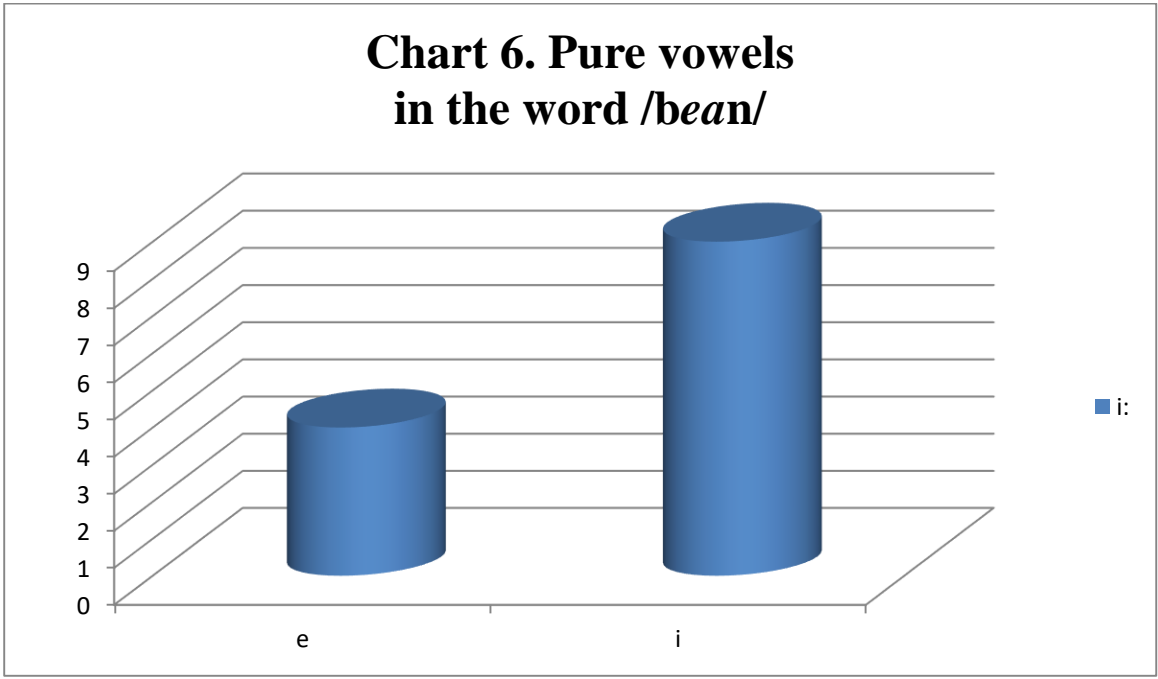
Chart 6 presents data in a way that demonstrates that 4 participants perceived the sounds [i:] as [e], while 9 perceived the very same speech sound as [i].

Chart 7. Gliding vowels in the word /yes/

As observed in the above chart, 8 participants perceived the sound as [j] it is, 1 as [i], 2 as [o] and 2 as [b].

Chart 8. Diphthongs in the word /ar*ou*nd/
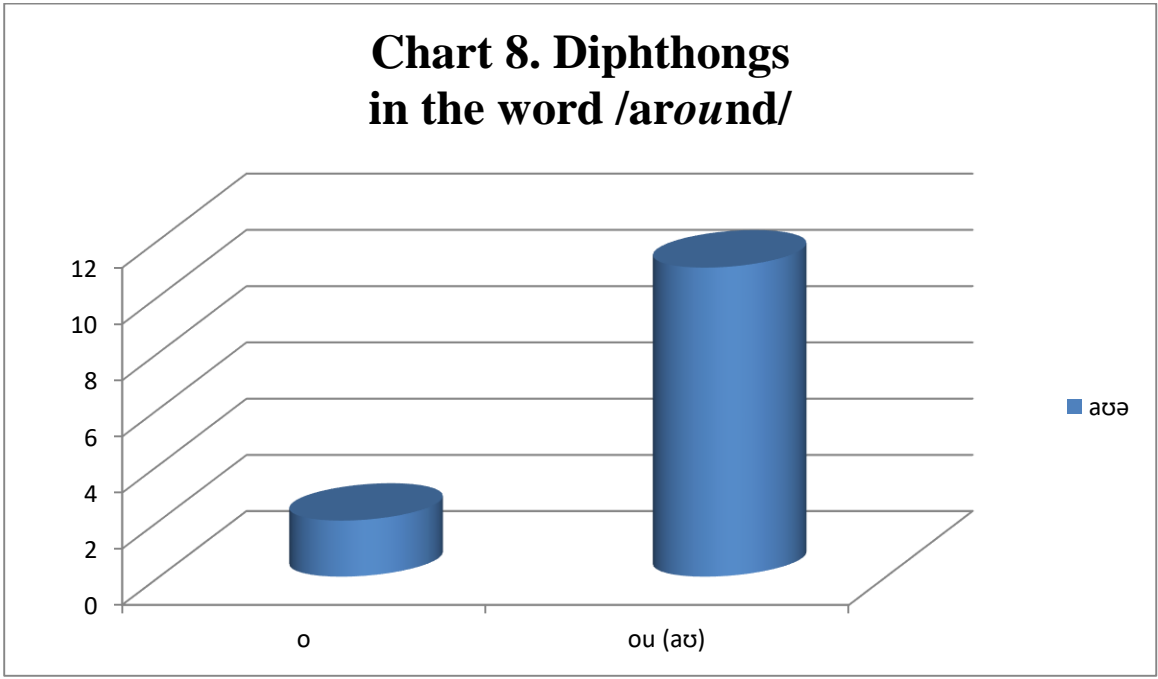
As reflected in chart 8, [aʊ] was perceived as [o] by 2 participants, while 11 perceived the sound as [ou].

Chart 9. Triphthong vowels in the word /hour/
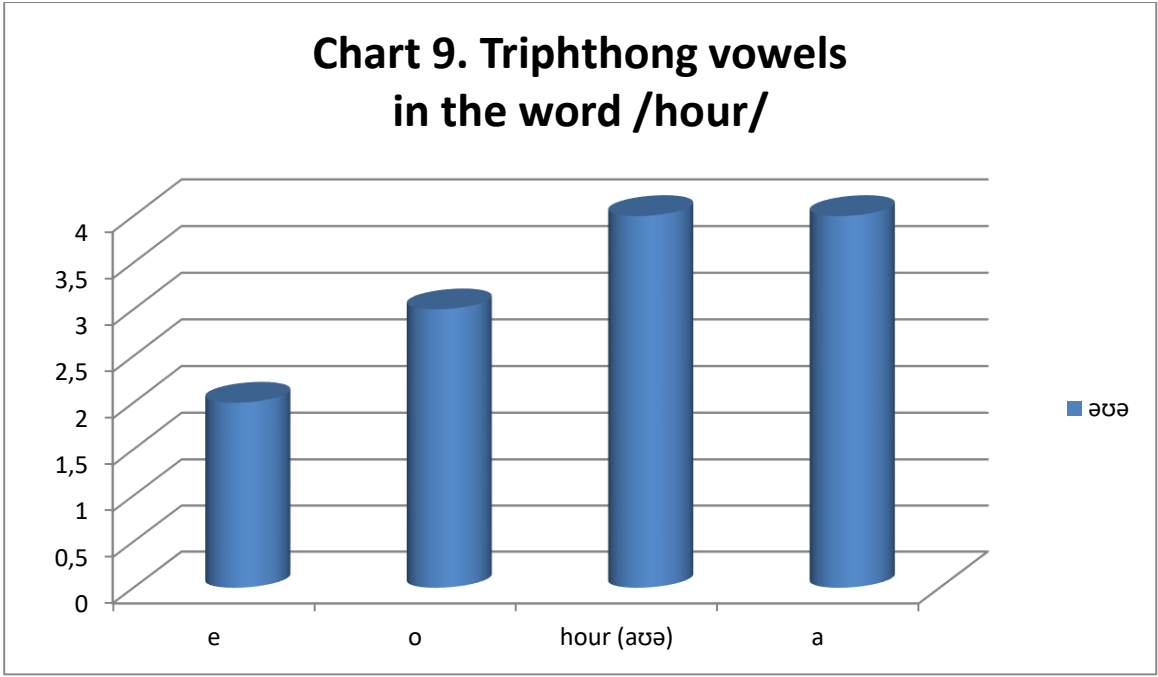
Chart 9 indicates that 2 perceived the vowel sound [aʊə] as [e], 3 as [o], 4 as [aʊə], 4 as [a].

Chart 10. Long vowels in the word /sport/
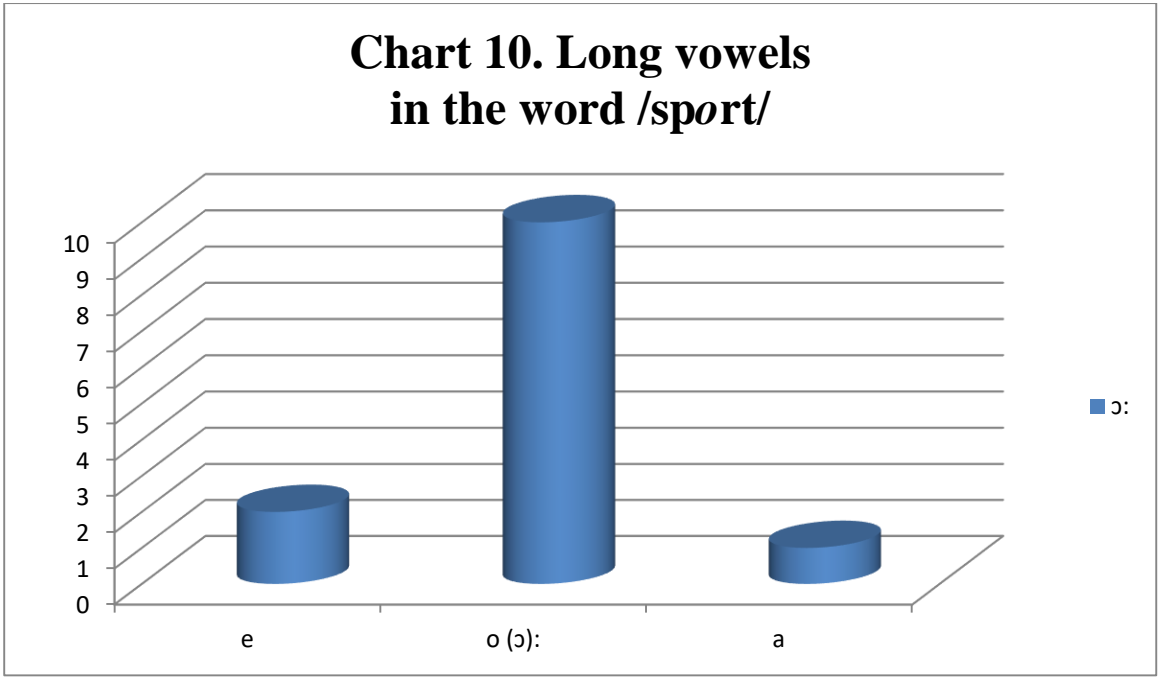
As observed in this chart, 10 perceived the [ɔ] as [e], 10 participants perceived the sound as (o) and [a] was perceived by 1 participants.

Chart 11. Short vowel in the word /s*e*t/
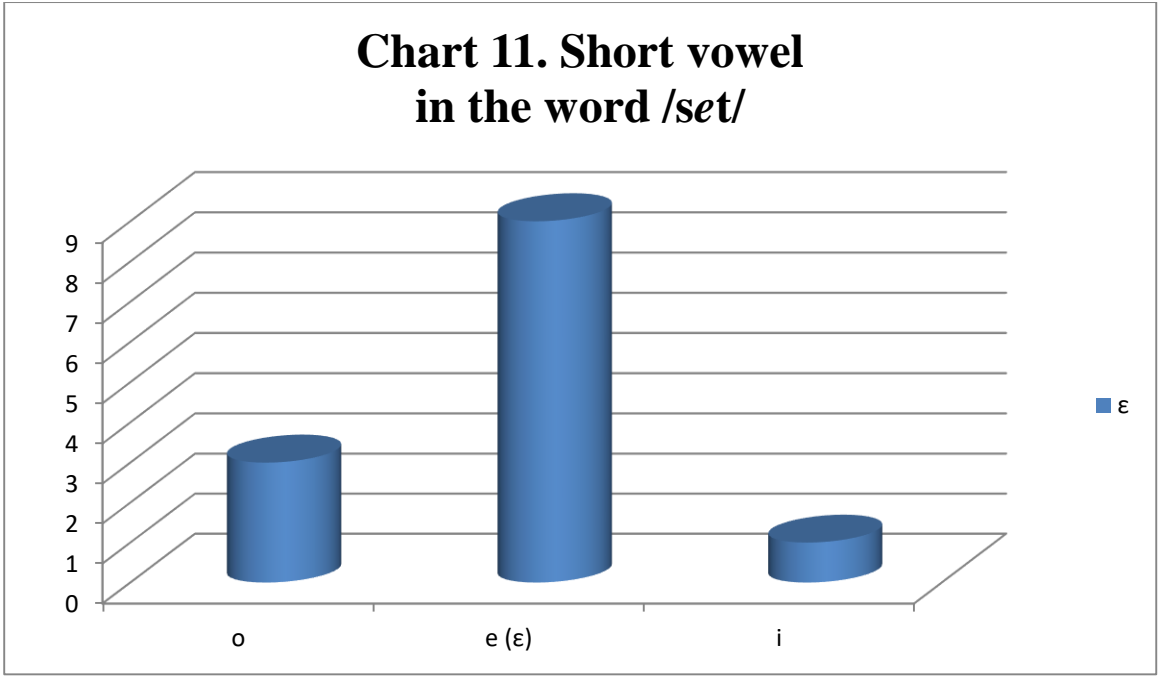
Chart 11 presents the data of participants who perceived the vowel sound [ɛ]. 3 participants perceived the sound as 3, while 9 as [e] and 1 as [i].

Chart 12. Tense vowel in the word /h*u*t/
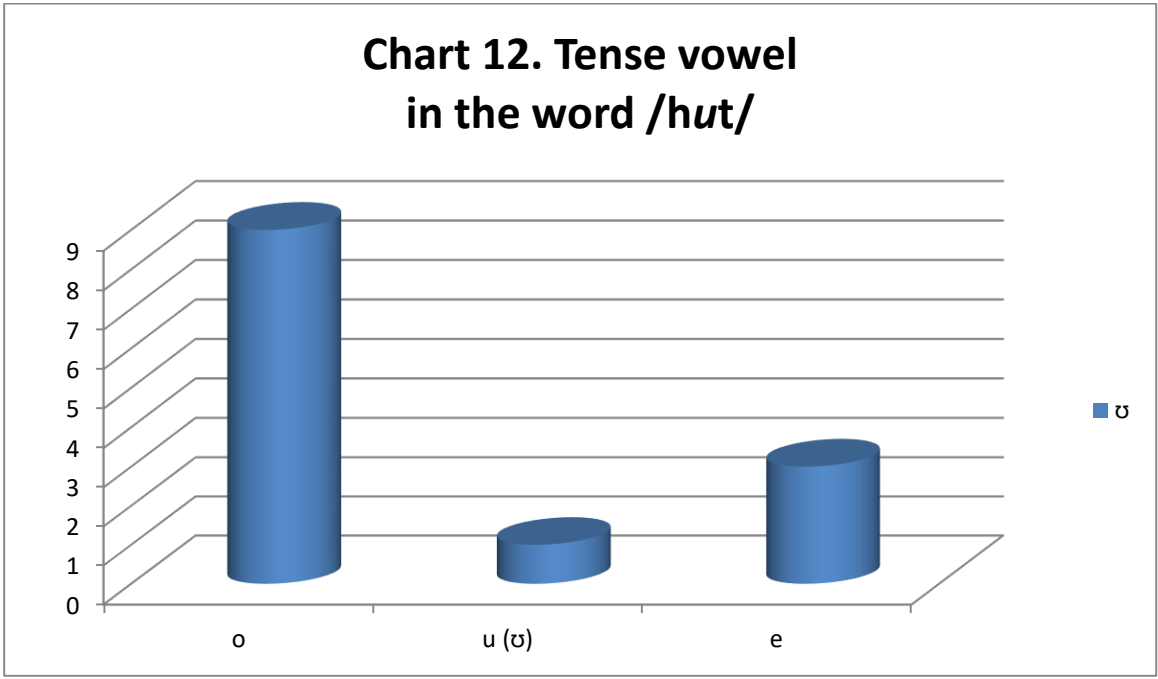
The illustrations in the above Chart, present the perception of the English vowel [ʊ]. 9 participants perceived the sound as [o], 1 as [u (ʊ)] and 3 as [e].

**Chart 13. Lax vowel
in the word /t*a*p/**
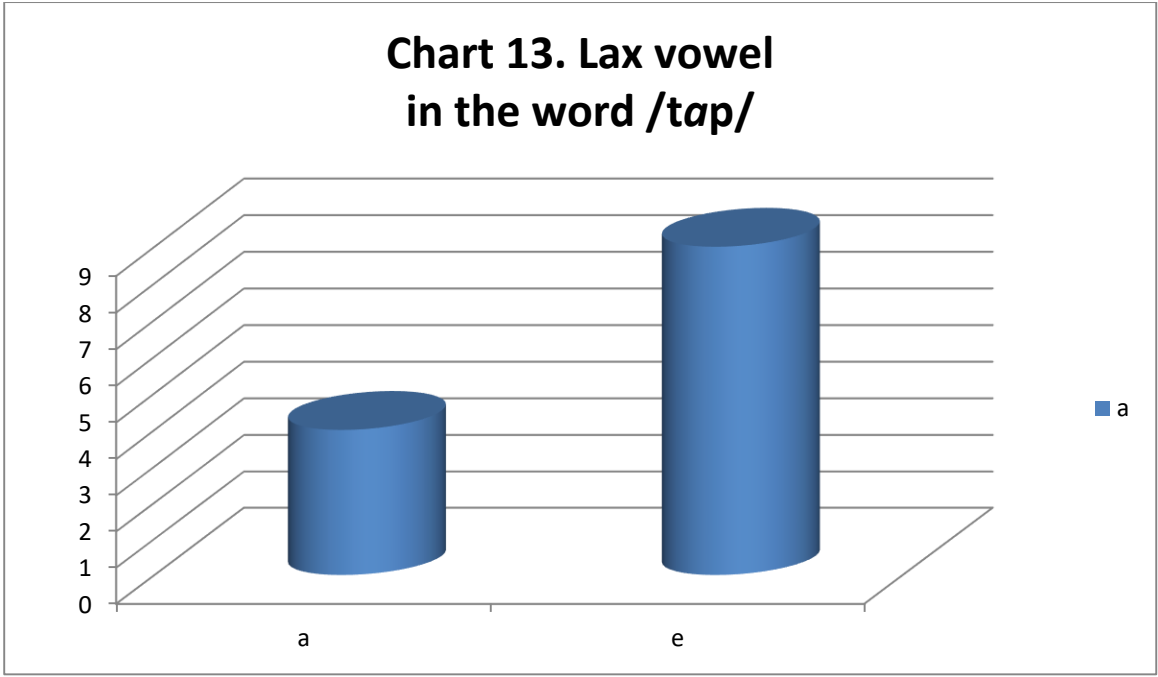
Chart 13 indicates that the participants perceived the vowel [a] in the following ways; 4 as [a] while 9 as [e].

Grade 8

**Chart 14. High vowel
in the word /p*i*n/**

The illustration in chart above, presents the perception of the English vowel [i:]. 2 participants perceived the sound as [o], 6 as [e] and 5 as [a].

Chart 15. Low vowel in the word /b*e*ll/
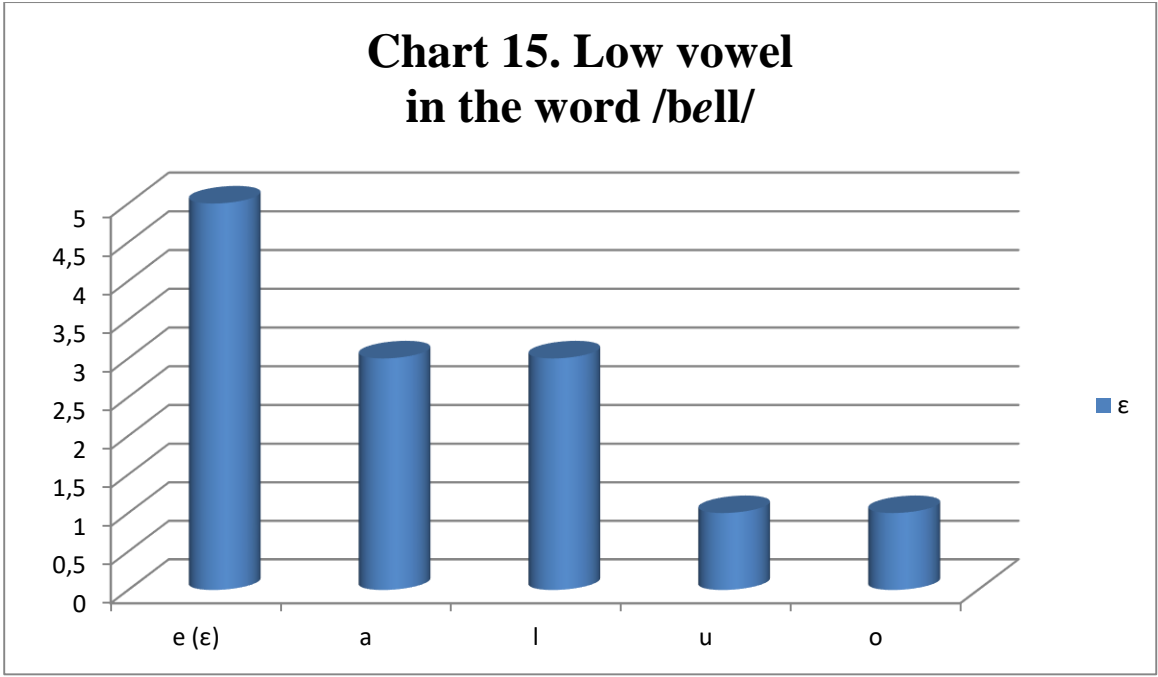
Chart 15 indicates that 5 perceived the vowel sound [ɛ] as [e], 3 as [a], 3 as [l], 1 as [u] and 1 as [o].

Chart 16. Front vowel in the word /b*ee*t/
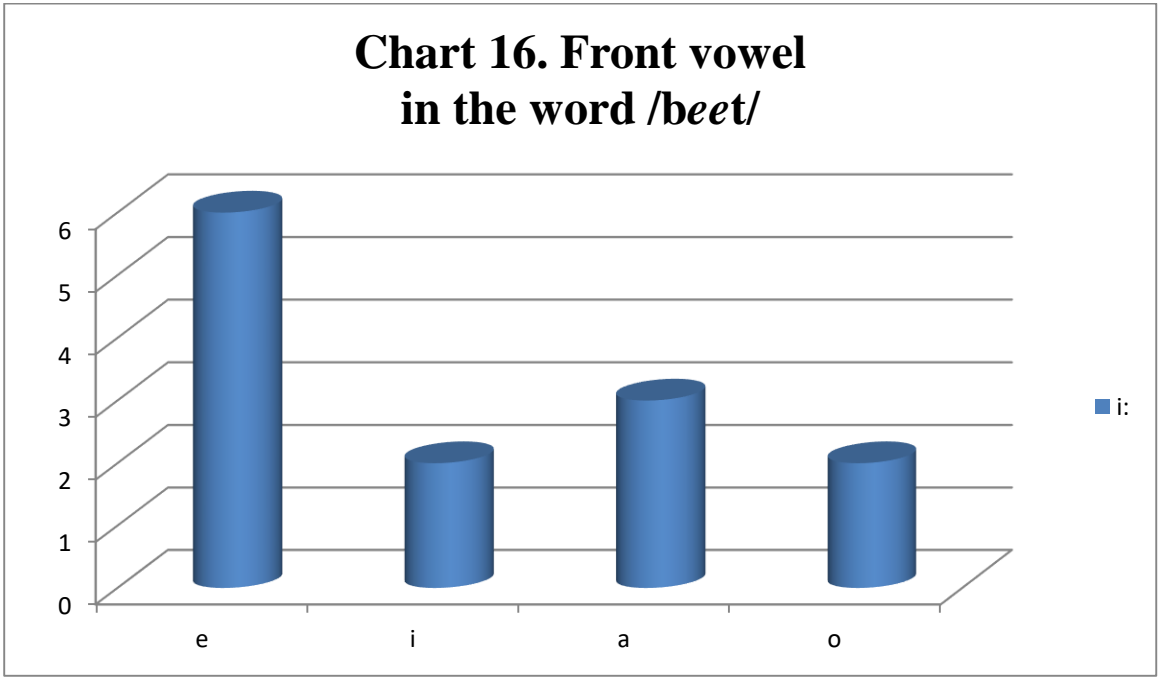
As observed in the above chart, instead of [i], 6 participants perceived the sound as [e], 2 as [i], 3 as [a] and 2 as [o].

**Chart 17. Back vowels
in the word /r*u*le/**
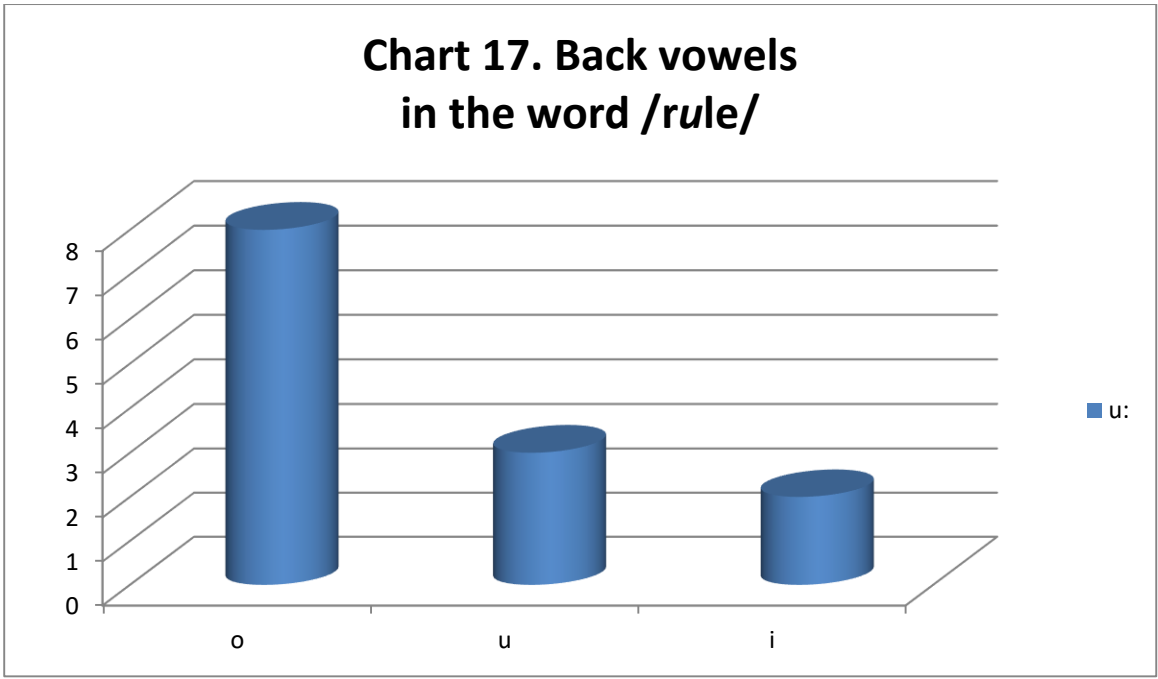
Chart 17 presents the data of participants who perceived the vowel sound [u:]. 8 participants perceived the sound as [o], while 3 as [u] and 2 as [i].

**Chart 18. Central vowels
in the word /t*i*re/**
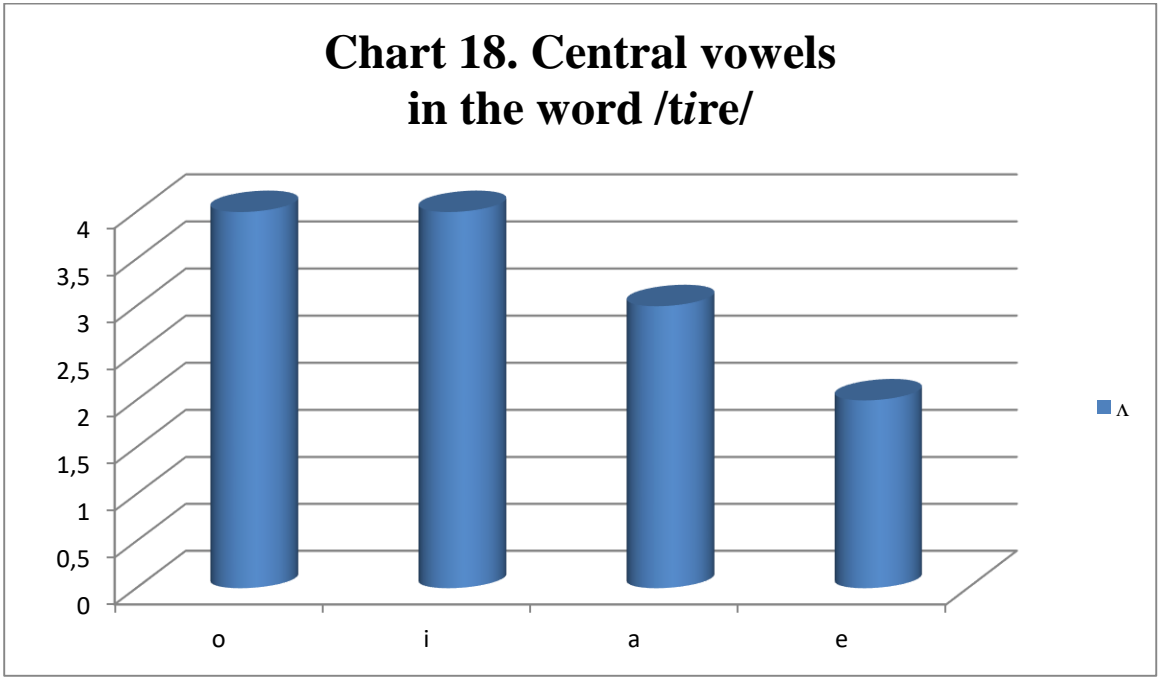
As reflected in chart 18 above, [ʌ] was perceived as [o] by 4 participants, while 4 perceived the sound as [i], 3 as [a] and 1 as [e].

Chart 19. Pure vowels
in the word /b*ea*n/
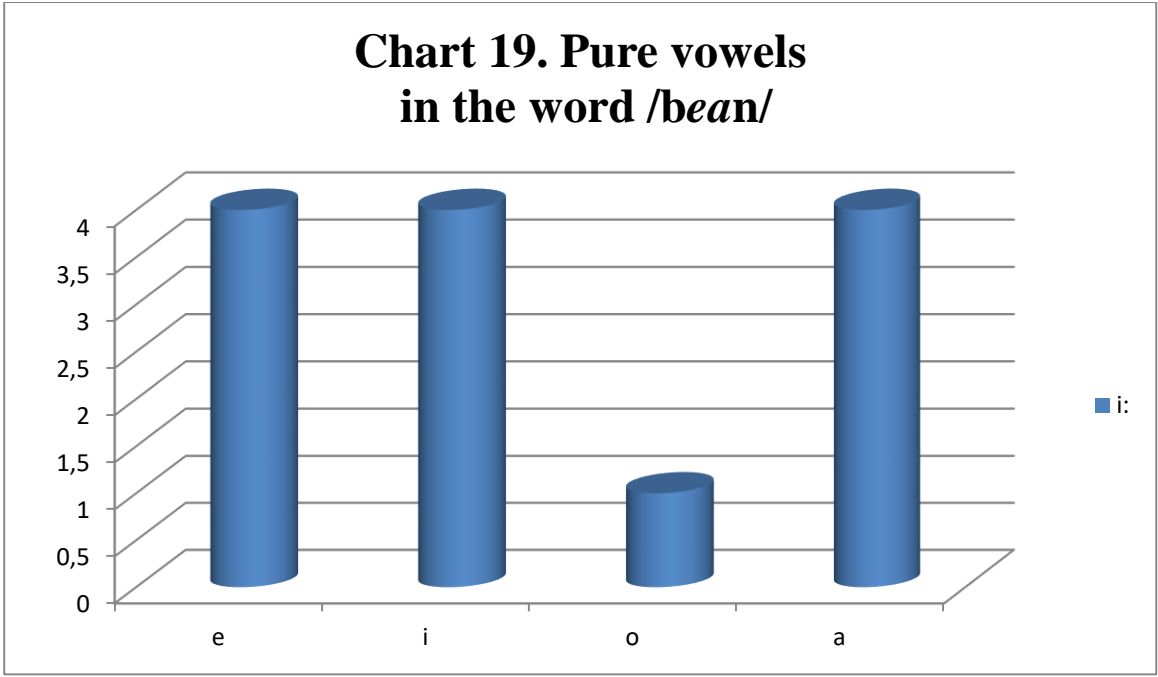
Participants perceived the sounds [i:] as [e], while 4 participants perceived the sound as [i], 1 as [o] and 4 as [a].

Chart 20. Gliding vowels
in the word /*yes*/
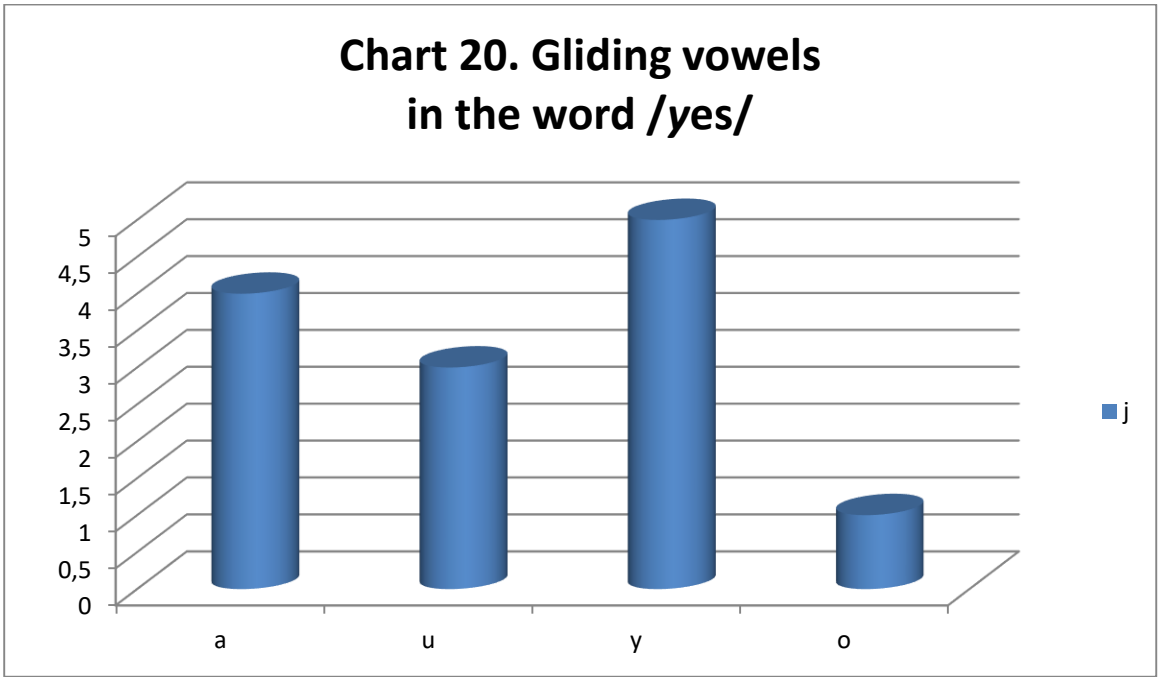
In light of illustration demonstrated in the above chart that presents the perception of the English vowel [j] by L2 speakers, 4 participants perceived the sound as [a], 5 as [y] and 1 as [o].

Chart 21. Diphthongs in the word /ar*ou*nd/
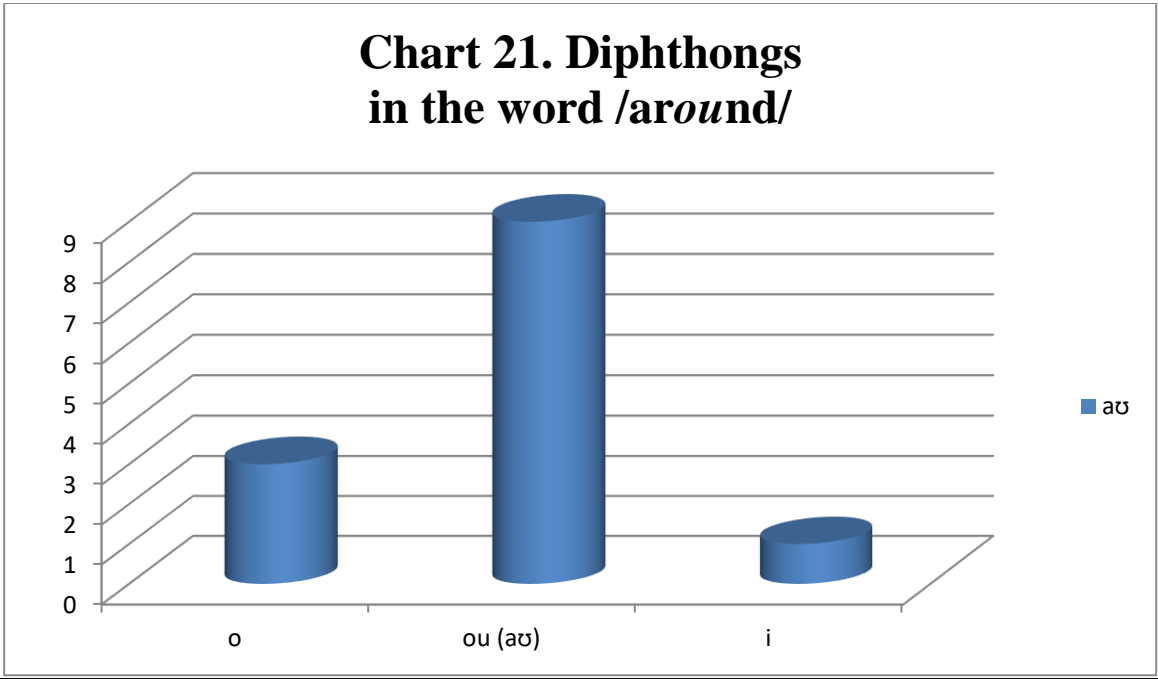
Chart 21 presents the data of participants who perceived the vowel sound [aʊ]. 3 participants perceived the sound as [o], while 9 as [ou] and 1 as [i].

Chart 22. Triphthongs vowels in the word /hour/

Chart 22 indicates that the participants perceived the vowel [aʊə] in the following ways; 4 participants perceived it as [a], 2 as au, 7 as /hour/ and 1 as [aoo].

**Chart 23. Long vowels
in the word /sp*o*rt/**
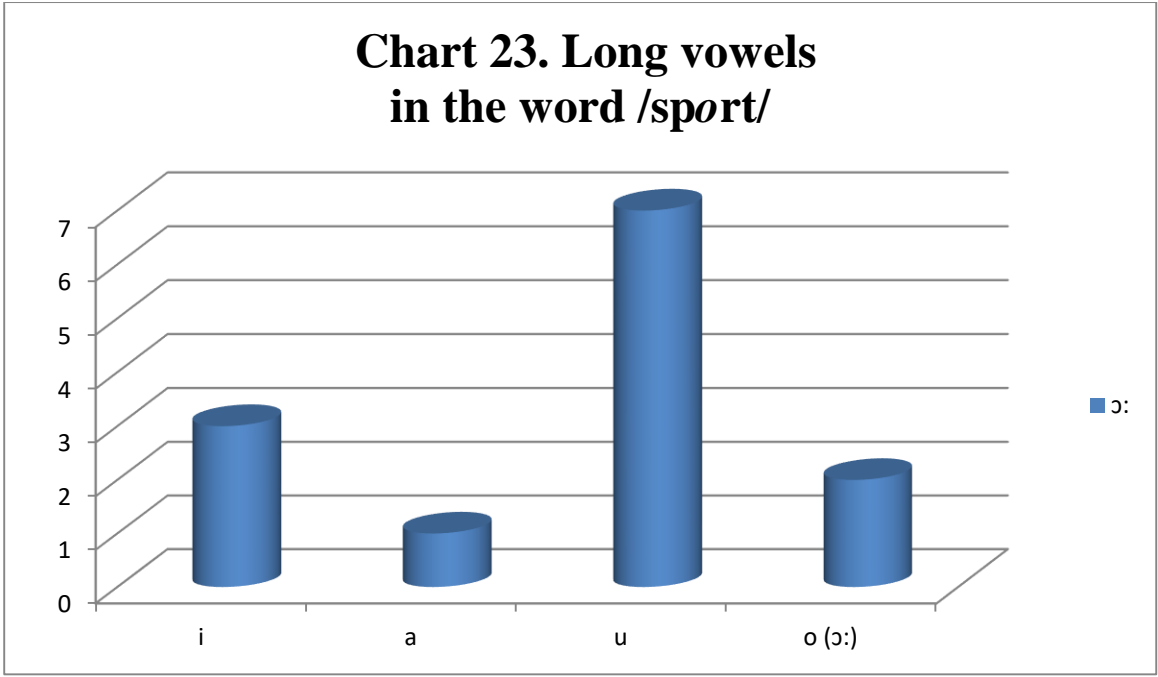
As observed in chart 23, there were 3 participants who perceived [ɔː] as [iː], 1 as [a], 7 as [u] and 2 as [o].

**Chart 24. Short vowel
in the word /w*e*t/**

Chart 24 presents the data of participants who perceived the vowel sound [ɛ]. 3 participants perceived the sound as [o], while 3 other perceived it as [a], 6 as [e], and 1 as [i].

**Chart 25. Tense vowel
in the word /hut/**
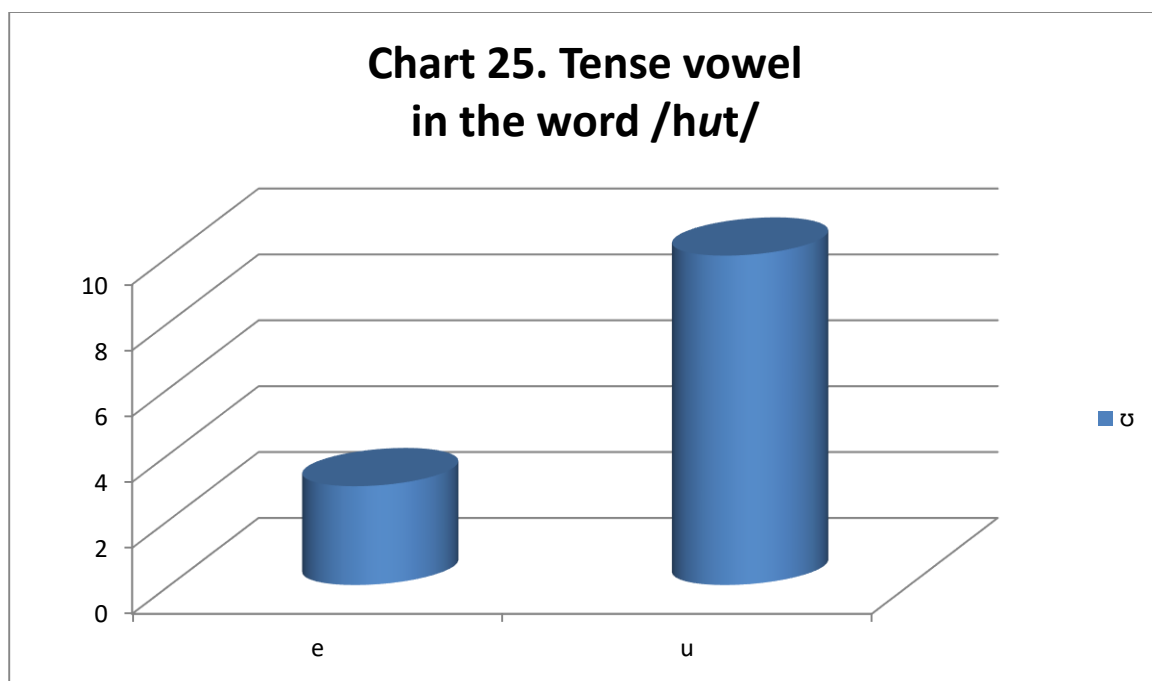
Chart 25 presents the data of participants who perceived the vowel sound [ʊ]. 3 participants perceived the sound as e, while 10 perceived it as [u].

**Chart 26. Lax vowels
in the word /lap/**
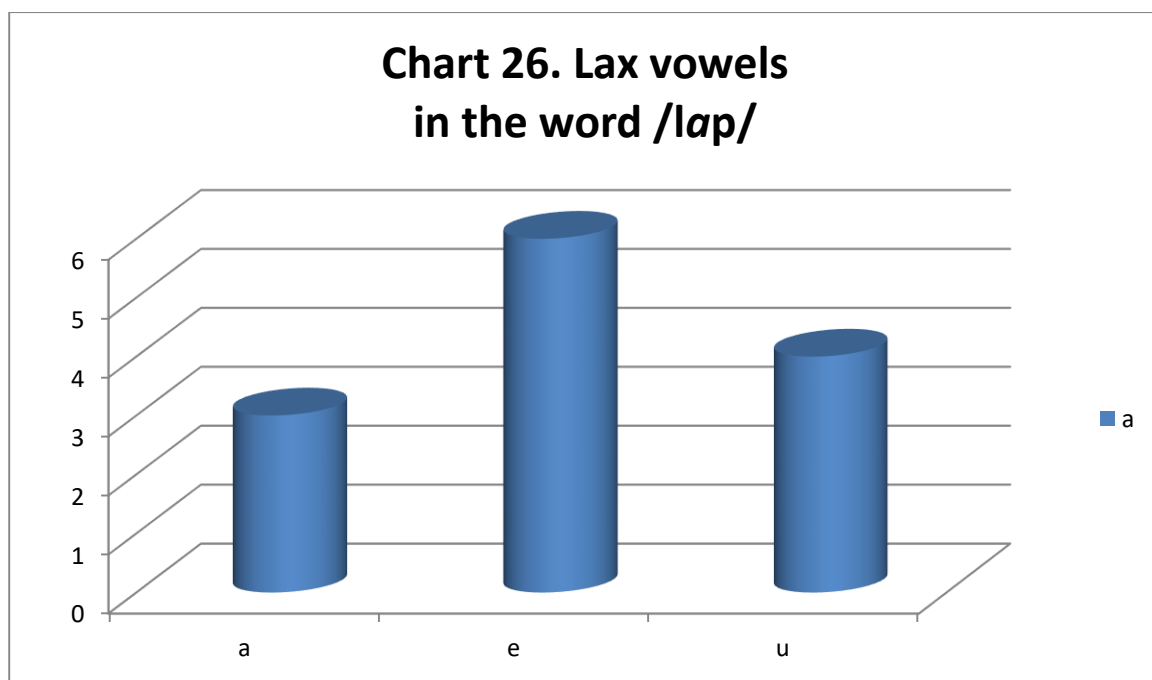
The illustration in the chart above, presents the perception of the English vowel [a] by L2 speakers of English language. 3 participants perceived the sound as [a], 6 as [e] and 4 as [u].

Grade 9

The same experiment was conducted on the participants of the two schools to test how the learners perceive the English vowels using the same tools.

Chart 27. High vowel in the word /p*u*ll/
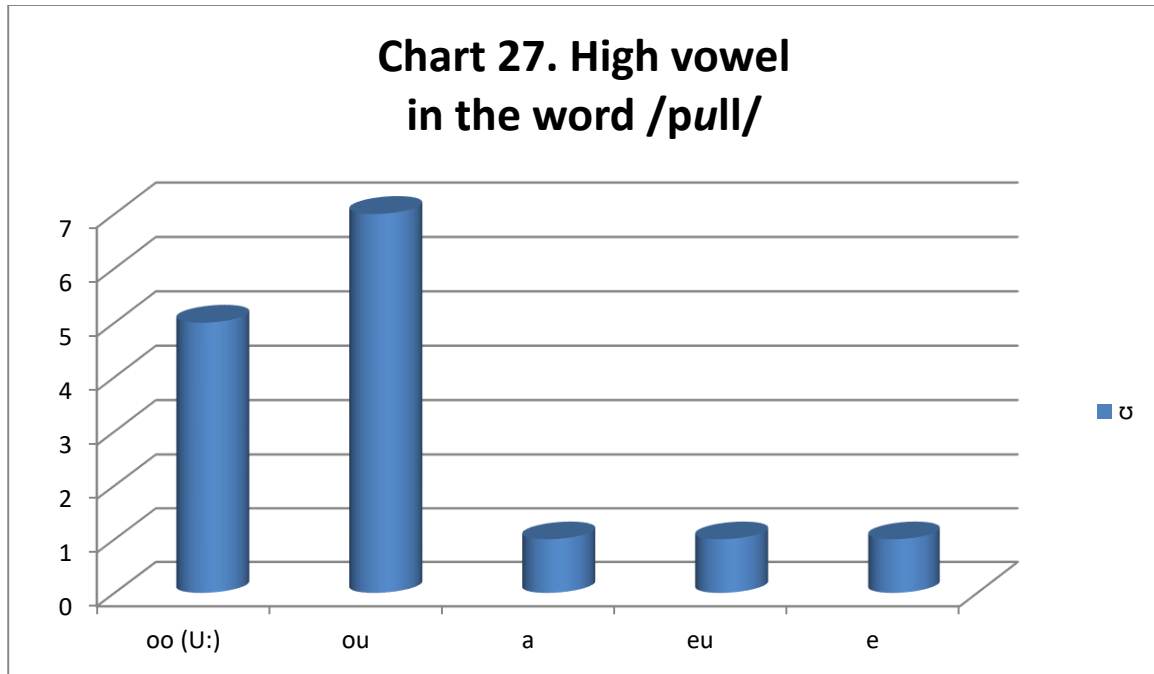
The vowel ʊ was perceived by participants in five different ways. Therefore, this is what this chart demonstrates. 5 participants perceived the vowel uttered as [oo], 7 perceived the sound (ou), 1 as [a], 1 as [eu] and 1 as [e].

Chart 28. Low vowel in the word /b*a*ll/
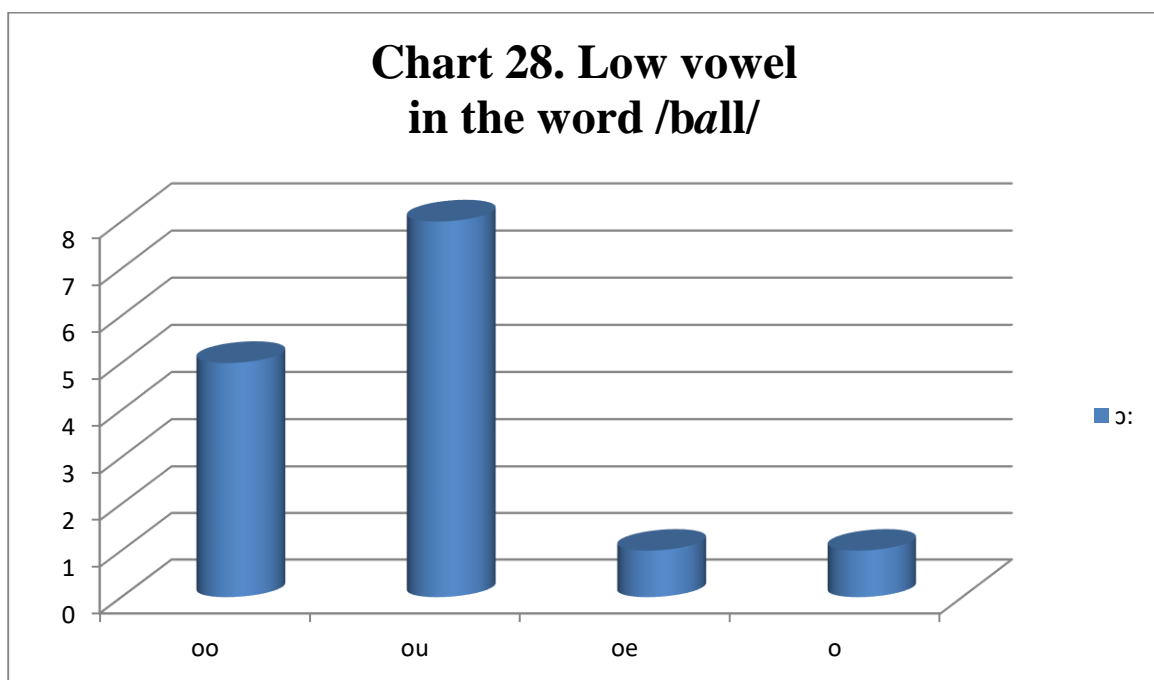
The illustration in chart above, presents the perception of the English vowel [ɔ]. 5 participants perceived the sound as [oo], 8 as [ou], 1 as [oe] and 1 as [o].

Chart 29. Front vowel in the word /t*i*t/
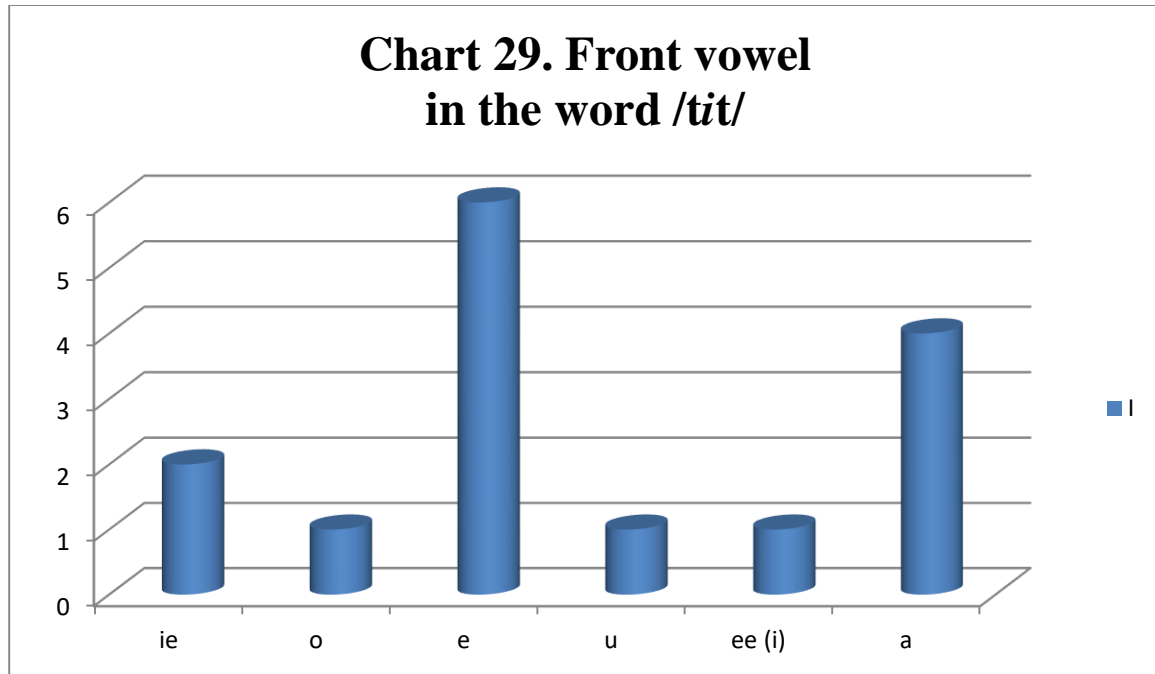
As observed in this chart, 2 perceived the sound [i] as [ie], 1 participant perceived the sound as (o), 6 as [e], 1 as [u], 1 as (ee), and 4 as [a].

Chart 30. Back vowels in the word /s*o*rt/
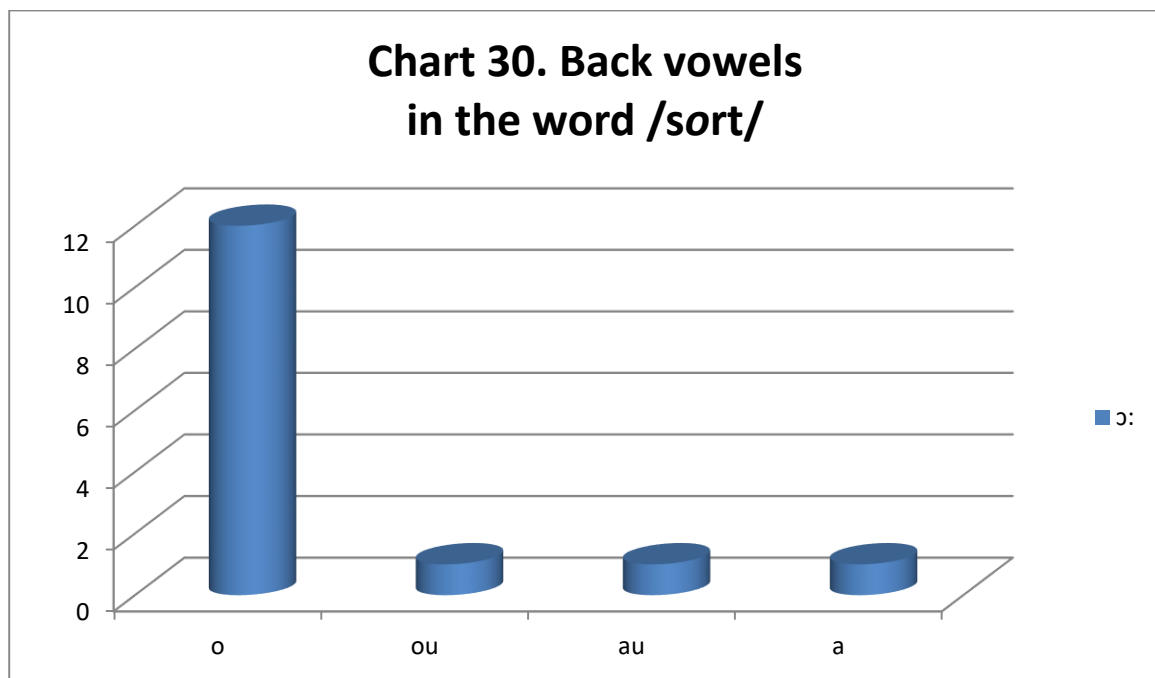
As observed in this chart, 12 perceived the [ɔ:] as [e], 1 participant perceived the sound as (ou), 1 as [au] and 1 as [a].

Chart 31. Central vowels in the word /*a*way/
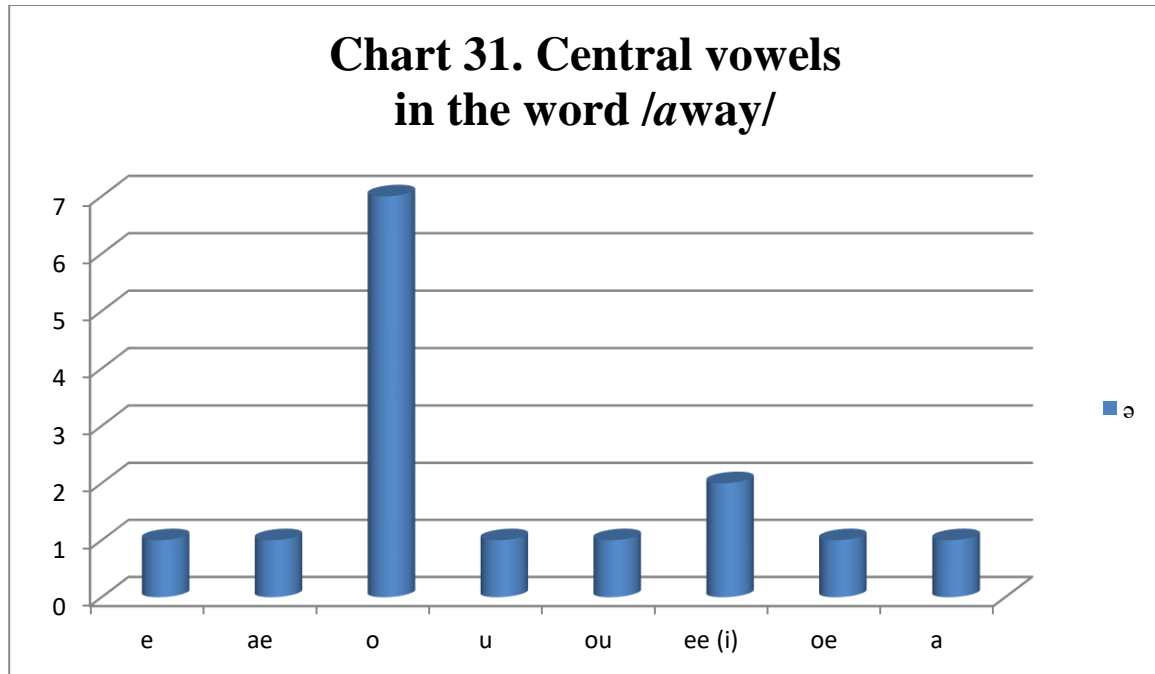
Chart 31 presents the data on how participants perceived the vowel sound [ə]. 1 participant perceived the sound as [e], while 1 perceived it as [ae], 7 as [o], 1 as [u], 1 as [ou], 2 as [ee], 1 as [oe] and 1 as [a] .

**Chart 32. Pure vowels
in the word /b*eat*/**
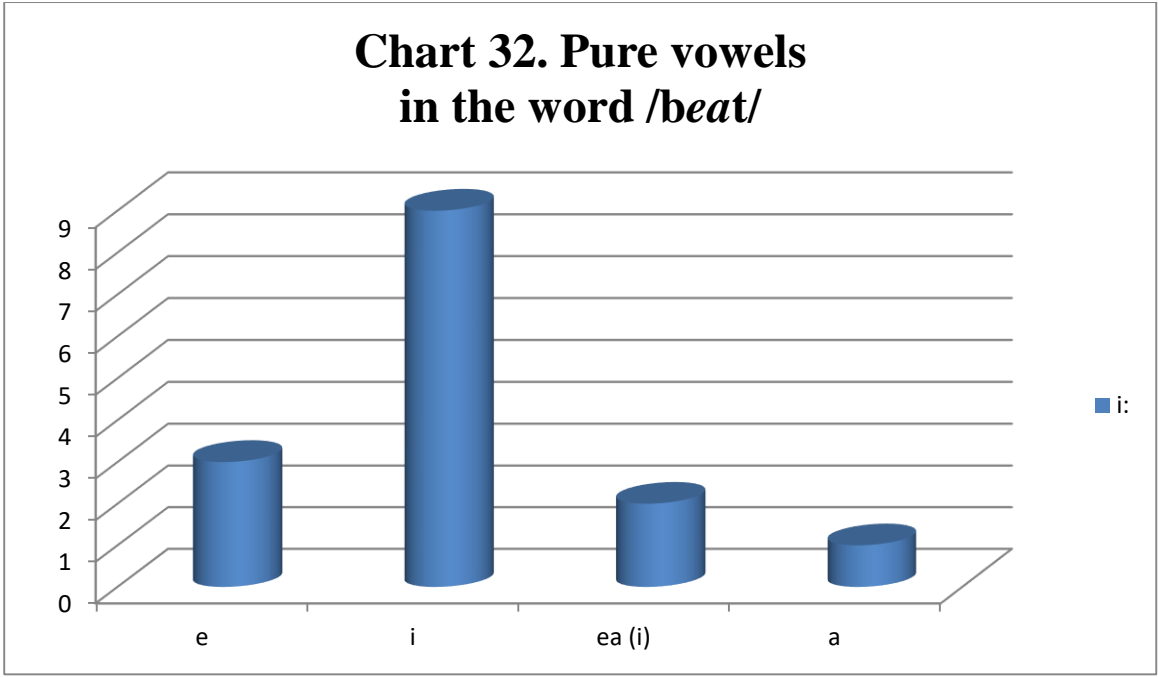
The illustrations in chart above, presents the perception of the English vowel [i:]. 3 participants perceived the sound as [e], 9 as [i] , 2 as [ea] and 1 as [a].

**Chart 33. Gliding vowels
in the word /w*in*/**
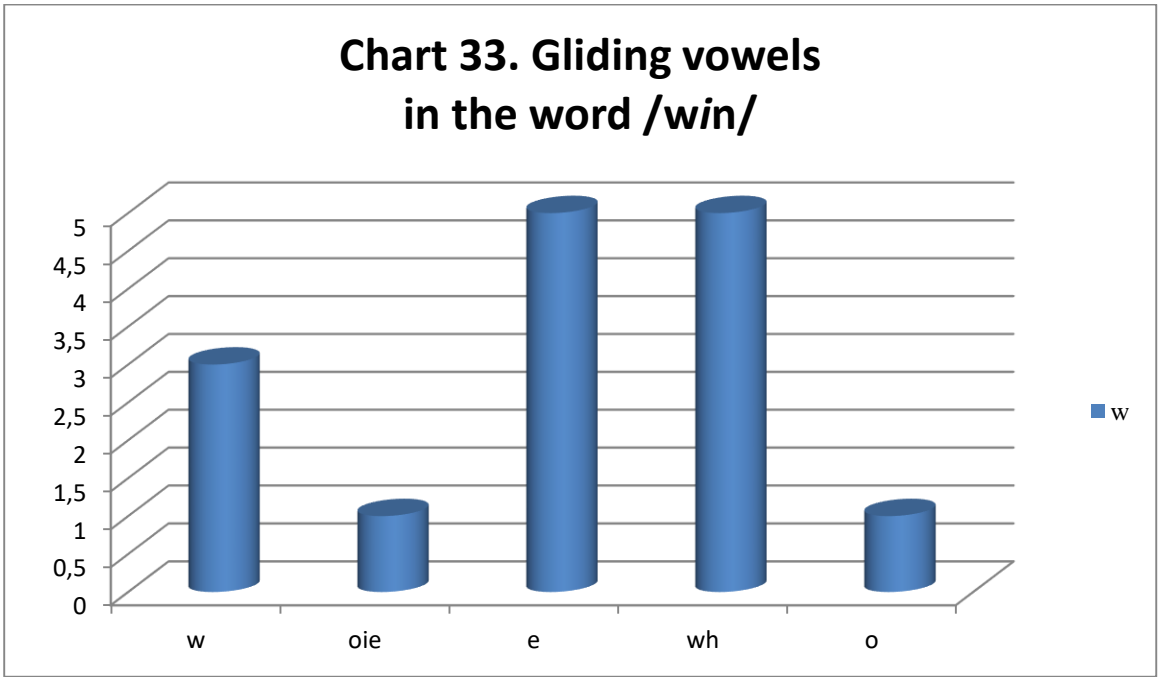
As indicated in the above chart. 3 participants perceived the vowel [w] as [w], 5 as [e], 1 as [o], 1 as [oie] and 5 as [wh].

**Chart 34. Diphthongs
in the word /oil/**
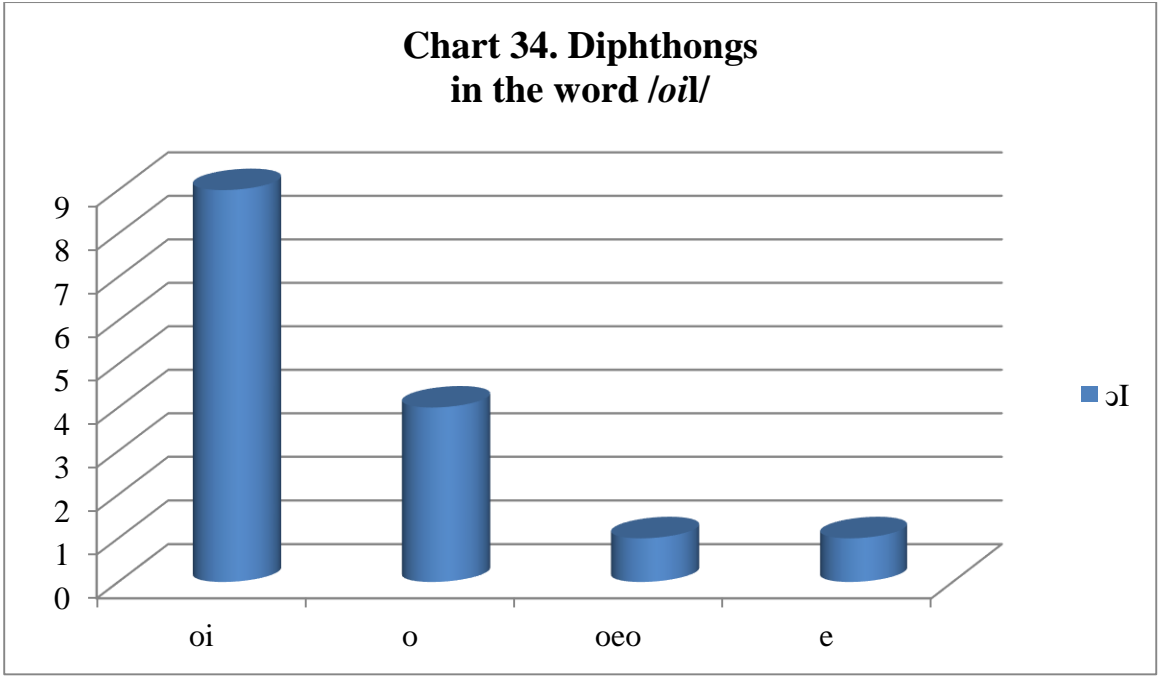
Chart 34 indicates that 9 perceived the vowel sound [ɔi] as [oi], 4 perceived the sound as [o], 1 as [oeo] and 1 as [u].

**Chart 35. Triphthongs vowels
in the word /fire/**
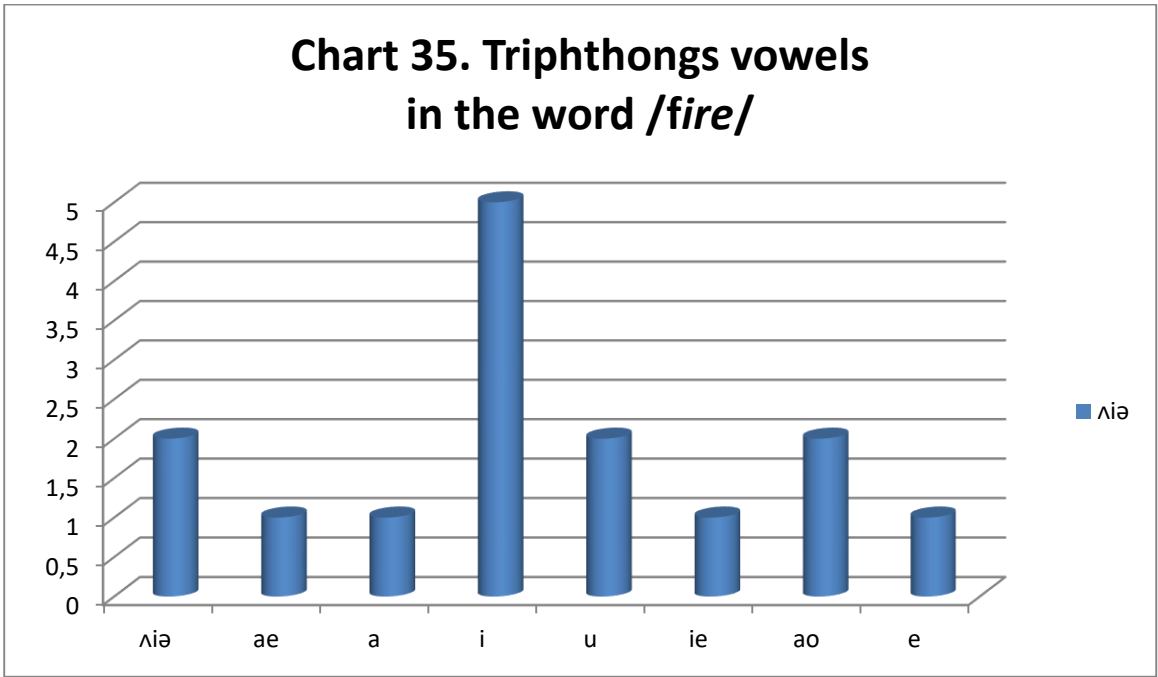
The vowel [ʌiə] was perceived by participants in 9 different ways. Therefore, this is what this chart demonstrates. 2 participants perceived the vowel uttered as [ʌiə], 1 participant perceived the sound as (ae), 1 as [a], 5 as [i] 2 as [u], 1 as [ie], 2 as [ao] and 1 as [e].

Chart 36. Long vowels in the word /coop/
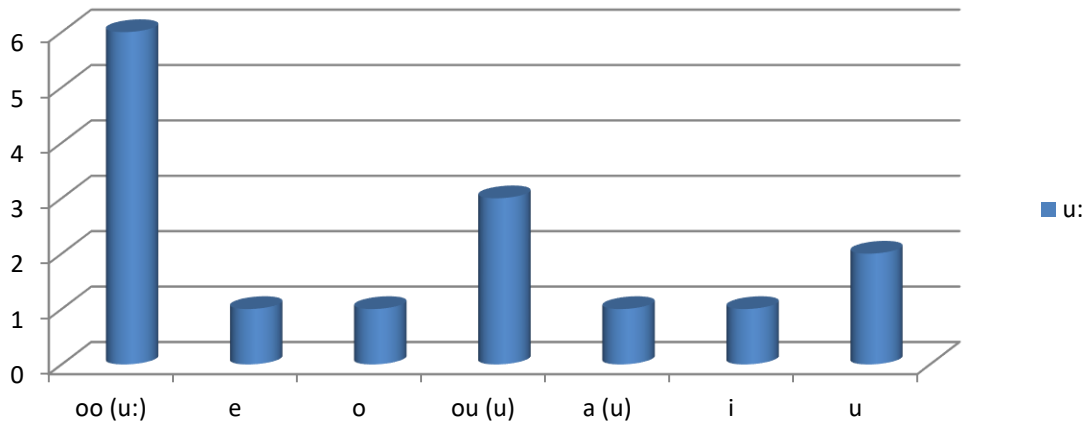
Out of 15 participants, 6 perceived the vowel [u:] as [oo]. 1 perceived the vowel as [e], 1 as [o], 3 as [ou], 1 as [a], 1 as [i] and 2 as [u].

Chart 37. Short vowel in the word /set/
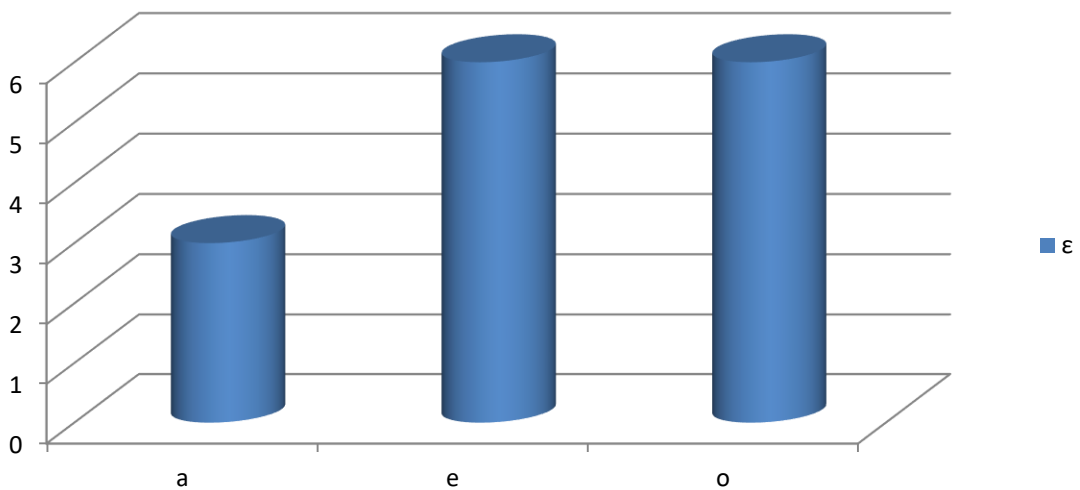
As observed in this chart, 3 perceived the vowel [ε] as [a], and 3 participants perceived the sound as [e], and 6 perceived the sound as [o]

Chart 38. Tense vowel in the word /sɑw/
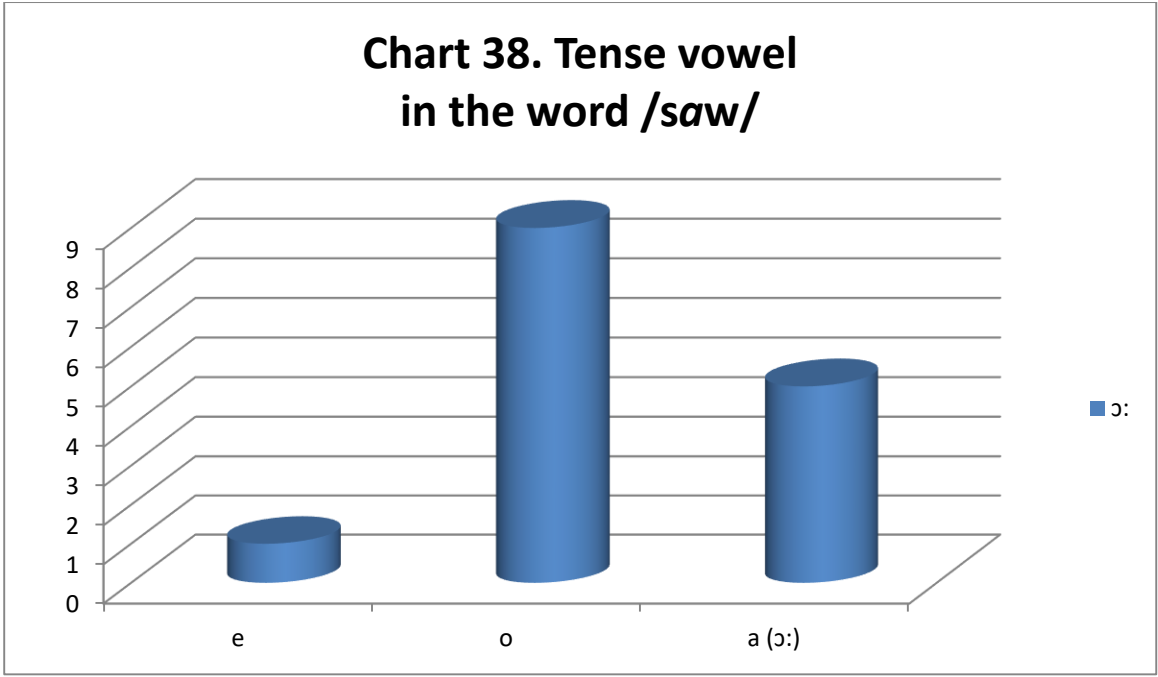
Chart 38 presents the data of participants who perceived the vowel sound [ɔ]. 3 participants perceived the sound as [a], while 6 others perceived it as [e], 6 as [o].

Chart 39. Lax vowels in the word /tɑb/
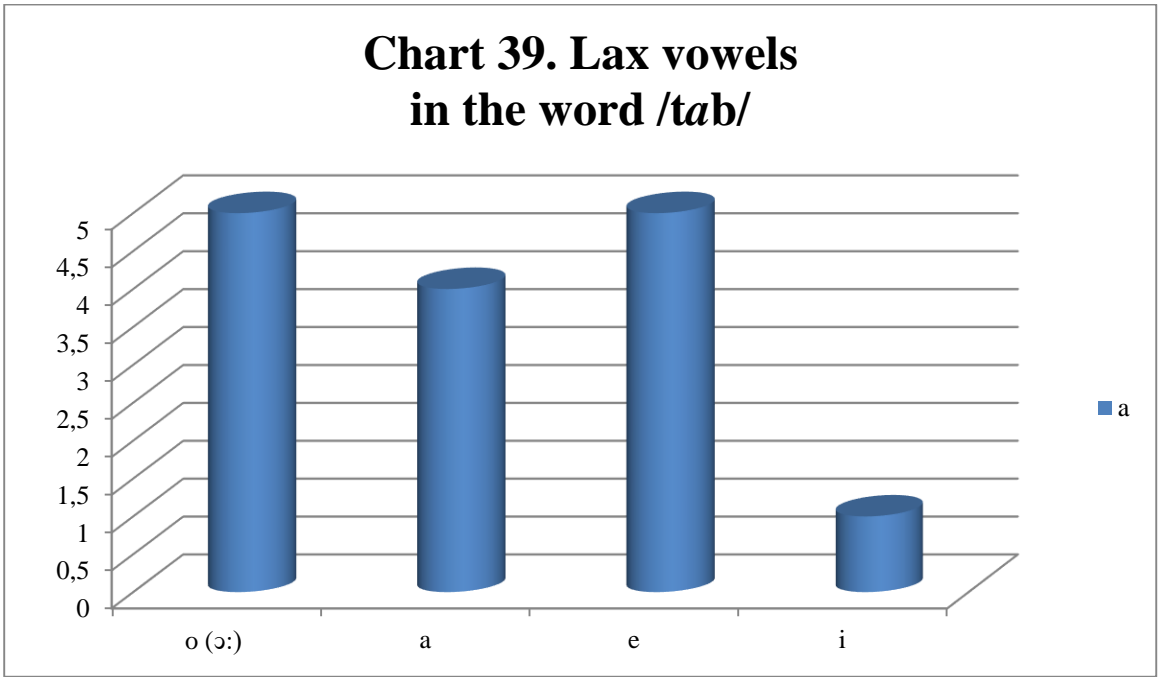
As reflected in chart 39, the vowel [a] was perceived as [o (ɔ:)] by 5 participants, [a] by 4 participants, [e] by 5 participants and finally, [i] by 1 participants.

Grade 9

Chart 40. High vowel in the word /p*u*ll/
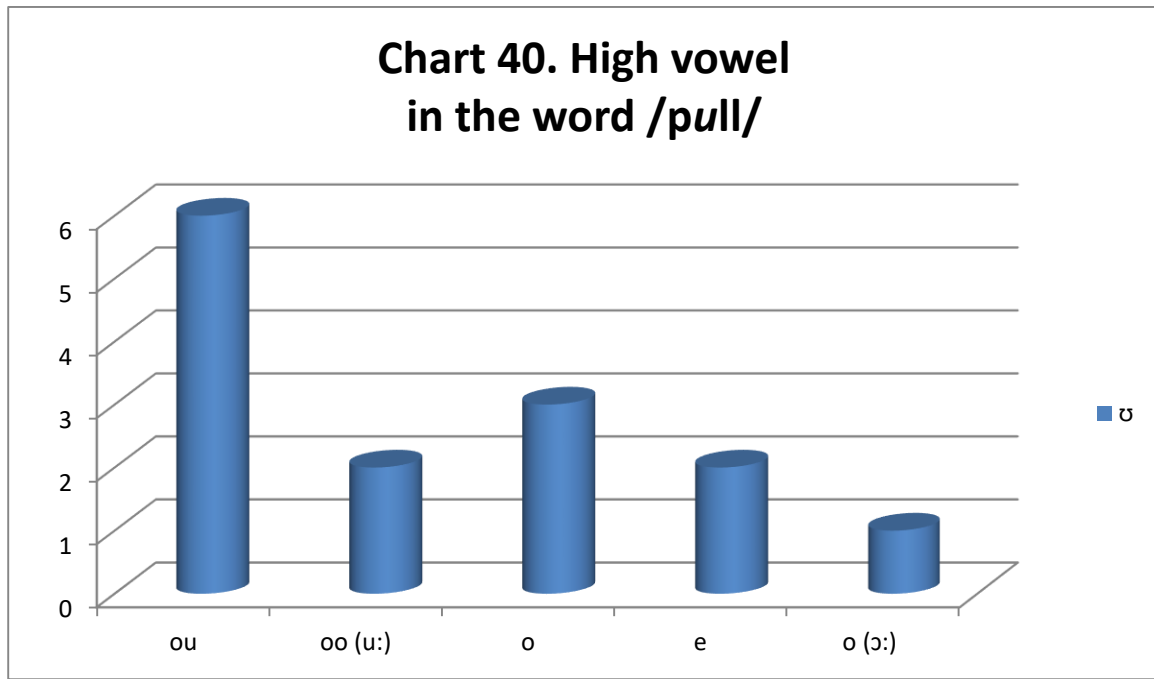
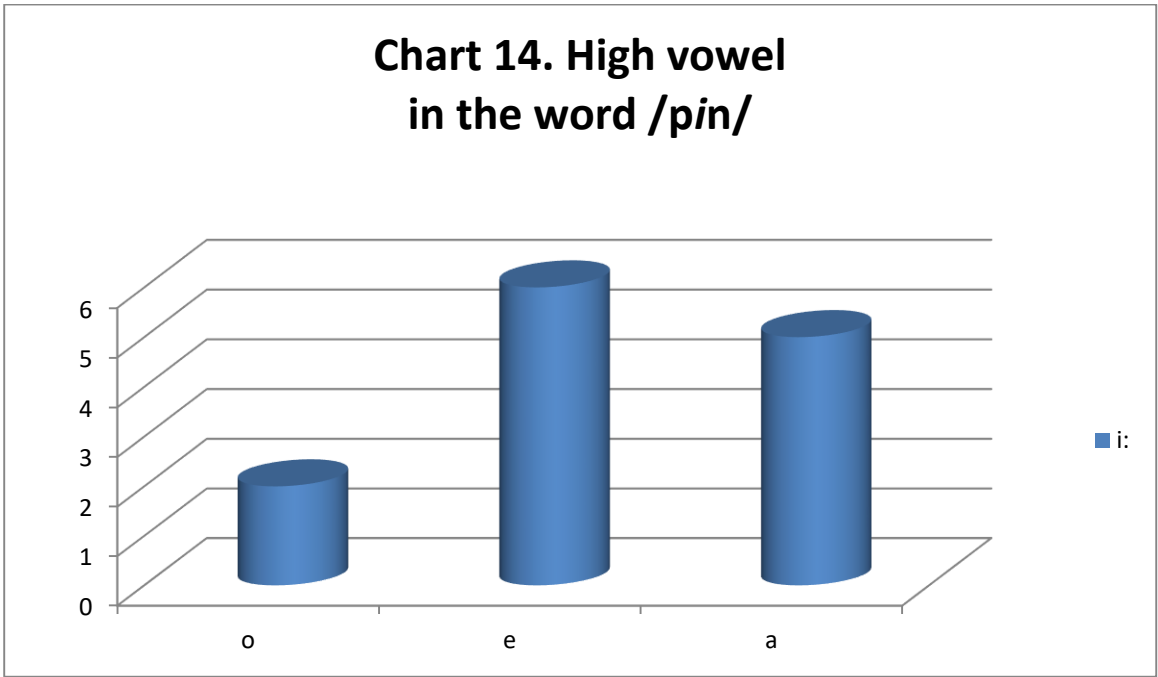The illustrations in the above chart present the perception of the English vowel [ʊ] by L2 speakers. 6 participants perceived the sound as [ou], 2 as [oo (uː)] and 3 as [o], 2 as [e] and 1 as [o (ɔ)].

Chart 41. Low vowel
in the word /b*a*ll/
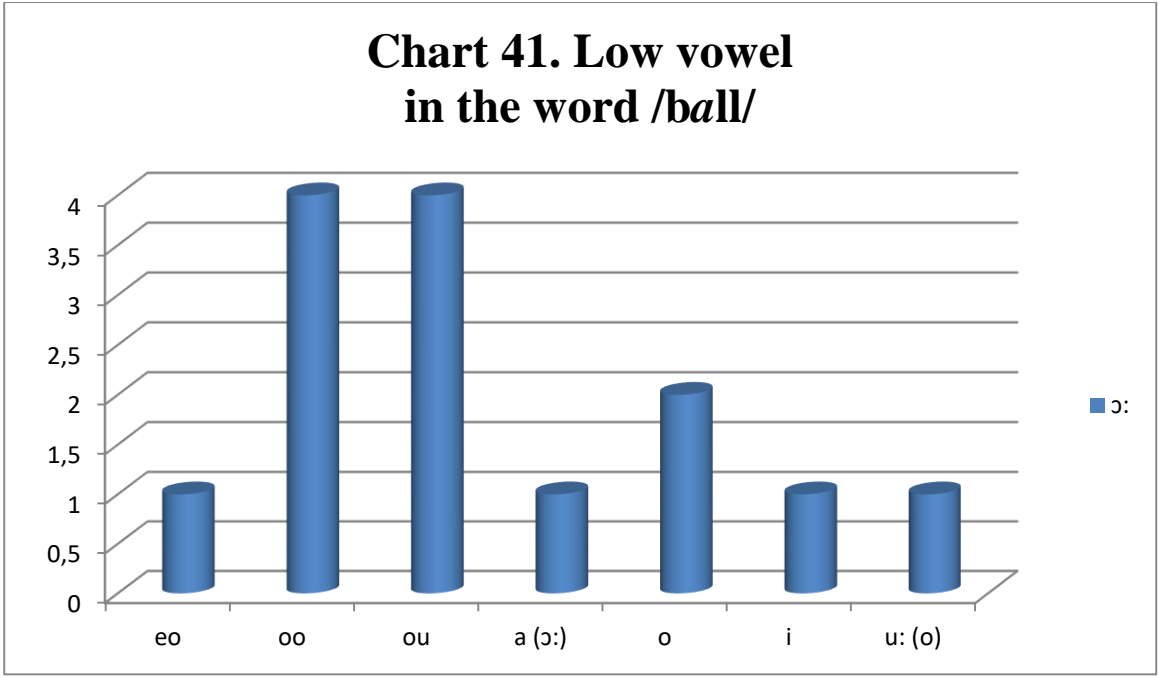
Chart 41 indicates that the participants perceived the vowel [ɔ:] in the following ways; 4 participants perceived it as [oo], 4 as [au], 1 as [a (ɔ:)], 2 as [o], 1 as [1] and 1 as [u: (o)].

Chart 42. Front vowel
in the word /t*i*t/
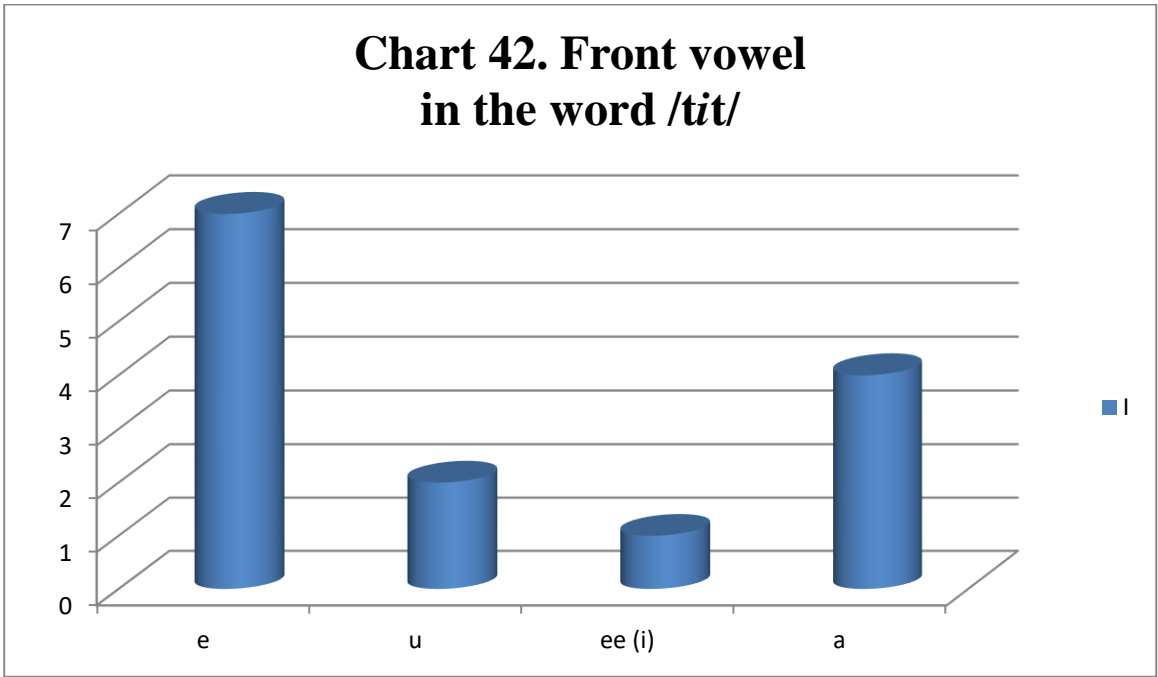
As observed in this chart, 7 participants perceived the vowel [ɪ] as [e], 2 participants perceived that vowel sound as [u], 1 perceived sound as [ee (i)], and 4 perceived as [a].

Chart 43. Back vowels in the word /s*o*rt/.
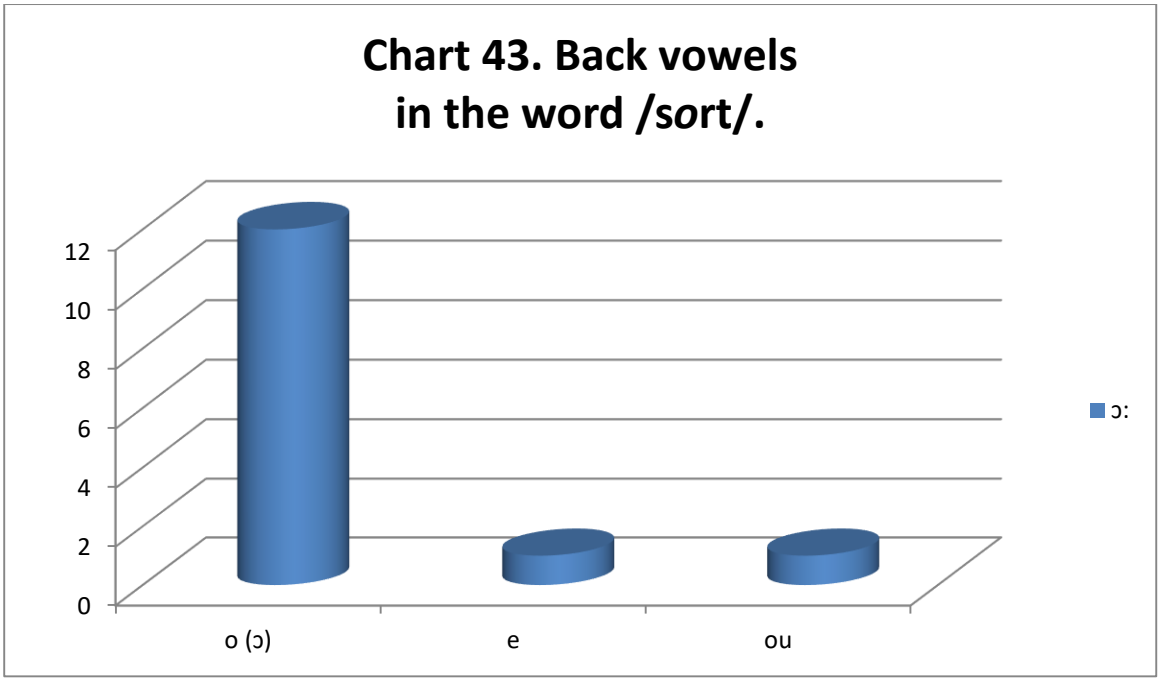
As indicated in the above chart, 12 perceived the vowel [ɔ:] as [o], 1 participant perceived the sound as (e) and 1 participant perceived [ou].

Chart 44. Central vowels in the word /*a*way/.
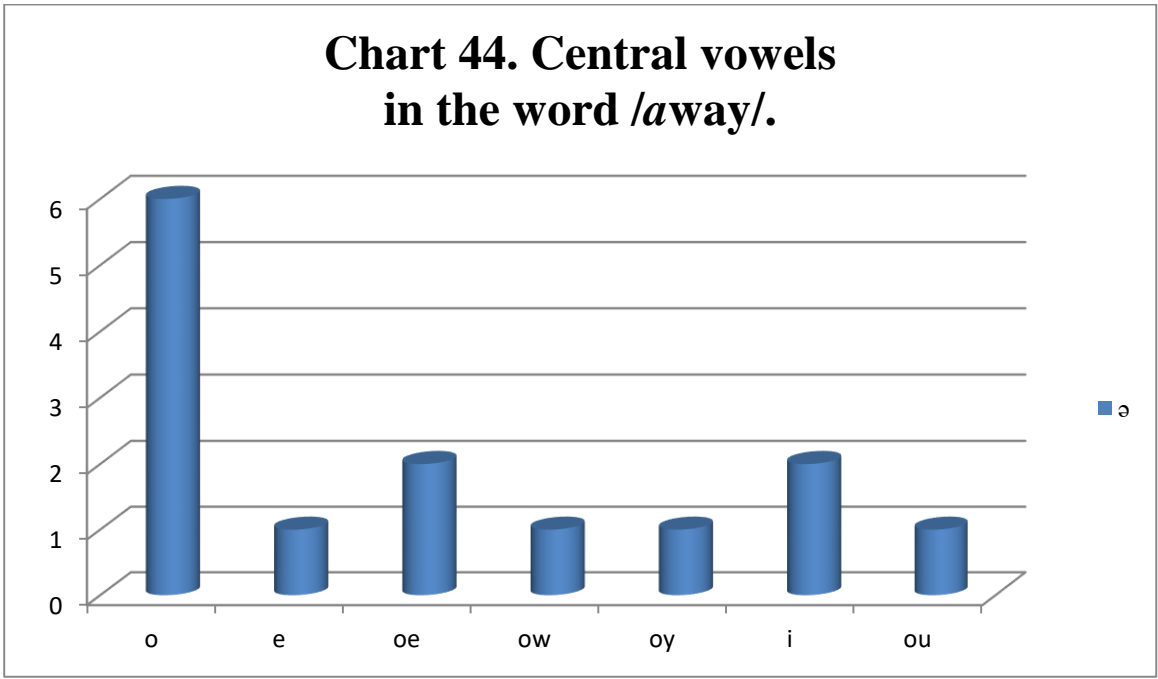
As reflected in chart 44, the vowel [ə] was perceived as [o] by 6 participants. 1 perceived that vowel as [e], [oe] by 2 participants, [ow] by 1 participant, [i] by 2 and finally, [ou] by 1 participant.

Chart 45. Pure vowels in the word /b*eat*/
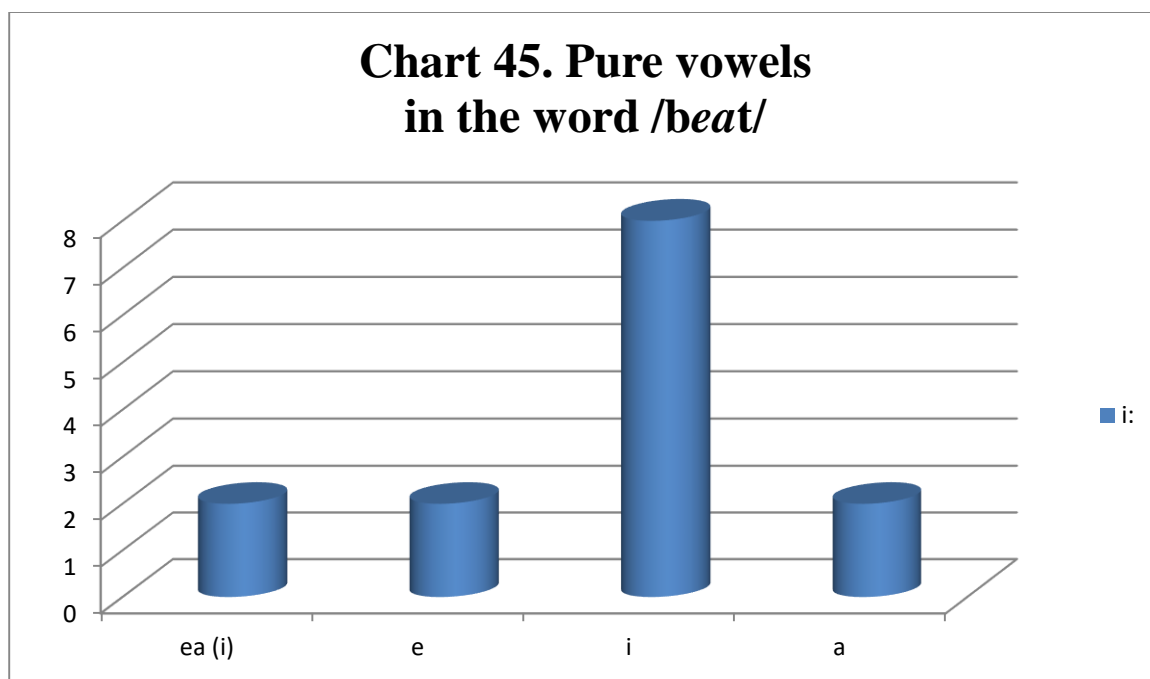
As observed in this chart, 12 participants perceived the vowel [ɔ:] as [e], 1 participant perceived the sound as (ou), 1 as [au] and 1 as [a].

# Chart 46. Gliding vowels in the word /*w*in/
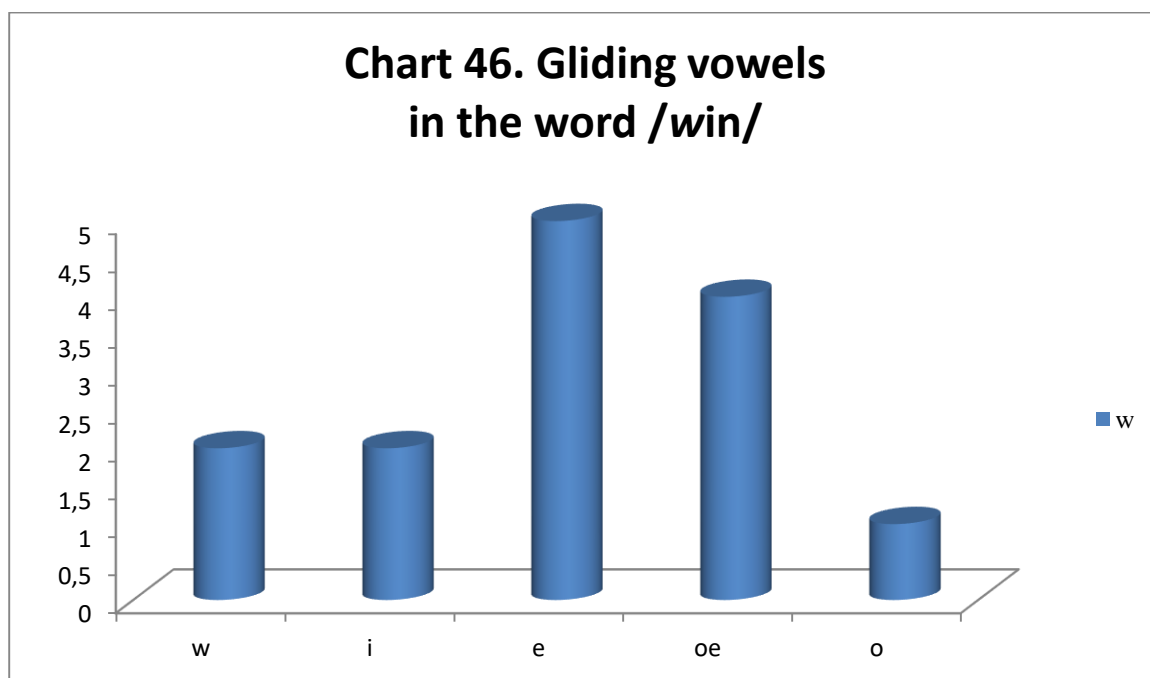
Chart 46 presents the data of participants who perceived the vowel sounds [wɪ]. 2 participants perceived the speech sound as [oi], 2 perceived it as [i], and 5 perceived the vowel [w] as [e]. 4 perceived the sound as [4] while, [o] was perceived by 1 participants.

Chart 47. Diphthongs vowel in the sound /oil/
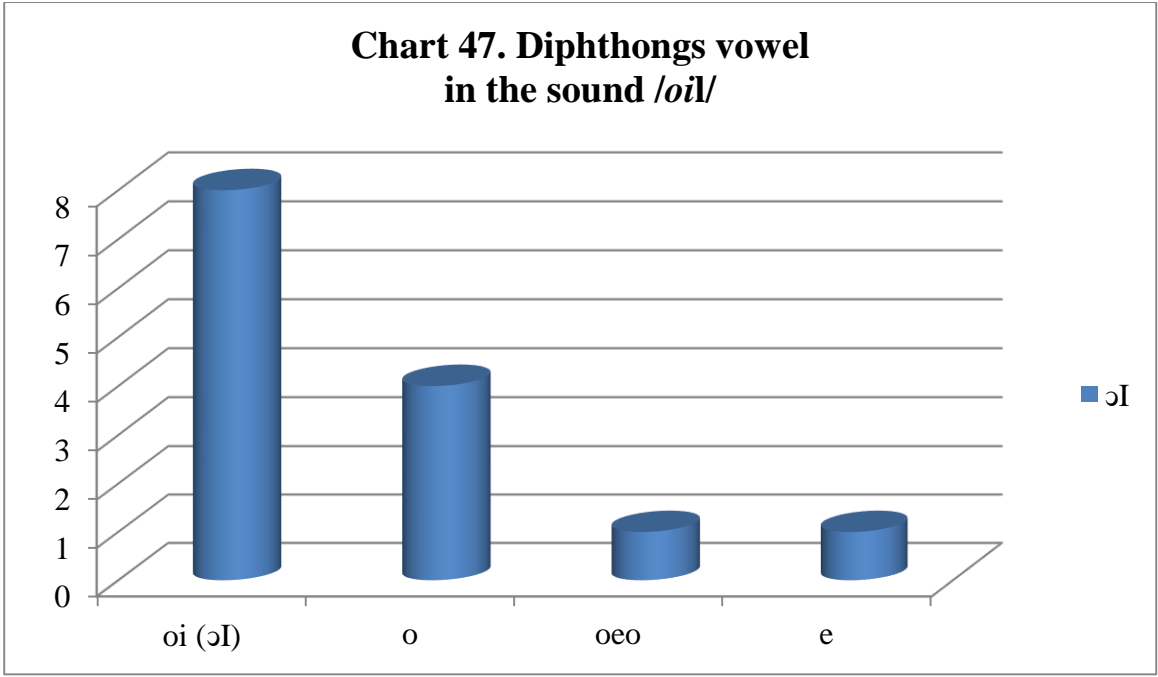
Chart 47 indicates that the participants perceived the vowel [ɔɪ] in the following ways; 8 participants perceived it as [oi (ɔɪ)], 4 as [o], 1 as [oeo] and 1 as [e].

Chart 48. Triphthongs vowels in the word /fire/
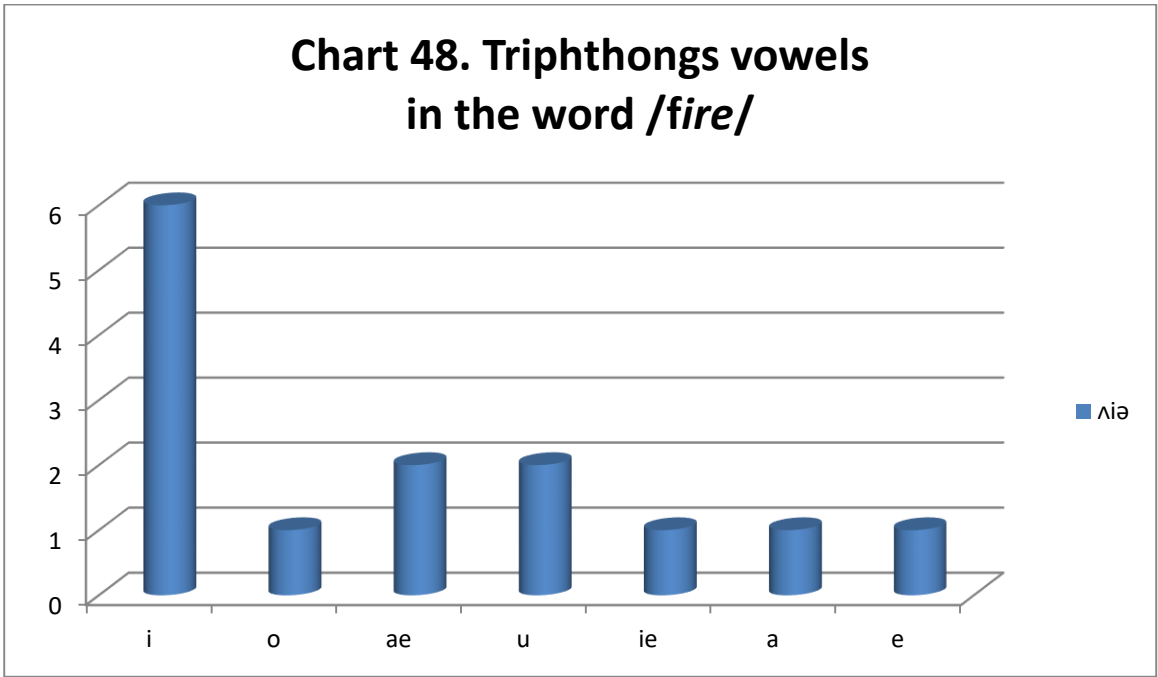
As observed in the above chart, instead of [ʌɪə], 6 participants perceived the triphthong as [i]. [o] was perceived by 1 participant, [ae] was perceived by 2, [u] by 2 , [ie] by 1, [a] by 1 and [e] was perceived by 1 participant.

**Chart 49. Long vowels
in the word /c*oo*p/**
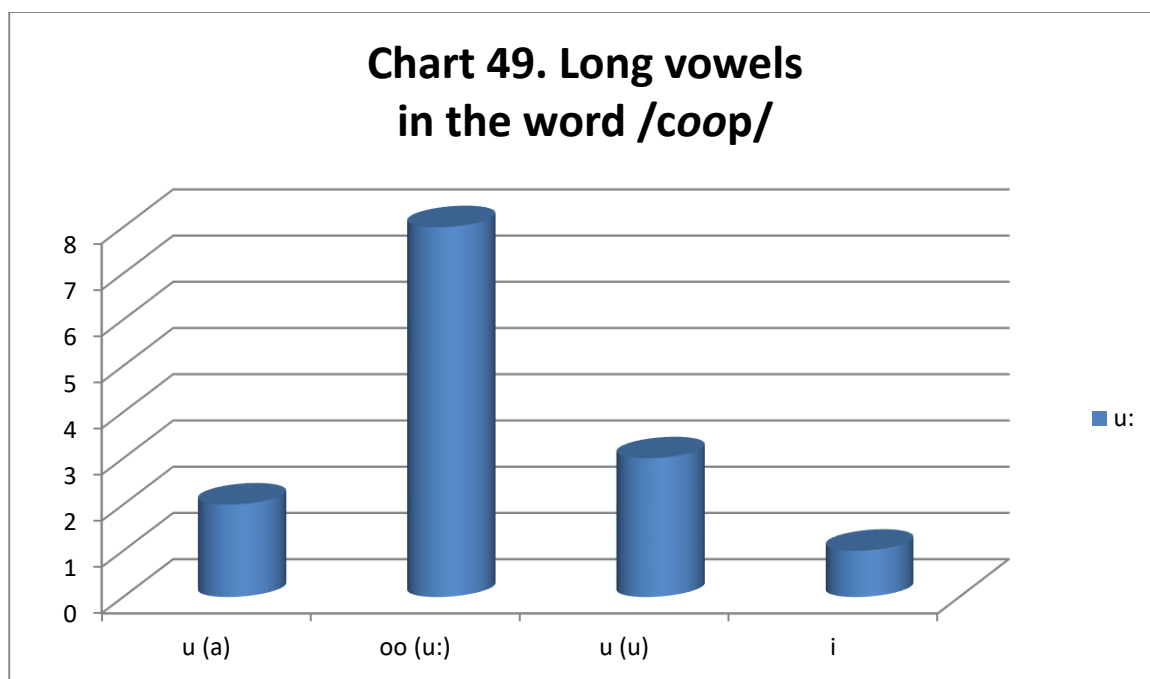
In light of illustrations demonstrated in the above chart that presents the perception of the English vowel [u:] by L2 speakers. 2 participants perceived the sound as [a], 8 perceived the sound as [oo (u)]. 3 participants perceived [u (u)] and 1 participant perceived the vowel sound [i].

Chart 50. Short vowel in the word /sɛt/
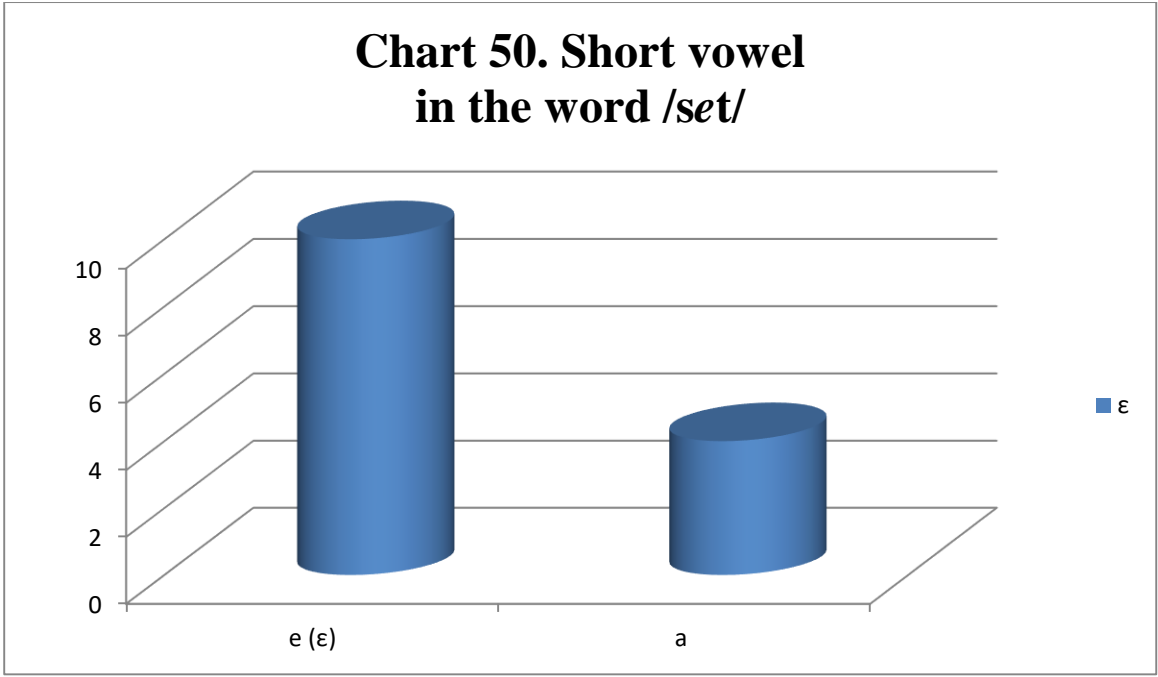
Chart 50 presents the data of participants who perceived the vowel sounds [a]. 10 participants perceived the sound as [e], while the other 4 perceived the vowel as [a].

Chart 51. Tense vowel in the word /saw/
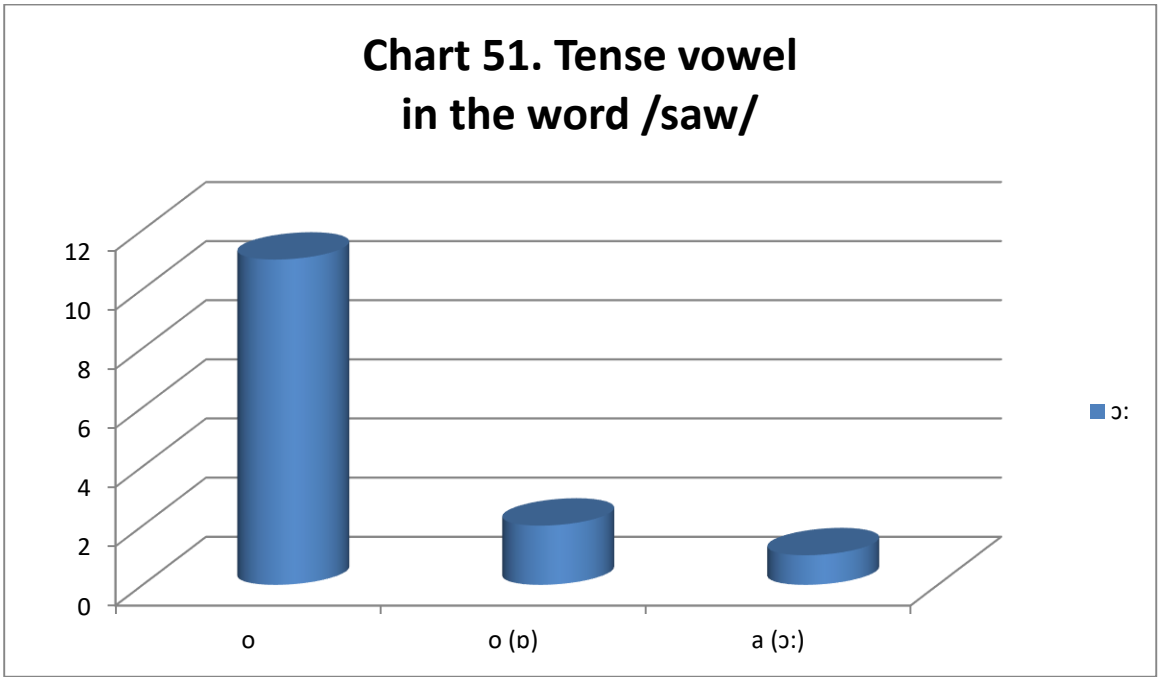
As reflected in chart 51, the vowel [ɔ:] was perceived as [o] by 11 participants, 2 participants perceived that vowel as [o (ɒ)] while 1 participants perceived the vowel as [a (ɔ:)].
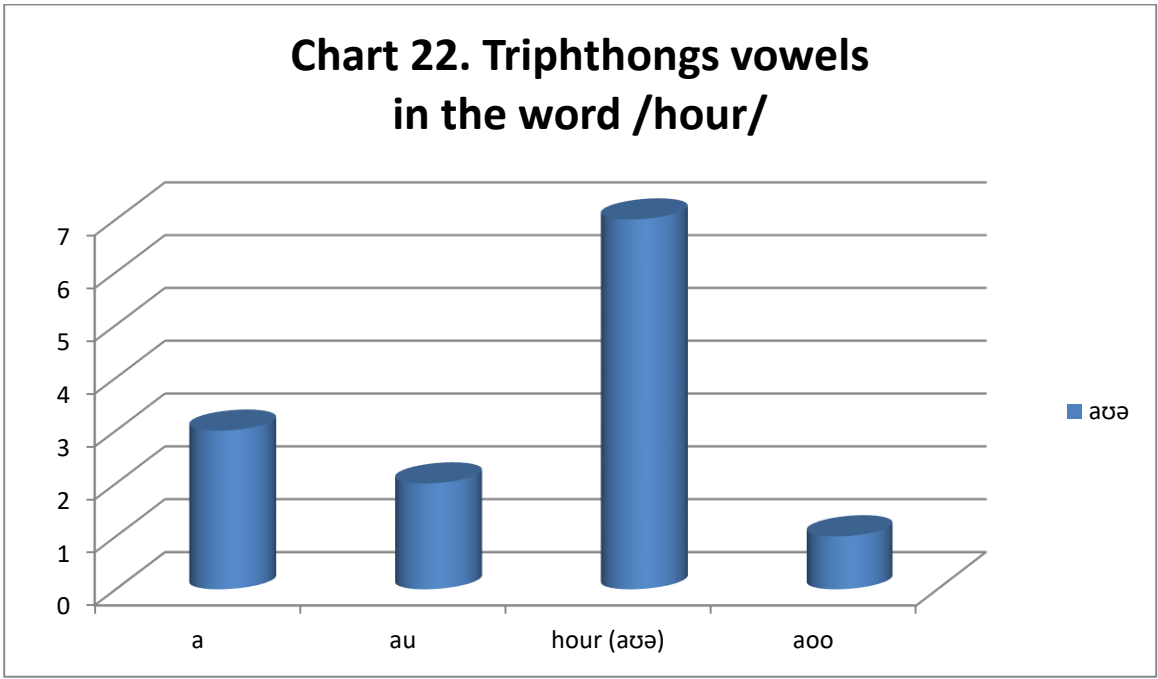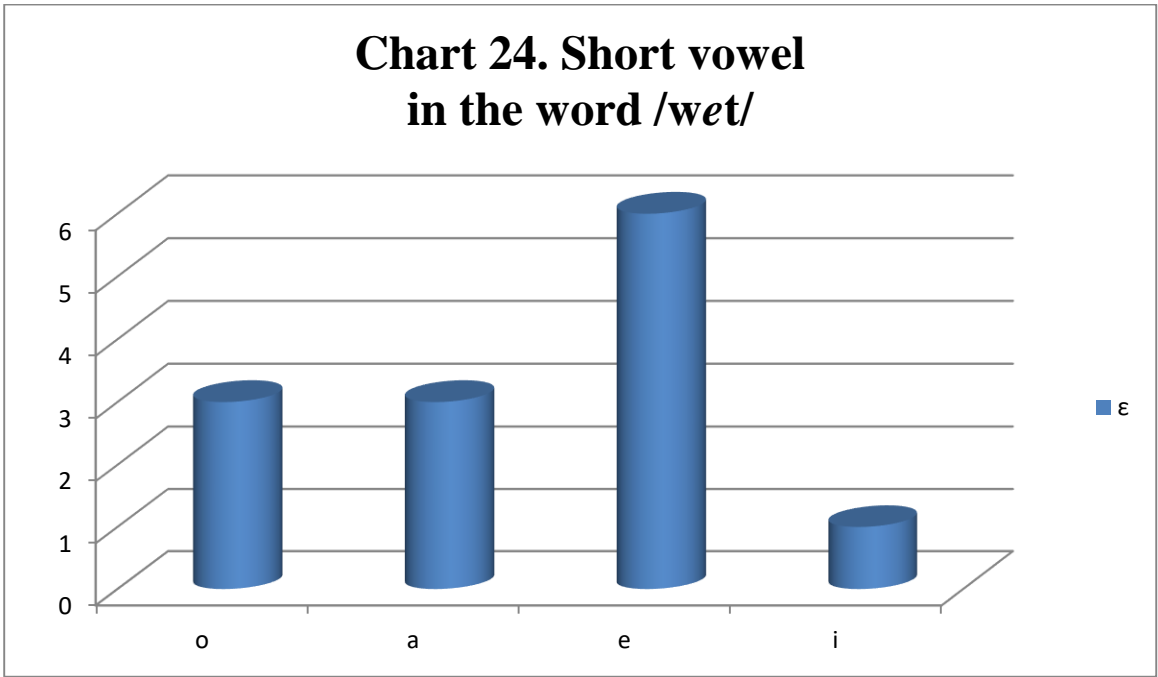
Chart 52. Lax vowel in the word /tap/
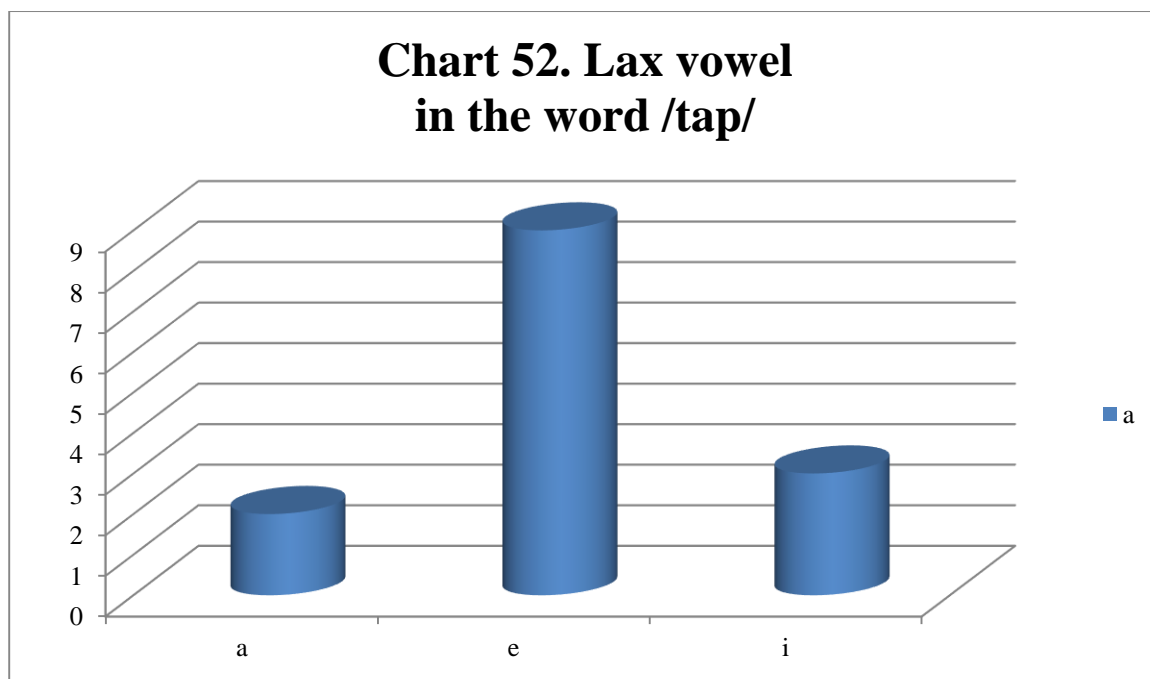
Chart 41 indicates that the participants perceived the vowel [a] in the following ways; 2 participants perceived it as [a], 9 perceived the sound as [e], while 1 perceived the vowel as as [i].

4.4 Findings

Participants were divided in to four groups. The first two groups comprised of the grade 8 learners of the schools in which the data was collected, while the last two groups were made up of grade 9 learners of the schools concerned. The results of the data analysis were compared and contrasted. This section of the chapter presents the findings of the study which will influence the recommendations and conclusion in the next chapter.

To begin with, the English high vowels [i] was difficult for the participants who were selected from grade 8. From this class, i.e. grade 8, to 8 of the participants perceived the vowel [o] instead. 3 participants perceived [e], while the vowels [i] and [a] were each perceived by only one learner. On the other hand, 6 students from the second group of one of the schools perceived the vowels [e], and it was 6 of them. 2 participants perceived the vowel [o], while the other 5 participants perceived the vowel [a]. None of the participants from both schools were able to perceive the desired high vowel [i:]. However, 7 participants from grade 9 perceived the diphthong [ou], while the desired high vowel sound was [ʊ]. There were 5 participants who perceived the back vowel [u:]. The vowels [a], [e] and [eu] were each perceived by a single participant. Nonetheless, the fourth group of participants perceived five

different vowels instead of the uttered vowel [ʊ]. To clarify this; 6 participants perceived the diphthong [ou]. 2 perceived [oo (u:)], while 3 participants perceived [o]. The vowel [e] was perceived by 2 participants, while a single participant perceived [o (ɔ:)]. Just like it was the case with the vowel [i], not a single participant was able to perceive the accurate vowel sound to the vowel [ʊ] that was produced. The study came across a case whereby the word /pin/ was perceived as /pone/.

Again, the low vowel [ɛ] was trickier for the grade 8 to perceive as only 2 participants managed to get the uttered vowel sound right, while a larger portion of 8 participants perceived the vowel as [a]. On the contrary, the other group of participants of 14 learners had 5 who perceived the vowel [ɛ], while the other 8 perceived 4 different vowel sounds which are; [a, ɪ, u, o]. Meanwhile, the other group of grade 9 participants completely failed to perceive the low vowel [ɔ:]. In addition to this, the other portion of participants only managed to have a single learner who was able to perceive the vowel [i] as it is, while others perceived [o], [eo], [ou], [oo], [i], [o (u:)] with the vowels [oo] and [ou] being perceived more.

In addition, one group of the grade 8 participants was able to perceive the front vowel sound [i:] as it was uttered. This vowel [i:] was well perceived. However, 3 participants perceived the speech sound as [e] instead. Another group of grade 8 participants perceived three other vowels instead of the vowel [i:]. Those vowels were [e, a, o] with [e] being the vowel that the participants perceived the most. Only 2 participants managed to perceive the vowel [i:]. On the other hand, 15 participants from grade 9 were tested on their perception of the front vowel [ɪ]. The participants failed to correctly perceive the vowel [ɪ] as only 1 participant managed to perceive the vowel as it was uttered. The rest of participants perceived the vowel sounds [ie], [o], [e], [u], [ee (i)] and [a] with [e] being perceived the most by 6 participants. In addition to this, another group of participants perceived [e], [u], [ee (i)] and [a] instead of [ɪ]. 7 learners perceived [e]'s and 4 perceived [a]'s.

Moreover, a group of the 13 grade 8 students participated in the experiment which was done to test the perception of back vowels. 10 participants perceived an identical vowel to the vowel [u:], while the rest of the participants perceived [o] and [i]. In addition to this, group 2 of the grade 8 perceived the vowel [u:] as [o]. 2 more participants perceived [i] instead. However, 3 participants perceived the exact vowel [u:] as it was uttered. Grade 9 learners from both schools successfully perceived the precise back vowel [ɔ] with 12 out of 15 participants per school. Nonetheless, fewer participants perceived [a], [o], [u] and the diphthongs; [ou] and [au]. On

the other hand, group 2 of the participants from grade 9 perceived [i], [u:], [o], [oo] and the diphthongs [eo, ou]. 1 participant perceived the exact low vowel. An unexpected finding that study found is that learners would attach a suffix /-o/ to the word 'sort', thereby; aspirating the [t] and ending up with a Sesotho word 'Sotho'. This indicates that the participants actually perceived a Sesotho word instead of an English word /sort/. An overall of 18 participants did this.

Additionally, the perception of the central vowel [ʌ] was put to the test. 4 out of 13 participants perceived [a (ʌ)] which was identical to the sound uttered. However, other participants from a different group perceived the vowels [ʌ] as [e], [i], [o] and [u] with [o] and [i] being perceived by 4 participants each. Moreover, the other group perceived the same vowel as [o, i, e]. Only 3 participants were accurate in their perception. Furthermore, the central vowel [ə] was perceived as [e], [o], [u], [ee (i)] and as the diphthongs; [ae], [ou] and [oe]. Only 1 participant accurately perceived the uttered vowel sound, but a larger number of 7 participants perceived the vowel [ə] as [o]. On the other hand, another group had 6 participants who perceived the vowel [ə] as [o]. The remaining 7 participants perceived the vowel as [oe, ow, oy, i, ou]. At least, there was 1 participant who perceived the vowel [e (ə)]. The researcher was not expecting to find gliding vowels; o*w*, o*y* and diphthongs; [ae], [ou] and [oe] in the vowels perceived.

Furthermore, an experiment was conducted to test perception the pure vowel [i:]. The first group successfully perceived the uttered vowel. It was 9 participants who succeeded, but there were 4 participants who perceived the vowel [e] instead. Nevertheless, another group of 13 participants took part in the experiment. The findings was that the vowel [e] was successfully perceived by 4 participants, while both [i] and [a] were perceived by 4 participants each. 1 participant perceived the vowel [o]. The same pure vowel was precisely perceived as [i] by 9 participants, while the vowels [e], [ea (i)] and [a] were perceived by the other 6 participants. Similarly, the other group of participants had 8 participants who managed to perceive vowel [u] accurately, while the rest 7 perceived the vowel as [ea (i), [e] and [a].

In addition, the perception of gliding vowels was put to the test. The gliding vowel [j] was well perceived by 8 participants out of 13 participants in total. However, not all participants were able to perceive the exact vowel sound, but others perceived [i,] and [o]. Surprisingly, 2 participants perceived a consonant [b]. Getting a consonant perceived instead of a vowel was unexpected. Furthermore, on the perception of gliding [w], 3 participants perceived a [w], while both [e] and [oe] dominated perception occurrences by 5 each. [oie] and [o] were perceived by

the remaining 2 participants. Nonetheless, the speech sound [w] was perceived as [e] and [oe] by 9 participants combined. The remaining 5 participants had succeeded in perceiving the gliding vowel [w].

Additionally, perception of English diphthongs was tested. A single group of the grade 8 participants proved to have perceived the diphthong [aʊ] accurately and in huge numbers. To be specific, 11 participants reflected accuracy in perception, but 2 participants did not. However, unlike the case with the initial group, this group perceived three vowels sounds instead of just two; [o], [i] and [aʊ]. Nevertheless, 9 participants perceived an identical diphthong to the uttered [aʊ], but 3 perceived [o] and 1 perceived [i], thereby missing the desired sound. From a grade 9 group, the researcher discovered that the diphthong was perceived well by a total of 9 participants. However, there were 5 participants whose responses were off the mark because they perceived [o], [oeo] and [e] combined. The last findings on diphthongs are that 8 participants perceived the desired [ɔɪ], while the remaining 6 perceived three vowel sounds [o], [oeo] and [e]. Both the grade 9 groups perceived the same vowel sounds with slight differences in numbers. Therefore, results are almost identical.

Moreover, the results of the triphthongs were also scrutinised and evidently, the first group of the grade 8 participants had trouble perceiving the triphthong [əʊə]. 9 participants perceived inaccurate speech sounds because they perceived 2 [e]'s, 3 [o]'s and 4 [a]'s with only 4 participants whose perceptions were accurate. The second group, however, consisted of 7 participants who mastered the perception of the triphthong. Still, the remaining participants perceived vowel sounds that were vividly inaccurate which are; 3 [a]'s, 2 [au]'s and 1 [aoo]. Both group participants from grade 8 perceived the vowel in an average grade. On the contrary, the triphthong [ʌiə] was trickier for the learners to perceive.

While on the topic of triphthongs, the researcher was surprised to discover that in the process of transcribing the English word 'fire' /fʌ*i*ə/, learners perceived it as /setšoana/ and transcribed it on paper. Not only does 'fire' /fʌ*i*ə/, and /setšoana/ have different syllabic structures, but they are from different languages. This was clearly brought about by the interference of the native language influencing the perception of speech sounds. Other participants, however, perceived the word /fire/ as /naene/. Like it is the case with the above example, /fire/ and /naene/ do not share the same number of syllables, but the word /naene/ is a Sesotho manner of trying to articulate the English word /nine/. This comes as a result of the influence of the native language

on L2 which in this case is Sesotho language. Most of participants in another group perceived the middle vowel [i] in the triphthong [ʌiə] as a consonant [n].

Furthermore, learners were tested on the perception of the long vowel [ɔ] and the data collected reflected that one group of the grade 8 participants succeeded to perceive the vowel [ɔ] exactly as it is. 10 over 13 participants provided an identical response long vowel [ɔ]. Nevertheless, the remaining 3 perceived the vowels as [e] and [a]. However, the perception of the other grade 8 group was not as accurate as above group's results proved to be. This is because a maximum of 2 participants provided identical responses to the [ɔ:], while the rest of the participants perceived the vowel as [i, a, u]. The vowel [u] was the most perceived with a total number of 7 participants. The perception of the long vowel [u:] was put under scrutiny, and the data showed that over 15 participants, 6 perceived the identical sound as the desired vowel [u:]. Other participants perceived [e, o, ou, a, i, u]. Similarly, [u] was perceived by 8 participants with only [u (a)] and [i]. Of all the 3 groups that the researcher used, only one failed to perceive long vowels. Another thing that the current study did not expect to find was for the word /sport/ to be perceived as the word /Sesotho/.

Additionally, on the perception of short vowels, one group of learners had 9 participants who perceived the vowel [ɛ] accurately, while the other 4 students perceived the vowels [o] and [i]. However, the other group of grade 8 learners had 6 learners who perceived the desired vowel [ɛ] as it is, but the remaining 7 participants perceived the vowel as [o], [a] and [i]. The same vowel was used when testing the perception of L2 vowels and this time data was collected from grade 9 learners. 6 participants perceived a vowel which is identical to vowel in concern, while the [o] was also perceived by 6 participants. There were also 3 more participants who perceived the vowel [a]. Nevertheless, the other group rather perceived two vowels instead of 3 or 4 like it was case with other groups. 10 students perceived exactly the uttered vowel, while 4 participants perceived [a] instead.

In addition, the tense vowel [ʊ] was utilised when testing perception of L2 vowels. Only 1 participant perceived an accurate vowel [ʊ], while 9 participants perceived [o] and 3 perceived [e]. Similarly, 10 participants perceived [ʊ], while 3 perceived [e]. On the other hand, the tense vowel [ɔ:] was accurately perceived as [a (ɒ)] by 5 participants. 10 participants rather perceived [o] and [e] with 1 perceiving [e] and 9 others perceiving [o]. Nonetheless, the results of fourth group reflected that 1 participant perceived an identical vowel [ɔ:], while a great number of 11 participants perceived as [o] and 2 perceived [o (ɒ)].

Finally, the findings revealed that the lax vowel [a] was precisely perceived by 4 participants as [a], but 9 participants perceived the vowel as [e] instead. However, 3 participants from another group perceived the same lax vowel as [a], while 6 participants perceived [e] and 4 perceived the vowel as [u]. On the other hand, 4 participants perceived an identical sound to the one uttered, while 5 perceived [o (ɔ:)], 5 perceived [e], and [i] was perceived by 1 participant. The results of the fourth group showed that the perception of 2 participants was accurate, while the 9 participants perceived the vowel as [e] and 3 perceived [i].

From the above findings, it is clear that Sesotho learners of English as a second language have serious problems in perceiving English vowels. Therefore, the ministry of education and teachers should attend to this problem before more harm gets done.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusions drawn from the findings of the present study. It also discusses whether the research questions, objectives or hypothesis are supported or not supported. This chapter also provides recommendations which are based on the findings that future studies on the perception of English speech sounds by Sesotho speakers of English as a second language will take into consideration when conducting such studies.

This study comprised of five chapters. Chapter one discusses the general introduction of the study. The background of the study was lengthier because it explicitly explains what speech sounds are and their types. Different vowel speech sounds were stated and explained. Linguistics interference or transference and accent were presented as factors that influence the perception of L2 speech sounds. The statement of the problem, research questions, objectives of the study, hypothesis, rationale of the study, the scope and the limitation of the study were stated in this chapter. The chapter was aimed at familiarising the reader concepts, and terminologies are involved in the perception of speech sounds that the reader needs to be acquainted with before going through the study. In other words, this chapter was in a way paving the way for the reader.

Furthermore, Chapter two consists of a series of studies that the researcher looked into before conducting the study; hence, this chapter is called 'Literature review'. It is through reviewing the literature on perception of L2 speech sounds that the researcher was able to determine whether there is a need to conduct a study on perception of L2 speech sounds. That is, the researcher looked for the gaps in the already existing studies. The methodologies and data analysis used by previous researchers, and findings they got helped mould this study. Thirdly, chapter three presented the methodologies the researcher used. This chapter comprised of the research design and approach, the method of data collection, the population, sampling technique, data analysis, validity and reliability of the study, and the ethical considerations.

Additionally, in chapter 4, all the data that the researcher collected was presented and analysed with the use of graph. The researcher opted for using graphical presentation over textual and tabular presentation to deal with the huge amount of data that potentially could be difficult for readers to comprehend. The findings that the researcher got were stated in this chapter along with those that were rather unexpected. Lastly, the fifth chapter is simply a made up of a conclusion which is a summary of the whole study. It also checks whether the research objectives and hypothesis are equivalent to the findings of the study. Finally, this chapter

presents the recommendations that L2 teachers should take in consideration when teaching speech sounds and other concepts in general. They should also consider the recommendations in conversing with Sesotho speakers of English as a second language.

5.2 Conclusion

This study hypothesised that Sesotho learners fail to perceive English vowel sounds correctly. This has proved to be the case as the findings reveals that participants in this study failed to perceive the exact vowel sounds uttered, but rather perceived different vowel sounds. The number of those who perceived the correct speech sounds was smaller than those who have incorrectly perceived the vowel speech sounds. The high vowels [i] and [ʊ] were wrongfully perceived by the learners. Participants perceived the vowels [e, a, o], while the uttered sounds was [i]. The vowel [ʊ] was perceived as [a, e, eu, ou, ɔ:, o, e]. Not a single participants from the two grade 9 groups perceived the vowel [ʊ] correctly, while only one learner perceived the vowel [i] accurately. In addition to, the low vowel [ɛ] was perceived as [a, ɪ, u, o, ɛ], while [ɔ:] was perceived as [o, eo, ou, oo, i, u:]. The front vowel [i:] was perceived as [i:, e, a, o]. The front vowel [ɪ] was perceived as [ie, o, u, i, ɪ, u:] by participants. However, the front vowel [ɔ] was perceived as [a, o, u, ou, au, ɔ].

Additionally, the central vowel [ʌ] was perceived as [ʌ, e, i, o, u], but the central vowel [ə] was perceived as [e, o, u, i, ae, ou, oe, ow, oy, ae, ə]. [i:] as a pure vowel was perceived as [i:, e, a, o], while the pure vowel [e] was perceived as [i, a, u, e,]. The gliding vowel [j] was perceived as [j, i, o], but the gliding vowel [w] was perceived as [e, oe, oe, oie, w]. Participants perceived the diphthong [aʊ] as [o, i, aʊ], while the diphthong [ɔɪ] was perceived as [o, oeo, e, ɔɪ]. The triphthong [əʊə] perceived [e, o, a, au, ao], but the triphthong [ʌɪə] was perceived as [ʌɪə, ae, a, u, i, e, ie]. The long vowel [ɔ] perceived as [ɔ, e, a, i, u]. On the other hand, the long vowel [u:] was perceived as [u:, e, o, ou, a, i, u]. Participants perceived the short vowel [ɛ] as [ɛ, o, a, i]. The tense vowel [ʊ] was perceived as [ʊ, o, e], while the tense vowel [ɔ:] was perceived as [ɒ, o, e, ɔ:]. Finally, the lax vowel [a] was perceived as [a, e, u, ɔ:].

Moreover, above findings indicate that the study was right to hypothesise that the learners would perceive various vowel sounds for the one uttered. These numerous vowel sounds that the learners perceived the vowels as indicate exactly that. Some learners perceived consonants sounds instead of the vowel sounds uttered. Moreover, the current study also made a hypothesis failure to perceive uttered sounds might lead perceiving different words. In the current study, learners failed to perceive the uttered vowel sounds, instead perceived different words from

those that were uttered. Although the experimental words were all English words, participants wrongfully perceived both Sesotho and English words. The word /pin/ was perceived as /pone/. An extra vowel [-e] was attached to base /pon/. The syllabic structure of some of the words that they perceived was different from that of the words uttered. The perception the word /sport/ as the word /Sesotho/ shows how inaccurate learners' perceptions are. Therefore, the present study was accurate in all the three hypotheses it hypothesised.

A research question set by the current study was 'How learners who use English as a L2 perceive English vowel speech sounds?' The findings of the study revealed that learners perceive different vowel sounds in the place of the uttered vowel. Participants perceived the minimum of 2 to the maximum of 8 vowels for a single vowel sound. One of the research questions for the present study was, 'How does L1 language interferes with the perception of L2 vowels sounds?' When given the task of perceiving the back vowel [ɔ] in the word /s*o*rt/, the participants perceived the whole word as /sotho/, while others perceived the word as /setho/. The consonant [t] was aspirated, turning it to /-*th*-/, and an additional and unnecessary vowel [o] was attached to the word /sort/. Clearly, the participants perceived a Sesotho word rather that English word /sort/. Participants transcribed the word /tit/ as /thetha/. This was brought about by the influence of L1 on L2 perception. The monosyllabic word /sport/ too was transcribed as /sepotho/ by one participant who actually perceived a Sesotho instead of an English word. Pairing consonants with vowels is morphological structure of the Sesotho language. This rule was applied on the word /sport/. In addition to, an additional /–i/ was attached to rear end of /spot/ and /bit/. The third research question was 'What is the effect of failure to perceive speech sounds?' The current study answered the question by indicating that failure to correctly perceive uttered vowel sound leads to perceiving a different word which leads to miscommunication.

The current study was conducted with the aim of achieving three objectives. The first one was to investigate how learners perceive English vowel sounds. The present study discovered that the learners perceive various vowel sounds when in fact one vowel was uttered. Findings of the present study revealed that, for the vowel [i], participants perceived four vowel sounds [e, a, i, o]. Another objective for the current study is to investigate how L1 interferes with the perception of vowel sounds. The findings revealed that the learners perceived the English vowel sounds as Sesotho vowel sounds. They perceived Sesotho words that they are familiar to not the English words uttered. They would even perceive incorrect Sesotho vowels. The word /bean/ was perceived as /pina/ and the word /sport/ was perceived as /Sesotho/. The last

objective was to find out the effects of failure to perceive speech sounds correctly, and present study discovered that failure to accurately perceive the uttered speech sounds leads to perceive a completely different word which potentially can lead to communication barriers.

5.3 Recommendations

The researcher has discovered that learners do not only have a problem perceiving vowel sounds, but also perceiving consonant speech sounds as well. There is a need to conduct a study aimed at investigating how Basotho learners of English as a L2 perceive English consonant speech sounds. In this study, some participants perceived certain consonants as vowels. Some participants not only perceived consonants incorrectly, but also added aspirations to the consonant sounds that they have wrongfully perceived. The current study could not focus on perception of consonant speech sounds because consonants perception was beyond its scope. I strongly advocate that this gap needs to be explored in order for teachers and The Ministry of Education to deal with the problems related to speech perception decisively.

Teachers and learners assume that both English and Sesotho language are identical and so tend to over-generalise and apply the grammatical rules of English language on Sesotho language. According to one of the educational principles, teaching should be done from what learners already know to what they do not know. This principle allows teachers to code-switch between languages while delivering content, and also to align the concepts and rules that they are teaching with concepts and rules of other languages. Drawing their attention to this truth would come in handy in easing up the teaching and learning process as teachers would search for alternative ways to simplify the teaching and learning without doing more harm that the good that may come out of it. This would also cut down the possible cases of transference and interference of L1.

Additionally, due to the fact that both languages have different morphological, phonological and phonetical structures, teachers and learners should be made aware of this lack of similarity to try to do away with interference in the perception of L2 speech sounds. Introducing learners to English vowel system rather than aligning the sound with a vowel sound present in Sesotho vowel system might be helpful in doing away with difficulties in perceiving English vowel sounds. Learners seemed to be unfamiliar to the syllables and the syllable structure. This reflected in the perceptions they got. They perceived words with more syllables or less that the uttered words had. It is not surprising that they could tell whether the uttered words were in Sesotho or English language.

REFERENCES

Abbasi, M. 2017. *Identification of short and long vowels by Iraqi Students.* University of

Samarra: Samarra.

Allott, B. 1992. *The motor theory of language: Original and Function*. Kluwer Academic

Publisher: United Kingdom, Volume. 61.

Apuke, O, D. 2017. Quantitative Research Methods: A synopsis Approach'. Taraba State

University: Nigeria. Vol. 6, No. 11

Ashiwadam, J. 2014. Communication Research methods: 'Methods of data analysis'. M.Th.

Communication: Tamilnadu Theological Seminary.

Beare, K. 2019. 'Voiced vs Voiceless consonants'. Updated June 2019.

Bhardwaj, P. 2019. 'Types of sampling in research'. All Indian Institute of Medical Sciences.

Vol. 5, no. 3, Pp. 157.

Bowen, G. 2009. 'Document analysis as a qualitative method'. Barry University. Vol. 9, no.2,

pp. 27-40.

Brown, G and Wafaa, A. 2018. *The perception and production of British English vowels and*

consonants by Arabic learners of English. University College London: London.

Burzio, L. 2007. 'Phonology and phonetics of English stress and vowel reduction'. Vol. 29,

no. 2, pp. 154-176.

Cali, R. 2015. 'The Influence of Phonetic Features on the Perception of Accent Speech', MA

Thesis. State of University of New York: New Paltz.

Chen, S and J, Fan. 2007. 'The Effects of Phonetic Distance, Learning context and Learner

Proficiency on L2 Perception of English Liquids'. National Taiwan University: Taiwan.

Connelly, L. 2016. 'Trustworthiness in qualitative research'. Medsurg Nursing . Vol. 25, no.

6, pp. 435.

Crowley, T. 1997. *An introduction to historical linguistics*. Oxford University Press: Oxford.

Dayanand, A, K.2018. 'Hypothesis types and research'. Eternal University: India

Ello, D. 2020, 'Auditory Phonetics'. Retrieved November 11, 2020.

Emilda, J. 2019. *Diphthongs.* Lebanese French University: Iraq.

Ekanjume, B, I. 2015. 'The Teaching of English as a second language: The case of the
National University of Lesotho'. Department of English: Roma. Vol. 6, No. 6.

Escudero, P, Simon, E and Mitterer, H. 2012. 'The perception of English front vowels by
North Holland and Flemish Listeners: Acoustic similarity predicts and explains cross-
linguistic and L2 perception'. University of Western Sydney: Australia.

Evans, B, G and Alshangiti, W. 2018. 'The perception and production of British English
vowels and consonants by Arabic learners of English'. University College London:
London.

Fabra,L, R and Romeno, J. 2012. 'Native Calatal learner's perception and production of
English Vowel'.

Farooq, M and Mahmood, A, M. 2017. *Identification of Triphthongs in Pakistani English*.
Government College University Faisalabad: Faisalabad. Vol. 8, volume. 1, pp.184).

Ferguson, D. 1988. *Physiology for dental students*. University of Manchester: Manchester.

Flege, E, F and Mackay, I, R, A. 2004. 'Perception vowels in a second language'. University
of Alabama: Birmingham.

Flege, E, F, Mackay, I, R, A and Meador D. 1999. 'Native Italian Speakers' perception and
Production of English vowels'. Acoustical Society of America: Alabama. Vol. 106, No.
2973.

Fleming, J, and Zegwaard, K, E. 2018. 'Methodologies, methods and ethical considerations
conducting research in work-intergrated learning'. Auckland University of
Technology: New Zealand.

Fleming, G. 'ThoughCo-Long and short vowel sounds'. Updated. August 2, 2019

Foote, A, J. 2015. 'Pronunciation and Pedagogy and Speech Perception: Three Studies'. Phd

    Thesis. Concordia University: Canada.

Garcia, P. 2014. 'The perception of American vowels by Spanish-English bilingual listeners'.

    Columbia University', PhD thesis, Columbia University: New York.

Garellek, M. 2019. *The phonetics of voice*. University of California: San Diego. Pp. 75-106

Ghosh, D. 2017. *Analysis of data*. University of Kalyani: India.

Gowin, D, B and Millman, J. 1969. 'Research Methodology: A point of view'. American

    Educational Research Association. Vol. 39, No.5.

Guma, S, M. 1971. *An Outline Structure of Southern Sotho*. Shutter and Shooter: The

    University of Virginia: Virginia.

Grover, V. 2015. 'Research Approach: An overview'. DAV College of Education, India.

Hao, Y, C and Jong, D, J. 2016. 'Imitation of second language sounds in relation to L2

    perception and production'. University of Tennessee Knoxville. USA

Haradhan, M. 2018. 'Qualitative Research Methodology in the social sciences and related

    subjects'. Premier University: Bangladash. Accessed. 02 november 2021.

Hardcastle, W and Hewlett, N. 2006. *Coarticulation: Theory, data and techniques.*

    Cambridge University Press: Cambridge.

Husain, N. 2015. *Language and language skills*. Mumbai:Maulana Azad National Urdu

    University: India.

Igwenagu, C. 2016. *Fundamentals of research methodology and data collection*. Enugu State
University of Science and Technology: Nigeria.

In, J and Lee, S. 2017. 'Statistical data presentation'. Dongguk University Ilsan Hospital:

    Goyang.

Jeske, A. 2012. 'The perception of English vowels by native Spanish speakers', MA thesis, University of Pittsburg: Pennsylvania.

Kabir, S. 2016. *Methods of data collection*. Curtin University: Bangladesh

Kartushina, N and Frauenfelder, U, H. 2014. On the effects of L2 perception and of individual differences in L1 production on L2 pronunciation. Faculty of Psychology and Educational Sciences:University of Geneva.

Kawulich, B. 2004. 'Qualitative Data Analysis Techniques'. University of West Geogia: USA.

Kirtesz, F, Alvarez, J, Afraymovich, M and Sullivan, J. 2012. 'Cognitive development: The role of accent and speaker certainity in children's selective trust'. Vol.60.

Kogan, V. 2020. 'The effects of first language on the discrimination of non-native vowel contrast: investigating individual differences'. University of Barcelona: Barcelona.

Khoo, E, M. 2005. 'Research questions and research objectives'. University of Malaya: Malaysia.

Koma, T, E, 2018. 'Cross-linguistic influence of Sesotho sounds on the production of English sounds', MA Thesis. National University of Lesotho: Roma

Liberman, M, Cooper, Shankweiler, P, Studdert-Kennedy, M. (1967) 'Perception of the speech code: Psychological Review'. Vol. 74, Pp. 431-446

Liberman M, Delattre, P, Cooper, S and Gerstman, J. 1954. 'The role of the consonants-vowel transitions in the perception of the stop and nasal consonants. Psychology Monographs: General and Applied'. Vol. 68, No. 8, Pp. 1-13.

Lin, C. 2014. 'Perception and production of five English front vowel college students', PhD Thesis. National Pingtung University: Taiwan. Vol. 7, no. 9.

Lipski, J, M. 1976. 'Structural linguistics and bilingual interference: Problems and proposal'.

  Vol. 3, No.3, P.229.

Levis, J and Zhou, Z. 2018. *The TESOL Encyclopedia of English Language-Accent.* Lowa

  State University: United States of America.

Maiunguwa, A. 2015. 'Perception and Production of English Fricatives by Hausa Speakers',

  MA Thesis. University of Malaya: Kuala Lumpur.

Martinez, R, M, Goad, H and Dow, M .2021. 'L1 phonological effects on L2 (non-) naïve

  Perception: Across-language investigation of the oral-nasal vowel contrast in

  Brazilian Portuguese'. Vol. 1, no. 37.

Matthews, P. 2014. *The concise Oxford Dictionary of linguistics*. Oxford University Press:

  Boston.

Mattick, K, Johnston, J and Croix, A, D, L. 2018. 'How to write a good research question'.

  Vol. 15, No. 2.

McRoberts, G. 2008. *Speech perception*. Haskins Laboratories: New Haven, pp. 244-253.

Mitterer, M and Cutler, A. 2006. Encyclopedia of language and linguistics. Accessed April

  23, 2021.

Majid, U. 2021. 'Research fundamentals:study design, population and sample'. University of

  Toronto:Canada.

Mohindru, G and Banka, H. 2022. *Cognitive Data models for Substainable*: 'Machine

  learning-enabled cognitive approaches for handling IoT-based environment data'.

  Department of Computer Science and Engineering: India.

Morrison, G, S. 2006. 'L1 & L2 Production of English and Spanish Vowels: A Statistical

  Modelling Approach', Phd Thesis. Department of Linguistics: Edmonton.

Nduka, E, C and Ogeke, U, P. 2022. *Analytical Techniques in Bioscience*: 'Statistical

    methods and tools in biosciences'. University of Hartcourt: Rivers State.

Nenonen, S, Shestakova, A, Alku, P and Huotilainen, M. 2003. *Perception of vowel length in*

    Native speakers and second-language users of a quality language. University of

    Helsinki: Finland.

Nimz, K and Khattab, G. 2015. 'L2 sound perception: Does orthography matter?' University

    of Potsdam: Newcastle.

Nordquist, R. 2020. 'Definition and examples of phonotactics in phonology'. Updated.

    February 12, 2020.

O'Grady,W, Dobrovolsky, M and Katamba, F. 1996. *Contemporary Linguistics*, Lancaster

    University: London.

Östlund, U, Kidd, L, Wengström, N and Rowa-Dewar, N. 2010. 'Combining qualitative and

    qualitative research.Within mixed method research designs: A methodological review'.
    Vol. 48, no. 3.

Patra, N, K. 2017. *Digital disruption and electronic resource management in libraries*.

    Chandos Publishing: United Kingdom.

Pereira, Y. 'Perception and production of vowels by Chilean learners of English: effect of

    auditory and modalities', Phd thesis. University College London: London.

Perwitasari, A. 2018. 'Perception of English vowels by Javanese and Sundanese'. Vol. 19,

    No. 1, p219-234.

Poeppel, P. 2015. 'Brain Mapping'. University of Southern California: Los Angeles, Vol. 3.

Profillids, V, A and Botzoris, G, N. 2019. Method of Modeling transport demand: 'Modeling

    of transport demand'. Elsevier.

Rato, A and Carlet, A. 2020. 'Second Language Perception of English Language by

    Portuguese Learners: The Effect of Stimulus'. University of Toronto: Toronto.

Rehman, I. 2019. 'Urdu vowel system and perception of English vowels by Punjabi-Urdu

    speakers', Phd thesis. University of Kent: Canterbury.

Rochet, B, L and Rocket, A, P. 1999. 'Effects of L1 Phonotactic constraints on L2 speech

    perception'. University of Albertina: Canada.

Rojon, C and Saunders, M, N. 2012. 'Formulating a convincing rationale for a research

    study'. Vol. 5, No. 1.

Romig, S. 2013. 'The Production and Perception of English by Native Speakers of Brazilian

    Portuguese Living in Victoria, Canada', MA thesis. University of Alaska Anchorage:

    Canada.

Ruhlen, M. 1973. 'Research papers: Nasal vowels'. No. 12, Published. November 1973,

    Pages 1-36.

Ryn, N. 2018. L2 Experience on Perception of Korean Vowels' The 23rd American

    Association of teachers of Korean (AATK) Annual conference, 21-23 June.

    University of Toronto: Canada.

Shukla, S. 2020. *Concept of population and sample.* Indian Institute of Teacher Education

    Gandhinagar: India.

Sirbu, A. 2015. *Language interference triggered by bilingualism.* Martime University of

    Constanta: Constanta.

Solijonov, S, O. 2022. 'International journal of research in commerce, IT, Engineering and

    social sciences'. Vol. 16, no. 16.

Sridhar, M, S. 2012. 'Presentation of statistical data –Textual presentation'. Indian Space

Research Organisation: India.

Szczegielniak, A. 2001, 'Phonetics: The sounds of language'. Published online 20 July 2001

Taherdoost, H. 2016. 'Validity and Reliability of the research instrument: How to test the

 Validation of a questionnaire/survey in a research'. University Canada West: Canada.

 Vol. 5, No. 3

Terrell, S, R. 2012. 'Mixed-Methods Research Methodologies'. Nova Southeastern

 University: Florida. Vol. 17, No. 1

The editors of Encyclopedia . 2021. *Vowel-Encyclopedia Britannica*. Uploaded October , 7

 2013. Accessed April 23, 2021.

The editors of a Dictionary. 2005. *Accent-The new oxford American dictionary*. Oxford

 University Press: Oxford.

Thomas, D, R and Hodges, I. 2010. Designing and planning your research project: Core skills

 for social and health researchers. Sage Publications.

Trembley, P and Deschamps, I. 2021. 'Brain aging and speech perception: effects of

 background noise and talker variability'. Vol. 227.

Trigueros, R. 2019. *Research Objectives.*University of El Salvador: San Salvador.

Tsu, R. 1992. *The poetic mode of speech perception*. Duke University Press: North Carolina.

Vasiliev, P. 2013. *The initial state for Californian English learners of speech and Portuguese

 vowels*. University of California: Los Angeles.

Webster, J and Watson, R, T. 2002. Analyzing the Past to Prepare for the Future: Writing a

 Literature Review. Management information Systems Research Center:Minnesota.

 Vol. 26, No.2, Pp. xii-xxiii.

Welman, J, C, Kruger, S. J and Mitchell, B. 2005. *Research Methodology*. Cape Town:

Oxford University Press.

White, A. 2016. 'The effects of accent familiarity on English as a foreign language students'

Word Recognition and comprehension of the English language'. Rajamangala.

University of Technology Krung Thep:Bangkok. Vol. 10. Pp.1-8

Wylli, T, M. 2019. 'The Importance of Research Gaps'. UNICAF University: Malawi

Yuan, J, Jiang, Y and Song, Z. 2010. 'Perception of foreign Accent in Spontaneous L2.

English Speech'. University of Pennsylvania:U.S.A

APPENDIX

Appendix 1: The words that participants write down when uttered and vowel sounds (*Italicized*) that the current study tested how they are perceived.

Grade 8	Grade 9
1. P*in*	1.P*u*ll
2. B*e*ll	2.b*all*
3. B*ee*t	3.t*i*t

4. R*u*le	4.s*o*rt
5. Tir*e*	5.*a*way
6. B*ea*n	6.b*ea*t
7. *Y*es	7.w*i*n
8. Ar*ou*nd	8.*oi*l
9. Hour	9.f*ire*
10. Sp*o*rt	10.c*oo*p
11. W*et*	11. s*et*
12. S*a*w	12.h*ut*
13. L*a*p	13.t*a*p

The words uttered and how they were perceived by participants.

<u>Participant 1</u>

1. Pin	End
2. Bell	Bell
3. Beet	Beat
4. Rule	Whoa
5. Tire	Tire
6. Bean	Aim
7. Yes	Boers
8. Around	Around
9. Hour	Hour
10. Sport	Part
11. Wet	Word
12. Saw	Soul
13. lap	Lep

<u>Participant 2</u>

1. Pin	Peim
2. Bell	Bell

3. Beet	Feet
4. Rule	Oow
5. Tire	Tiel
6. Bean	Ein
7. Yes	Oowukes
8. Around	Araud
9. Hour	Al
10. Sport	Pot
11. Wet	Word
12. Saw	So
13. lap	lip

Participant 3

1. Pin	In
2. Bell	All
3. Beet	Feet
4. Rule	Whowho
5. Tire	Tell
6. Bean	In
7. Yes	Years
8. Around	Around
9. Hour	Hour
10. Sport	Pot
11. Wet	Wait
12. Saw	Soup
13. lap	lip

Participant 4

1. Pin	In
2. Bell	Aw
3. Beet	But

4. Rule	Uo
5. Tire	Time
6. Bean	Bin
7. Yes	Yes
8. Around	Round
9. Hour	Our
10. Sport	Hot
11. Wet	Word
12. Saw	So
13. lap	lerp

Participant 5

1. Pin	Aim
2. Bell	Bell
3. Beet	Beat
4. Rule	Rule
5. Tire	Tire
6. Bean	Been
7. Yes	Was
8. Around	Around
9. Hour	Hour
10. Sport	Pot
11. Wet	Word
12. Saw	Soul
13. lap	Lep

Participant 6

1. Pin	Hello
2. Bell	Help
3. Beet	Bed
4. Rule	Crow

5. Tire	Tiyer
6. Bean	In
7. Yes	Was
8. Around	Around
9. Hour	Hour
10. Sport	Pot
11. Wet	What
12. Saw	So
13. lap	lip

Participant 7

1. Pin	<mark>Pone</mark>
2. Bell	Pao
3. Beet	Peach
4. Rule	Wowo
5. Tire	Them
6. Bean	Pin
7. Yes	Yes
8. Around	Around
9. Hour	Awo
10. Sport	Sot
11. Wet	Wet
12. Saw	So
13. lap	lirb

Participant 8

1. Pin	Poone
2. Bell	Pou
3. Beet	Peach
4. Rule	Room
5. Tire	Thaeo
6. Bean	Pee

7. Yes	Ous
8. Around	Around
9. Hour	Ao
10. Sport	Spoti
11. Wet	Word
12. Saw	Saw
13. lap	lib

Participant 9

1. Pin	Pan
2. Bell	Now
3. Beet	Pety
4. Rule	Rrue
5. Tire	Tarey
6. Bean	Pin
7. Yes	Jase
8. Around	Around
9. Hour	Car
10. Sport	sepotho
11. Wet	Set
12. Saw	So
13. lap	lim

Participant 10

1. Pin	Com
2. Bell	To
3. Beet	Eat
4. Rule	Ieo
5. Tire	Tha
6. Bean	Eng
7. Yes	Ieos

8. Around	Ovalt
9. Hour	El
10. Sport	<mark>Sesotho</mark>
11. Wet	Set
12. Saw	So
13. lap	leep

Participant 11

1. Pin	Pin
2. Bell	Both
3. Beet	Peach
4. Rule	Draw
5. Tire	Wear
6. Bean	Bim
7. Yes	Yes
8. Around	Around
9. Hour	Or
10. Sport	sport
11. Wet	Word
12. Saw	So
13. lap	lip

Participant 12

1. Pin	Com
2. Bell	Tap
3. Beet	Pita
4. Rule	Yoyo
5. Tire	Tiel
6. Bean	Penn
7. Yes	Gux
8. Around	Account

9. Hour	Yol
10. Sport	Spot
11. Wet	Wet
12. Saw	So
13. lap	Lup

Participant 13

1. Pin	Payn
2. Bell	Paw
3. Beet	Piet
4. Rule	Wow
5. Tire	Terya
6. Bean	Pina
7. Yes	Yes
8. Around	Around
9. Hour	Awl
10. Sport	Sport
11. Wet	Word
12. Saw	Sow
13. lap	lup

Participant 14

1. Pin	Peni
2. Bell	Pao
3. Beet	Pite
4. Rule	Wuw
5. Tire	Tile
6. Bean	<mark>Pina</mark>
7. Yes	Yes
8. Around	Arount
9. Hour	Awer

10. Sport	Sprot
11. Wet	Wert
12. Saw	Sao
13. lap	Lep

Participant 15

1. Pin	Khomi
2. Bell	El
3. Beet	Eight
4. Rule	No
5. Tire	<mark>thaele</mark>
6. Bean	Peng
7. Yes	Buoase
8. Around	Ouround
9. Hour	El
10. Sport	Sport
11. Wet	Set
12. Saw	So
13. lap	

Participant 16

1. Pin	Pon
2. Bell	Fell
3. Beet	Beat
4. Rule	Bent
5. Tire	Tile
6. Bean	Pin
7. Yes	Yes
8. Around	Around
9. Hour	Erl
10. Sport	Sport

11. Wet	Wet
12. Saw	Saw
13. lap	lep

Participant 17

1. Pin	Com
2. Bell	Tao
3. Beet	Oeit
4. Rule	Low
5. Tire	Too
6. Bean	Peing
7. Yes	Yours
8. Around	Around
9. Hour	Ao
10. Sport	Spoti
11. Wet	Wet
12. Saw	Sow
13. lap	Lep

Participant 18

1. Pin	Tlhomi
2. Bell	Thou
3. Beet	Beat
4. Rule	You
5. Tire	Tire
6. Bean	Pet
7. Yes	Yes
8. Around	Around
9. Hour	Hour
10. Sport	Sport
11. Wet	Wet

12. Saw	Sow
13. lap	Lup

Participant 19

1. Pin	Pem
2. Bell	Tau
3. Beet	Eight
4. Rule	You
5. Tire	Ten
6. Bean	Ten
7. Yes	Teng
8. Around	Around
9. Hour	Aa
10. Sport	Sport
11. Wet	Oet
12. Saw	So
13. lap	lap

Participant 20

1. Pin	Pen
2. Bell	Bath
3. Beet	Biti
4. Rule	Who
5. Tire	Thaea
6. Bean	Bina
7. Yes	Buoax
8. Around	Around
9. Hour	Ahr
10. Sport	Sport
11. Wet	Wet
12. Saw	Sow

13. lap	Lap

Participant 21

1. Pin	And
2. Bell	Help
3. Beet	Fed
4. Rule	Uool
5. Tire	Time
6. Bean	Petin
7. Yes	Yes
8. Around	Around
9. Hour	Awar
10. Sport	Pood
11. Wet	Weed
12. Saw	Soum
13. lap	Lep

Participant 22

1. Pin	Am
2. Bell	O
3. Beet	Bit
4. Rule	U
5. Tire	Too
6. Bean	Dit
7. Yes	Yours
8. Around	Around
9. Hour	Ahuir
10. Sport	Put
11. Wet	Pet
12. Saw	So
13. lap	lup

Participant 23

1. Pin	Value
2. Bell	Hell
3. Beet	Peat
4. Rule	Uoo
5. Tire	Tile
6. Bean	Think
7. Yes	Yes
8. Around	Around
9. Hour	Hour
10. Sport	Pot
11. Wet	Word
12. Saw	Soill
13. lap	lap

Participant 24

1. Pin	Home
2. Bell	Help
3. Beet	Fat
4. Rule	Row
5. Tire	Time
6. Bean	Pen
7. Yes	Box
8. Around	Round
9. Hour	Hour
10. Sport	Pot
11. Wet	Wed
12. Saw	Saw
13. lap	lap

Participant 25

1. Pin	Am	
2. Bell	Abe	
3. Beet	Bat	
4. Rule	Uoo	
5. Tire	Tail	
6. Bean	Beem	
7. Yes	Buance	
8. Around	Aroud	
9. Hour	Aware	
10. Sport	Port	
11. Wet	Word	
12. Saw	Soul	
13. lap	lep	

Participant 26

1. Pin	An	
2. Bell	All	
3. Beet	Bat	
4. Rule	Froo	
5. Tire	Teryer	
6. Bean	A	
7. Yes	Yes	
8. Around	Ground	
9. Hour	Hour	
10. Sport	Port	
11. Wet	Word	
12. Saw	Soul	
13. lap	lep	

Participant 27

1. Pin	A
2. Bell	O
3. Beet	Fat
4. Rule	Uovou
5. Tire	Tou
6. Bean	Pai
7. Yes	Bous
8. Around	Around
9. Hour	Our
10. Sport	Pot
11. Wet	Peet
12. Saw	Saw
13. lap	lemp

Participant 28

1. Pin	Theme
2. Bell	O
3. Beet	Bed
4. Rule	Yowoo
5. Tire	Two
6. Bean	Penya
7. Yes	Uwas
8. Around	Around
9. Hour	aour
10. Sport	Pot
11. Wet	Ward
12. Saw	So
13. lap	lap

Participant 29

1. pull	Pen

2. ball	Bich
3. tit	But
4. sort	Sotho
5. away	Over
6. beat	Peach
7. win	Thau
8. oil	Podle
9. fire	Fine
10. coop	cub
11. set	Set
12. hut	Hurt
13. tap	top

Participant 30

14. pull	Home
15. ball	Speal
16. tit	Speed
17. sort	Sotho
18. away	Wose
19. beat	Eat
20. win	Win
21. oil	Will
22. fire	fine
23. coop	Cook
24. set	Word
25. hut	Work
26. tap	tep

Participant 31

27. pull	Home
28. ball	O

29. tit	Tet
30. sort	Sotho
31. away	Oy
32. beat	Been
33. win	Was
34. oil	Boy
35. fire	Leya
36. coop	Keep
37. set	Wet
38. hut	wark
39. tap	tep

Participant 32

40. pull	phone
41. ball	Phone
42. tit	Tit
43. sort	Sotho
44. away	Away
45. beat	Beat
46. win	Win
47. oil	Oil
48. fire	Five
49. coop	Cook
50. set	Wet
51. hut	Work
52. tap	Tep

Participant 33

53. pull	Phone
54. ball	How
55. tit	But

56. sort	Sotho
57. away	Owen
58. beat	Breat
59. win	Wtten
60. oil	Pain
61. fire	Fan
62. coop	Kick
63. set	What
64. hut	Work
65. tap	top

Participant 34

66. pull	Pool
67. ball	Home
68. tit	Pity
69. sort	Sotho
70. away	Well
71. beat	Bin
72. win	When
73. oil	Well
74. fire	Fine
75. coop	Keep
76. set	Word
77. hut	Broke
78. tap	tab

Participant 35

79. pull	Pol
80. ball	Lo
81. tit	Tet
82. sort	Soot

83. away	Oal
84. beat	It
85. win	Wat
86. oil	Were
87. fire	Foll
88. coop	Cook
89. set	Wert
90. hut	Howek
91. tap	top

Participant 36

92. pull	Hello
93. ball	O
94. tit	Eat
95. sort	Southu
96. away	Will
97. beat	Been
98. win	Was
99. oil	Wall
100. fire	Fine
101. coop	Kike
102. set	Hot
103. hut	What
104. tap	tib

Participant 37

105. pull	Houll
106. ball	Hol
107. tit	Tead
108. sort	Sooth
109. away	Oy

110.	beat	Bet
111.	win	When
112.	oil	Oyr
113.	fire	Fareani
114.	coop	Pot
115.	set	What
116.	hut	Hawt
117.	tap	top

Participant 38

118.	pull	Pool
119.	ball	O
120.	tit	Eat
121.	sort	Soup
122.	away	Owy
123.	beat	Been
124.	win	Wen
125.	oil	Oil
126.	fire	Five
127.	coop	Keep
128.	set	Words
129.	hut	Walk
130.	tap	tip

Participant 39

131.	pull	Poun
132.	ball	Paam
133.	tit	Eat
134.	sort	Sotho
135.	away	O why
136.	beat	Bean

137.	win	Win
138.	oil	Oell
139.	fire	Auw
140.	coop	Pot
141.	set	Wet
142.	hut	Walk
143.	tap	teb

Participant 40

144.	pull	Phou
145.	ball	Pou
146.	tit	But
147.	sort	Sotho
148.	away	Owbye
149.	beat	Bit
150.	win	Weni
151.	oil	Oeo
152.	fire	Fine
153.	coop	Coot
154.	set	Sad
155.	hut	Hard
156.	tap	tap

Participant 41

157.	pull	Hope
158.	ball	Spell
159.	tit	Eat
160.	sort	Sotho
161.	away	oI
162.	beat	Eng
163.	win	When

164.	oil	Old
165.	fire	Layer
166.	coop	Cook
167.	set	Set
168.	hut	Hard
169.	tap	terb

Participant 42

170.	pull	Pou
171.	ball	Vant
172.	tit	That
173.	sort	Sotho
174.	away	Ae
175.	beat	Bat
176.	win	Van
177.	oil	Oil
178.	fire	Fan
179.	coop	Qut
180.	set	Sat
181.	hut	Hat
182.	tap	terb

Participant 43

183.	pull	Penu
184.	ball	Both
185.	tit	Teta
186.	sort	Solt
187.	away	Tayer
188.	beat	Bing
189.	win	Oeny
190.	oil	Old

191.	fire	Layer
192.	coop	Pot
193.	set	Set
194.	hut	Haut
195.	tap	tep

Participant 44

196.	pull	Phou
197.	ball	Pou
198.	tit	Terd
199.	sort	Setho
200.	away	Oy
201.	beat	Beat
202.	win	Oeng
203.	oil	Oil
204.	fire	Yuoe
205.	coop	Cook
206.	set	Set
207.	hut	Harte
208.	tap	tep

Participant 45

209.	pull	How
210.	ball	Thow
211.	tit	Thetha
212.	sort	sotho
213.	away	Awale
214.	beat	Pii
215.	win	Was
216.	oil	Oil
217.	fire	Oaea

218.	coop	Pot
219.	set	Sad
220.	hut	Halt
221.	tap	tab

Participant 46

222.	Pull	Peme
223.	Ball	O
224.	Tit	Thath
225.	Sort	Sotho
226.	Away	Oy
227.	Beat	Paid
228.	Win	Oenwo
229.	Oil	Oyo
230.	Fire	Fan
231.	Coop	Cook
232.	Set	Harth
233.	Hut	Harth
234.	tap	tap

Participant 47

235.	Pull	Pen
236.	Ball	Elle
237.	Tit	Theth
238.	Sort	Sotho
239.	Away	Ow
240.	Beat	Tit
241.	Win	Wen
242.	Oil	Oyo
243.	Fire	Awa
244.	Coop	Kuk

245.	Set	Het
246.	Hut	Hath
247.	tap	tip

Participant 48

248.	Pull	End
249.	Ball	Al
250.	Tit	Eat
251.	Sort	Sotho
252.	Away	Uo
253.	Beat	Peat
254.	Win	Oen
255.	Oil	Oil
256.	Fire	Aoa
257.	Coop	Pot
258.	Set	wed
259.	Hut	Had
260.	tap	tep

Participant 49

261.	Pull	Hol
262.	Ball	Pen
263.	Tit	Cat
264.	Sort	Sotho
265.	Away	I will
266.	Beat	Peach
267.	Win	Oeng
268.	Oil	Oil
269.	Fire	Warya
270.	Coop	Cook
271.	Set	set

272.	Hut	Hut
273.	tap	tip

Participant 50

274.	Pull	Ponie
275.	Ball	Pou
276.	Tit	Bit
277.	Sort	Sotho
278.	Away	Oway
279.	Beat	Bein
280.	Win	When
281.	Oil	Oil
282.	Fire	Funey
283.	Coop	Could
284.	Set	Set
285.	Hut	Heart
286.	tap	teb

Participant 51

287.	Pull	Pon
288.	Ball	Pou
289.	Tit	Pite
290.	Sort	Sotho
291.	Away	Olly
292.	Beat	It
293.	Win	Koen
294.	Oil	On
295.	Fire	Fan
296.	Coop	hot
297.	Set	Set
298.	Hut	Hard

299.	tap	tep

Participant 52

300.	Pull	Poor
301.	Ball	Oo
302.	Tit	Thetha
303.	Sort	Sotho
304.	Away	Ae
305.	Beat	Bed
306.	Win	When
307.	Oil	Oil
308.	Fire	Faer
309.	Coop	Cook
310.	Set	Set
311.	Hut	Heart
312.	tap	tab

Participant 53

313.	Pull	coo
314.	Ball	Oo
315.	Tit	Thurd
316.	Sort	Sotho
317.	Away	Well
318.	Beat	Beat
319.	Win	Win
320.	Oil	Oil
321.	Fire	Layer
322.	Coop	School
323.	Set	Sad
324.	Hut	Heart
325.	tap	tap

Appendix 2: Table in the study.
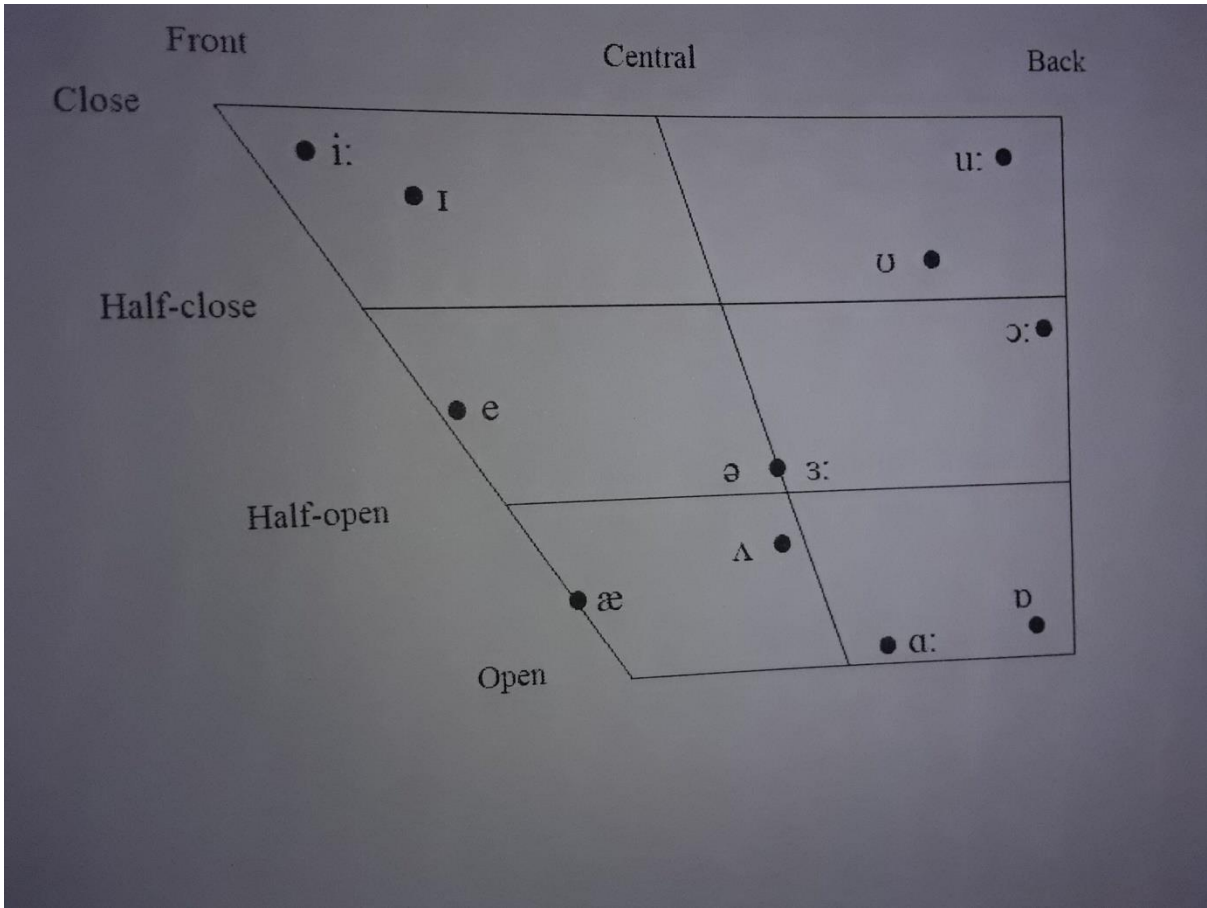
Figure 1: English Pure vowels according to Koma (2018 cited Roach, 139)

Appendix 3: Answer sheet

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Appendix 4

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3rd April, 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

This letter serves to introduce to you Reitumetse Charles Masasa who is a Masters student in the department of English at the National University of Lesotho, under my supervision.

Mr Masasa is carrying out a research on: "The Perception of English vowels by Sesotho Speakers of English as a Second Language: The Case of Grade 8 and 9." He will need to collect data from the said students. The information he will collect is mainly for academic purposes.

The university would be grateful if you could give him the assistance he needs.

Yours sincerely

Prof. Beatrice Ekanjume-Ilongo