

SECTION

1

SOUNDS OF THE LANGUAGE

ORAL CONVERSATION

Phonology (Speech sounds of a Ghanaian language)

INTRODUCTION

Dear learner, you are welcome to this section which discusses the foundation of language (speech sounds). You will be introduced to the concepts of vowels and consonants of your language of study and how speech sounds are described (parameter). It will focus on where the speech sounds occur in words of a Ghanaian language. For example, where vowels and consonants can occur in a word of a Ghanaian language such as initial position, medial position, or final position of a word. Again, Dear learner you will be introduced to the distribution of vowels and consonants in your language, aiding you to form meaningful words and facilitate effective speaking and reading in the language. This section is essential for learners not only in the context of Ghanaian language studies but also to establish links with related subjects such as English and other languages. This section equips you with foundational knowledge and functional understanding of speech sounds and their role in language learning. In summary, you should be able to identify, explain, produce, and label vowel charts and consonant tables of your language of study.

At the end of this section, you should be able to:

1. Describe the vowels of a Ghanaian language using the right parameters (e.g., lip posture, tongue height and part of the tongue).
2. Describe the consonants of the Ghanaian language using the right parameters (e.g., voicing, place of articulation and manner of articulation).
3. Explain the distribution of vowels of the Ghanaian language (e.g., word initial, medial and final).
4. Explain the distribution of consonants of the Ghanaian language (e.g., word initial, medial and final).

Key ideas

- Production refers to the making or saying of a speech sound in language. Speech sound is a sound used in the formation of words for human communication. The production of speech sound involves obstruction which is the interruption of free flow of air during production of speech sounds. Sounds are distributed in languages and this refers to the place or position in a word where a sound can appear. Sound involves airflow which is a mass movement of air that is meant for the production of speech sounds. Another term for it is *airstream*.

Types of speech sounds

Speech sounds can be grouped into two main types, namely vowels and consonants. It is the combination of these two types of sounds that produces words. In other words, all words are made up of individual speech sounds. For examples, the word *pan* consists of three individual speech sounds, that is, /p/, /a/, /n/. The sound /a/ is a vowel, whereas the sounds /p/ and /n/ are consonants. In the following topics we discuss both vowels and consonants focusing on how each is produced in a Ghanaian language.

The concept of vowel

The concept *vowel* refers as a speech sound in which production there is a little or no obstruction of the flow of air in the oral cavity. In other words, a speech sound which when being produced the air is not obstructed or it is minimally obstructed in the oral cavity is referred to as a vowel. Since in their production there is no or very little obstruction of airflow, vowels are comparatively heard louder when they are produced. Vowels are very important part of words. There cannot be a word without a vowel or vowel-like sound. This important role vowel plays in a word will later on in your second year be discussed when we are talking about the *syllable*.

Description of vowels

Dear learner, in describing vowels of a Ghanaian language, there are certain properties we use. These properties are often termed *parameters*. Parameters simply refer to the characteristics that a vowel possesses. The main parameters used in describing vowels are the tongue height, lip posture, and part of the tongue used during the production of the vowel sound. In addition to the three, there is a fourth parameter called advancement of the tongue root in some Ghanaian languages such as Akan. Let us begin the discussions of these parameters.

Lip position/posture

The parameter lip posture is used to determine the position your lips assume when you are producing a vowel. So, at this level, the lips assume two main postures or positions, namely rounded or unrounded. That is, whether the lips are rounded or they are not rounded when a vowel sound is being produced. Based on this posture of the lips, we can divide vowels of a Ghanaian language into two, namely ‘**rounded**’ and ‘**spread/unrounded.**’ Some examples of rounded vowels are /u, o, ɔ/. examples of unrounded vowels, on the other hand, are /i, e, a/.

Activity 1.1

At this point, produce rounded and unrounded/spread vowels of your Ghanaian language of study.

Tongue height/Height of the tongue

This refers to the position of the tongue in reference to the root of the mouth when producing vowel sounds. It is assumed that when we are producing vowels, the mouth opens when we drop the jaw. This can be **high, mid, or low**. When we drop our jaws to the lowest possible position, the vowels produced in this way are referred to as low vowels. Examples of low vowel is /a/, and in some Ghanaian languages [æ]. When we open our mouth wide enough but not as low as when producing low vowels, then the vowels we produced are termed mid vowels. Some examples of mid vowels in a Ghanaian language are /e, o/. In producing high vowels, on the other hand, the mouth is significantly opened but not as wide as mid vowels, thereby allowing enough air to flow through the oral cavity. Some examples of high vowels in a Ghanaian language are /i, u/.

Activity 1.2

Begin practicing the [production of vowels](#) in your language of study focusing on how high or how low you raise your jaws or open your mouth.

Part of the tongue

This parameter refers to the area of the tongue where the vowel sound is produced. It is assumed that when we are producing vowels, some parts of the tongue move. We cannot easily feel this movement though. Three parts of the tongue are assumed to be involved when a vowel sounds is being produced. These parts are the front part, middle part, and back part. Based on that, the parameter gives us three classes of vowels, namely **front, mid, and back** vowels. In producing front vowels, it is the front part of the tongue that moves. Some examples of front vowels of a Ghanaian language are /i, e, ε/. For the production of mid vowels, the middle of the tongue is assumed to move. Therefore, the following vowel is an example of a mid-vowel: /a/. For back vowels, on the other hand, as the name suggests, it is the back of the tongue that is involved in their production. Some examples of back vowels of a Ghanaian language are: /u, o, ɔ/.

Activity 1.3

Practice how to produce vowels of your language of study with focus on the part of the tongue.

Having finished discussing the main parameters we use in describing vowels of a Ghanaian language, there is a fourth parameter as mentioned earlier in this sub-strand which is not common among Ghanaian languages. This parameter is advancement of the tongue.

Advancement of the tongue root (ATR)

(Please, discuss only if applicable in your language)

This parameter, which is prominent in a few Ghanaian languages including Akan, Dagbani, etc. It is used to determine the position the tongue root assumes when a vowel is being produced. By this parameter, we try to find out if there is tension or pressure on the tongue or not during production of vowels. When a vowel is produced with pressure on the tongue thereby causing the tongue root to draw back, we say that vowel is produced with Advanced Tongue Root (ATR) i.e. (+ATR) vowels. When vowels are produced with the tongue root in its natural neutral position, we label those vowels are Unadvanced Tongue Root i.e. (-ATR) vowels. Some examples of (+ATR) vowels are: /i, e, u, o/, and examples of (-ATR) vowels are /ɪ, ε, ɔ/.

Activity 1.4

Produce all the vowels of language Ghanaian language of study paying attention to the movement of your tongue root to distinguish advanced tongue roots (+ATR) from unadvanced tongue root (-ATR) vowels.

Activity 1.5

Complete the table using the parameters you have learnt for describing a vowel

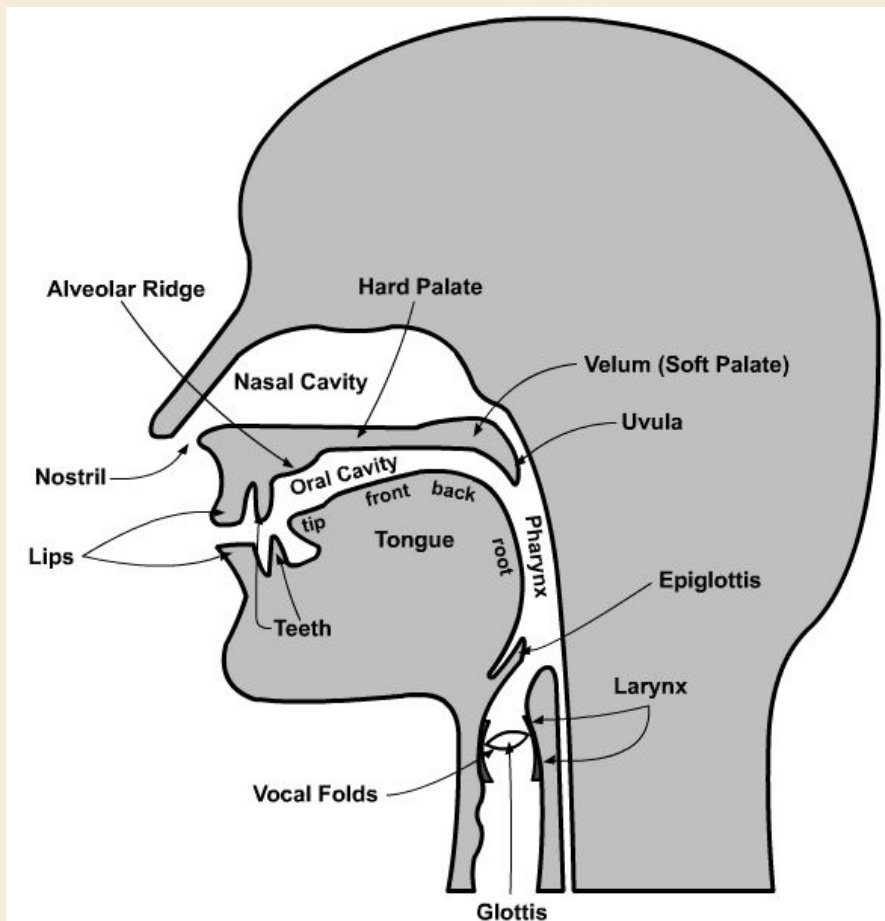
Vowel	Lip Posture	Tongue Height	Part of the tongue
/i/	spread	High	Front
/e/			
/u/			
/ε/			
/ɔ/			
/o/			
/a/			

Having discussed the nature of vowel sounds and the parameters used in describing the vowel sounds of your language, we now focus our attention on the production of consonants.

Activity 1.6

Thinking question

Carefully look at the diagram below on the organs of speech and try and identify where the various organs are located in the body.



The concept of consonant

As was mentioned earlier in the section, consonant is another type of speech sounds apart from vowel. The concept consonant refers to a speech sound in which during production the breath, which we have termed airflow, is at least obstructed. Based on this explanation, we can contrast vowel and consonant by saying that while in the production of vowel there is very minimal or no obstruction of airflow, there is significant obstruction of airflow when producing consonants. We combined vowels and consonants form a word.

Description of consonants

When we want to describe a consonant, there are parameters that are used for that purpose. The three parameters used to describe consonants are: place of articulation manner of articulation, and voicing. We will discuss each of the three parameters and provide examples to illustrate it.

Place of articulation

This refers to a point of contact between two organs of speech during production of consonant sounds. As was observed in the video on speech sounds, some of the places of articulation in a Ghanaian language are bilabial, labio-dental, alveolar, palatal, velar, etc. The following are some places of articulation and the consonants of a Ghanaian language that are produced in these places.

- **Bilabial:** In producing bilabial sounds, we bring our two lips closely together. For example, /p, b, m/.
- **Alveolar:** When producing an alveolar sound, we bring our front part of the tongue to the hard palate. Some examples of alveolar sounds are /t, d, s, n/.
- **Labio-dental:** Labio-dental sounds are produced by touching your upper set of the teeth with your lower lip. For example, /f/.
- **Palatal:** In producing palatal sounds, we raise the centre of our tongue towards the hard palate. An example of palatal sound is /j/.
- **Velar:** When producing velar sounds, we push the back of our tongue towards the velum or the soft palate. Some examples of velar sounds are /k, g/.

Activity 1.7

Provide examples of Ghanaian languages word that begins with each of the places of articulation you have learned.

Manner of articulation

This refers to how the airflow is obstructed in the course of production of consonant sounds. There are degrees of obstruction of airflow during speech sounds production. For example, in some consonants, in their production there is a momentary complete blocking or obstruction and sudden release of airflow. Based on the degree of closure or obstruction, some manners of articulation can be identified with consonants of a Ghanaian language. The articulators configure and interact during the production of speech sound. Some examples of manners of articulation of consonants include stops, fricatives, affricate, nasal, lateral, etc. The following are some manners of articulation and examples of consonant sounds of a Ghanaian language produced in those manners.

- **Stops:** As the name suggests, in producing stop sounds, the continuous airflow is completely stopped or obstructed momentarily or briefly. The obstructed airflow is released suddenly. For example, /p, b, t, d, k, g, m, n/. Based on where the trapped or obstructed airflow is released from, we can categorize stop sounds into two, namely oral stop and nasal stop. When the trapped air is released through the mouth, it is known as *plosive*, e.g. /p, b, t, d, k, g/. On the other hand, when the trapped air is released through the nose, it is known as *nasal stop*, e.g. /m, n/.
- **Fricative:** For the production of fricative, there is no complete obstruction of airflow but rather a narrow space so that airflow passes through the space gradually thereby causing friction. Some examples of fricative sounds are /f, s/.

- **Affricate:** In producing affricate sounds, there are two stages involved; first there is a complete obstruction of airflow, and in the final stages the obstructed airflow is released gradually (not suddenly). Some examples include /tʃ/ as applicable in a Ghanaian language.
- **Lateral:** In the production of lateral sound, the front part of the tongue will touch the alveolar ridge allowing airflow from only the side of the mouth. An example of a lateral sound is /l/.
- **Trill:** Trill sound is produced by the tongue, which is the active articulator, touching the passive articulator; the alveolar ridge in quick succession. An example of a trill sound is /r/.

Voicing

My dear learner, the third parameter we use in describing consonant sounds is the voicing. When we are making or producing consonant sounds, our vocal folds, which are inside our glottis assumes two states; either it is vibrating or it is not vibrating. When the vocal folds are vibrating, the sounds we produce are known as voiced consonants. On the other hand, when the vocal folds are not vibrating when articulating consonant sounds we call those consonant sounds voiceless sounds. Some examples of voiced consonants include /g/, /d/, /m/, /b/, and voiceless consonants include /f/, /s/, /k/, /t/, /ʃ/, etc.

Activity 1.8

1. Watch a YouTube video on how speech consonants sounds are produced. Please click here: <https://www.youtube.com/watch?v=df0RdKuPF9I>.
2. After watching the video, practise articulating all consonants by placing your forefinger at your larynx in front of your neck as you mention the consonants, and determine which of them are voiced and which ones are voiceless.
3. Discuss the content in class based on the three parameters for describing consonants in your Ghanaian language of study.

Sound distribution

The concept sound distribution simply refers to the position in a word where speech sounds can occur in a language. Every language has some restrictions on where it can permit a speech sound to occur. The three positions that speech sounds can occur in word are initial position, medial position, or final positions. Let us begin our discussions with the distribution of vowels.

Vowel distribution

Vowel distribution simply refers to the position that a vowel can occur in a word in a Ghanaian language. When a vowel occurs at the beginning of a word, we say it has occurred in a **word initial** position. When it occurs at the middle of a word, we refer to that position as the **word medial** position, while when it occurs at the end of a word, it is referred to

as **word final** position. From the explanation above, it is clear that languages treat vowel distributions differently. It is also important to note that some of the vowels can occur in all the three positions in words in a language. Let us consider in the example below the distribution of the vowel /a/ in the words: NB: Please, replace examples with appropriate ones in a Ghanaian language.

1. asem
2. tam
3. asaaba

In example 1, the vowel /a/ occurs at the beginning of the word. In this case, we say that /a/ can occur at word initial. In example 2 also, the /a/ occurs in the middle of the word so we say that /a/ can occur in word medial. In the third example, /a/ is the last sound that ends the word thus, /a/ can occur at word final.

Activity 1.9 (word-initial vowels)

1. List all the vowels in your Ghanaian language of study in the table below.
2. For each vowel provide a corresponding word in your language that begins with the vowel.
3. Share with your colleague your observation on the answers you provided regarding which vowels cannot occur at word-initial position.
4. The pair should present their observations for class discussion.

NB: It is important to note that the vowels to be listed are the phonetic vowels (vowels we speak) and not orthographic vowels (vowels we write).

Vowel	Word-initial
e	

Activity 1.10 (word-medial vowels)

1. List all the vowels in your Ghanaian language of study in the table below.
2. For each vowel provide a corresponding word in your language in which the vowels occur in the middle.
3. Share with your colleague your observation on the answers you provided paying attention to which vowels cannot occur at word-medial position.
4. The pair should present their observations for class discussion.

Vowel	Word-medial
a	

Activity 1.11 (word-final vowels)

1. List all the vowels in your Ghanaian language of study in the table below.
2. For each vowel provide a corresponding word in your language that ends with the vowels.
3. Share with your colleague your observation on the answers you provided paying attention to which vowels cannot occur at word-final position.
4. The pair should present their observations for class discussion.

Vowel	Word-final
u	

Consonant distribution

The concept consonant distribution simply refers to the position in a word where a consonant can occur in a particular Ghanaian language. A consonant that occurs at the beginning of a word is referred to as **word initial** consonant. When a consonant occurs at the middle of a word, we refer to it as **word medial** consonant. When a consonant occurs at the end of a word, we refer to it as **word final** consonant. Let us note that some consonants can occur in all positions of a word. For example, in some Ghanaian languages, the consonant /m/ can occur in the three positions in a word.

In the following activities, we will consider consonants of a Ghanaian language and the position the consonants can occur in a word.

Activity 1.12 (word-initial consonants)

1. List all the consonants in your Ghanaian language of study in the table below.
2. For each consonant provide a corresponding word in your language that begins with it.
3. Share with your colleague your observation on the answers you provided focusing on consonants that cannot occur at word-initial position.
4. The pair should present their observations for class discussion. (Provide a table that reflects all consonants of your Ghanaian language of study).

NB: Please, note that the consonants to be listed are the phonetic consonants (spoken consonants) and not orthographic consonants (written consonants).

Consonant	Word-initial
p	
b	
t	
d	
k	
g	
f	
m	
n	
w	
s	

Activity 1.13 (word-medial consonants)

1. In pairs, list all the consonants in your Ghanaian language of study in the table below.
2. For each consonant provide a corresponding word in your language in which the consonants occur in the middle.
3. Share with your colleague pairs your observation on the answers.
4. The pair should present their observations for class discussion.

Consonant	Word-medial
p	
b	
t	
d	

Consonant	Word-medial
k	
g	
f	
m	
n	
w	
s	

Activity 1.14 (word-final consonants)

1. In your groups list all the consonants in your Ghanaian language of study in the table below.
2. For each consonant provide a corresponding word in your language that ends with the consonants.
3. Share with another group your observation on the answers.
4. The group should present their observations for class discussion.

Consonant	Word-final
p	
b	
t	
d	
k	
g	
f	
m	
n	
w	
s	

Extended Reading and Resources

Dolphyne, F. A., (2006). *The Akan (Twi-Fante) language: Its sound systems and tonal structure*. Accra: Woeli Publishing Services.

Yule, G. (2010). *The Study of Language (4th ed.)*. Cambridge: Cambridge University Press.

Organs of speech: <https://youtu.be/lg9RkazFZLk?t=378>.

References

Adomako, K., Odoom, J., & Sackitey, M. (2022). *Akan phonetics and phonology*. Adonai Publication Ltd.

Dolphyne, F. A., (2006). *The Akan (Twi-Fante) language: Its sound systems and tonal structure*. Woeli Publishing Services.

Ladefoged, P. & Disner, S. F. (2012). *Vowels and consonants (3rd ed.)*. Wiley-Blackwell.

Yule, G. (2010). *The Study of Language (4th ed.)*. Cambridge University Press.

Review Questions

1. Vowels and consonants are speech sounds, in your own words explain two ways in which they differ.
2. Using the three parameters, describe each of the following vowels of your language of study: /o/, /i/, /ɛ/, and /ɔ/.
3. Using the parameters place of articulation, manner of articulation, and voicing, how do you describe the following consonants? /f/, /g/, /m/, /t/.
4. Draw a table similar to the one below and provide examples of words of your Ghanaian language of study in the positions in which vowels can occur.

Vowel	Word initial	Word medial	Word final

5. Draw a table similar to the one below and provide examples of words of your Ghanaian language of study in the positions in which consonants can occur.

Consonant	Word initial	Word medial	Word final

Suggested Answers to Review Questions

The following are suggested responses to the review question.

1. While in the production of vowels there is little or no obstruction of airflow, in producing consonants there are varying significant degrees of obstruction of airflow. Again, while all vowels are voiced, not all consonants are voiced; some consonants are voiceless.
2. The following are the three parameters used for the description of vowels.

Vowels	Part of tongue	Height of tongue	Lip position/posture
i. /o/	Back	Mid	Rounded
ii. /i/	Front	High	Unrounded
iii. /ε/	Front	Mid	Unrounded
iv. /ɔ/	Back	Mid	Rounded

3. The following are the 3 parameters used in describing the following consonants: /f/, /g/, /m/, /t/.

Consonants	Place of articulation	Manner of articulation	Voicing
i. /f/	Labio-dental	Fricative	Voiceless
ii. /g/	Velar	Stop (plosive)	Voiced
iii. /m/	Bilabial	Stop (nasal)	Voiced
iv. /t/	Alveolar	Stop (plosive)	Voiceless

NB: Responses to questions four and five are Ghanaian language-specific. Therefore, the learners will do self-assessment.

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