La-Net

ARA 318

PHONETICS AND PHONOLOGY

Download on the App Store

GET IT ON Google Play

Course video is available on our app

lanetonline.com

Course code: ARA 318

Course title: Phonetics and Phonology

Course credit load: 1 Unit

Series 1: Branches Of Phonetics In Arabic (Articulatory, Acoustic, Auditory)

Part 1.1 Articulatory Phonetics In Arabic

- 1.1.1 Definition and scope of articulatory phonetics
- 1.1.2 Organs of speech in Arabic articulation
- 1.1.3 Classification of Arabic consonants and vowels by place and manner of articulation
- 1.1.4 Examples from Qur'anic recitation and classical Arabic usage

Part 1.2 Acoustic Phonetics In Arabic

- 1.2.1 Definition and scope of acoustic phonetics
- 1.2.2 Sound waves and frequency patterns in Arabic speech
- 1.2.3 Spectrogram analysis of Arabic consonants and vowels
- 1.2.4 Practical examples from Arabic language lab recordings

Part 1.3 Auditory Phonetics In Arabic

- 1.3.1 Definition and scope of auditory phonetics
- 1.3.2 The human ear and perception of Arabic sounds
- 1.3.3 Distinguishing similar Arabic phonemes through auditory training
- 1.3.4 Applications in Qur'anic tajwīd and Arabic pronunciation practice

Introduction

Phonetics is the scientific study of speech sounds, and it provides the foundation for understanding how the Arabic language is spoken and heard. As learners of Arabic, it is

important to recognise that the beauty and precision of Qur'anic recitation and classical Arabic expression depend on accurate production, transmission, and perception of sounds. This Series introduces you to the three major branches of phoneticsarticulatory, acoustic, and auditoryeach of which explains a different aspect of how Arabic sounds function.

The aim of this Series is to enable you to define, explain, and apply the principles of articulatory, acoustic, and auditory phonetics in the study of Arabic. By the end, you should be able to analyse how Arabic sounds are produced by the organs of speech, how they are transmitted as sound waves, and how they are perceived by the human ear.

We shall commence this Series by exploring articulatory phonetics, focusing on how Arabic consonants and vowels are produced and classified according to place and manner of articulation. Next, we will move on to acoustic phonetics, examining the physical properties of Arabic sounds such as frequency and resonance, supported by spectrogram analysis. Finally, we will conclude with auditory phonetics, considering how the ear perceives Arabic sounds, how similar phonemes are distinguished, and how this knowledge is applied in tajwīd and pronunciation practice.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 1.1** define articulatory phonetics and explain its scope in the study of Arabic sounds,
- **SLO 1.2** identify the organs of speech involved in Arabic articulation,
- **SLO 1.3** classify Arabic consonants and vowels according to place and manner of articulation,
- **SLO 1.4** demonstrate examples of articulatory phonetics using Qur'anic recitation and classical Arabic usage,
- **SLO 1.5** define acoustic phonetics and explain its scope in relation to Arabic speech,

- **SLO 1.6** analyse the physical properties of Arabic sounds such as frequency and resonance,
- **SLO 1.7** interpret spectrograms of Arabic consonants and vowels,
- **SLO 1.8** apply acoustic phonetics through practical examples from Arabic language lab recordings,
- **SLO 1.9** define auditory phonetics and explain its scope in Arabic sound perception,
- **SLO 1.10** describe how the human ear perceives Arabic sounds,
- **SLO 1.11** distinguish similar Arabic phonemes through auditory training, and
- **SLO 1.12** evaluate the applications of auditory phonetics in Qur'anic tajwīd and pronunciation practice.

1.1 Articulatory Phonetics In Arabic

1.1.1 Definition and scope of articulatory phonetics

Articulatory phonetics is the branch of phonetics that studies how speech sounds are physically produced by the organs of speech. In Arabic, this involves examining how consonants and vowels are articulated, focusing on the movement and positioning of the tongue, lips, and other vocal organs. Understanding articulatory phonetics is crucial for accurate pronunciation, especially in Qur'anic recitation where precision is required.

Fill in the blank: The branch of phonetics that studies how speech sounds are physically produced is called _____.

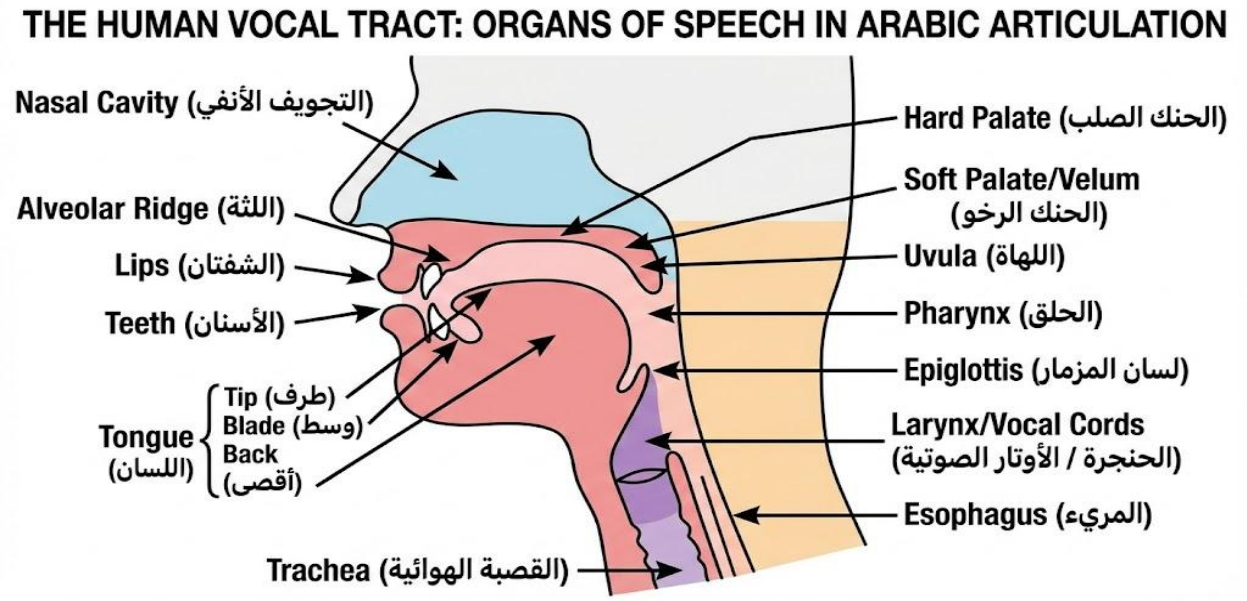


Figure 1.1: Organs of speech in Arabic articulation

1.1.2 Organs of speech in Arabic articulation

The **organs of speech** are the physical structures involved in producing sounds. In Arabic, these include the lungs, vocal cords, tongue, lips, teeth, and nasal cavity. Each organ plays a specific role in shaping sounds. For example, the tongue is central in producing consonants such as /d/ and /t/, while the lips are essential for sounds like /b/ and /m/.

Fill in the blank: The organ of speech that produces sounds like /b/ and /m/ is the _____.

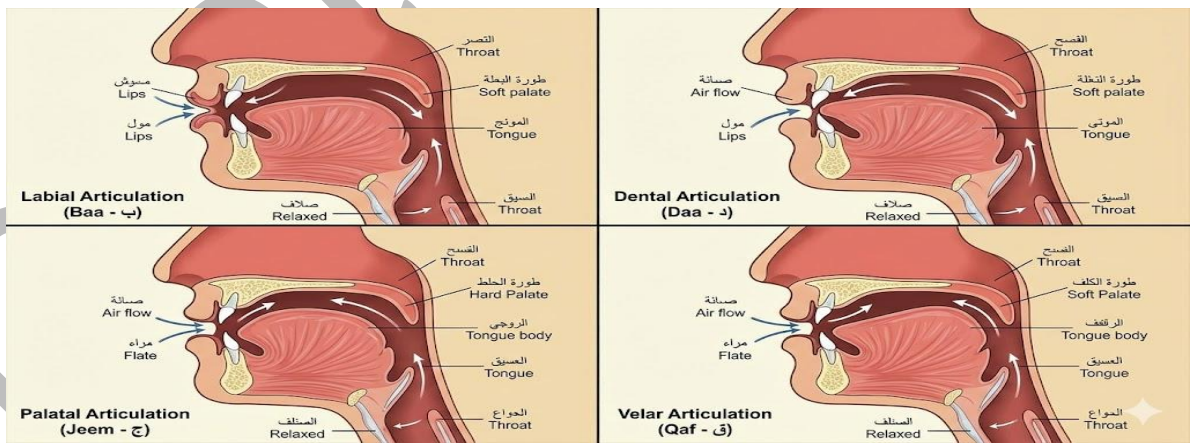


Plate 1.1: Organs of speech in Arabic articulation

1.1.3 Classification of Arabic consonants and vowels by place and manner of articulation

Arabic consonants are classified by **place of articulation** (where the sound is produced) and **manner of articulation** (how the sound is produced). For example, /q/ is a uvular stop produced at the back of the tongue, while /f/ is a labiodental fricative produced by the lower lip and upper teeth. Arabic vowels are classified by tongue height and position, such as /a/ (low central), /i/ (high front), and /u/ (high back).

Fill in the blank: The consonant /q/ is classified as a _____ stop produced at the back of the tongue.

Consonant	Place of articulation	Manner of articulation	Example
/q/	Uvular	Stop	Qur'an recitation of *Qul*
/f/	Labiodental	Fricative	Word *fi* (in)
/b/	Bilabial	Stop	Word *bismillah*

Table 1.1: Classification of Arabic consonants by place and manner of articulation

1.1.4 Examples from Qur'anic recitation and classical Arabic usage

Qur'anic recitation provides clear examples of articulatory phonetics. For instance, the word *Qul* in *Sūrat al-Ikhlāṣ* demonstrates the uvular stop /q/, while *bismillah* illustrates the bilabial stop /b/. Classical Arabic poetry also highlights articulation, where precise sound production contributes to rhythm and meaning. These examples show how articulatory phonetics is applied in real contexts.

Fill in the blank: The word *Qul* in *Sūrat al-Ikhlāṣ* demonstrates the articulation of the consonant _____.

Plate 1.2: Examples of articulatory phonetics in Qur'anic recitation

Pilot questions 1.1

1. What is articulatory phonetics?
2. Fill in the blank: The branch of phonetics that studies how speech sounds are physically produced is called _____.
3. Name three organs of speech used in Arabic articulation.
4. Fill in the blank: The organ of speech that produces sounds like /b/ and /m/ is the _____.
5. Classify the consonant /q/ by place and manner of articulation.
6. Fill in the blank: The word *Qul* in *Sūrat al-Ikhlāṣ* demonstrates the articulation of the consonant _____.

1.2 Acoustic Phonetics In Arabic

1.2.1 Definition and scope of acoustic phonetics

Acoustic phonetics is the branch of phonetics that studies the physical properties of speech sounds as they travel through the air. It focuses on sound waves, frequency, amplitude, and resonance. In Arabic, acoustic phonetics helps us understand why certain sounds, such as emphatic consonants, have a distinct quality compared to non-emphatic ones. This branch is particularly useful when analysing Qur'anic recitation, where subtle differences in sound waves affect meaning and beauty.

Fill in the blank: The branch of phonetics that studies the physical properties of speech sounds is called _____.

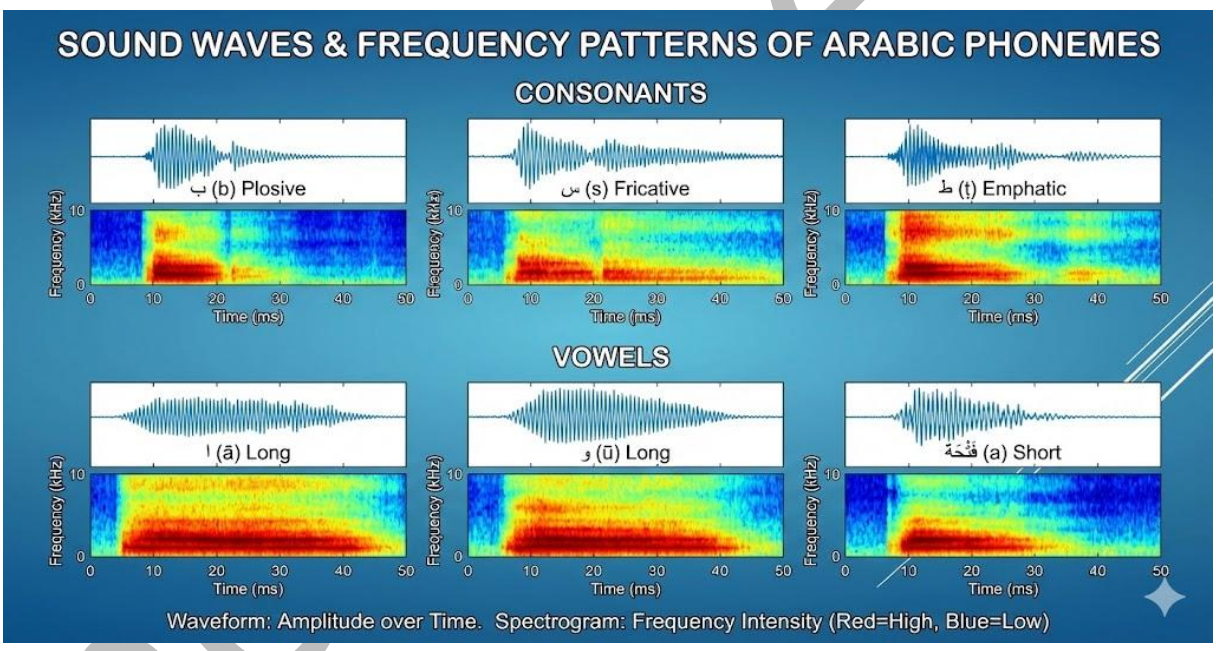


Figure 1.2: Sound waves in Arabic speech

1.2.2 Sound waves and frequency patterns in Arabic speech

Arabic sounds differ in their **frequency patterns**. For example, vowels such as /i/ and /u/ have distinct resonance frequencies, while emphatic consonants like /ṣ/ and /ḍ/ produce lower frequency vibrations. These differences can be measured and displayed visually, helping learners to distinguish sounds that may otherwise seem similar.

Fill in the blank: Emphatic consonants such as /ṣ/ and /ḍ/ produce _____ frequency vibrations compared to non-emphatic consonants.

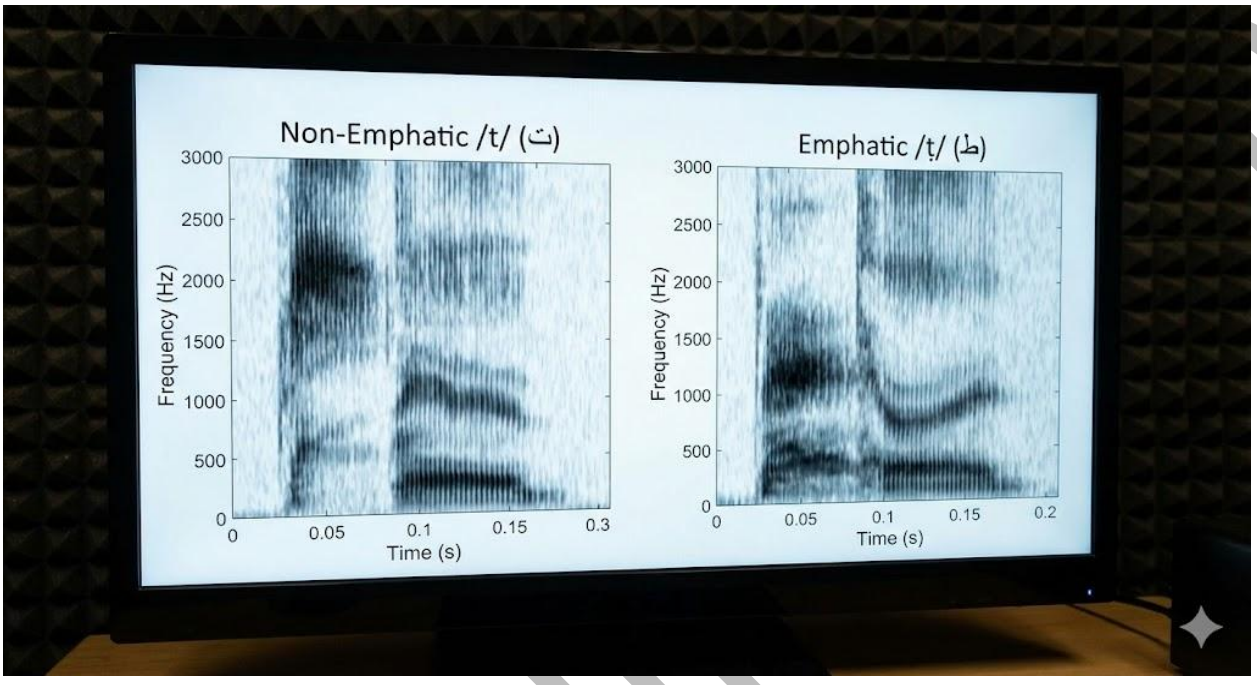


Plate 1.3: Frequency patterns of Arabic consonants

1.2.3 Spectrogram analysis of Arabic consonants and vowels

A **spectrogram** is a visual representation of sound frequencies over time. In Arabic phonetics, spectrograms are used to analyse how consonants and vowels differ in their acoustic properties. For example, the vowel /a/ shows a wide frequency band, while /i/ shows a narrow high-frequency band. Spectrograms are especially useful in language labs, where learners can see the acoustic differences between sounds they hear.

Fill in the blank: A visual representation of sound frequencies over time is called a _____.

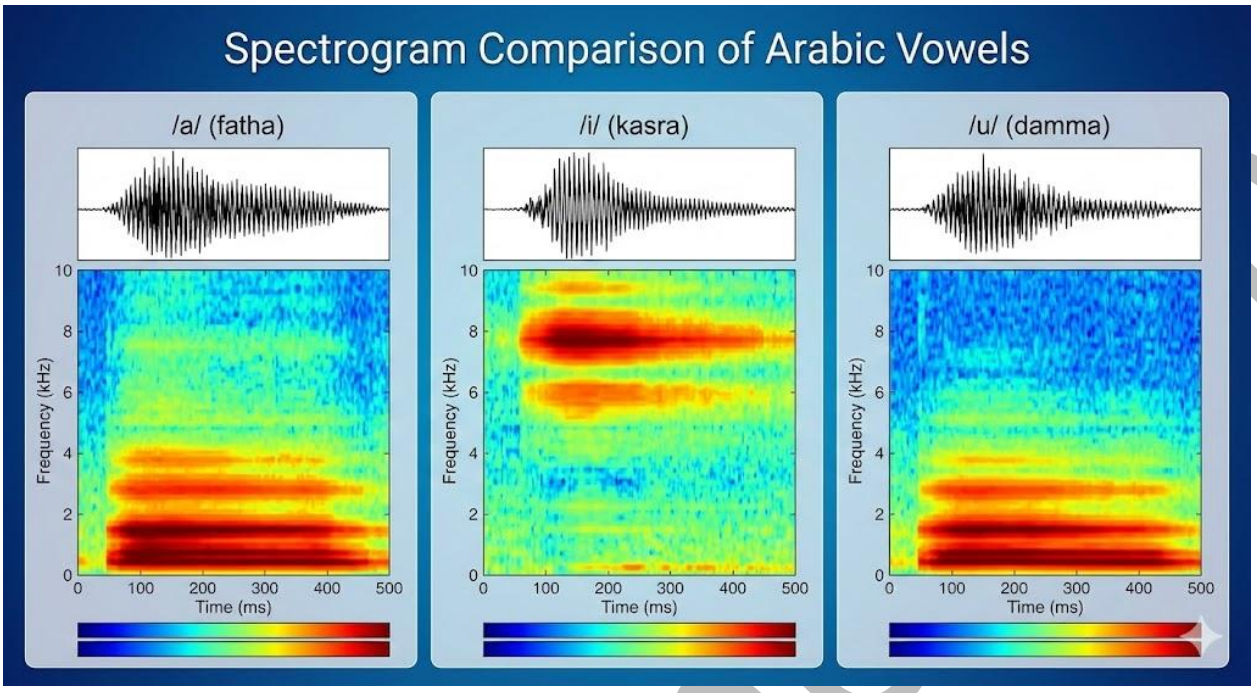


Figure 1.3: Spectrogram analysis of Arabic vowels

1.2.4 Practical examples from Arabic language lab recordings

In the Arabic language lab, learners can listen to recordings of native speakers and observe spectrograms of their speech. For example, recordings of Qur'anic recitation highlight the acoustic differences between long and short vowels, while classical poetry demonstrates rhythmic sound patterns. These practical exercises help learners connect theory with real-world application.

Fill in the blank: Recordings of Qur'anic recitation highlight the acoustic differences between _____ and short vowels.

Activity	**Explanation**
Listen to Recordings of Qur'anic Recitation	Helps students observe **intonation, rhythm, and articulation** of classical Arabic sounds.
Observe Spectrograms of Vowels and Consonants	Visualises **frequency patterns and acoustic features**, aiding phonetic analysis.

Compare Emphatic and Non-Emphatic Consonants	Trains learners to distinguish subtle **phonetic contrasts** central to Arabic pronunciation.
Practise Distinguishing Sounds Using Frequency Patterns	Strengthens auditory discrimination by linking **acoustic cues to phonological categories**.

Box 1.1: Recommended practice in the Arabic language lab

Pilot questions 1.2

1. What is acoustic phonetics?
2. Fill in the blank: The branch of phonetics that studies the physical properties of speech sounds is called _____.
3. Which consonants in Arabic produce lower frequency vibrations compared to non-emphatic consonants?
4. Fill in the blank: Emphatic consonants such as /ṣ/ and /ḍ/ produce _____ frequency vibrations compared to non-emphatic consonants.
5. What is a spectrogram used for in Arabic phonetics?
6. Fill in the blank: A visual representation of sound frequencies over time is called a _____.
7. What do recordings of Qur'anic recitation highlight in terms of vowel sounds?
8. Fill in the blank: Recordings of Qur'anic recitation highlight the acoustic differences between _____ and short vowels.

1.3 Auditory Phonetics In Arabic

1.3.1 Definition and scope of auditory phonetics

Auditory phonetics is the branch of phonetics that studies how speech sounds are perceived by the human ear and processed by the brain. In Arabic, auditory phonetics is especially important because many sounds are closely related, and learners must train their ears to distinguish subtle

differences. This branch helps explain why accurate listening is essential for Qur'anic recitation and for mastering Arabic pronunciation.

Fill in the blank: The branch of phonetics that studies how speech sounds are perceived by the ear is called _____.

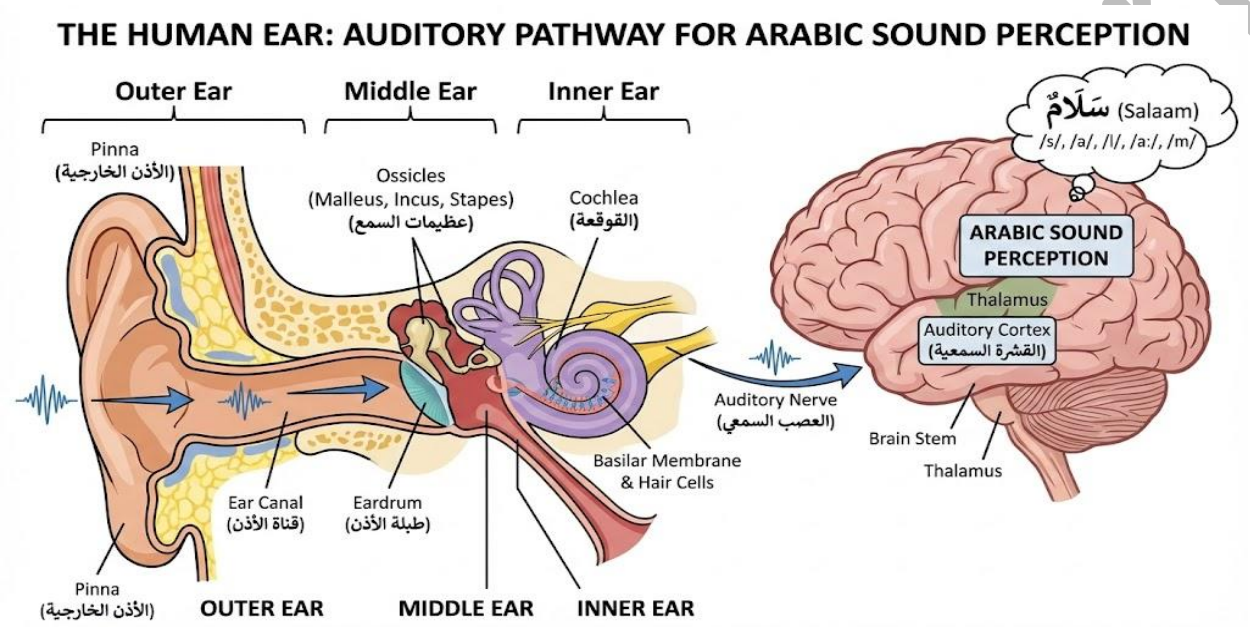


Figure 1.4: Auditory pathway for Arabic sound perception

1.3.2 The human ear and perception of Arabic sounds

The **human ear** consists of the outer ear, middle ear, and inner ear, all of which work together to capture and process sound waves. In Arabic, the ear must distinguish between sounds such as /ḥ/ and /h/, which differ in subtle breathiness, or between emphatic and non-emphatic consonants. Training the ear to perceive these differences is a key step in mastering Arabic phonetics.

Fill in the blank: The human ear must distinguish between sounds such as /ḥ/ and _____, which differ in subtle breathiness.

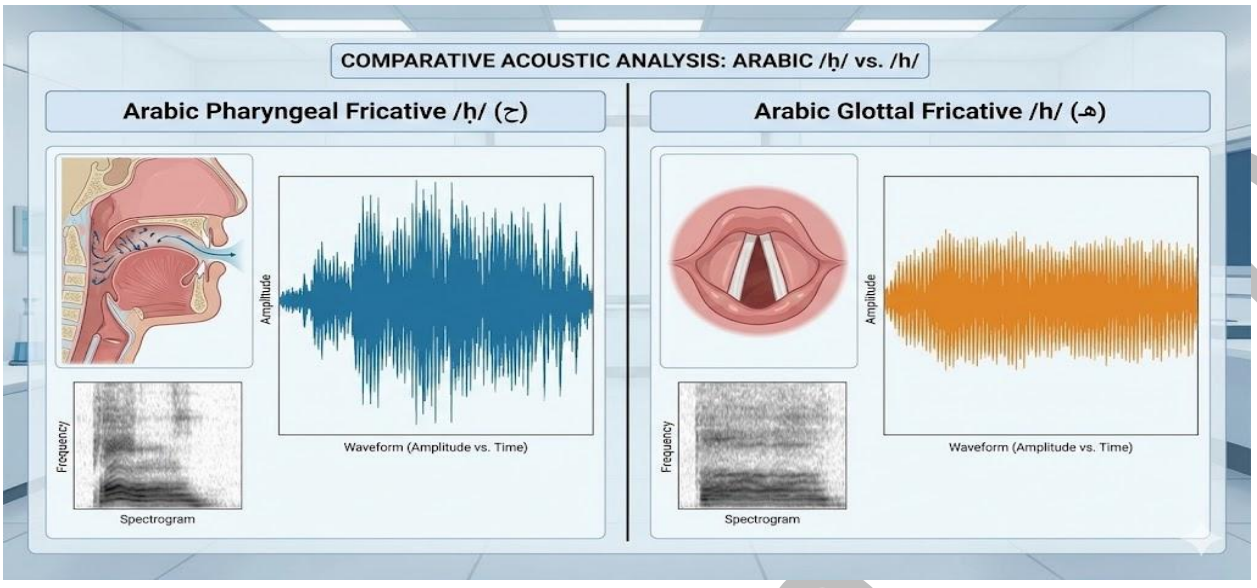


Plate 1.4: Auditory perception of similar Arabic sounds

1.3.3 Distinguishing similar Arabic phonemes through auditory training

Arabic contains several **similar phonemes** that learners often confuse. For example, /s/ and /ṣ/ differ in emphasis, while /d/ and /ḍ/ differ in tongue position and resonance. Auditory training involves repeated listening and practice to sharpen perception of these differences. This is particularly important in Qur'anic tajwīd, where mispronunciation can alter meaning.

Fill in the blank: The consonants /s/ and /ṣ/ differ in _____, which learners must train their ears to perceive.

Phoneme pair	Difference	Example word
/s/ vs /ṣ/	Emphasis	*sabr* vs *ṣabr*
/d/ vs /ḍ/	Tongue position and resonance	*dīn* vs *ḍīn*
/ḥ/ vs /h/	Breathiness	*ḥaqq* vs *hal*

Table 1.2: Examples of similar Arabic phonemes requiring auditory training

1.3.4 Applications in Qur'anic tajwīd and Arabic pronunciation practice

Auditory phonetics is applied in **tajwīd**, the science of Qur'anic recitation, where precise listening ensures correct pronunciation of every letter. For example, distinguishing between /ḍ/ and /d/ is essential in reciting *ṣirāṭ al-mustaqīm*. In Arabic pronunciation practice, auditory

phonetics helps learners refine their listening skills, ensuring they can reproduce sounds accurately.

Fill in the blank: Auditory phonetics is applied in _____, the science of Qur'anic recitation.

Application	Explanation
Tajwīd Training for Qur'anic Recitation	Enhances accuracy in **intonation, rhythm, and articulation** of sacred texts.
Listening Exercises for Distinguishing Similar Phonemes	Helps learners identify subtle contrasts (e.g., emphatic vs. non-emphatic sounds).
Pronunciation Drills Using Language Lab Recordings	Provides structured practice with **authentic audio models** for refining speech.
Peer Practice Sessions	Encourages collaborative learning, improving both **listening and speaking skills**.

Box 1.2: Practical applications of auditory phonetics in Arabic

Pilot questions 1.3

1. What is auditory phonetics?
2. Fill in the blank: The branch of phonetics that studies how speech sounds are perceived by the ear is called _____.
3. Which parts of the human ear work together to capture and process sound waves?
4. Fill in the blank: The human ear must distinguish between sounds such as /ḥ/ and _____, which differ in subtle breathiness.
5. Give two examples of similar Arabic phonemes that require auditory training.
6. Fill in the blank: The consonants /s/ and /ṣ/ differ in _____, which learners must train their ears to perceive.
7. How is auditory phonetics applied in Qur'anic tajwīd?

8. Fill in the blank: Auditory phonetics is applied in _____, the science of Qur'anic recitation.

Series Summary

This Series has introduced you to the three major branches of phonetics in Arabic: **articulatory, acoustic, and auditory**. Each branch provides a different perspective on how Arabic sounds are produced, transmitted, and perceived. By studying articulatory phonetics, you explored the organs of speech and how consonants and vowels are classified by place and manner of articulation. Acoustic phonetics then showed you how sound waves and frequency patterns shape the distinct qualities of Arabic sounds, supported by spectrogram analysis and language lab recordings. Finally, auditory phonetics highlighted the role of the human ear in perceiving and distinguishing similar phonemes, with practical applications in Qur'anic tajwīd and pronunciation practice.

In line with the Series Learning Outcomes, you should now be able to define and explain each branch of phonetics, classify Arabic sounds by articulation, analyse their acoustic properties, interpret spectrograms, and evaluate how auditory training supports accurate recitation and pronunciation. This knowledge provides a strong foundation for the rest of the course, ensuring you can approach the study of Arabic phonology with both theoretical understanding and practical skill.

Glossary of Terms

- **Acoustic phonetics**: The branch of phonetics that studies the physical properties of speech sounds, such as sound waves, frequency, and resonance, as they travel through the air.
- **Articulatory phonetics**: The branch of phonetics that examines how speech sounds are physically produced by the organs of speech, including the tongue, lips, and vocal cords.
- **Auditory phonetics**: The branch of phonetics that focuses on how speech sounds are perceived by the human ear and processed by the brain.

- **Emphatic consonants**: Special consonants in Arabic, such as /ṣ/ and /ḍ/, that are produced with a distinct emphasis and lower frequency vibrations compared to non-emphatic consonants.
- **Organs of speech**: The physical structures used to produce sounds, including the lungs, vocal cords, tongue, lips, teeth, and nasal cavity.
- **Place of articulation**: The specific location in the vocal tract where a sound is produced, such as bilabial (using both lips) or uvular (using the back of the tongue against the uvula).
- **Manner of articulation**: The way in which airflow is modified to produce a sound, such as stop, fricative, or nasal.
- **Phoneme**: The smallest unit of sound in a language that can change meaning, for example /b/ and /m/ in Arabic.
- **Spectrogram**: A visual representation of sound frequencies over time, used to analyse the acoustic properties of vowels and consonants.
- **Tajwīd**: The science of Qur'anic recitation, which requires precise articulation and auditory perception to ensure correct pronunciation of every letter.

Concept Check Questions [Series 1]

Objective questions

1. Which branch of phonetics studies how speech sounds are physically produced? (Linked to SLO 1.1)
2. Fill in the blank: The consonant /q/ is classified as a _____ stop. (Linked to SLO 1.3)
3. Which branch of phonetics focuses on the physical properties of speech sounds such as frequency and resonance? (Linked to SLO 1.5)
4. Fill in the blank: A visual representation of sound frequencies over time is called a _____. (Linked to SLO 1.7)
5. Which branch of phonetics studies how speech sounds are perceived by the human ear? (Linked to SLO 1.9)
6. Fill in the blank: Auditory phonetics is applied in _____, the science of Qur'anic recitation. (Linked to SLO 1.12)

Short-answer questions

7. Define articulatory phonetics and explain its scope in Arabic. (Linked to SLO 1.1)
8. Identify three organs of speech used in Arabic articulation. (Linked to SLO 1.2)
9. Classify the consonant /f/ by place and manner of articulation. (Linked to SLO 1.3)
10. Explain how emphatic consonants differ acoustically from non-emphatic consonants. (Linked to SLO 1.6)
11. What does a spectrogram reveal about Arabic vowels? (Linked to SLO 1.7)
12. Give two examples of similar Arabic phonemes that require auditory training. (Linked to SLO 1.11)
13. Explain how auditory phonetics supports tajwīd practice. (Linked to SLO 1.12)

Long-answer questions

14. Discuss articulatory phonetics in Arabic, including its definition, organs of speech, classification of sounds, and examples from Qur'anic recitation. (Linked to SLOs 1.1–1.4)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

15. Analyse acoustic phonetics in Arabic, explaining its scope, sound waves, frequency patterns, spectrogram analysis, and practical applications in the language lab. (Linked to SLOs 1.5–1.8)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

16. Evaluate auditory phonetics in Arabic, describing its scope, the role of the human ear, distinguishing similar phonemes, and applications in tajwīd and pronunciation practice. (Linked to SLOs 1.9–1.12)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

Answers to Concept Check Questions [Series 1]

Objective questions

1. Articulatory phonetics.
2. Uvular.
3. Acoustic phonetics.
4. Spectrogram.
5. Auditory phonetics.
6. Tajwīd.

Short-answer questions

7. Articulatory phonetics studies how speech sounds are produced by the organs of speech in Arabic.
8. Tongue, lips, vocal cords.
9. /f/ is a labiodental fricative.
10. Emphatic consonants produce lower frequency vibrations compared to non-emphatic consonants.
11. A spectrogram shows the frequency bands of vowels, such as wide for /a/ and narrow high-frequency for /i/.
12. /s/ vs /ṣ/, /d/ vs /ḍ/.
13. Auditory phonetics supports tajwīd by training the ear to distinguish subtle phoneme differences, ensuring accurate recitation.

Long-answer questions

14. *Basic response*: Articulatory phonetics studies how Arabic sounds are produced, using organs of speech such as tongue and lips. Consonants are classified by place and manner of articulation, with examples like /q/ (uvular stop) and /b/ (bilabial stop). Qur'anic recitation demonstrates these articulations clearly.

Value-added response: Learners may add that articulatory phonetics is foundational for tajwīd, ensuring precise recitation and preserving meaning in Qur'anic verses.

15. *Basic response*: Acoustic phonetics studies the physical properties of Arabic sounds, including sound waves and frequency patterns. Emphatic consonants produce lower frequencies, and spectrograms reveal differences between vowels. Language labs provide practical recordings for analysis.
    Value-added response: Learners may add that acoustic phonetics connects linguistic study with physics, showing how resonance and frequency patterns shape Arabic's unique sound system.

16. *Basic response*: Auditory phonetics studies how Arabic sounds are perceived by the ear. It involves distinguishing similar phonemes like /s/ and /ṣ/, and supports tajwīd practice.
    Value-added response: Learners may add that auditory phonetics bridges science and spirituality, as accurate listening and perception are essential for preserving Qur'anic recitation traditions and mastering Arabic pronunciation.

Answers to Pilot Questions [Series 1]

Part 1.1

1. Articulatory phonetics.
2. Articulatory phonetics.
3. Tongue, lips, vocal cords (any three organs of speech).
4. Lips.
5. /q/ is a uvular stop.
6. /q/.

Part 1.2

1. Acoustic phonetics.
2. Acoustic phonetics.
3. Emphatic consonants such as /ṣ/ and /ḍ/.
4. Lower.
5. A spectrogram is used to analyse the acoustic properties of Arabic sounds.
6. Spectrogram.
7. Recordings highlight differences between long and short vowels.
8. Long.

Part 1.3

1. Auditory phonetics.
2. Auditory phonetics.
3. Outer ear, middle ear, inner ear.
4. /h/.
5. /s/ vs /ṣ/, /d/ vs /ḍ/, /ḥ/ vs /h/ (any two).

6. Emphasis.
7. It ensures precise listening and correct pronunciation of letters in Qur'anic recitation.
8. Tajwīd.

References and Attributions [Series 1]

General References

- Al-Ani, S. H. (1970). *Arabic phonology: An outline*. Mouton.
- Al-Jurjānī. (n.d.). *Dalāʾil al-Iʿjāz*. Classical Arabic manuscript.
- Ladefoged, P. (2001). *A course in phonetics* (4th ed.). Harcourt College Publishers.
- Qur'an. (n.d.). Selected verses cited for examples of articulation and tajwīd.

Illustrations

- *Figure 1.1: Organs of speech in Arabic articulation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a labelled diagram of the human vocal tract highlighting organs of speech used in Arabic articulation."
    - Suggested OER search string: "Arabic phonetics vocal tract diagram OER"
- *Plate 1.1: Organs of speech in Arabic articulation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate an image of the human mouth showing tongue and lips in articulation of Arabic sounds."
    - Suggested OER search string: "Arabic phonetics organs of speech OER"
- *Table 1.1: Classification of Arabic consonants by place and manner of articulation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a table showing classification of Arabic consonants by place and manner of articulation with examples."
    - Suggested OER search string: "Arabic consonants classification place manner articulation OER"
- *Plate 1.2: Examples of articulatory phonetics in Qur'anic recitation*

    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image of a Qur’anic manuscript highlighting words with distinct Arabic consonant articulation.”
    - Suggested OER search string: “Qur’an Arabic phonetics articulation OER”
- *Figure 1.2: Sound waves in Arabic speech*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a diagram showing sound waves and frequency patterns of Arabic consonants and vowels.”
    - Suggested OER search string: “Arabic phonetics acoustic sound waves OER”
- *Plate 1.3: Frequency patterns of Arabic consonants*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image of a spectrogram showing frequency differences between emphatic and non-emphatic Arabic consonants.”
    - Suggested OER search string: “Arabic consonants frequency spectrogram OER”
- *Figure 1.3: Spectrogram analysis of Arabic vowels*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a spectrogram diagram comparing Arabic vowels /a/, /i/, and /u/.”
    - Suggested OER search string: “Arabic vowels spectrogram analysis OER”
- *Box 1.1: Recommended practice in the Arabic language lab*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a text box listing recommended practice activities in the Arabic language lab for acoustic phonetics.”
    - Suggested OER search string: “Arabic language lab phonetics practice OER”

- *Figure 1.4: Auditory pathway for Arabic sound perception*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a labelled diagram of the human ear showing auditory pathway for Arabic sound perception.”
    - Suggested OER search string: “Arabic phonetics auditory perception diagram OER”
- *Plate 1.4: Auditory perception of similar Arabic sounds*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image showing comparison of Arabic sounds /ḥ/ and /h/ with auditory waveforms.”
    - Suggested OER search string: “Arabic phonetics auditory perception h OER”
- *Table 1.2: Examples of similar Arabic phonemes requiring auditory training*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a table showing examples of similar Arabic phonemes requiring auditory training with differences and examples.”
    - Suggested OER search string: “Arabic phonemes auditory training OER”
- *Box 1.2: Practical applications of auditory phonetics in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a text box listing practical applications of auditory phonetics in Arabic, including tajwīd and pronunciation practice.”
    - Suggested OER search string: “Arabic tajwid auditory phonetics practice OER”

Series 2: Phonology Of The Arabic Language (Consonants And Vowels)

Part 2.1 Consonants In Arabic Phonology

- 2.1.1 Definition and scope of consonants in Arabic phonology
- 2.1.2 Classification of Arabic consonants by phonological features (voicing, emphasis, nasality)
- 2.1.3 Distribution of consonants in Arabic words and syllables
- 2.1.4 Examples from Qur'anic recitation and classical Arabic texts

Part 2.2 Vowels In Arabic Phonology

- 2.2.1 Definition and scope of vowels in Arabic phonology
- 2.2.2 Short and long vowels in Arabic (ḥarakāt and madd)
- 2.2.3 Phonological role of vowels in word formation and meaning
- 2.2.4 Examples from Qur'anic recitation and poetry

Part 2.3 Interaction Of Consonants And Vowels In Arabic

- 2.3.1 Syllable structure in Arabic (CV, CVC, CVCC)
- 2.3.2 Phonological rules governing consonant-vowel interaction
- 2.3.3 Effects of vowel length and consonant emphasis on meaning
- 2.3.4 Applications in tajwīd and Arabic pronunciation practice

Introduction

In the last Series, we explored the three branches of phonetics in Arabic, focusing on how sounds are produced, transmitted, and perceived. Building on that foundation, we now turn to phonology, which examines how sounds function within the structure of the Arabic language. Phonology is essential because it explains the rules and patterns that govern consonants and vowels, showing how they interact to form meaningful words and expressions.

The aim of this Series is to enable you to define, classify, and analyse the phonological features of Arabic consonants and vowels, and to apply this knowledge in understanding syllable structures, word formation, and pronunciation practices.

We shall commence this Series by studying consonants in Arabic phonology, looking at their definition, classification, and distribution in words and syllables. Next, we will move on to vowels, examining short and long vowels, their phonological roles, and their importance in meaning. Finally, we will conclude with the interaction of consonants and vowels, focusing on syllable structures, phonological rules, and practical applications in tajwīd and pronunciation practice.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 2.1** define consonants in Arabic phonology and explain their scope,
- **SLO 2.2** classify Arabic consonants according to phonological features such as voicing, emphasis, and nasality,
- **SLO 2.3** analyse the distribution of consonants in Arabic words and syllables,
- **SLO 2.4** demonstrate examples of consonant use from Qur'anic recitation and classical Arabic texts,
- **SLO 2.5** define vowels in Arabic phonology and explain their scope,
- **SLO 2.6** distinguish between short and long vowels in Arabic, including ḥarakāt and madd,
- **SLO 2.7** evaluate the phonological role of vowels in word formation and meaning,
- **SLO 2.8** illustrate examples of vowel use from Qur'anic recitation and poetry,
- **SLO 2.9** describe syllable structures in Arabic, including CV, CVC, and CVCC patterns,
- **SLO 2.10** explain phonological rules governing consonant-vowel interaction,

- **SLO 2.11** analyse the effects of vowel length and consonant emphasis on meaning, and
- **SLO 2.12** apply knowledge of consonant-vowel interaction in tajwīd and Arabic pronunciation practice.

2.1 Consonants In Arabic Phonology

2.1.1 Definition and scope of consonants in Arabic phonology

Consonants are speech sounds produced by obstructing or constricting the airflow in the vocal tract. In Arabic phonology, consonants are central because they form the backbone of words and syllables. Unlike vowels, which are produced with an open vocal tract, consonants involve varying degrees of closure or friction. Arabic has 28 consonantal sounds, each with distinctive phonological features that contribute to meaning and pronunciation.

Fill in the blank: Arabic has _____ consonantal sounds that form the backbone of words and syllables.

PHONOLOGICAL FEATURES OF ARABIC CONSONANTS

FEATURE / CONSONANT CLASS	BILABIAL (شَفَوِي)	DENTAL/ALVEOLAR (لِثَوي / أَسْنَانِي)	PALATAL/VELAR (غَارِي / طَبَقِي)	UVULAR/PHARYNGEAL/ GLOTTAL (لَهَوي / حَلْقِي / حَنْجَرِي)
CONSONANTS (Arabic & IPA)	ب (b), م (m), و (w)	ت (t), د ط (d), ط (ṭ) ض (ḍ), س (s), ص (ṣ) ن (n), ل (l), ر (r)	ج (j), ش (š), ك (k), ي (y)	ق (q), غ (ġ), خ (ḫ), ع (ʿ), ح (ḥ), ء (ʔ), هـ (h)
PLACE OF ARTICULATION	Lips	Teeth & Alveolar Ridge	Hard & Soft Palate	Uvula, Pharynx, Glottis
VOICING (+/- VOICE)	+ (b, m, w)	– (t, ṭ, s, ṣ) + (d, ḍ, n, l, r)	+ (j, y) – (š, k)	– (q, ḥ, ḫ, ʔ, h) + (ġ, ʿ)
EMPHASIS (*TAFKHĪM*)	– (Plain)	+ (ṭ, ḍ, ṣ) – (others)	– (Plain)	+ (q, ġ, ḥ) – (others)
NASALITY (+/- NASAL)	+ (m) – (b, w)	+ (n) – (others)	– (All)	– (All)

+ = Feature Present, – = Feature Absent. *TAFKHĪM* = Emphatic/Velarized.

Figure 2.1: Arabic consonant chart by phonological features

2.1.2 Classification of Arabic consonants by phonological features

Arabic consonants can be classified by **voicing** (whether the vocal cords vibrate), **emphasis** (whether the sound is produced with secondary articulation involving the pharynx), and **nasality** (whether air passes through the nose). For example, /b/ is a voiced bilabial stop, /t/ is a voiceless alveolar stop, and /m/ is a nasal bilabial sound. Emphatic consonants such as /ṣ/, /ḍ/, /ṭ/, and /ẓ/ are unique to Arabic and give the language its distinct sound quality.

Fill in the blank: The consonant /m/ is classified as a _____ bilabial sound.

Consonant	Voicing	Emphasis	Nasality	Example word
/b/	Voiced	Non-emphatic	Non-nasal	*bismillah*
/t/	Voiceless	Non-emphatic	Non-nasal	*taʿāla*
/m/	Voiced	Non-emphatic	Nasal	*muḥammad*
/ṣ/	Voiceless	Emphatic	Non-nasal	*ṣabr*

Table 2.1: Classification of selected Arabic consonants by phonological features

2.1.3 Distribution of consonants in Arabic words and syllables

Arabic consonants are distributed across words and syllables according to phonological rules. A typical Arabic syllable structure is **CV** (consonant + vowel), but more complex forms such as **CVC** and **CVCC** also occur. For example, the word *kitāb* (book) follows a CVCVC pattern. Consonants often appear at the beginning of syllables, giving Arabic its strong rhythmic quality.

Fill in the blank: The word *kitāb* follows a _____ pattern in Arabic syllable structure.

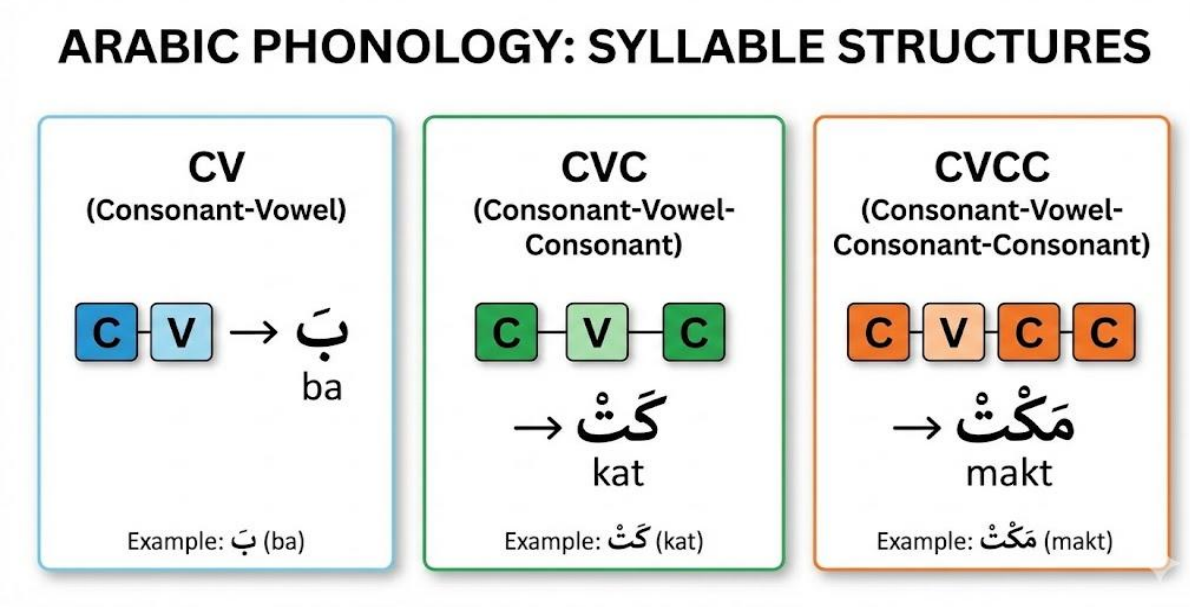


Figure 2.2: Syllable structures in Arabic phonology

2.1.4 Examples from Qur'anic recitation and classical Arabic texts

Qur'anic recitation provides clear examples of consonant use in Arabic phonology. For instance, the word *ṣirāṭ* in *Sūrat al-Fātiḥa* demonstrates the emphatic consonant /ṣ/, while *muḥammad* illustrates the nasal consonant /m/. Classical Arabic poetry also highlights consonant distribution, where precise articulation contributes to rhythm and meaning. These examples show how phonological rules are applied in real contexts.

Fill in the blank: The word *ṣirāṭ* in *Sūrat al-Fātiḥa* demonstrates the articulation of the consonant _____.

Plate 2.1: Examples of consonants in Qur'anic recitation

Pilot questions 2.1

1. How many consonantal sounds are found in Arabic?
2. Fill in the blank: Arabic has _____ consonantal sounds that form the backbone of words and syllables.
3. Classify the consonant /b/ by voicing, emphasis, and nasality.
4. Fill in the blank: The consonant /m/ is classified as a _____ bilabial sound.
5. What syllable pattern does the word *kitāb* follow?
6. Fill in the blank: The word *kitāb* follows a _____ pattern in Arabic syllable structure.
7. Give one example of an emphatic consonant in Arabic.
8. Fill in the blank: The word *ṣirāṭ* in *Sūrat al-Fātiḥa* demonstrates the articulation of the consonant _____.

2.2 Vowels In Arabic Phonology

2.2.1 Definition and scope of vowels in Arabic phonology

Vowels are speech sounds produced without significant obstruction of airflow in the vocal tract. In Arabic phonology, vowels are crucial because they carry meaning, distinguish words, and affect rhythm in speech. Unlike consonants, vowels are produced with an open vocal tract, and their quality depends on tongue position and lip shape. Arabic vowels are relatively few in number but play a powerful role in shaping words and expressions.

Fill in the blank: Unlike consonants, vowels are produced with an _____ vocal tract.

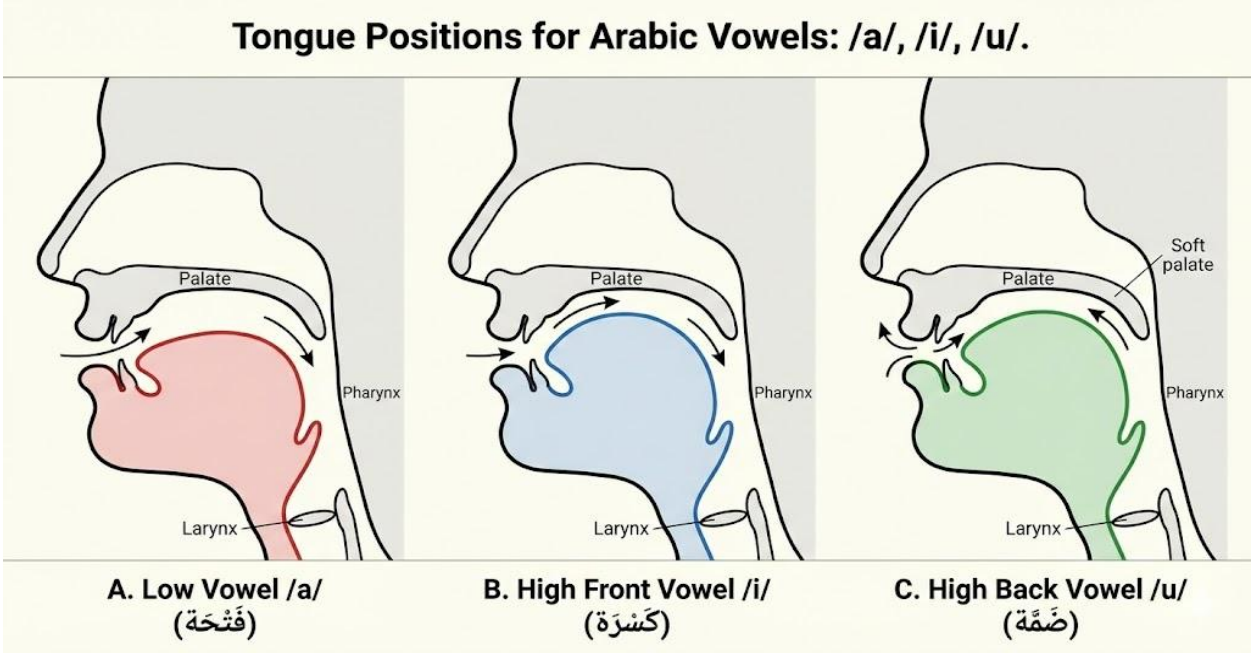


Figure 2.3: Tongue positions for Arabic vowels

2.2.2 Short and long vowels in Arabic (ḥarakāt and madd)

Arabic vowels are divided into **short vowels** (ḥarakāt) and **long vowels** (madd). Short vowels include /a/, /i/, and /u/, represented by diacritical marks above or below consonants. Long vowels are written with letters such as alif (ا), yāʾ (ي), and wāw (و), and they extend the duration of the vowel sound. For example, *kitāb* (book) contains a long vowel /ā/, while *kataba* (he wrote) contains short vowels.

Fill in the blank: The long vowel /ā/ in Arabic is represented by the letter _____.

Vowel type	Symbol	Example word
Short /a/	◌َ	*kataba*
Short /i/	◌ِ	*kitāb*
Short /u/	◌ُ	*qul*
Long /ā/	ا	*kitāb*
Long /ī/	ي	*ḥadīth*
Long /ū/	و	*nūr*

Table 2.2: Short and long vowels in Arabic

2.2.3 Phonological role of vowels in word formation and meaning

Vowels play a central role in Arabic word formation. They distinguish between different verb forms and noun patterns. For example, *kataba* (he wrote), *kutiba* (it was written), and *kitāb* (book) differ only in vowel placement and length. This demonstrates how vowels carry grammatical and semantic weight in Arabic phonology.

Fill in the blank: The words *kataba*, *kutiba*, and *kitāb* differ only in _____ placement and length.

Word	Meaning
kataba	**He wrote**
kutiba	**It was written**
kitāb	**Book**
kātib	**Writer**

Box 2.2: Examples of vowel changes affecting meaning in Arabic

2.2.4 Examples from Qur'anic recitation and poetry

Qur'anic recitation provides clear examples of vowel use. For instance, the word *nūr* (light) demonstrates the long vowel /ū/, while *qul* (say) demonstrates the short vowel /u/. Classical Arabic poetry also relies heavily on vowel length and placement to maintain rhythm and metre. These examples highlight the importance of vowels in both meaning and aesthetics.

Fill in the blank: The word *nūr* demonstrates the long vowel _____ in Arabic.

Plate 2.2: Examples of vowels in Qur'anic recitation

Pilot questions 2.2

1. What distinguishes vowels from consonants in Arabic phonology?
2. Fill in the blank: Unlike consonants, vowels are produced with an _____ vocal tract.
3. Name the three short vowels in Arabic.
4. Fill in the blank: The long vowel /ā/ in Arabic is represented by the letter _____.
5. How do vowels affect word formation and meaning in Arabic?

6. Fill in the blank: The words *kataba*, *kutiba*, and *kitāb* differ only in _____ placement and length.
7. Give one example of a long vowel from Qur'anic recitation.
8. Fill in the blank: The word *nūr* demonstrates the long vowel _____ in Arabic.

2.3 Interaction Of Consonants And Vowels In Arabic

2.3.1 Syllable structure in Arabic (CV, CVC, CVCC)

Syllable structure refers to the way consonants and vowels combine to form units of pronunciation. In Arabic, the most common syllable types are CV (consonant + vowel), CVC (consonant + vowel + consonant), and CVCC (consonant + vowel + consonant + consonant). For example, *qa-la* (he said) follows a CV-CV pattern, while *kitāb* (book) follows a CVCVC pattern. These structures give Arabic its rhythmic and balanced sound.

Fill in the blank: The word *qa-la* follows a _____ pattern in Arabic syllable structure.

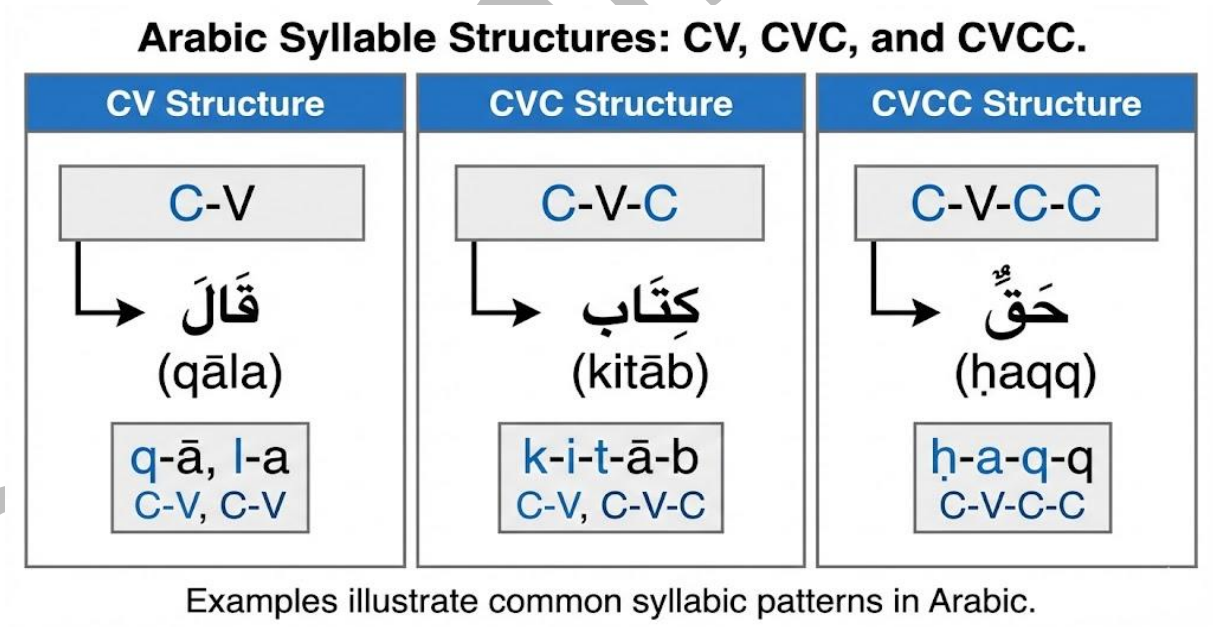


Figure 2.4: Syllable structures in Arabic phonology

2.3.2 Phonological rules governing consonant-vowel interaction

Arabic phonology is governed by rules that determine how consonants and vowels interact. For instance, short vowels often occur between consonants to break up clusters, while long vowels can extend syllables and affect stress. Assimilation also occurs, where certain consonants influence the pronunciation of neighbouring sounds, such as the lam in *al-* definite article being assimilated before sun letters (e.g., *ash-shams*).

Fill in the blank: In the phrase *ash-shams*, the lam of the definite article *al-* is _____ before the sun letter.

Rule	**Explanation / Example**
Short Vowels Break Up Consonant Clusters	Arabic avoids heavy clusters by inserting short vowels, e.g., *kataba* (he wrote) vs. *ktb* (root only).
Long Vowels Extend Syllables and Affect Stress	Long vowels lengthen syllables and shift stress, e.g., *kitāb* (book) vs. *katab* (he wrote).
Assimilation with Lam in *al-* Before Sun Letters	The *lam* in the definite article *al-* assimilates to following sun letters, e.g., *ash-shams* (the sun) instead of *al-shams*.
Emphatic Consonants Influence Neighbouring Vowels	Emphatic consonants (ṣ, ḍ, ṭ, ẓ) cause adjacent vowels to be pronounced with a deeper, backed quality, e.g., *ṣalāt* (prayer).

Box 2.3: Key phonological rules in Arabic consonant-vowel interaction

2.3.3 Effects of vowel length and consonant emphasis on meaning

Vowel length and consonant emphasis are crucial in Arabic because they can change the meaning of words. For example, *ʿalam* (flag) differs from *ʿālam* (world) due to vowel length. Similarly, *sabr* (patience) differs from *ṣabr* (patience with emphasis) due to consonant emphasis. These distinctions highlight the importance of precise phonological awareness in Arabic.

Fill in the blank: The words *ʿalam* and *ʿālam* differ in _____ length.

Word	Feature	Meaning
ʿalam	Short vowel	Flag
ʿālam	Long vowel	World
sabr	Non-emphatic consonant	Patience
ṣabr	Emphatic consonant	Patience (emphatic)

Table 2.3: Examples of vowel length and consonant emphasis affecting meaning

2.3.4 Applications in tajwīd and Arabic pronunciation practice

In **tajwīd**, the science of Qur'anic recitation, consonant-vowel interaction is carefully observed to ensure correct pronunciation. For example, vowel length must be maintained in words like *nūr* (light), and assimilation rules must be applied in phrases like *ash-shams*. In pronunciation practice, learners train to distinguish vowel length and consonant emphasis, ensuring clarity and accuracy in speech.

Fill in the blank: In tajwīd, vowel _____ must be carefully maintained to ensure correct recitation.

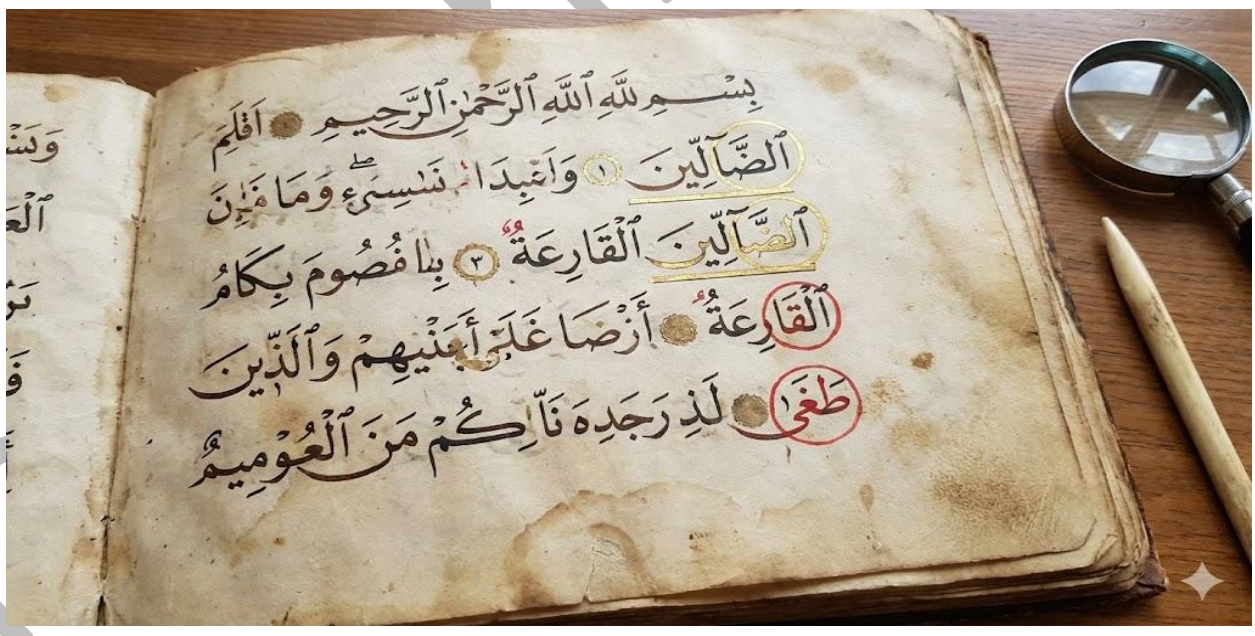


Plate 2.3: Applications of consonant-vowel interaction in Qur'anic recitation

Pilot questions 2.3

1. What are the three main syllable structures in Arabic?
2. Fill in the blank: The word *qa-la* follows a _____ pattern in Arabic syllable structure.
3. Explain the assimilation rule involving the lam in *al-* before sun letters.
4. Fill in the blank: In the phrase *ash-shams*, the lam of the definite article *al-* is _____ before the sun letter.
5. Give one example of how vowel length changes meaning in Arabic.
6. Fill in the blank: The words *ʿalam* and *ʿālam* differ in _____ length.
7. Provide one example of consonant emphasis affecting meaning in Arabic.
8. Fill in the blank: In tajwīd, vowel _____ must be carefully maintained to ensure correct recitation.

Series Summary

This Series has guided you through the phonology of the Arabic language, focusing on consonants, vowels, and their interaction. In **Part 2.1**, you examined consonants, learning how they are defined, classified by phonological features such as voicing, emphasis, and nasality, and distributed across words and syllables. You also saw practical examples from Qur'anic recitation and classical Arabic texts. In **Part 2.2**, you explored vowels, distinguishing between short vowels (harakāt) and long vowels (madd), and analysing their phonological role in word formation and meaning. Examples from Qur'anic recitation and poetry highlighted how vowel length and placement shape both meaning and rhythm. Finally, in **Part 2.3**, you studied the interaction of consonants and vowels, including syllable structures, phonological rules, and the effects of vowel length and consonant emphasis on meaning, with applications in tajwīd and pronunciation practice.

By completing this Series, you should now be able to define, classify, and analyse Arabic consonants and vowels, evaluate their phonological roles, and apply knowledge of their interaction in both linguistic and practical contexts. These skills directly align with the Series

Learning Outcomes, ensuring you can approach Arabic phonology with confidence and precision.

Glossary of Terms

- **Assimilation**: A phonological process in Arabic where a consonant changes its sound to become more like a neighbouring consonant, such as the lam in *al-* being assimilated before sun letters.
- **Consonants**: Speech sounds produced by obstructing or constricting airflow in the vocal tract. Arabic has 28 consonantal sounds that form the backbone of words and syllables.
- **Emphatic consonants**: Special consonants in Arabic (/ṣ/, /ḍ/, /ṭ/, /ẓ/) produced with secondary articulation involving the pharynx, giving them a distinct heavy quality.
- **Long vowels (madd)**: Vowels in Arabic that are extended in duration, represented by letters such as alif (ا), yāʾ (ي), and wāw (و).
- **Nasality**: A phonological feature where air passes through the nose during sound production, as in the consonant /m/.
- **Short vowels (ḥarakāt)**: Vowels in Arabic represented by diacritical marks, including /a/, /i/, and /u/, which are shorter in duration than long vowels.
- **Syllable structure**: The arrangement of consonants and vowels in Arabic words, commonly in patterns such as CV, CVC, and CVCC.
- **Tajwīd**: The science of Qur'anic recitation, which requires precise application of phonological rules, including vowel length and consonant emphasis.
- **Vowels**: Speech sounds produced with an open vocal tract, classified in Arabic as short (ḥarakāt) or long (madd), and essential for word formation and meaning.
- **Voicing**: A phonological feature that indicates whether the vocal cords vibrate during sound production, distinguishing sounds like /b/ (voiced) and /t/ (voiceless).

Concept Check Questions [Series 2]

Objective questions

1. Which branch of phonology studies consonants in Arabic? (Linked to SLO 2.1)
2. Fill in the blank: Arabic has _____ consonantal sounds. (Linked to SLO 2.1)
3. Which phonological feature distinguishes /b/ from /t/? (Linked to SLO 2.2)
4. Fill in the blank: The consonant /m/ is classified as a _____ bilabial sound. (Linked to SLO 2.2)
5. Which syllable structure does the word *kitāb* follow? (Linked to SLO 2.3)
6. Fill in the blank: The lam in *al-* is _____ before sun letters. (Linked to SLO 2.10)
7. Which vowel type is represented by alif (ا)? (Linked to SLO 2.6)
8. Fill in the blank: The word *nūr* demonstrates the long vowel _____. (Linked to SLO 2.8)

Short-answer questions

9. Define consonants in Arabic phonology. (Linked to SLO 2.1)
10. Classify the consonant /ṣ/ by voicing, emphasis, and nasality. (Linked to SLO 2.2)
11. Analyse the distribution of consonants in the word *muḥammad*. (Linked to SLO 2.3)
12. Give one example of a short vowel and one example of a long vowel in Arabic. (Linked to SLOs 2.6, 2.8)
13. Explain how vowel placement changes meaning in the words *kataba*, *kutiba*, and *kitāb*. (Linked to SLO 2.7)
14. Describe the assimilation rule involving lam in *al-* before sun letters. (Linked to SLO 2.10)
15. Provide one example of how consonant emphasis changes meaning in Arabic. (Linked to SLO 2.11)

16. Explain how tajwīd applies phonological rules of vowel length. (Linked to SLO 2.12)

Long-answer questions

17. Discuss consonants in Arabic phonology, including their definition, classification, distribution, and examples from Qur'anic recitation. (Linked to SLOs 2.1–2.4)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

18. Analyse vowels in Arabic phonology, explaining short and long vowels, their phonological role, and examples from Qur'anic recitation and poetry. (Linked to SLOs 2.5–2.8)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

19. Evaluate the interaction of consonants and vowels in Arabic, describing syllable structures, phonological rules, and the effects of vowel length and consonant emphasis on meaning, with applications in tajwīd. (Linked to SLOs 2.9–2.12)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

Answers to Concept Check Questions [Series 2]

Objective questions

1. Consonant phonology.
2. 28.
3. Voicing.
4. Nasal.
5. CVCVC.
6. Assimilated.
7. Long vowel /ā/.
8. /ū/.

Short-answer questions

9. Consonants are speech sounds produced by obstructing airflow in the vocal tract; they form the backbone of Arabic words.
10. /ṣ/ is voiceless, emphatic, and non-nasal.
11. *Muḥammad* follows a CVCVC pattern, with nasal /m/ at the beginning and end.
12. Short vowel: /a/ in *kataba*; long vowel: /ā/ in *kitāb*.
13. *Kataba* = he wrote, *kutiba* = it was written, *kitāb* = book; vowels change grammatical and semantic meaning.
14. The lam in *al-* is assimilated before sun letters, e.g., *ash-shams*.
15. *Sabr* vs *ṣabr*; emphasis changes the quality and meaning.
16. Tajwīd requires maintaining vowel length, e.g., long vowels in *nūr*.

Long-answer questions

17. *Basic response*: Consonants are defined as obstructed sounds, classified by voicing, emphasis, and nasality. They are distributed across syllables like CV and CVC. Examples include /ṣ/ in *ṣirāṭ* and /m/ in *muḥammad*.
    Value-added response: Learners may add that consonant classification is essential for tajwīd, ensuring accurate recitation and preserving meaning in Qur'anic verses.

18. *Basic response*: Vowels are open sounds, divided into short (ḥarakāt) and long (madd). They shape meaning, as in *kataba*, *kutiba*, and *kitāb*. Examples include long vowels in *nūr* and short vowels in *qul*.
    Value-added response: Learners may add that vowel length contributes to rhythm in poetry and recitation, linking phonology to aesthetics and linguistic artistry.

19. *Basic response*: Consonant-vowel interaction forms syllable structures like CV, CVC, and CVCC. Rules include assimilation and vowel length distinctions. Meaning changes with vowel length (*ʿalam* vs *ʿālam*) and consonant emphasis (*sabr* vs *ṣabr*). Tajwīd applies these rules in recitation.
    Value-added response: Learners may add that these interactions highlight the precision of Arabic phonology, where small changes in sound alter meaning and rhythm, reflecting the depth of the language's structure.

Answers to Pilot Questions [Series 2]

Part 2.1

1. 28.
2. 28.
3. /b/ is voiced, non-emphatic, and non-nasal.
4. Nasal.
5. CVCVC.
6. CVCVC.
7. /ṣ/.
8. /ṣ/.

Part 2.2

1. Vowels are produced with an open vocal tract, unlike consonants which involve obstruction.
2. Open.
3. /a/, /i/, /u/.
4. Alif (ا).
5. Vowels distinguish meaning and grammatical forms, e.g., *kataba*, *kutiba*, *kitāb*.
6. Vowel.
7. /ū/ in *nūr*.
8. /ū/.

Part 2.3

1. CV, CVC, CVCC.
2. CV-CV.

3. The lam in *al-* is assimilated before sun letters, e.g., *ash-shams*.
4. Assimilated.
5. *ʿalam* vs *ʿālam*.
6. Vowel.
7. *sabr* vs *ṣabr*.
8. Length.

References and Attributions [Series 2]

General References

- Al-Ani, S. H. (1970). *Arabic phonology: An outline*. Mouton.
- Al-Jurjānī. (n.d.). *Dalāʾil al-Iʿjāz*. Classical Arabic manuscript.
- Ladefoged, P. (2001). *A course in phonetics* (4th ed.). Harcourt College Publishers.
- Qur'an. (n.d.). Selected verses cited for examples of consonant and vowel use in recitation.

Illustrations

- *Figure 2.1: Arabic consonant chart by phonological features*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a labelled chart of Arabic consonants showing phonological features such as voicing, emphasis, and nasality."
    - Suggested OER search string: "Arabic consonant chart phonology OER"
- *Table 2.1: Classification of selected Arabic consonants by phonological features*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a table showing classification of Arabic consonants by voicing, emphasis, and nasality with examples."
    - Suggested OER search string: "Arabic consonants voicing emphasis nasality OER"
- *Figure 2.2: Syllable structures in Arabic phonology*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a diagram showing syllable structures in Arabic phonology with examples such as CV, CVC, and CVCC."
    - Suggested OER search string: "Arabic syllable structure phonology OER"

- *Plate 2.1: Examples of consonants in Qur'anic recitation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate an image of a Qur'anic manuscript highlighting words with emphatic and nasal consonants."
    - Suggested OER search string: "Qur'an Arabic consonants phonology OER"
- *Figure 2.3: Tongue positions for Arabic vowels*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a diagram showing tongue positions for Arabic vowels /a/, /i/, and /u/."
    - Suggested OER search string: "Arabic vowels tongue position diagram OER"
- *Table 2.2: Short and long vowels in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a table showing short and long vowels in Arabic with symbols and examples."
    - Suggested OER search string: "Arabic vowels short long harakat madd OER"
- *Box 2.2: Examples of vowel changes affecting meaning in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a text box showing examples of vowel changes affecting meaning in Arabic words."
    - Suggested OER search string: "Arabic vowel changes meaning examples OER"
- *Plate 2.2: Examples of vowels in Qur'anic recitation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate an image of a Qur'anic manuscript highlighting words with short and long vowels."

    - Suggested OER search string: “Qur’an Arabic vowels harakat madd OER”
- *Figure 2.4: Syllable structures in Arabic phonology*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a diagram showing CV, CVC, and CVCC syllable structures with Arabic examples such as qala, kitab, and haqq.”
    - Suggested OER search string: “Arabic syllable structure CV CVC CVCC OER”
- *Box 2.3: Key phonological rules in Arabic consonant-vowel interaction*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a text box listing key phonological rules in Arabic consonant-vowel interaction with examples.”
    - Suggested OER search string: “Arabic phonology consonant vowel rules OER”
- *Table 2.3: Examples of vowel length and consonant emphasis affecting meaning*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a table showing examples of vowel length and consonant emphasis affecting meaning in Arabic words.”
    - Suggested OER search string: “Arabic vowel length consonant emphasis meaning OER”
- *Plate 2.3: Applications of consonant-vowel interaction in Qur’anic recitation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image of a Qur’anic manuscript highlighting words with vowel length and consonant emphasis.”
    - Suggested OER search string: “Qur’an tajwid vowel length consonant emphasis OER”

Series 3: Morphemes, Allomorphs, And Phonemes In Arabic

Part 3.1 Morphemes In Arabic

- 3.1.1 Definition and scope of morphemes in Arabic
- 3.1.2 Types of morphemes (roots, affixes, inflectional, derivational)
- 3.1.3 Role of morphemes in Arabic word formation
- 3.1.4 Examples from Qur'anic vocabulary and classical Arabic texts

Part 3.2 Allomorphs In Arabic

- 3.2.1 Definition and scope of allomorphs
- 3.2.2 Types of allomorphs in Arabic (phonological, morphological, contextual)
- 3.2.3 Conditions for allomorphic variation in Arabic words
- 3.2.4 Examples from Qur'anic recitation and everyday Arabic usage

Part 3.3 Phonemes In Arabic

- 3.3.1 Definition and scope of phonemes in Arabic phonology
- 3.3.2 Distinctive features of Arabic phonemes
- 3.3.3 Minimal pairs and phonemic contrasts in Arabic
- 3.3.4 Applications in tajwīd, pronunciation practice, and linguistic analysis

Introduction

In the last Series, we examined how consonants and vowels function within Arabic phonology, focusing on their classification, distribution, and interaction. To deepen our understanding of the structure of the Arabic language, we now turn to the study of **morphemes, allomorphs, and phonemes**. These elements are the smallest building blocks of language, and they explain how words are formed, how sounds vary in context, and how meaning is distinguished through sound

contrasts. This Series is therefore essential for connecting phonology with morphology and for appreciating the precision of Arabic word formation.

The aim of this Series is to equip you with the ability to define, classify, and analyse morphemes, allomorphs, and phonemes in Arabic, and to apply this knowledge in understanding word formation, sound variation, and phonemic contrasts in both linguistic and practical contexts.

We shall commence this Series by exploring morphemes in Arabic, defining them and examining their types, including roots, affixes, and their role in word formation. Next, we will move on to allomorphs, considering how sound and form variations occur in Arabic words under specific conditions, with examples from Qur'anic recitation and everyday usage. Finally, we will conclude with phonemes, analysing their distinctive features, minimal pairs, and contrasts, and applying this knowledge to tajwīd, pronunciation practice, and linguistic analysis.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 3.1** define morphemes in Arabic and explain their scope,
- **SLO 3.2** classify types of morphemes in Arabic, including roots, affixes, inflectional, and derivational forms,
- **SLO 3.3** analyse the role of morphemes in Arabic word formation,
- **SLO 3.4** illustrate examples of morphemes from Qur'anic vocabulary and classical Arabic texts,
- **SLO 3.5** define allomorphs in Arabic and explain their scope,
- **SLO 3.6** distinguish types of allomorphs in Arabic, such as phonological, morphological, and contextual variations,
- **SLO 3.7** evaluate the conditions under which allomorphic variation occurs in Arabic words,

- **SLO 3.8** demonstrate examples of allomorphs from Qur'anic recitation and everyday Arabic usage,
- **SLO 3.9** define phonemes in Arabic phonology and explain their scope,
- **SLO 3.10** identify distinctive features of Arabic phonemes,
- **SLO 3.11** analyse minimal pairs and phonemic contrasts in Arabic, and
- **SLO 3.12** apply knowledge of phonemes in tajwīd, pronunciation practice, and linguistic analysis.

3.1 Morphemes In Arabic

3.1.1 Definition and scope of morphemes in Arabic

A **morpheme** is the smallest meaningful unit of language. In Arabic, morphemes are especially important because the language is built on a root-and-pattern system. Roots, usually made up of three consonants (triliteral), carry the core meaning, while patterns of vowels and affixes shape that meaning into different words. For example, the root ك-ت-ب (*k-t-b*) conveys the idea of writing, and when combined with different patterns, it produces words such as *kitāb* (book), *kātib* (writer), and *maktab* (office).

Fill in the blank: The root ك-ت-ب (*k-t-b*) conveys the idea of _____.

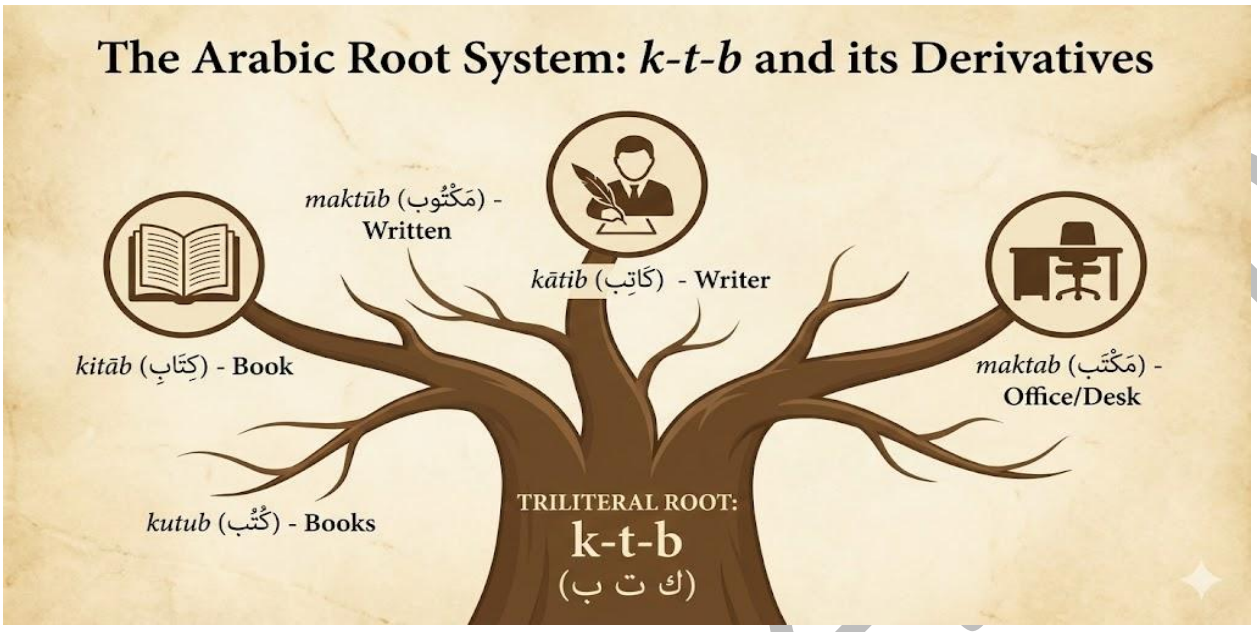


Figure 3.1: Root-and-pattern system in Arabic morphology

3.1.2 Types of morphemes (roots, affixes, inflectional, derivational)

Arabic morphemes can be classified into several types:

- **Roots**: The basic consonantal framework that carries meaning, e.g., ك-ت-ب (*k-t-b*).
- **Affixes**: Prefixes, suffixes, and infixes added to roots to modify meaning, e.g., the prefix *mu-* in *muktab*.
- **Inflectional morphemes**: Morphemes that mark grammatical categories such as tense, number, and case, e.g., *-ūna* in *muslimūna* (Muslims).
- **Derivational morphemes**: Morphemes that create new words from roots, e.g., *maktab* (office) from *k-t-b*.

Fill in the blank: The suffix *-ūna* in *muslimūna* is an example of an _____ morpheme.

Type	Example	Word	Meaning
Root	ك-ت-ب	*kitāb*	Book
Affix	Prefix *mu-*	*muktab*	Place of writing

Inflectional	Suffix *-ūna*	*muslimūna*	Muslims
Derivational	*maktab*	Office	Place of writing

Table 3.1: Types of morphemes in Arabic with examples

3.1.3 Role of morphemes in Arabic word formation

Morphemes play a central role in Arabic word formation. The triliteral root system allows a single root to generate multiple words by applying different vowel patterns and affixes. This system makes Arabic highly productive and flexible. For example, from the root ك-ت-ب (*k-t-b*), we derive *kataba* (he wrote), *yaktubu* (he writes), *kitāb* (book), *kātib* (writer), and *maktab* (office). Each word retains the core meaning of writing but expresses it in different grammatical or semantic contexts.

Fill in the blank: The word *yaktubu* (he writes) is derived from the root _____.

Word	**Meaning**
kataba	He wrote
yaktubu	He writes
kitāb	Book
kātib	Writer
maktab	Office

Box 3.1: Examples of words derived from the root ك-ت-ب

3.1.4 Examples from Qur'anic vocabulary and classical Arabic texts

The Qur'an provides rich examples of morphemes in action. For instance, the root غ-ف-ر (*gh-f-r*) meaning forgiveness appears in words such as *ghafara* (He forgave), *maghfirah* (forgiveness), and *ghafūr* (Most Forgiving). Classical Arabic poetry also demonstrates the productivity of roots, where poets manipulate morphemes to create rhythm and meaning. These examples show how morphemes are not only linguistic units but also carriers of cultural and religious significance.

Fill in the blank: The word *maghfirah* (forgiveness) is derived from the root _____.

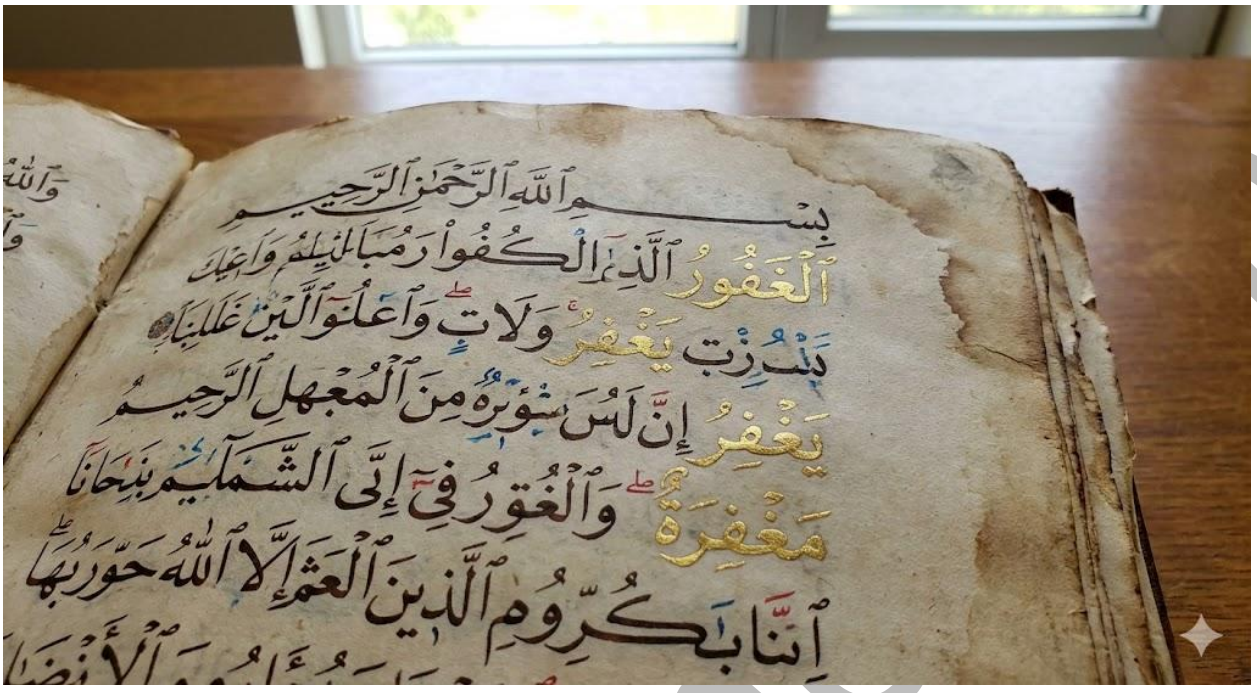


Plate 3.1: Examples of morphemes in Qur'anic vocabulary

Pilot questions 3.1

1. What is a morpheme in Arabic?
2. Fill in the blank: The root ك-ت-ب conveys the idea of _____.
3. List the four main types of morphemes in Arabic.
4. Fill in the blank: The suffix *-ūna* in *muslimūna* is an example of an _____ morpheme.
5. Give three examples of words derived from the root ك-ت-ب.
6. Fill in the blank: The word *yaktubu* (he writes) is derived from the root _____.
7. Provide one example of a root from the Qur'an and its derived forms.
8. Fill in the blank: The word *maghfirah* (forgiveness) is derived from the root _____.

3.2 Allomorphs In Arabic

3.2.1 Definition and scope of allomorphs

An **allomorph** is a variant form of a morpheme that appears in different contexts but carries the same meaning. In Arabic, allomorphs occur when a single morpheme changes its shape due to phonological, morphological, or contextual conditions. For example, the plural morpheme can appear as *-ūna* in *muslimūna* (Muslims) or *-īna* in *muslimīna*, depending on grammatical case. These variations do not change the meaning but reflect the rules of Arabic grammar.

Fill in the blank: The plural morpheme in *muslimūna* and *muslimīna* is an example of an _____.

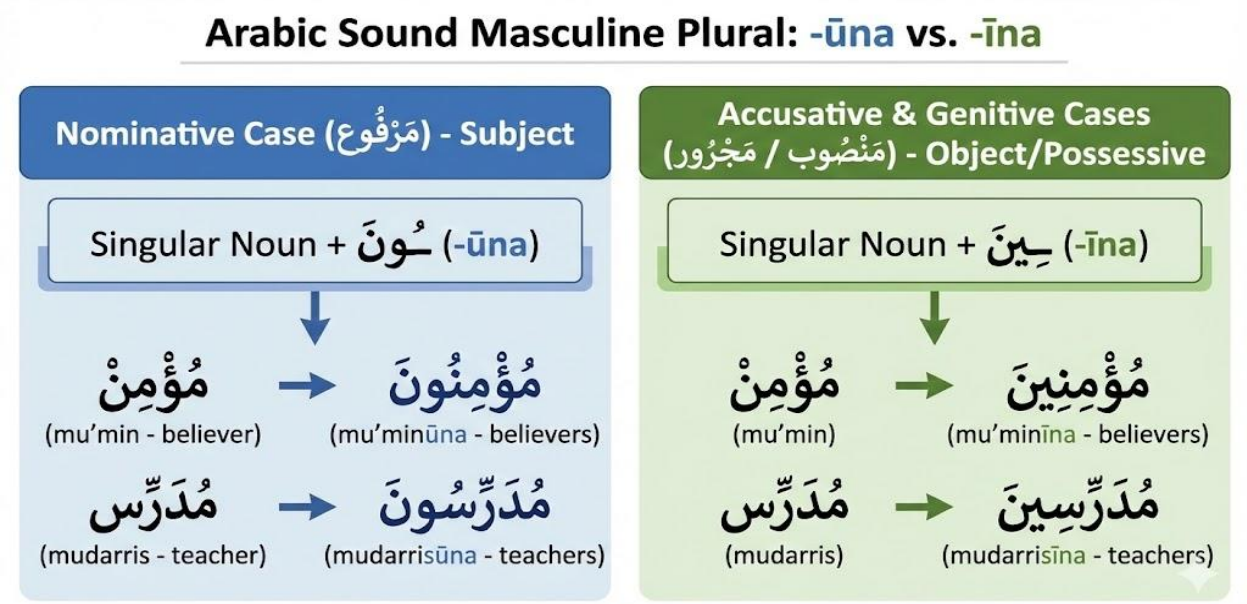


Figure 3.2: Allomorphic variation in Arabic plural morphemes

3.2.2 Types of allomorphs in Arabic (phonological, morphological, contextual)

Arabic allomorphs can be classified into three main types:

- **Phonological allomorphs**: Variations caused by sound environment, e.g., assimilation of lam in *al-* before sun letters (*ash-shams*).

- **Morphological allomorphs**: Variations caused by grammatical categories, e.g., plural endings *-ūna* and *-īna*.
- **Contextual allomorphs**: Variations influenced by syntactic or semantic context, e.g., different forms of verb endings depending on tense or mood.

Fill in the blank: The assimilation of lam in *al-* before sun letters is an example of a _____ allomorph.

Type	Example	Word	Explanation
Phonological	Lam assimilation	*ash-shams*	Lam changes before sun letters
Morphological	Plural endings	*muslimūna*, *muslimīna*	Case endings vary
Contextual	Verb endings	*yaktubu*, *yaktubna*	Context determines form

Table 3.2: Types of allomorphs in Arabic with examples

3.2.3 Conditions for allomorphic variation in Arabic words

Allomorphic variation in Arabic occurs under specific conditions. Phonological conditions include assimilation and vowel harmony. Morphological conditions involve case, gender, and number. Contextual conditions depend on syntax, such as verb conjugation in different moods. For example, the verb *yaktubu* (he writes) changes to *yaktubna* (they write) in the plural feminine form. These conditions ensure that Arabic remains consistent and systematic while allowing flexibility in word formation.

Fill in the blank: The verb *yaktubu* changes to *yaktubna* in the _____ feminine form.

Condition	Explanation / Example
Phonological	Assimilation of *lam* in *al-* before sun letters, e.g., *ash-shams* (the sun) instead of *al-shams*.
Morphological	Case endings in plurals vary, e.g., *muslimūna* (nominative) vs. *muslimīna* (accusative/genitive).

Contextual	Verb endings shift with mood and tense, e.g., *yaktubu* (he writes) vs. *yaktub* (jussive: that he write).

Box 3.2: Conditions for allomorphic variation in Arabic

3.2.4 Examples from Qur'anic recitation and everyday Arabic usage

Qur'anic recitation provides clear examples of allomorphs. For instance, the definite article *al-* changes to *ash-* in *ash-shams* due to assimilation. Everyday Arabic also shows allomorphic variation, such as plural endings in *muslimūna* and *muslimīna*. These examples demonstrate how allomorphs are not abstract concepts but practical features of Arabic that learners encounter in both religious and daily contexts.

Fill in the blank: In Qur'anic recitation, the definite article *al-* changes to *ash-* in the word _____.

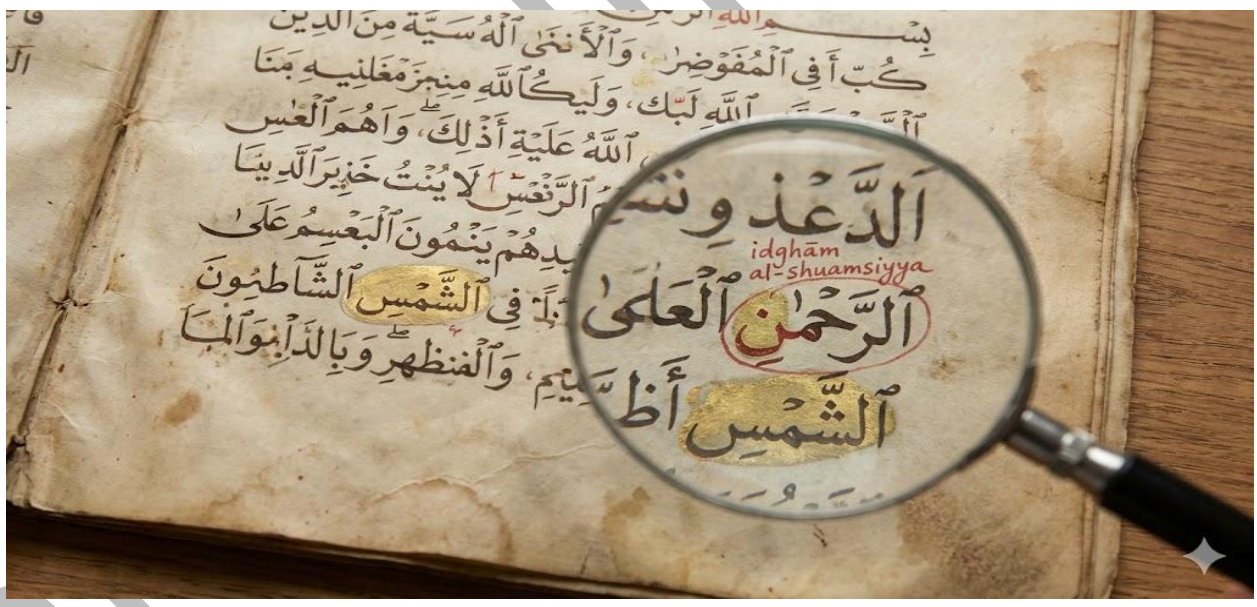


Plate 3.2: Examples of allomorphs in Qur'anic recitation

Pilot questions 3.2

1. What is an allomorph in Arabic?
2. Fill in the blank: The plural morpheme in *muslimūna* and *muslimīna* is an example of an _____.

3. List the three main types of allomorphs in Arabic.
4. Fill in the blank: The assimilation of lam in *al-* before sun letters is an example of a _____ allomorph.
5. Explain the conditions under which allomorphic variation occurs in Arabic.
6. Fill in the blank: The verb *yaktubu* changes to *yaktubna* in the _____ feminine form.
7. Provide one example of an allomorph from Qur'anic recitation.
8. Fill in the blank: In Qur'anic recitation, the definite article *al-* changes to *ash-* in the word _____.

3.3 Phonemes In Arabic

3.3.1 Definition and scope of phonemes in Arabic phonology

A **phoneme** is the smallest unit of sound in a language that can distinguish meaning between words. In Arabic, phonemes are critical because a single sound change can alter the meaning of a word entirely. For example, /b/ in *bint* (girl) and /m/ in *mint* (mint) represent different phonemes, and this difference changes the meaning of the word. Arabic phonology recognises both consonant and vowel phonemes, each with distinctive features that contribute to the richness of the language.

Fill in the blank: A phoneme is the smallest unit of _____ that can distinguish meaning.

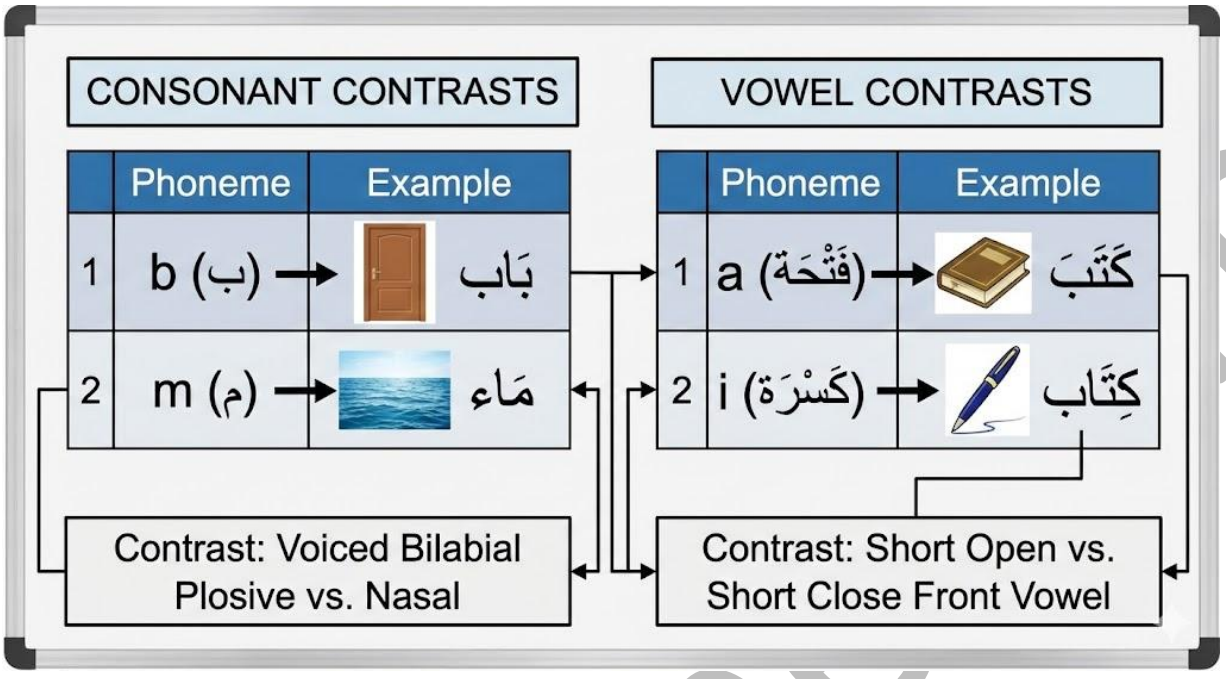


Figure 3.3: Arabic phonemes and their role in distinguishing meaning

3.3.2 Distinctive features of Arabic phonemes

Arabic phonemes are characterised by **distinctive features** such as voicing, place of articulation, manner of articulation, and emphasis. These features allow linguists and learners to differentiate between sounds. For example, /t/ is a voiceless alveolar stop, while /ṭ/ is an emphatic voiceless alveolar stop. The distinction between emphatic and non-emphatic phonemes is unique to Arabic and plays a significant role in meaning and pronunciation.

Fill in the blank: The phoneme /ṭ/ is an emphatic voiceless _____ stop.

Phoneme	**Voicing**	**Place of articulation**	**Manner of articulation**	**Emphasis**	**Example word**
/t/	Voiceless	Alveolar	Stop	Non-emphatic	*taʿāla*
/ṭ/	Voiceless	Alveolar	Stop	Emphatic	*ṭālib*

/b/	Voiced	Bilabial	Stop	Non-emphatic	*bismillah*
/ṣ/	Voiceless	Alveolar	Fricative	Emphatic	*ṣabr*

Table 3.3: Distinctive features of selected Arabic phonemes

3.3.3 Minimal pairs and phonemic contrasts in Arabic

A **minimal pair** is a pair of words that differ by only one phoneme, showing how phonemes distinguish meaning. In Arabic, minimal pairs are common and highlight the importance of precise pronunciation. For example, *qalb* (heart) and *kalb* (dog) differ only in the initial phoneme /q/ vs /k/. Similarly, *sabr* (patience) and *ṣabr* (patience with emphasis) differ by emphatic vs non-emphatic consonants. These contrasts demonstrate how phonemes function as the foundation of meaning in Arabic.

Fill in the blank: The words *qalb* and *kalb* differ only in the initial _____.

Word Pair	Meaning
qalb vs. **kalb**	*qalb* = heart; *kalb* = dog. A single consonant change alters meaning entirely.
sabr vs. **ṣabr**	*sabr* = patience (plain); *ṣabr* = patience (emphatic). Emphatic consonant changes articulation and nuance.
ʿalam vs. **ʿālam**	*ʿalam* = flag; *ʿālam* = world. Vowel length (**ā**) shifts the meaning.

Box 3.3: Examples of minimal pairs in Arabic

3.3.4 Applications in tajwīd, pronunciation practice, and linguistic analysis

Phonemes are central to **tajwīd**, the science of Qur'anic recitation, where precise articulation ensures correct meaning and rhythm. For example, distinguishing between /q/ and /k/ is vital in recitation, as mispronunciation can alter meaning. In pronunciation practice, learners train to recognise and produce phonemic contrasts, while in linguistic analysis, phonemes are studied to understand the structure and rules of Arabic. This shows that phonemes are not only theoretical but also practical in everyday and religious contexts.

Fill in the blank: In tajwīd, distinguishing between /q/ and /k/ is vital because it affects _____.

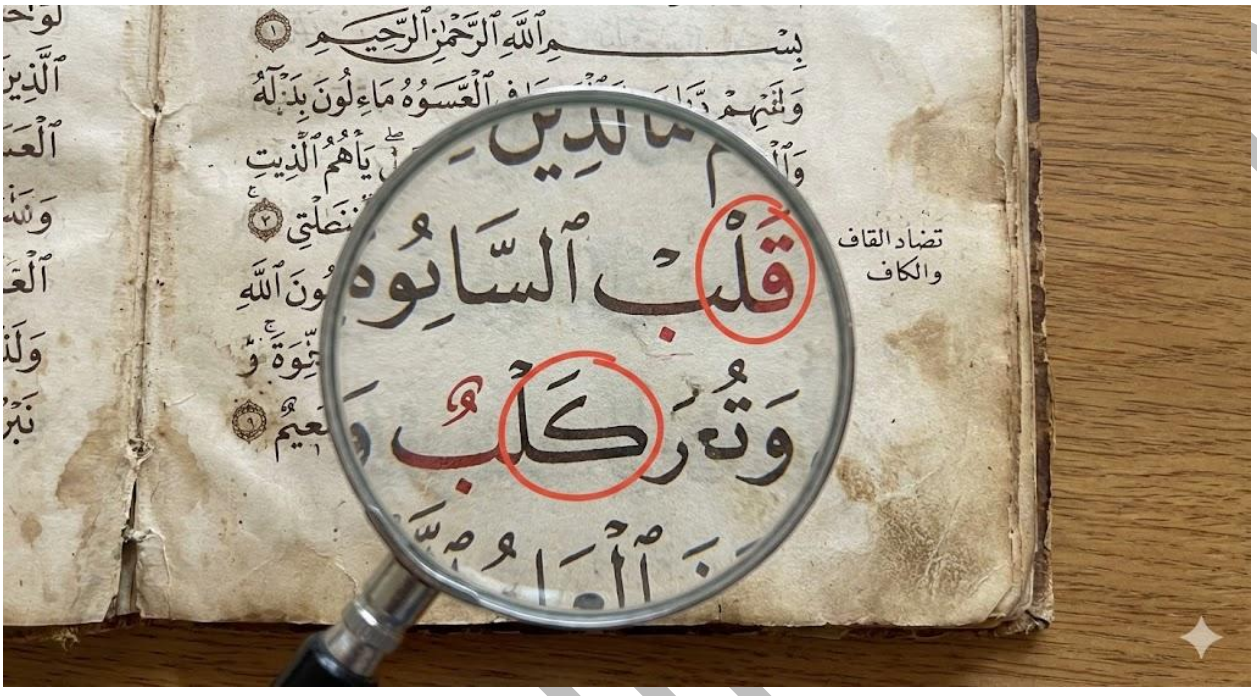


Plate 3.3: Applications of phonemes in Qur'anic recitation

Pilot questions 3.3

1. What is a phoneme in Arabic phonology?
2. Fill in the blank: A phoneme is the smallest unit of _____ that can distinguish meaning.
3. Describe the distinctive features of the phoneme /ṭ/.
4. Fill in the blank: The phoneme /ṭ/ is an emphatic voiceless _____ stop.
5. Give one example of a minimal pair in Arabic.
6. Fill in the blank: The words *qalb* and *kalb* differ only in the initial _____.
7. Explain why phonemes are important in tajwīd.

8. Fill in the blank: In tajwīd, distinguishing between /q/ and /k/ is vital because it affects _____.

Series Summary

This Series has focused on the foundational elements of Arabic linguistics: morphemes, allomorphs, and phonemes. Its purpose was to show how the smallest units of meaning and sound work together to form words, create variation, and distinguish meaning. Beginning with morphemes, you examined roots, affixes, and their role in word formation, supported by examples from Qur'anic vocabulary and classical texts. You then moved on to allomorphs, exploring their types and the conditions under which they vary, with practical illustrations from recitation and everyday Arabic. Finally, you studied phonemes, learning about their distinctive features, minimal pairs, and contrasts, and how they are applied in tajwīd and pronunciation practice.

By completing this Series, you should now be able to define, classify, and analyse morphemes, allomorphs, and phonemes in Arabic, illustrate examples from authentic sources, evaluate conditions for variation, and apply phonemic knowledge in both linguistic and practical contexts. These achievements directly align with the Series Learning Outcomes, ensuring you can confidently approach Arabic morphology and phonology with precision and clarity.

Glossary of Terms

- **Affix**: A morpheme added to a root, either at the beginning (prefix), end (suffix), or middle (infix), to modify meaning or create new words in Arabic.
- **Allomorph**: A variant form of a morpheme that appears in different contexts but carries the same meaning, such as the plural endings *-ūna* and *-īna*.
- **Contextual allomorph**: An allomorph that changes depending on syntactic or semantic context, for example verb endings that vary with tense or mood.

- **Derivational morpheme**: A morpheme that creates new words from a root, such as *maktab* (office) derived from the root ك-ت-ب (*k-t-b*).
- **Inflectional morpheme**: A morpheme that marks grammatical categories like tense, number, or case, such as *-ūna* in *muslimūna* (Muslims).
- **Minimal pair**: Two words that differ by only one phoneme, showing how sound distinctions change meaning, e.g., *qalb* (heart) vs *kalb* (dog).
- **Morpheme**: The smallest meaningful unit of language, such as the root ك-ت-ب (*k-t-b*) which conveys the idea of writing.
- **Morphological allomorph**: An allomorph that varies according to grammatical categories, such as plural endings in different cases.
- **Phoneme**: The smallest unit of sound in a language that can distinguish meaning, such as /q/ and /k/ in *qalb* and *kalb*.
- **Phonological allomorph**: An allomorph that changes due to sound environment, such as the assimilation of lam in *al-* before sun letters (*ash-shams*).
- **Root**: The basic consonantal framework in Arabic, usually triliteral, that carries the core meaning, e.g., ك-ت-ب (*k-t-b*) meaning “to write”.

Concept Check Questions [Series 3]

Objective questions

1. Define a morpheme in Arabic. (Linked to SLO 3.1)
2. Fill in the blank: The root ك-ت-ب conveys the idea of _____. (Linked to SLO 3.1)
3. Identify the type of morpheme represented by the suffix *-ūna* in *muslimūna*. (Linked to SLO 3.2)
4. Fill in the blank: The assimilation of lam in *al-* before sun letters is an example of a _____ allomorph. (Linked to SLO 3.6)
5. Which phoneme distinguishes the words *qalb* (heart) and *kalb* (dog)? (Linked to SLO 3.11)
6. Fill in the blank: A phoneme is the smallest unit of _____ that can distinguish meaning. (Linked to SLO 3.9)

Short-answer questions

7. Classify the four main types of morphemes in Arabic with one example each. (Linked to SLOs 3.2, 3.4)
8. Explain the difference between inflectional and derivational morphemes in Arabic. (Linked to SLOs 3.2, 3.3)
9. Describe the three types of allomorphs in Arabic. (Linked to SLO 3.6)
10. Provide one example of contextual allomorph variation in Arabic verbs. (Linked to SLO 3.7)
11. Analyse the distinctive features of the phoneme /ṭ/. (Linked to SLO 3.10)
12. Give two examples of minimal pairs in Arabic and explain their phonemic contrasts. (Linked to SLO 3.11)
13. Explain why phonemes are important in tajwīd. (Linked to SLO 3.12)

Long-answer questions

14. Discuss morphemes in Arabic, including their definition, types, and role in word formation, with examples from Qur'anic vocabulary. (Linked to SLOs 3.1–3.4)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

15. Analyse allomorphs in Arabic, explaining their types, conditions for variation, and examples from Qur'anic recitation and everyday usage. (Linked to SLOs 3.5–3.8)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

16. Evaluate phonemes in Arabic, describing their distinctive features, minimal pairs, and applications in tajwīd and pronunciation practice. (Linked to SLOs 3.9–3.12)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

Answers to Concept Check Questions [Series 3]

Objective questions

1. A morpheme is the smallest meaningful unit of language.
2. Writing.
3. Inflectional morpheme.
4. Phonological allomorph.
5. /q/ vs /k/.
6. Sound.

Short-answer questions

7. Roots (ك-ت-ب), affixes (*mu-*), inflectional (*-ūna*), derivational (*maktab*).

8. Inflectional morphemes mark grammar (e.g., tense, case), while derivational morphemes create new words.

9. Phonological (sound environment), morphological (grammatical categories), contextual (syntax/semantics).

10. *Yaktubu* (he writes) vs *yaktubna* (they write, feminine plural).

11. /ṭ/ is voiceless, alveolar, stop, emphatic.

12. *Qalb* vs *kalb* (heart vs dog); *sabr* vs *ṣabr* (patience vs emphatic patience).

13. Phonemes ensure precise articulation in tajwīd, preserving meaning and rhythm.

Long-answer questions

14. *Basic response*: Morphemes are the smallest meaningful units. Types include roots, affixes, inflectional, and derivational morphemes. They form words like *kitāb*, *kātib*, and *maktab*. Qur'anic examples include غ-ف-ر (*gh-f-r*) producing *ghafūr* and *maghfirah*.
Value-added response: Learners may add that morphemes reflect the productivity of Arabic's root-and-pattern system, enabling vast vocabulary from limited roots, and highlight cultural significance in Qur'anic usage.

15. *Basic response*: Allomorphs are variant forms of morphemes. Types include phonological (assimilation of lam), morphological (plural endings *-ūna*, *-īna*), and contextual (verb endings). Qur'anic recitation shows lam assimilation in *ash-shams*.
Value-added response: Learners may add that allomorphs demonstrate Arabic's adaptability, balancing strict rules with flexibility, and that studying them deepens understanding of grammar and recitation accuracy.

16. *Basic response*: Phonemes are sound units distinguishing meaning. Distinctive features include voicing, place, manner, and emphasis. Minimal pairs like *qalb* vs *kalb* show contrasts. Tajwīd requires precise phoneme articulation.
Value-added response: Learners may add that phonemes are central to linguistic analysis, showing how Arabic's emphatic sounds enrich its phonological system, and that mastery of phonemes enhances both linguistic competence and recitation artistry.

Answers to Pilot Questions [Series 3]

Part 3.1

1. A morpheme is the smallest meaningful unit of language.
2. Writing.
3. Roots, affixes, inflectional morphemes, derivational morphemes.
4. Inflectional.
5. *kataba*, *yaktubu*, *kitāb*.
6. ك-ت-ب (*k-t-b*).
7. غ-ف-ر (*gh-f-r*) → *ghafara*, *maghfirah*, *ghafūr*.
8. غ-ف-ر (*gh-f-r*).

Part 3.2

1. An allomorph is a variant form of a morpheme that carries the same meaning but changes shape in different contexts.
2. Allomorph.
3. Phonological, morphological, contextual.
4. Phonological.
5. Phonological (assimilation), morphological (case endings), contextual (verb endings).
6. Plural.
7. *al-* → *ash-* in *ash-shams*.
8. *ash-shams*.

Part 3.3

1. A phoneme is the smallest unit of sound that distinguishes meaning.
2. Sound.

3. /ṭ/ is voiceless, alveolar, stop, emphatic.
4. Alveolar.
5. *qalb* vs *kalb*.
6. Initial phoneme.
7. Phonemes ensure precise articulation, preserving meaning in tajwīd.
8. Meaning.

References and Attributions [Series 3]

General References

- Al-Ani, S. H. (1970). *Arabic phonology: An outline*. Mouton.
- Haywood, J. A., & Nahmad, H. M. (1965). *A new Arabic grammar of the written language*. Lund Humphries.
- Qur'an. (n.d.). Selected verses cited for examples of morphemes, allomorphs, and phonemes in recitation.
- Versteegh, K. (2014). *The Arabic language*. Edinburgh University Press.

Illustrations

- *Figure 3.1: Root-and-pattern system in Arabic morphology*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a diagram showing Arabic triliteral root k-t-b and its derived forms such as kitāb, kātib, maktab."
    - Suggested OER search string: "Arabic triliteral root pattern system OER"
- *Table 3.1: Types of morphemes in Arabic with examples*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a table showing types of morphemes in Arabic with examples from Qur'an and classical texts."
    - Suggested OER search string: "Arabic morphemes roots affixes inflection derivation OER"
- *Box 3.1: Examples of words derived from the root ك-ت-ب*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a text box showing examples of words derived from the Arabic root k-t-b."

    - Suggested OER search string: “Arabic root k-t-b derived words OER”
- *Plate 3.1: Examples of morphemes in Qur’anic vocabulary*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image of a Qur’anic manuscript highlighting words derived from the Arabic root gh-f-r.”
    - Suggested OER search string: “Qur’an Arabic morphemes gh-f-r OER”
- *Figure 3.2: Allomorphic variation in Arabic plural morphemes*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a diagram showing Arabic plural morpheme variations -ūna and -īna with examples.”
    - Suggested OER search string: “Arabic allomorphs plural morpheme OER”
- *Table 3.2: Types of allomorphs in Arabic with examples*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a table showing types of allomorphs in Arabic with examples from Qur’an and grammar.”
    - Suggested OER search string: “Arabic allomorphs phonological morphological contextual OER”
- *Box 3.2: Conditions for allomorphic variation in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate a text box listing conditions for allomorphic variation in Arabic with examples.”
    - Suggested OER search string: “Arabic allomorphs conditions variation OER”
- *Plate 3.2: Examples of allomorphs in Qur’anic recitation*
    - Attribution: AI-generated using Copilot graphic art tool.

- Prompt: “Generate an image of a Qur’anic manuscript highlighting examples of allomorphic variation such as al- assimilated before sun letters.”
- Suggested OER search string: “Qur’an Arabic allomorphs examples OER”

- *Figure 3.3: Arabic phonemes and their role in distinguishing meaning*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a diagram showing Arabic phonemes with examples of consonant and vowel contrasts such as b vs m, a vs i.”
  - Suggested OER search string: “Arabic phonemes examples minimal pairs OER”
- *Table 3.3: Distinctive features of selected Arabic phonemes*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a table showing distinctive features of selected Arabic phonemes with examples.”
  - Suggested OER search string: “Arabic phonemes distinctive features OER”
- *Box 3.3: Examples of minimal pairs in Arabic*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a text box showing examples of minimal pairs in Arabic with meanings.”
  - Suggested OER search string: “Arabic minimal pairs phonemes OER”
- *Plate 3.3: Applications of phonemes in Qur’anic recitation*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate an image of a Qur’anic manuscript highlighting words with phonemic contrasts such as qalb vs kalb.”
  - Suggested OER search string: “Qur’an Arabic phonemes tajwid OER”

Series 4: The Sound System Of The Arabic Language

Part 4.1 Consonantal System Of Arabic

- 4.1.1 Definition and scope of Arabic consonants
- 4.1.2 Classification of consonants by place and manner of articulation
- 4.1.3 Emphatic consonants and their distinctive role
- 4.1.4 Examples from Qur'anic recitation and classical Arabic texts

Part 4.2 Vocalic System Of Arabic

- 4.2.1 Definition and scope of Arabic vowels
- 4.2.2 Short vowels (ḥarakāt) and their functions
- 4.2.3 Long vowels (madd) and their role in meaning and rhythm
- 4.2.4 Examples from Qur'anic recitation and poetry

Part 4.3 Interaction Of Consonants And Vowels In Arabic

- 4.3.1 Syllable structures in Arabic (CV, CVC, CVCC)
- 4.3.2 Phonological rules governing consonant-vowel interaction
- 4.3.3 Effects of vowel length and consonant emphasis on meaning
- 4.3.4 Applications in tajwīd and everyday pronunciation

Introduction

In the last Series, we explored morphemes, allomorphs, and phonemes, focusing on how the smallest units of meaning and sound shape Arabic words and pronunciation. Building on that foundation, this Series turns to the **sound system of the Arabic language**, which is central to both linguistic study and practical recitation. Understanding the sound system allows learners to appreciate how Arabic conveys meaning through precise articulation and how its unique features distinguish it from other languages.

The aim of this Series is to equip you with the ability to describe, classify, and analyse the consonantal and vocalic systems of Arabic, and to apply this knowledge to the interaction of sounds in syllable structures, phonological rules, and tajwīd.

We shall commence this Series by examining the consonantal system of Arabic, defining consonants and classifying them by place and manner of articulation, with special attention to emphatic sounds. Next, we will move on to the vocalic system, considering short vowels (ḥarakāt) and long vowels (madd), and their role in meaning and rhythm. Finally, we will conclude with the interaction of consonants and vowels, analysing syllable structures, phonological rules, and the effects of vowel length and consonant emphasis, with applications in tajwīd and everyday pronunciation.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 4.1** define the consonantal system of Arabic and explain its scope,
- **SLO 4.2** classify Arabic consonants by place and manner of articulation,
- **SLO 4.3** analyse the distinctive role of emphatic consonants in Arabic,
- **SLO 4.4** illustrate examples of consonants from Qur'anic recitation and classical Arabic texts,
- **SLO 4.5** define the vocalic system of Arabic and explain its scope,
- **SLO 4.6** describe the functions of short vowels (ḥarakāt) in Arabic,
- **SLO 4.7** demonstrate the role of long vowels (madd) in meaning and rhythm,
- **SLO 4.8** provide examples of vowels from Qur'anic recitation and poetry,
- **SLO 4.9** identify common syllable structures in Arabic such as CV, CVC, and CVCC,
- **SLO 4.10** explain phonological rules governing consonant-vowel interaction,
- **SLO 4.11** evaluate the effects of vowel length and consonant emphasis on meaning, and

- **SLO 4.12** apply knowledge of the sound system in tajwīd and everyday pronunciation.

4.1 Consonantal System Of Arabic

4.1.1 Definition and scope of Arabic consonants

A **consonant** is a speech sound produced by obstructing or constricting airflow at specific points in the vocal tract. In Arabic, consonants form the backbone of the language, as most words are built from triliteral or quadriliteral consonantal roots. Arabic has 28 consonants, including unique sounds such as emphatic consonants and pharyngeals, which distinguish it from many other languages.

Fill in the blank: Arabic words are primarily built from _____ roots.

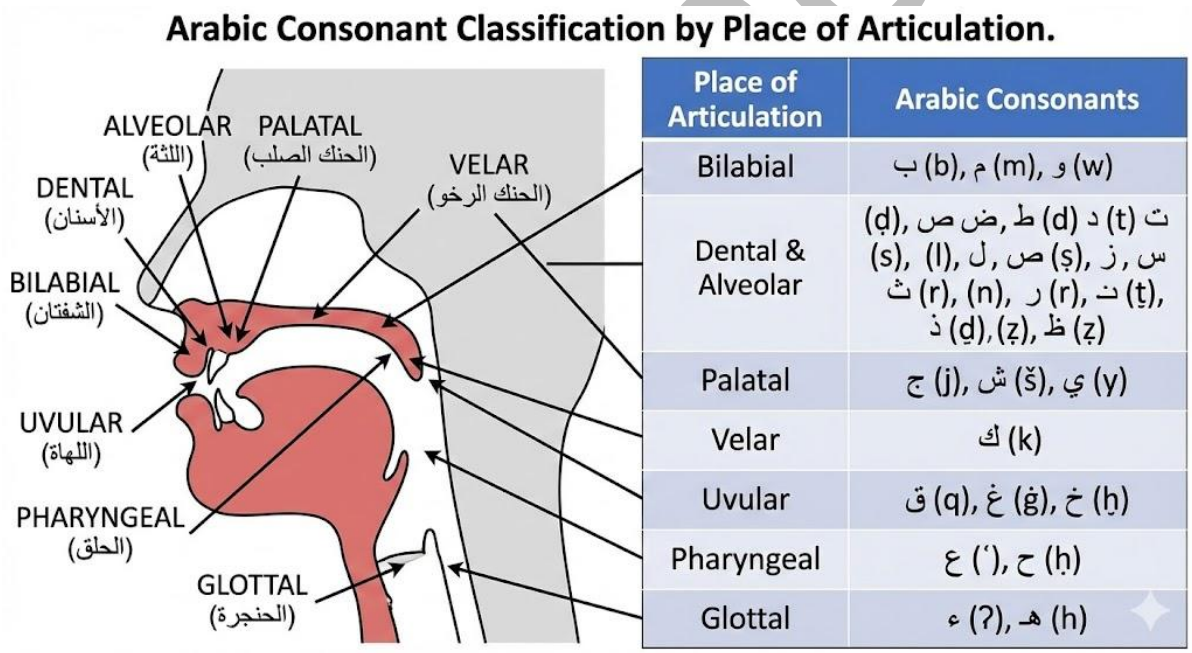


Figure 4.1: Arabic consonantal system by place of articulation

4.1.2 Classification of consonants by place and manner of articulation

Arabic consonants are classified according to **place of articulation** (where the sound is produced) and **manner of articulation** (how the sound is produced). For example:

- Bilabial: /b/, /m/ produced with both lips.

- Dental: /t/, /d/ produced with the tongue against the teeth.
- Pharyngeal: /ʕ/, /ħ/ produced deep in the throat.
- Glottal: /ʔ/, /h/ produced at the vocal cords.

Fill in the blank: The consonant /ʕ/ is classified as a _____ sound.

Consonant	Place of articulation	Manner of articulation	Example word
/b/	Bilabial	Stop	*bismillah*
/t/	Dental	Stop	*taʿāla*
/ʕ/	Pharyngeal	Fricative	*ʿilm*
/ʔ/	Glottal	Stop	*saʔala*

Table 4.1: Classification of selected Arabic consonants

4.1.3 Emphatic consonants and their distinctive role

Arabic has a set of **emphatic consonants** (/ṣ/, /ḍ/, /ṭ/, /ẓ/) that are produced with a secondary articulation involving the pharynx or velum. These consonants contrast with their non-emphatic counterparts and can change the meaning of words. For example, *sabr* (patience) vs *ṣabr* (patience with emphasis). Emphatics also affect surrounding vowels, often causing them to be pronounced with a deeper or darker quality.

Fill in the blank: The consonant /ṭ/ is an emphatic counterpart of the non-emphatic consonant _____.

Consonant	Example Word	Meaning
/ṣ/	*ṣabr*	Patience
/ḍ/	*ḍarb*	Strike
/ṭ/	*ṭālib*	Student
/ẓ/	*ẓulm*	Oppression

Box 4.1: Examples of emphatic consonants in Arabic

4.1.4 Examples from Qur'anic recitation and classical Arabic texts

Qur'anic recitation provides clear examples of consonantal precision. For instance, the distinction between /q/ and /k/ in *qalb* (heart) and *kalb* (dog) is vital to preserve meaning. Classical Arabic poetry also demonstrates the richness of consonantal sounds, where poets use emphatics and pharyngeals to create rhythm and depth. These examples show that consonants are not only structural units but also carriers of meaning and artistry in Arabic.

Fill in the blank: In Qur'anic recitation, the distinction between /q/ and /k/ is vital because it preserves _____.

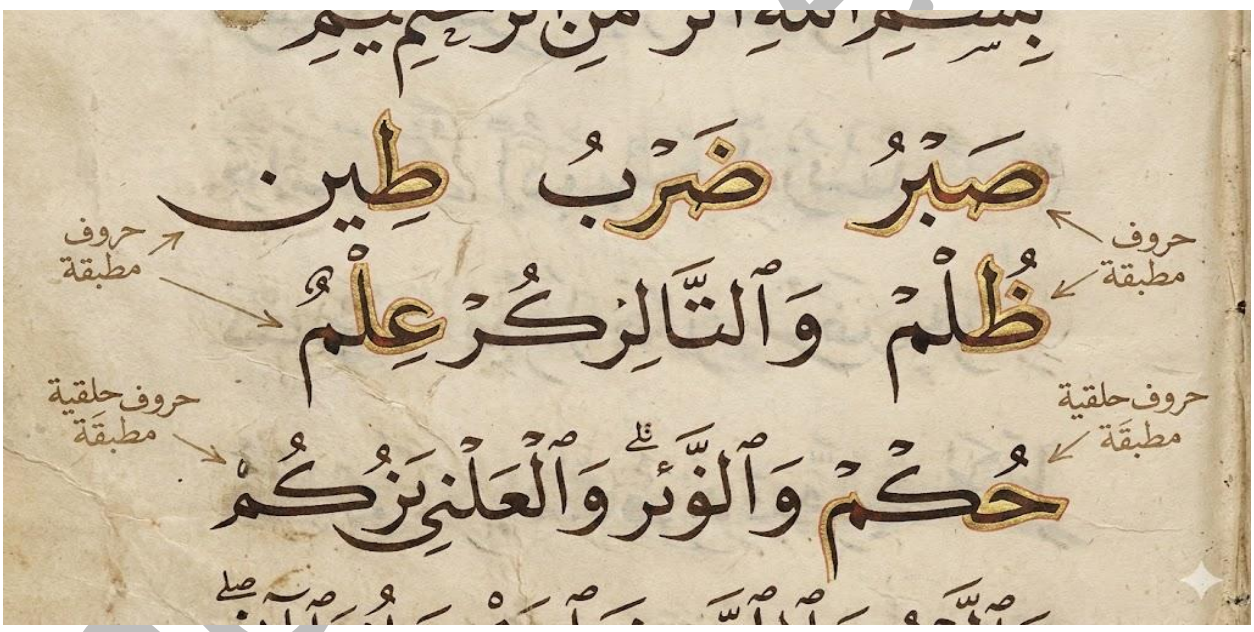


Plate 4.1: Examples of consonantal precision in Qur'anic recitation

Pilot questions 4.1

1. What is a consonant in Arabic phonology?
2. Fill in the blank: Arabic words are primarily built from _____ roots.
3. Classify the consonant /ʕ/ by place and manner of articulation.

4. Fill in the blank: The consonant /ʕ/ is classified as a _____ sound.
5. List the four emphatic consonants in Arabic.
6. Fill in the blank: The consonant /ṭ/ is an emphatic counterpart of the non-emphatic consonant _____.
7. Provide one example of consonantal precision from Qur'anic recitation.
8. Fill in the blank: In Qur'anic recitation, the distinction between /q/ and /k/ is vital because it preserves _____.

4.2 Vocalic System Of Arabic

4.2.1 Definition and scope of Arabic vowels

A **vowel** is a speech sound produced without significant constriction of airflow in the vocal tract. In Arabic, vowels are represented by short diacritical marks known as **ḥarakāt** and by long vowels called **madd**. Vowels play a crucial role in distinguishing meaning, rhythm, and grammatical function. For example, the difference between *kataba* (he wrote) and *kutiba* (it was written) lies in the vowel pattern applied to the same root.

Fill in the blank: In Arabic, short vowels are represented by _____.

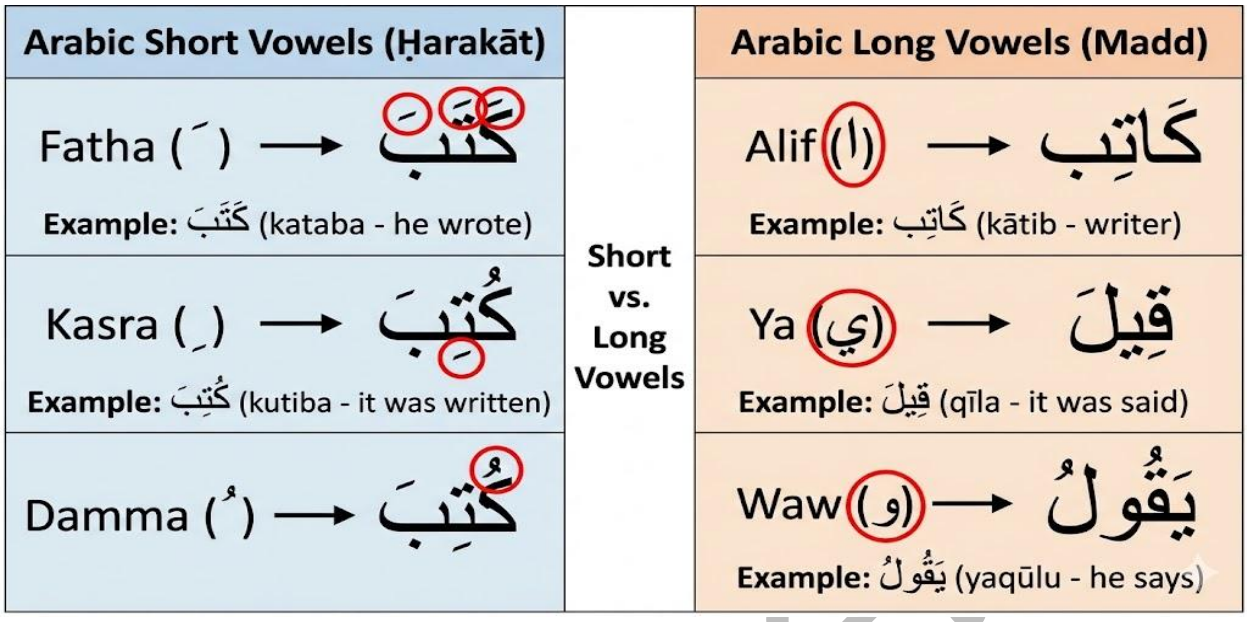


Figure 4.2: Diagram showing Arabic short and long vowels with examples.

4.2.2 Short vowels (ḥarakāt) and their functions

Arabic has three short vowels: **fatḥa** (a), **ḍamma** (u), and **kasra** (i). These are written as diacritical marks above or below consonants. Short vowels indicate grammatical case, tense, and mood, and they are essential for correct pronunciation in Qur'anic recitation. For example, *muslimu* (nominative), *muslima* (accusative), and *muslimi* (genitive) differ only in their short vowels.

Fill in the blank: The short vowel **kasra** is represented by the sound _____.

Vowel	Symbol	Sound	Example word
Fatḥa	ـَ	a	*kataba* (he wrote)
Ḍamma	ـُ	u	*kutiba* (it was written)
Kasra	ـِ	i	*kitāb* (book)

Table 4.2: Short vowels in Arabic with examples

4.2.3 Long vowels (madd) and their role in meaning and rhythm

Arabic has three long vowels: **ā**, **ū**, and **ī**, represented by the letters alif (ا), wāw (و), and yāʾ (ي) respectively. Long vowels extend the duration of the sound and often change the meaning of

words. For example, *ʿalam* (flag) vs *ʿālam* (world). Long vowels also contribute to rhythm and melody in Qur'anic recitation and poetry, making them vital for both linguistic and artistic expression.

Fill in the blank: The long vowel **ū** is represented by the letter _____.

Word Pair	**Meaning**
ʿalam vs. **ʿālam**	*ʿalam* = flag; *ʿālam* = world. The long vowel **ā** changes the meaning.
sūrah vs. **surah**	*sūrah* = chapter (of Qur'an); *surah* = image. The long vowel **ū** alters the semantic field.
dīn vs. **dan**	*dīn* = religion; *dan* = debt. The long vowel **ī** distinguishes abstract vs. concrete meaning.

Box 4.2: Examples of long vowels in Arabic

4.2.4 Examples from Qur'anic recitation and poetry

Qur'anic recitation demonstrates the importance of vowels in preserving meaning and rhythm. For instance, the elongation of vowels in *māliki yawmi d-dīn* (Master of the Day of Judgement) ensures correct recitation and emphasis. Classical Arabic poetry also relies heavily on vowel length to maintain metre and rhyme. These examples highlight how vowels are not only grammatical markers but also artistic devices in Arabic.

Fill in the blank: In Qur'anic recitation, the elongation of vowels ensures correct _____.

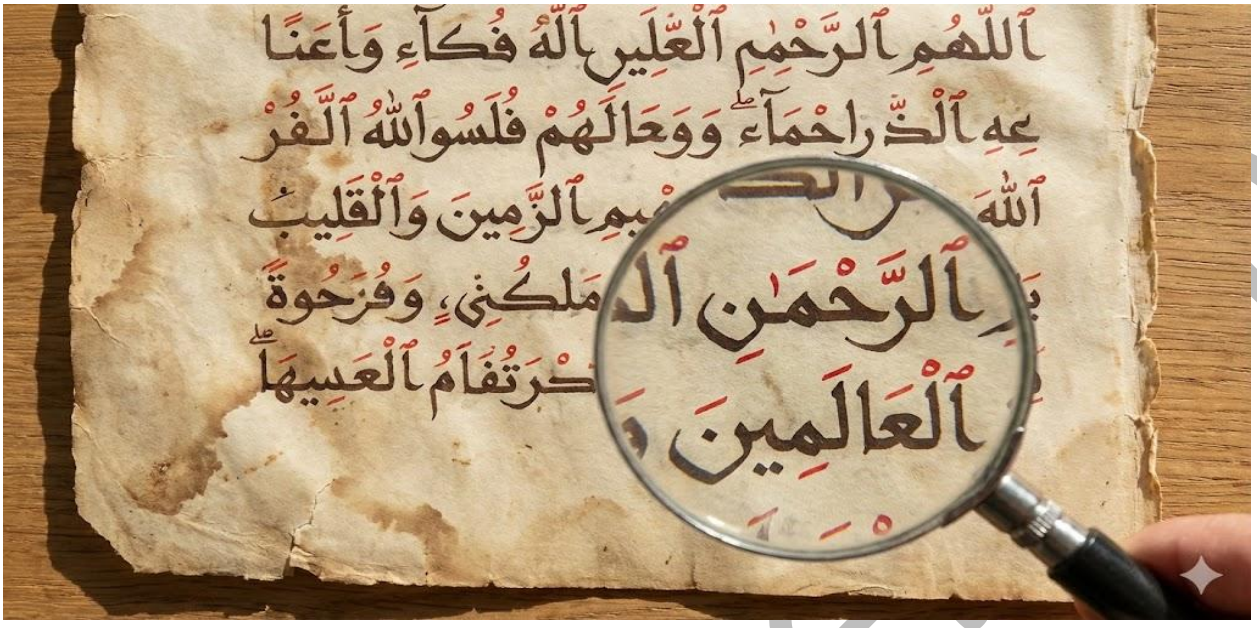


Plate 4.2: Examples of vowels in Qur'anic recitation

Pilot questions 4.2

1. What is a vowel in Arabic phonology?
2. Fill in the blank: In Arabic, short vowels are represented by _____.
3. List the three short vowels in Arabic with their symbols.
4. Fill in the blank: The short vowel **kasra** is represented by the sound _____.
5. Name the three long vowels in Arabic and the letters that represent them.
6. Fill in the blank: The long vowel **ū** is represented by the letter _____.
7. Provide one example of how long vowels change meaning in Arabic.
8. Fill in the blank: In Qur'anic recitation, the elongation of vowels ensures correct _____.

4.3 Interaction Of Consonants And Vowels In Arabic

4.3.1 Syllable structures in Arabic (CV, CVC, CVCC)

A **syllable** is a unit of pronunciation consisting of a vowel sound, often with surrounding consonants. In Arabic, syllable structures are typically simple and predictable. The most common structures are CV (consonant + vowel), CVC (consonant + vowel + consonant), and CVCC (consonant + vowel + consonant + consonant). For example, *ba* (CV), *kat* (CVC), and *makt* (CVCC). These structures form the rhythm of Arabic speech and are essential for correct recitation and poetry.

Fill in the blank: The syllable *kat* is an example of a _____ structure.

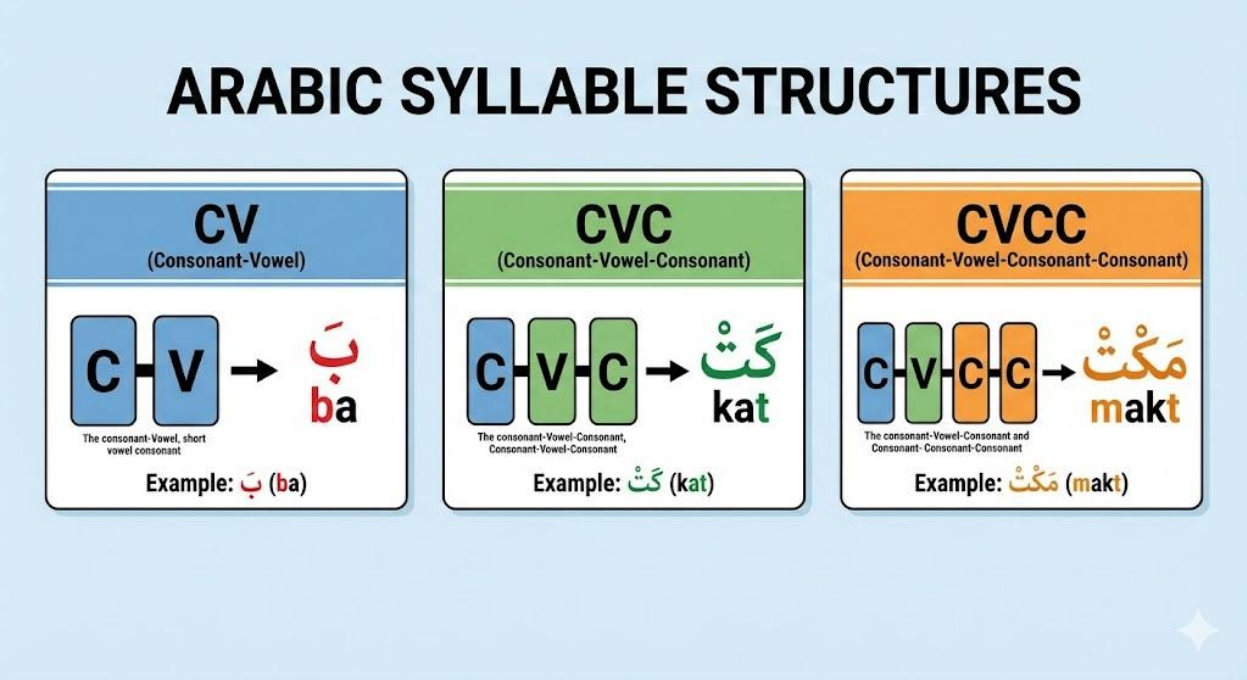


Figure 4.3: Common syllable structures in Arabic

4.3.2 Phonological rules governing consonant-vowel interaction

Arabic phonology includes rules that govern how consonants and vowels interact. For instance, short vowels cannot occur without a consonant, and long vowels often require specific consonantal contexts. Assimilation rules also affect how consonants and vowels combine, such

as the definite article *al-* assimilating before sun letters. These rules ensure consistency in pronunciation and meaning.

Fill in the blank: The definite article *al-* assimilates before _____ letters.

Rule	Example	Explanation
Short vowels need consonants	*kataba*	Vowels attach to consonants
Long vowels require context	*ʿālam*	Long vowel ā with alif
Assimilation of *al-*	*ash-shams*	Lam assimilates before sun letters

Table 4.3: Phonological rules in Arabic consonant-vowel interaction

4.3.3 Effects of vowel length and consonant emphasis on meaning

Vowel length and consonant emphasis can change the meaning of words in Arabic. For example, *ʿalam* (flag) vs *ʿālam* (world) differ only in vowel length. Similarly, *sabr* (patience) vs *ṣabr* (patience with emphasis) differ in consonant emphasis. These distinctions are crucial in Qur'anic recitation, where mispronunciation can alter meaning.

Fill in the blank: The words *ʿalam* and *ʿālam* differ only in _____ length.

Word Pair	Meaning
ʿalam vs. **ʿālam**	*ʿalam* = flag; *ʿālam* = world. Vowel length (**ā**) shifts the meaning.
sabr vs. **ṣabr**	*sabr* = patience (plain); *ṣabr* = patience (emphatic). Consonant emphasis changes articulation and nuance.
qalb vs. **kalb**	*qalb* = heart; *kalb* = dog. A single consonant change alters meaning entirely.

Box 4.3: Examples of meaning changes due to vowel length and consonant emphasis

4.3.4 Applications in tajwīd and everyday pronunciation

In **tajwīd**, the science of Qur'anic recitation, precise interaction of consonants and vowels ensures correct meaning and rhythm. For example, elongating vowels where required and pronouncing emphatic consonants correctly are essential for proper recitation. In everyday Arabic, these rules help maintain clarity and avoid misunderstandings. Mastery of consonant-vowel interaction is therefore both a linguistic and practical skill.

Fill in the blank: In tajwīd, precise interaction of consonants and vowels ensures correct _____.

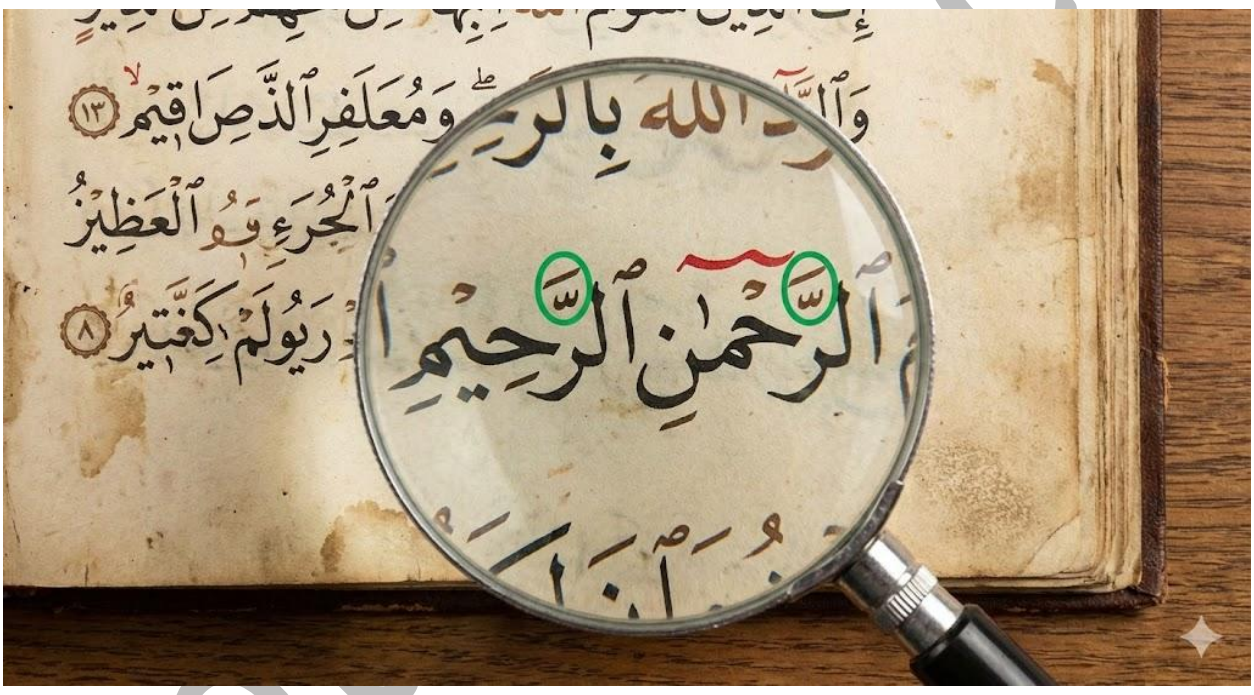


Plate 4.3: Applications of consonant-vowel interaction in Qur'anic recitation

Pilot questions 4.3

1. What is a syllable in Arabic phonology?
2. Fill in the blank: The syllable *kat* is an example of a _____ structure.
3. Explain one phonological rule governing consonant-vowel interaction in Arabic.
4. Fill in the blank: The definite article *al-* assimilates before _____ letters.

5. Provide one example of how vowel length changes meaning in Arabic.
6. Fill in the blank: The words *ʿalam* and *ʿālam* differ only in _____ length.
7. Give one example of how consonant emphasis changes meaning in Arabic.
8. Fill in the blank: In tajwīd, precise interaction of consonants and vowels ensures correct _____.

Series Summary

This Series has focused on the **sound system of the Arabic language**, highlighting how consonants and vowels interact to shape meaning, rhythm, and pronunciation. Starting with the consonantal system, you examined the definition and scope of Arabic consonants, their classification by place and manner of articulation, and the distinctive role of emphatic sounds, supported by examples from Qur'anic recitation and classical texts. You then moved on to the vocalic system, where you studied short vowels (ḥarakāt) and long vowels (madd), their functions, and their impact on meaning and rhythm, illustrated through Qur'anic recitation and poetry. Finally, you explored the interaction of consonants and vowels, analysing syllable structures, phonological rules, and the effects of vowel length and consonant emphasis, with practical applications in tajwīd and everyday speech.

By completing this Series, you should now be able to define, classify, and analyse both consonants and vowels in Arabic, demonstrate their distinctive features, evaluate how their interaction affects meaning, and apply this knowledge in recitation and pronunciation. These achievements directly align with the Series Learning Outcomes, ensuring you can confidently approach the Arabic sound system with precision and clarity.

Glossary of Terms

- **Assimilation**: A phonological process in Arabic where a consonant changes to match the sound of a neighbouring consonant, such as lam in *al-* assimilating before sun letters (*ash-shams*).

- **Consonant**: A speech sound produced by obstructing or constricting airflow at specific points in the vocal tract. Arabic has 28 consonants, including emphatic and pharyngeal sounds.
- **Emphatic consonant**: A consonant produced with secondary articulation in the pharynx or velum, giving it a heavier quality. Examples include /ṣ/, /ḍ/, /ṭ/, and /ẓ/.
- **Fatḥa**: A short vowel in Arabic represented by the diacritical mark ـَ, pronounced as the sound *a*.
- **Kasra**: A short vowel in Arabic represented by the diacritical mark ـِ, pronounced as the sound *i*.
- **Ḍamma**: A short vowel in Arabic represented by the diacritical mark ـُ, pronounced as the sound *u*.
- **Long vowel (madd)**: A vowel sound in Arabic that is extended in duration, represented by alif (ا) for *ā*, wāw (و) for *ū*, and yāʾ (ي) for *ī*.
- **Pharyngeal consonant**: A consonant produced deep in the throat, such as /ʕ/ and /ħ/, unique to Arabic and some Semitic languages.
- **Syllable**: A unit of pronunciation consisting of a vowel sound, often with surrounding consonants. Common Arabic syllable structures include CV, CVC, and CVCC.
- **Tajwīd**: The science of Qur'anic recitation, which requires precise articulation of consonants and vowels to preserve meaning and rhythm.
- **Vowel**: A speech sound produced without significant constriction of airflow. In Arabic, vowels are represented by short diacritical marks (ḥarakāt) and long vowels (madd).

Concept Check Questions [Series 4]

Objective questions

1. Define a consonant in Arabic phonology. (Linked to SLO 4.1)
2. Fill in the blank: Arabic words are primarily built from _____ roots. (Linked to SLO 4.1)
3. Classify the consonant /ʕ/ by place of articulation. (Linked to SLO 4.2)
4. Fill in the blank: The consonant /ṭ/ is an emphatic counterpart of the non-emphatic consonant _____. (Linked to SLO 4.3)
5. Identify the three short vowels in Arabic. (Linked to SLO 4.6)
6. Fill in the blank: The long vowel **ū** is represented by the letter _____. (Linked to SLO 4.7)
7. Which syllable structure does the word *kat* represent? (Linked to SLO 4.9)
8. Fill in the blank: The definite article *al-* assimilates before _____ letters. (Linked to SLO 4.10)

Short-answer questions

9. Explain the distinctive role of emphatic consonants in Arabic. (Linked to SLO 4.3)
10. Provide one example of consonantal precision from Qur'anic recitation. (Linked to SLO 4.4)
11. Describe the functions of short vowels (ḥarakāt) in Arabic grammar. (Linked to SLO 4.6)
12. Demonstrate how long vowels (madd) change meaning in Arabic with one example. (Linked to SLO 4.7)
13. Identify and explain one phonological rule governing consonant-vowel interaction. (Linked to SLO 4.10)
14. Give one example of how consonant emphasis changes meaning in Arabic. (Linked to SLO 4.11)

15. Explain why precise interaction of consonants and vowels is important in tajwīd. (Linked to SLO 4.12)

Long-answer questions

16. Analyse the consonantal system of Arabic, including its definition, classification, and examples from Qur'anic recitation. (Linked to SLOs 4.1–4.4)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

17. Discuss the vocalic system of Arabic, describing short and long vowels, their functions, and their role in meaning and rhythm. (Linked to SLOs 4.5–4.8)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

18. Evaluate the interaction of consonants and vowels in Arabic, focusing on syllable structures, phonological rules, and applications in tajwīd. (Linked to SLOs 4.9–4.12)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

Answers to Concept Check Questions [Series 4]

Objective questions

1. A consonant is a speech sound produced by obstructing or constricting airflow.
2. Consonantal.
3. Pharyngeal.
4. /t/.
5. Fatḥa, ḍamma, kasra.
6. Wāw (و).
7. CVC.
8. Sun.

Short-answer questions

9. Emphatic consonants add depth and contrast, changing meaning and affecting vowel quality.
10. Distinction between /q/ and /k/ in *qalb* vs *kalb*.
11. Short vowels mark case, tense, and mood, ensuring correct grammar and pronunciation.
12. *ʿalam* (flag) vs *ʿālam* (world).
13. Assimilation of lam in *al-* before sun letters.
14. *sabr* vs *ṣabr*.
15. Tajwīd requires precise articulation to preserve meaning and rhythm.

Long-answer questions

16. *Basic response*: Arabic consonants are classified by place and manner of articulation, with emphatic sounds adding contrast. Qur'anic recitation demonstrates precision, such as /q/ vs /k/.

    Value-added response: Learners may add that consonants reflect the unique identity of

Arabic, with pharyngeals and emphatics shaping its soundscape and influencing vowel quality.

17. *Basic response*: Arabic vowels include short vowels (ḥarakāt) and long vowels (madd). Short vowels mark grammar, while long vowels change meaning and add rhythm.
    Value-added response: Learners may add that vowel length is central to Arabic poetry and recitation, maintaining metre and melody, and that vowel shifts can signal subtle semantic differences.

18. *Basic response*: Consonant-vowel interaction forms syllable structures (CV, CVC, CVCC), governed by phonological rules such as assimilation. These interactions affect meaning and pronunciation.
    Value-added response: Learners may add that mastery of these interactions enhances tajwīd, ensuring accurate recitation, and contributes to linguistic analysis of Arabic's phonological system.

Answers to Pilot Questions [Series 4]

Part 4.1

1. A consonant is a speech sound produced by obstructing or constricting airflow.
2. Consonantal.
3. /ʕ/ is a pharyngeal fricative.
4. Stop.
5. /ṣ/, /ḍ/, /ṭ/, /ẓ/.
6. /t/.
7. Distinction between /q/ and /k/ in *qalb* vs *kalb*.
8. Meaning.

Part 4.2

1. A vowel is a speech sound produced without significant constriction of airflow.
2. Ḥarakāt (diacritical marks).
3. Fatḥa (ـَ), ḍamma (ـُ), kasra (ـِ).
4. i.
5. ā (alif), ū (wāw), ī (yāʾ).
6. Wāw (و).
7. *ʿalam* (flag) vs *ʿālam* (world).
8. Recitation.

Part 4.3

1. A syllable is a unit of pronunciation consisting of a vowel sound, often with surrounding consonants.
2. CVC.

3. Assimilation of lam in *al-* before sun letters.
4. Sun.
5. *ʿalam* vs *ʿālam*.
6. Vowel.
7. *sabr* vs *ṣabr*.
8. Meaning.

References and Attributions [Series 4]

General References

- Al-Ani, S. H. (1970). *Arabic phonology: An outline*. Mouton.
- Haywood, J. A., & Nahmad, H. M. (1965). *A new Arabic grammar of the written language*. Lund Humphries.
- Qur'an. (n.d.). Selected verses cited for examples of consonants, vowels, and syllable structures in recitation.
- Versteegh, K. (2014). *The Arabic language*. Edinburgh University Press.

Illustrations

- *Figure 4.1: Arabic consonantal system by place of articulation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a diagram showing Arabic consonants classified by place of articulation (bilabial, dental, alveolar, pharyngeal, uvular, glottal)."
    - Suggested OER search string: "Arabic consonant chart place of articulation OER"
- *Table 4.1: Classification of selected Arabic consonants*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a table showing classification of selected Arabic consonants by place and manner of articulation with examples."
    - Suggested OER search string: "Arabic consonant classification place manner OER"
- *Box 4.1: Examples of emphatic consonants in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a text box showing examples of emphatic consonants in Arabic with words."

- Suggested OER search string: “Arabic emphatic consonants examples OER”

- *Plate 4.1: Examples of consonantal precision in Qur’anic recitation*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate an image of a Qur’anic manuscript highlighting emphatic and pharyngeal consonants in Arabic words.”
  - Suggested OER search string: “Qur’an Arabic consonants emphatic pharyngeal OER”
- *Figure 4.2: Arabic vowels and their representation*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a diagram showing Arabic short vowels (ḥarakāt) and long vowels (madd) with examples such as kataba vs kutiba.”
  - Suggested OER search string: “Arabic vowels short long harakat madd OER”
- *Table 4.2: Short vowels in Arabic with examples*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a table showing Arabic short vowels with symbols, sounds, and examples.”
  - Suggested OER search string: “Arabic short vowels harakat examples OER”
- *Box 4.2: Examples of long vowels in Arabic*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a text box showing examples of long vowels in Arabic with meanings.”
  - Suggested OER search string: “Arabic long vowels madd examples OER”
- *Plate 4.2: Examples of vowels in Qur’anic recitation*
  - Attribution: AI-generated using Copilot graphic art tool.

- Prompt: “Generate an image of a Qur’anic manuscript highlighting vowel marks and elongations in Arabic words.”
- Suggested OER search string: “Qur’an Arabic vowels harakat madd OER”

- *Figure 4.3: Common syllable structures in Arabic*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a diagram showing Arabic syllable structures CV, CVC, CVCC with examples ba, kat, makt.”
  - Suggested OER search string: “Arabic syllable structures CV CVC CVCC OER”
- *Table 4.3: Phonological rules in Arabic consonant-vowel interaction*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a table showing phonological rules in Arabic consonant-vowel interaction with examples.”
  - Suggested OER search string: “Arabic phonological rules consonant vowel interaction OER”
- *Box 4.3: Examples of meaning changes due to vowel length and consonant emphasis*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a text box showing examples of meaning changes due to vowel length and consonant emphasis in Arabic.”
  - Suggested OER search string: “Arabic vowel length consonant emphasis meaning OER”
- *Plate 4.3: Applications of consonant-vowel interaction in Qur’anic recitation*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate an image of a Qur’anic manuscript highlighting vowel elongation and consonant emphasis in tajwid.”

- Suggested OER search string: “Qur’an Arabic tajwid consonant vowel interaction OER”

Series 5: The Arabic Language Lab And Pronunciation Practice

Part 5.1 Practical articulation of Arabic consonants

- 5.1.1 Exercises in producing consonants by place of articulation
- 5.1.2 Practice with emphatic consonants and pharyngeals
- 5.1.3 Qur'anic recitation drills focusing on consonantal precision

Part 5.2 Vowel practice and rhythm in Arabic pronunciation

- 5.2.1 Exercises with short vowels (ḥarakāt)
- 5.2.2 Practice with long vowels (madd) and elongation rules
- 5.2.3 Application of vowel length in Qur'anic recitation and poetry

Part 5.3 Integrated pronunciation practice in the language lab

- 5.3.1 Syllable structure drills (CV, CVC, CVCC)
- 5.3.2 Exercises combining consonants and vowels in words and phrases
- 5.3.3 Tajwīd-based pronunciation practice for accuracy and fluency

Introduction

In the last Series, we examined the sound system of Arabic, focusing on consonants, vowels, and their interaction in syllable structures and tajwīd. Having built a strong theoretical foundation, this Series now moves into the practical dimension, where you will actively engage with the sounds of Arabic in a language lab setting. Pronunciation practice is essential for mastering Arabic, as accurate articulation ensures clarity, preserves meaning, and supports effective recitation.

The aim of this Series is to provide you with structured opportunities to practise the articulation of Arabic consonants and vowels, apply phonological rules in real speech, and develop fluency through integrated pronunciation drills.

We shall commence this Series by working on the practical articulation of Arabic consonants, including exercises on place of articulation, emphatic sounds, and Qur'anic recitation drills. Next, we will continue with vowel practice, focusing on short vowels (ḥarakāt), long vowels (madd), and their role in rhythm and meaning, supported by examples from recitation and poetry. Finally, we will bring the Series to a close with integrated pronunciation practice in the language lab, combining consonants and vowels in syllable structures, words, and phrases, with tajwīd-based exercises to ensure accuracy and fluency.

Series Learning Outcomes

Upon completing this Series, you should be able to:

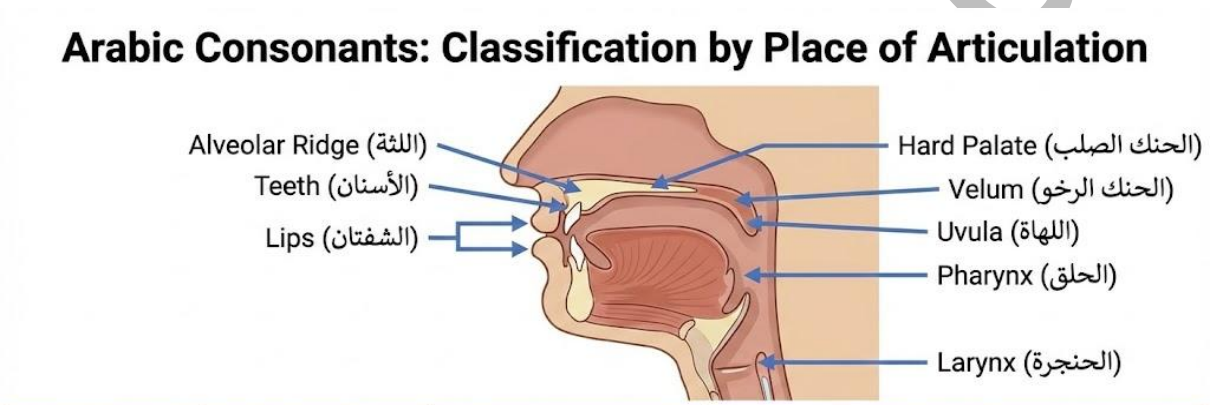
- **SLO 5.1** demonstrate the correct articulation of Arabic consonants by place of articulation,
- **SLO 5.2** practise and reproduce emphatic consonants and pharyngeals accurately,
- **SLO 5.3** apply consonantal precision in Qur'anic recitation drills,
- **SLO 5.4** produce short vowels (ḥarakāt) correctly in spoken Arabic,
- **SLO 5.5** elongate long vowels (madd) appropriately in pronunciation exercises,
- **SLO 5.6** illustrate the role of vowel length in Qur'anic recitation and poetry,
- **SLO 5.7** construct syllable structures (CV, CVC, CVCC) through guided drills,
- **SLO 5.8** combine consonants and vowels effectively in words and phrases, and
- **SLO 5.9** apply tajwīd-based pronunciation rules to achieve accuracy and fluency in recitation.

5.1 Practical Articulation Of Arabic Consonants

5.1.1 Exercises in producing consonants by place of articulation

Arabic consonants are produced at different points in the vocal tract, known as **places of articulation**. These include bilabial (using both lips), dental (tongue against teeth), alveolar (tongue against alveolar ridge), pharyngeal (deep in the throat), uvular, and glottal (vocal cords). In practice, learners should repeat words such as *bismillah* (bilabial /b/), *taʿāla* (dental /t/), and *ʿilm* (pharyngeal /ʕ/) to train their articulation.

Fill in the blank: The consonant /ʕ/ is produced in the _____ region of the vocal tract.



Place	Arabic Term	Consonants	Examples
Bilabial	شفوي	ب (b), م (m), و (w)	بسم الله (bismillah - In the name of God)
Dental	أسنان	ت (t), د (d), ط (ṭ)	تعالى (taʿāla - Exalted)
Pharyngeal	حلقي	ع (ʿ), ح (ḥ)	علم (ʿilm - Knowledge)
Glottal	حنجري	ء (ʔ), هـ (h)	الله (Allāh - God)

Figure 5.1: Places of articulation in Arabic consonants

5.1.2 Practice with emphatic consonants and pharyngeals

Arabic has a set of **emphatic consonants** (/ṣ/, /ḍ/, /ṭ/, /ẓ/) produced with secondary articulation in the pharynx or velum. These sounds are heavier than their non-emphatic counterparts and affect surrounding vowels. Learners should practise pairs such as *sabr* vs *ṣabr* and *talib* vs *ṭālib* to feel the difference. Pharyngeal consonants (/ʕ/, /ħ/) are unique to Arabic and require deep throat

articulation. Practising words like *ʿabd* (servant) and *ḥaqq* (truth) helps learners master these sounds.

Fill in the blank: The consonant /ṭ/ is the emphatic counterpart of the non-emphatic consonant _____.

Word	**Consonant Type**	**Meaning**
ṣabr	Emphatic (ṣ)	Patience
ḍarb	Emphatic (ḍ)	Strike
ṭālib	Emphatic (ṭ)	Student
ẓulm	Emphatic (ẓ)	Oppression
ʿabd	Pharyngeal (ʿ)	Servant
ḥaqq	Pharyngeal (ḥ)	Truth

Box 5.1: Practice words for emphatic and pharyngeal consonants

5.1.3 Qur'anic recitation drills focusing on consonantal precision

In **tajwīd**, the science of Qur'anic recitation, precise articulation of consonants is essential. Mispronouncing a consonant can change the meaning of a word. For example, *qalb* (heart) vs *kalb* (dog) differ only in the initial consonant. Learners should practise reciting verses that highlight consonantal contrasts, such as *Qul huwa Allāhu aḥad* (Say: He is Allah, One) to strengthen their articulation of /q/ and /ʔ/.

Fill in the blank: In Qur'anic recitation, the distinction between /q/ and /k/ is vital because it preserves _____.

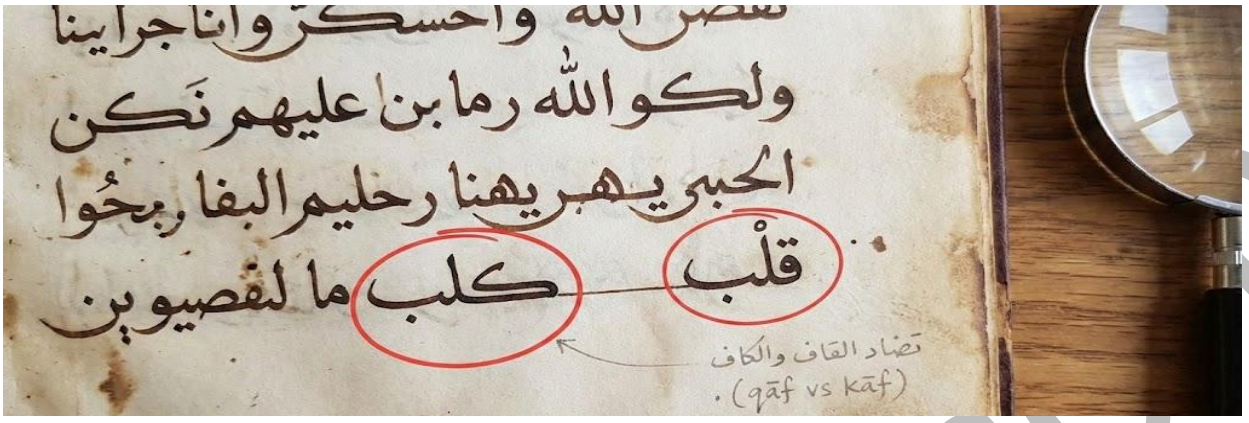


Plate 5.1: Consonantal precision in Qur'anic recitation

Pilot questions 5.1

1. What are places of articulation in Arabic consonants?
2. Fill in the blank: The consonant /ʕ/ is produced in the _____ region of the vocal tract.
3. List the four emphatic consonants in Arabic.
4. Fill in the blank: The consonant /ṭ/ is the emphatic counterpart of the non-emphatic consonant _____.
5. Provide two examples of pharyngeal consonants in Arabic.
6. Give one example of a word pair that demonstrates consonantal precision in Qur'anic recitation.
7. Fill in the blank: In Qur'anic recitation, the distinction between /q/ and /k/ is vital because it preserves _____.

5.2 Vowel Practice And Rhythm In Arabic Pronunciation

5.2.1 Exercises with short vowels (ḥarakāt)

Arabic short vowels, known as **ḥarakāt**, are represented by diacritical marks placed above or below consonants. They include **fatḥa** (ـَ, pronounced *a*), **ḍamma** (ـُ, pronounced *u*), and **kasra** (ـِ,

pronounced *i*). In practice, learners should repeat words such as *kataba* (he wrote), *kutiba* (it was written), and *kitāb* (book) to train their pronunciation of short vowels. These exercises help learners recognise how vowel changes affect meaning and grammatical function.

Fill in the blank: The short vowel **kasra** is represented by the sound _____.

Vowel	Symbol	Sound	Example word
Fatḥa	ـَ	a	*kataba* (he wrote)
Ḍamma	ـُ	u	*kutiba* (it was written)
Kasra	ـِ	i	*kitāb* (book)

Table 5.1: Practice words with short vowels

5.2.2 Practice with long vowels (madd) and elongation rules

Arabic long vowels, known as **madd**, are represented by the letters alif (ا) for *ā*, wāw (و) for *ū*, and yāʾ (ي) for *ī*. Long vowels extend the duration of the sound and often change the meaning of words. For example, *ʿalam* (flag) vs *ʿālam* (world). Learners should practise elongating vowels in words such as *dīn* (religion) and *sūrah* (chapter) to develop fluency and rhythm. In Qur'anic recitation, elongation rules are vital for maintaining correct tajwīd.

Fill in the blank: The long vowel **ū** is represented by the letter _____.

Word Pair	Explanation / Meaning
ʿalam vs. **ʿālam**	*ʿalam* = flag; *ʿālam* = world. The long vowel **ā** changes the meaning significantly.
dīn vs. **dan**	*dīn* = religion; *dan* = debt. The long vowel **ī** distinguishes abstract vs. concrete meaning.
sūrah vs. **surah**	*sūrah* = chapter (of Qur'an); *surah* = image. The long vowel **ū** alters the semantic field.

Box 5.2: Practice words with long vowels

5.2.3 Application of vowel length in Qur'anic recitation and poetry

In Qur'anic recitation, vowel length is carefully observed to preserve meaning and rhythm. For example, in *māliki yawmi d-dīn* (Master of the Day of Judgement), elongating the vowel *ā* ensures correct recitation. In classical Arabic poetry, vowel length contributes to metre and rhyme, making it a key feature of artistic expression. Learners should practise reciting verses and lines of poetry to internalise the role of vowel length in rhythm and meaning.

Fill in the blank: In Qur'anic recitation, elongating vowels ensures correct _____.

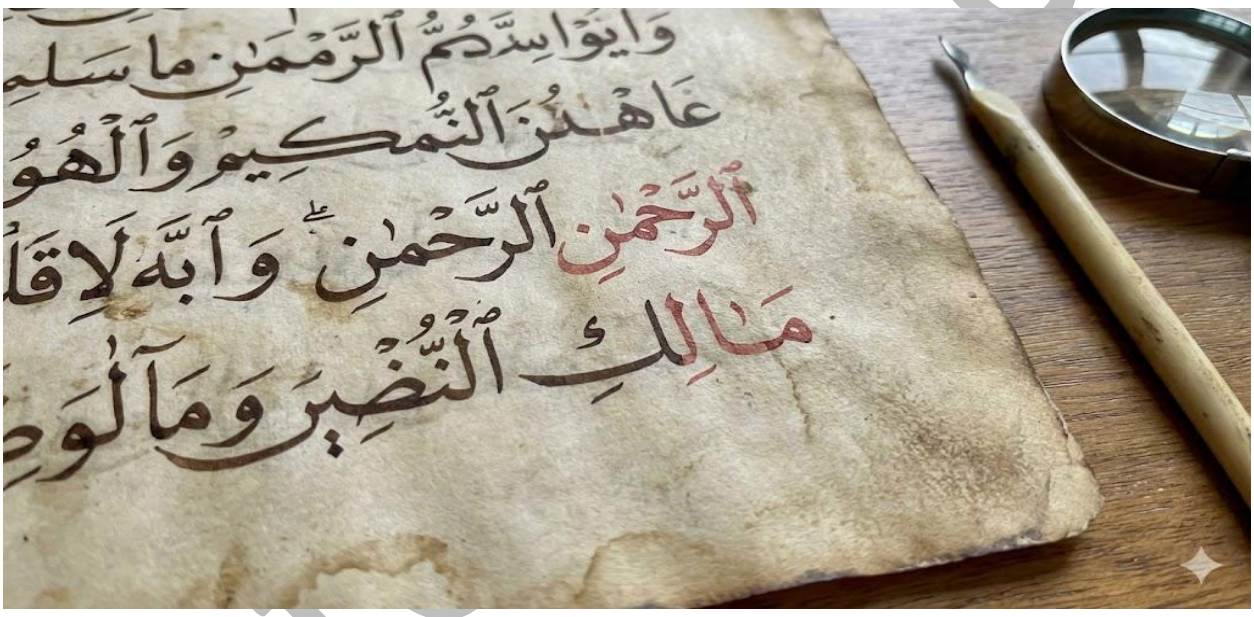


Plate 5.2: Vowel length in Qur'anic recitation

Pilot questions 5.2

1. What are short vowels (ḥarakāt) in Arabic?
2. Fill in the blank: The short vowel **kasra** is represented by the sound _____.
3. List the three short vowels in Arabic with their symbols.
4. What are long vowels (madd) in Arabic and which letters represent them?
5. Fill in the blank: The long vowel **ū** is represented by the letter _____.

6. Provide one example of how vowel length changes meaning in Arabic.
7. Explain the role of vowel length in Qur'anic recitation.
8. Fill in the blank: In Qur'anic recitation, elongating vowels ensures correct _____.

5.3 Integrated Pronunciation Practice In The Language Lab

5.3.1 Syllable structure drills (CV, CVC, CVCC)

Arabic syllables are built from combinations of consonants and vowels. The most common structures are **CV** (consonant + vowel), **CVC** (consonant + vowel + consonant), and **CVCC** (consonant + vowel + consonant + consonant). Practising these structures helps learners develop fluency and rhythm. For example, *ba* (CV), *kat* (CVC), and *makt* (CVCC). In the lab, learners should repeat these syllables aloud, gradually combining them into words and phrases.

Fill in the blank: The syllable *makt* is an example of a _____ structure.

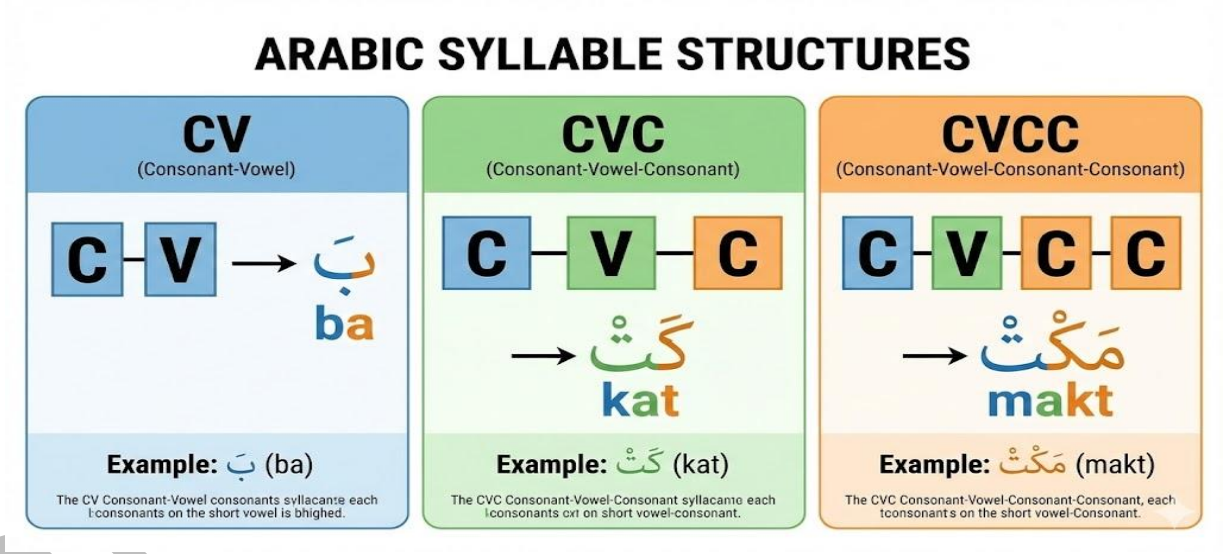


Figure 5.2: Syllable structures in Arabic pronunciation practice

5.3.2 Exercises combining consonants and vowels in words and phrases

Once learners are comfortable with syllable structures, they should practise combining consonants and vowels into complete words and short phrases. For example, *kitāb* (book), *ʿilm*

(knowledge), and *bismillah* (in the name of Allah). These exercises reinforce the connection between theory and practice, helping learners pronounce words accurately and fluently.

Fill in the blank: The word *kitāb* combines consonants and vowels to form the meaning _____.

Word / Phrase	**Explanation**
kitāb	Book – shows consonant–vowel alternation with a long vowel.
ʿilm	Knowledge – illustrates short vowel insertion to break consonant clusters.
bismillah	"In the name of Allah" – combines consonants and vowels in a common phrase, demonstrating fluid integration.
ṭālib	Student – highlights emphatic consonant (ṭ) interacting with vowels.

Box 5.3: Practice words and phrases for consonant-vowel integration

5.3.3 Tajwīd-based pronunciation practice for accuracy and fluency

In **tajwīd**, learners apply rules of pronunciation to ensure correct recitation of the Qur'an. This involves precise articulation of consonants, correct vowel length, and observing assimilation rules. For example, reciting *Qul huwa Allāhu aḥad* requires careful attention to the consonant /q/ and the elongation of vowels. In the lab, learners should practise selected verses repeatedly, focusing on accuracy and fluency.

Fill in the blank: In tajwīd, accurate pronunciation ensures correct _____.

Plate 5.3: Tajwīd-based pronunciation practice in Arabic

Pilot questions 5.3

1. What are the common syllable structures in Arabic?
2. Fill in the blank: The syllable *makt* is an example of a _____ structure.
3. Provide two examples of words that combine consonants and vowels in Arabic.
4. Fill in the blank: The word *kitāb* combines consonants and vowels to form the meaning _____.
5. Explain why tajwīd-based pronunciation practice is important.
6. Fill in the blank: In tajwīd, accurate pronunciation ensures correct _____.

Series Summary

This Series has provided you with practical training in the **Arabic language lab and pronunciation practice**, moving from theoretical knowledge of sounds into hands-on articulation and recitation. Beginning with consonantal practice, you worked on producing consonants by place of articulation, mastering emphatic and pharyngeal sounds, and applying precision in Qur'anic recitation. You then advanced to vowel practice, focusing on short vowels

(ḥarakāt) and long vowels (madd), learning how vowel length influences meaning, rhythm, and fluency in both recitation and poetry. Finally, you engaged in integrated pronunciation drills, combining consonants and vowels into syllable structures, words, and phrases, and applying tajwīd rules to achieve accuracy and fluency in recitation.

By completing this Series, you should now be able to demonstrate correct articulation of consonants, practise vowels with precision, construct syllable structures, and apply tajwīd-based rules in recitation. These skills directly align with the Series Learning Outcomes, ensuring that you can confidently practise and refine your pronunciation in both academic and religious contexts.

Glossary of Terms

- **Emphatic consonant**: A consonant in Arabic produced with secondary articulation in the pharynx or velum, giving it a heavier quality. Examples include /ṣ/, /ḍ/, /ṭ/, and /ẓ/.
- **Fatḥa**: A short vowel in Arabic represented by the diacritical mark ـَ, pronounced as the sound *a*.
- **Kasra**: A short vowel in Arabic represented by the diacritical mark ـِ, pronounced as the sound *i*.
- **Ḍamma**: A short vowel in Arabic represented by the diacritical mark ـُ, pronounced as the sound *u*.
- **Long vowel (madd)**: A vowel sound in Arabic that is extended in duration, represented by alif (ا) for *ā*, wāw (و) for *ū*, and yāʾ (ي) for *ī*.
- **Pharyngeal consonant**: A consonant produced deep in the throat, such as /ʕ/ and /ħ/, unique to Arabic and central to its sound system.
- **Place of articulation**: The point in the vocal tract where a consonant is produced, such as bilabial (lips), dental (teeth), alveolar (ridge), pharyngeal (throat), uvular, or glottal (vocal cords).

- **Syllable structure**: The arrangement of consonants and vowels in a unit of pronunciation. Common Arabic syllable structures include CV (consonant + vowel), CVC (consonant + vowel + consonant), and CVCC (consonant + vowel + consonant + consonant).
- **Tajwīd**: The science of Qur'anic recitation, which requires precise articulation of consonants, correct vowel length, and adherence to phonological rules to preserve meaning and rhythm.
- **Vowel**: A speech sound produced without significant constriction of airflow. In Arabic, vowels are represented by short diacritical marks (ḥarakāt) and long vowels (madd).

Concept Check Questions [Series 5]

Objective questions

1. Identify the place of articulation for the consonant /ʕ/. (Linked to SLO 5.1)
2. Fill in the blank: The consonant /ṭ/ is the emphatic counterpart of the non-emphatic consonant _____. (Linked to SLO 5.2)
3. State the purpose of consonantal precision in Qur'anic recitation. (Linked to SLO 5.3)
4. List the three short vowels (ḥarakāt) in Arabic. (Linked to SLO 5.4)
5. Fill in the blank: The long vowel **ū** is represented by the letter _____. (Linked to SLO 5.5)
6. Identify the syllable structure of the word *makt*. (Linked to SLO 5.7)
7. Fill in the blank: In tajwīd, accurate pronunciation ensures correct _____. (Linked to SLO 5.9)

Short-answer questions

8. Demonstrate how emphatic consonants differ from their non-emphatic counterparts with one example. (Linked to SLO 5.2)
9. Provide one example of a pharyngeal consonant in Arabic and a word where it occurs. (Linked to SLO 5.2)
10. Explain how vowel length changes meaning in Arabic with one example. (Linked to SLO 5.6)
11. Construct a syllable of type CV and give an example word. (Linked to SLO 5.7)
12. Describe how consonants and vowels combine to form words in Arabic. (Linked to SLO 5.8)
13. Explain why tajwīd-based pronunciation practice is important for learners. (Linked to SLO 5.9)

Long-answer questions

14. Analyse the practical articulation of Arabic consonants, including exercises by place of articulation, emphatic sounds, and Qur'anic recitation drills. (Linked to SLOs 5.1–5.3)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

15. Discuss vowel practice in Arabic, describing short vowels, long vowels, and their role in rhythm and meaning in recitation and poetry. (Linked to SLOs 5.4–5.6)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

16. Evaluate integrated pronunciation practice in the language lab, focusing on syllable structures, word formation, and tajwīd-based exercises. (Linked to SLOs 5.7–5.9)

- *Basic response*: Based on Series-only knowledge.
- *Value-added response*: For outstanding learners who go beyond the basics.

Answers to Concept Check Questions [Series 5]

Objective questions

1. Pharyngeal.
2. /t/.
3. To preserve meaning.
4. Fatḥa, ḍamma, kasra.
5. Wāw (و).
6. CVCC.
7. Meaning.

Short-answer questions

8. Example: *sabr* vs *ṣabr*; emphatic consonants are heavier and affect vowel quality.
9. /ʕ/ in *ʿilm* or /ħ/ in *ḥaqq*.
10. *ʿalam* (flag) vs *ʿālam* (world).
11. CV syllable: *ba* in *bismillah*.
12. Consonants provide the root structure, while vowels attach to them to form words with meaning.
13. Tajwīd ensures accurate recitation, preserving meaning and rhythm in the Qur'an.

Long-answer questions

14. *Basic response*: Arabic consonants are articulated at different places in the vocal tract. Learners practise emphatic and pharyngeal sounds, and Qur'anic recitation drills highlight consonantal precision.
    Value-added response: Learners may add that consonantal practice strengthens fluency, enhances awareness of subtle contrasts, and connects linguistic training with religious practice.

15. *Basic response*: Short vowels (ḥarakāt) mark grammar, while long vowels (madd) extend sound and change meaning. Vowel length contributes to rhythm in recitation and poetry. *Value-added response*: Learners may add that vowel practice develops sensitivity to metre in poetry, supports tajwīd rules, and reflects the aesthetic dimension of Arabic phonology.

16. *Basic response*: Integrated practice involves syllable drills (CV, CVC, CVCC), combining consonants and vowels into words, and applying tajwīd rules for accuracy. *Value-added response*: Learners may add that lab-based practice enhances confidence, bridges theory with application, and prepares learners for both academic and devotional contexts.

Answers to Pilot Questions [Series 5]

Part 5.1

1. Places of articulation are the points in the vocal tract where consonants are produced.
2. Pharyngeal.
3. /ṣ/, /ḍ/, /ṭ/, /ẓ/.
4. /t/.
5. /ʕ/ in *ʿabd* and /ħ/ in *ḥaqq*.
6. *qalb* (heart) vs *kalb* (dog).
7. Meaning.

Part 5.2

1. Short vowels (ḥarakāt) are diacritical marks representing *a*, *u*, and *i*.
2. i.
3. Fatḥa (ـَ), ḍamma (ـُ), kasra (ـِ).
4. Long vowels (madd) are extended sounds represented by alif (ا), wāw (و), and yāʾ (ي).
5. Wāw (و).
6. *ʿalam* (flag) vs *ʿālam* (world).
7. Vowel length preserves rhythm and meaning in recitation.
8. Recitation.

Part 5.3

1. CV, CVC, CVCC.
2. CVCC.
3. *kitāb* (book), *ʿilm* (knowledge).
4. Book.

5. Tajwīd ensures accuracy and fluency in Qur'anic recitation.
6. Meaning.

References and Attributions [Series 5]

General References

- Al-Ani, S. H. (1970). *Arabic phonology: An outline*. Mouton.
- Haywood, J. A., & Nahmad, H. M. (1965). *A new Arabic grammar of the written language*. Lund Humphries.
- Qur'an. (n.d.). Selected verses cited for examples of consonantal precision, vowel elongation, and tajwīd practice.
- Versteegh, K. (2014). *The Arabic language*. Edinburgh University Press.

Illustrations

- *Figure 5.1: Places of articulation in Arabic consonants*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a diagram showing Arabic consonants classified by place of articulation with examples such as bismillah, taʿāla, ʿilm."
    - Suggested OER search string: "Arabic consonants place of articulation diagram OER"
- *Box 5.1: Practice words for emphatic and pharyngeal consonants*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate a text box showing practice words for emphatic and pharyngeal consonants in Arabic."
    - Suggested OER search string: "Arabic emphatic consonants pharyngeal practice words OER"
- *Plate 5.1: Consonantal precision in Qur'anic recitation*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: "Generate an image of a Qur'anic manuscript highlighting consonantal contrasts such as qalb vs kalb."

- Suggested OER search string: “Qur’an Arabic tajwid consonantal precision OER”

- *Table 5.1: Practice words with short vowels*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a table showing Arabic short vowels with their symbols, sounds, and practice words.”
  - Suggested OER search string: “Arabic short vowels harakat practice OER”
- *Box 5.2: Practice words with long vowels*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a text box showing practice words with long vowels in Arabic and their meanings.”
  - Suggested OER search string: “Arabic long vowels madd practice OER”
- *Plate 5.2: Vowel length in Qur’anic recitation*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate an image of a Qur’anic manuscript highlighting vowel elongation marks in Arabic words.”
  - Suggested OER search string: “Qur’an Arabic vowel elongation tajwid OER”
- *Figure 5.2: Syllable structures in Arabic pronunciation practice*
  - Attribution: AI-generated using Copilot graphic art tool.
  - Prompt: “Generate a diagram showing Arabic syllable structures CV, CVC, CVCC with practice examples ba, kat, makt.”
  - Suggested OER search string: “Arabic syllable structures practice drills OER”
- *Box 5.3: Practice words and phrases for consonant-vowel integration*
  - Attribution: AI-generated using Copilot graphic art tool.

    - Prompt: “Generate a text box showing practice words and phrases combining consonants and vowels in Arabic.”
    - Suggested OER search string: “Arabic consonant vowel practice words OER”
- *Plate 5.3: Tajwīd-based pronunciation practice in Arabic*
    - Attribution: AI-generated using Copilot graphic art tool.
    - Prompt: “Generate an image of a Qur’anic manuscript highlighting tajwid rules such as consonant articulation and vowel elongation.”
    - Suggested OER search string: “Qur’an tajwid pronunciation practice OER”