

Practical mechanisms for teaching perception and pronunciation of problematic consonants in Standard Arabic

Ibtisam Hussein
Al'Isra University, Jordan

1 Introducing the problem Most learners of Standard Arabic as a foreign language confront the problem of producing and perceiving 9 consonants, which constitute about the third of the 28 Arabic consonants. These sounds are: /ʕ/ /ħ/, /q/, /χ/, /ḍ/, /ṭ/, /ṣ/, /ḡ/ and /ḏ/. This renders the task of teaching such sounds very challenging for the teacher and requires a tremendous effort to help the learners recognize their articulation places and distinguish their articulatory characteristics. However, when the learners commence to recognize these problematic consonants as distinguished entities in terms of articulation and perception, they are encountered with a new problem. Most learners tend to convert them into other sounds that are easier to produce or closer to his/her mother tongue. This consequently leads to confusion in linguistic implications or the complete loss of the intended meaning- conveyed or perceived. Some learners do, however, produce some of these sounds correctly but with an unnatural exaggeration in the movement of their lips and their articulation in general, which distorts their normal articulation.

The problem of these consonants is not only restricted to their recognition and articulation, but extends further to two other aspects:

1 Some of these consonants, /ḍ/, /ṭ/, /ṣ/ and /ḏ/ have an emphatic value which renders the neighbouring segments emphatic as well. For example, in the word /mustaṭi:l/ (a rectangle), the sound /t/ is emphasized and converted into its allophone /ṭ/. In the word /mustaḥi:l/ "impossible," however, there is no emphasis in the consonant /t/ due to the lack of the emphatic sounds. This problem confuses the Arabic language learners in both writing and dictionary usage. For instance, when he is asked to write down the word /ṣa:ḍa/ (hunted), he would write the emphatic allophone /ḍ/ instead of /ḍ/, hence, losing the meaning. The problem goes further when the learner is asked to look up a word, like /mistara/ (a ruler) in the dictionary. He would look for it under the root /ṣaṭara/, which is not the required task.

2 One of the Arabic language characteristics is gemination "Al Shadda" which refers to "a sequence of identical adjacent segments of a sound in a single morpheme without being separated by epenthetic vowels". (Crystal, 196) The tongue rests at the articulatory place of the consonant for some time then it is released pronouncing the sound twice successively. In transcription, the doubled consonant sound is written twice. Gemination has a great impact on the meaning of words in Arabic language: (ex: faṣala (to do) - faṣṣala (to activate)). Therefore, it is essential for the Arabic language learner to understand and perceive the idea of doubling consonants. Nevertheless, if the 9 consonants that are mentioned above are difficult to pronounce without doubling, the difficulty will undoubtedly increase when they are geminated.

Despite the recurrence of this problem with a great number of Arabic learners, none of the books that are designed to teach Arabic language tackles it. In fact, they just deal with these problematic consonants just like all the other consonants without providing the learners with intensive strategies that would help them overcome these problems in terms of articulation or perception. Thus, many

beginners and intermediate learners still face the problem of distinguishing between these consonants. For diplomatic delegations, the embarrassment is far too great when they are unable to understand what is said and report it later on.

Hence, this study aims at drawing the attention to this problem which most Arabic learners face and to suggest practical methods to help the learners recognize and articulate these consonants without losing their basic traits. Nevertheless, and due to the diversity of issues that are related to these consonants, the study would discuss all the above mentioned consonants except for /q/, /x/ and /ɣ/ which will be studied in a separate paper.

2 Identifying the problematic consonants Direct observation and follow-up are sufficient to identify the problematic consonants. It is evident that most Arabic learners tend to replace these consonants, consciously or unconsciously, with other phonemes thinking that they are pronouncing the target consonants or perceive them aurally and in writing. For example, they would pronounce the words /ʕayn / “an eye” as /ʔayn / “Where” and /t̤aːba/ “to recover” as / t̤aːba/ “to repent”, and they get perplexed when they understand that these are two different words. Their problem and embarrassment increase when they fail to convey a clear linguistic message due to the sound replacements, especially in social gatherings.

As a result of such observations, many auditory and pronunciation tests took place repeatedly for different scholastic levels. Three levels were specified according to the words, sentences and texts that were allocated to each level. The findings of the tests are:

1 There is a relative equilibrium (balance) between the problems of recognition of the sound and its articulation. The difficulty results from the learners’ disability to recognize the sounds and, consequently, articulate them.

2 The phonetic context does not have a great impact on the problem: it does neither increase nor decrease it.

3 Most learners made nearly the same replacements as shown in the table:

The target consonant	The replaced consonant
pharyngeal approximant /ʕ/	glottal stop /ʔ/,
pharyngeal fricative /ħ/	glottal or velar fricative /h/, /x/ successively
The emphatic /d̤/	Non-emphatic /d/,
The emphatic /t̤/	Non-emphatic /t/
The emphatic /s̤/	Non-emphatic /s/
The emphatic /ð̤/	Non-emphatic /ð/

Table 1: the common replacements of the target consonants by learners of Arabic language

3 Why are these consonants problematic? The reasons behind the difficulty of these consonants are both the place and mechanisms of articulation.

a. Place of articulation

All the above-mentioned sounds are related to the pharynx, an inactive articulatory area in many languages such as English, Japanese and Swedish, which explains why such sounds are difficult to perceive and articulate. Moreover, native children whose native language uses the pharynx frequently “take longer time to acquire the production of pharyngeal consonants compared to oral consonants” (Elgendy, 65). In /ʕ/ and /ħ/, the pharynx is the main place of articulation (Bishir ,121) while it is a secondary one in the others (Al-Ani , 71) : /t̤/, /d̤/ and /s̤/ are dental-alveolar, / ð̤ / is

dental (anees,75,46). That explains why such consonants are more difficult for foreigners than the others.

b. Articulation mechanisms

1. The Pharyngeal Consonants The production of pharyngeal consonants requires not only retracting the tongue root into the pharyngeal cavity , but also involves the control of coordinated activities of pharyngeal wall contraction, epiglottis bending and larynx raising and constriction, as data collected using fiberoptic monitoring show(Elgendy,2001) . However, what distinguishes /ʕ/ from /ħ/ is that the earlier is a voiced pharyngeal approximant while the letter is a voiceless pharyngeal fricative. Moreover the place of restriction for the voiceless pharyngeal /ħ/ is higher in the pharynx than that of /ʕ/ (Al-Ani 1985) and it is further back with voiceless than that of voiced (Delattre, 1971). Due to all these difficulties regarding these consonants, learners, consciously or unconsciously, replace the pharyngeal sounds with glottal ones because they are closer to the pharynx. So, /ħ/ is mistaken for /h/ and /ʕ/ for /ʔ/. But the main reason for the replacement is that /h/ and /ʔ/ are easier and already found in other languages.

2. The pharyngealized consonants The production of pharyngealized consonants involves the tri-movement of the tongue: the apex rising towards the place of articulation, the back moving towards the soft palate and the retraction of the dorsum or root of the tongue, which is described as velarization (Oumar,279) . The secondary movements of the dorsum and the back of the tongue give these consonants the emphatic value which sets them apart from their counterpart phonemes. Without the emphatic value, /t/ changes into /t/, /d/ into /d/, /s/ into /s/ and /ð / changes into /ð/. Learners usually find the counterparts easier to pronounce taking into consideration that they occur in there languages.

4 Procedures of Treatment

a. Raising teachers' awareness of the difficulties faced by learners in learning these consonants. Many teachers do not deal with these consonants with the required attention and treat the problematic sounds like the other sounds which make the problem for the learners last longer. Moreover, many teachers think that these consonants are too difficult for foreigners to produce and they do not keep drawing learners' attention to the continuous replacements that they do while pronouncing them.

b. Raising Learners' awareness of these consonants and the replacements they usually make. Learners are required to realize the difficulties of producing these consonants along with the changes in the meaning that occur when they replace the consonants with those mentioned in table 1. Therefore, learners are expected to give more emphasis when pronouncing these consonants. This will be achieved through different ways:

The mechanism movie The film visually simulates the organic movements that occur when the target consonants and the replacement consonants take place slowly and naturally. It is displayed repeatedly in front of learners using x-rays or animated graphic to contrast, for example, /ħ/ with /h/ and /ʕ/ with /ʔ/ successively within the syllable CVCV aurally and visually. As a result, learners will gradually realize and relate such organic movements with the specific sounds of consonants. Contrast and repetition are essential to help the learner realize the difference between the two sounds such as /ħ/ vs. /h/ and /ʕ/ vs. /ʔ/.

The Pharynx Muscular Motivation To enhance learner's pronunciation of the pharyngeal /ʕ/ sound, they should exercise to irritate the pharynx, larynx and the root of the tongue using a tongue depressor (a tool used for tonsils examination). They will have this mechanism of training recorded on a CD as a movie to be able to practice at home. The repetition of such exercises would help them feel the place of articulation of the /ʕ/ sound and therefore, improve the activation of its area. Meanwhile, the practical key to the pronunciation of /ħ/ is found in the description of the fourth century linguist, Ibn Jenny. He states that "except for the hoarseness (Al buħħa/ in Arabic) in the /ħ/, it would resemble the /ʕ/." (Ibn Jenny, 254). Based on this description, the learners should be asked to frequently clear their throats until they feel and distinguish its area of pronunciation.

Starting with the long back low vowel Although the Arabic syllable system never starts with a vowel, it is considered an effective way that helps learners produce the emphatic consonants to start with the long back low vowel /ɑ:/ then to close the syllable with the target consonant. In Arabic, the long back low vowel /ɑ:/ is considered emphatic because when articulated, the tongue retracts towards the pharynx making it narrower. The narrowing of the pharynx is what gives this vowel /ɑ:/ its emphatic value which paves the way for the emphatic consonants to be pronounced. Another way to produce the emphatic sounds depends on their allophones which are found in English words like son, done, ton, thus, etc. The teacher asks the learner to pronounce them with a high intensity to amplify (exaggerate) their initial consonants to the maximum degree, hence making them more emphatic.

Perceptive Comparison Tables (minimal pairs) As its name indicates, this technique depends on organizing sets of minimal pairs that represent the target sound and its counterpart (replacement) in tables using the PowerPoint. It is important to have both sounds in syllables, words and sentences to increase the learners' ability to distinguish between them in their perception, articulation and writing. These tables could be classified into three kinds:

Auditory-articulatory: In supervised laboratory training sessions, learners are taught how to listen and how to concentrate on the target consonant in various contexts and then to the replaced consonant. The speed of articulation ranges from medium to natural. Then they are asked to repeat the listening text and record what they say to compare their articulation with the listening text.

Auditory-Writing: In these training sessions, teachers will pronounce words with the target consonant and their counterparts in random order. Learners are required to write what they hear on a worksheet. Then the teacher checks the learners' answers.

Auditory-Visual (optical reading): learners have to choose the right consonant image according to the sounds they hear.

Some of the words are clarified in this table

The alternate consonant	The target consonant
mawʔid (to bury alive)	mawħid (appointment)
su:ra (a Quranic verse)	ṣu:ra (a picture)
ti:n (figs)	ṭi:n (mud)

Table2: some examples of minimal pairs

Watching sketches demonstrating dialogues between Arabs and foreigners. Such dialogues clarify the communicative problems due to the sound alteration. For example, a woman who

wants to tell someone that she is pregnant has to say " ana ħa:mil " (I am pregnant) but instead she says "ana hamel" (I'm awful) or "ana xamel" (I'm lazy). This is usually followed with a group of questions from the recipient to try to understand what she means. Another sketch pictures a foreign learner who exaggerates in pronouncing the target consonant in different phonetic contexts. This exaggeration makes it completely unnatural in articulation. Through these sketches, the learner tackles the target consonants in all their forms: syllables, words, sentences and short texts which helps increase the distinctive characteristic for each consonant.

Categorizing the roots and the derivatives Teachers find it essential for learners to learn the root of every word they learn to form a database because this is very helpful to differentiate between the originally emphatic consonants and their counterparts that are used due to their presence. For example, by going to the roots, learners would easily know that the /s/ in /miṣṭara/ is not the same as in /muṣṭafa/ although they seem aurally the same. The roots are /saṭara/ and /ṣafiya/ successively. This would increase the learners' awareness of the impact the emphatic consonants have on the neighbouring sounds and would always try to detect which sound is used. Therefore, the root categorization helps the learners very much.

Root	Noun	Verb	Pres. part.	Past part.
(s + ṣ + r) saṭr	miṣṭara "ruler" saṭr (a line) ṭastur (lines)	yaṣṭuru (to draw lines)	saṭir (a person who draws lines)	maṣṭur (lined)
(ṣ + f + y) ṣafaya	muṣṭafa (a person's name) ṭiṣṭifa:ṭ (choosing)	yaṣṭafi: (to choose)	muṣṭafin (the chooser)	muṣṭafan (the chosen)

Table3: examples of the influence of emphatic consonant on its neighbouring sounds

Filming the learners while pronouncing the target consonants Filming the learners while pronouncing the target consonants has an evident impact on learning the problematic consonants correctly. What really happens is that learners are filmed, with a digital camera, while pronouncing the target sounds in different contexts: words, sentences, or texts, that are given by the teacher. The film lasts for about two minutes. Then it is displayed in the same session so that learners start commenting on their lip movement and articulation to learn where things go wrong.

The Weekly Meetings and the Linguistic Guide The weekly meetings with native Arabs play an efficient role in helping the learners get accustomed to the target consonants in various contexts. So does the linguistic guide (who can be a student at the university). He/She is chosen by the teacher and appointed to accompany the learner for 3 hours weekly in which they speak Arabic naturally. Every week, they practice a target consonant focusing on specific words given in their textbooks. The repeating meetings help learners to distinguish the problematic sounds aurally and articulatory.

5 Conclusion This study concludes that both teachers and learners should give the above-mentioned problematic consonants due attention as it is insufficient to merely draw the learners' attention to them. In fact, teachers should give their students intensive articulatory and perceptive exercises which not only help them articulate the target consonants correctly, but also overcome

the problem of their phonetic replacement. This is achieved through auditory, visual, physical and linguistic techniques described under the procedures of treatment.

6 Recommendations In an attempt to help learners learn these consonants and their usage in words, sentences and texts without a teacher, we already have the blueprints of interactive software for teaching and learning standard Arabic sounds and their usage. This interactive software will enable learners to evaluate their perception and pronouncing of problematic consonants.

References

- Ahmed M. Elgendy and Louis C.W. Pols. (2001)" Mechanical versus perceptual constraints as determinants of articulatory strategy" Proceedings 24 (2001), 65-74. Institute of Phonetic Sciences, University of Amsterdam.
- Al-Ani, S. (1985).personal communication
- Crystal. David, ,(2003) A dictionary of linguistics and phonetics ,fifth edition .
- Delattre, P. (1971) "pharyngeal features in the consonant of Arabic" phonetics 23,129-155
- Laufer A, Baer T.(1988) The emphatic and pharyngeal sounds in Hebrew and in Arabic. Lang Speech. 1988 Apr-Jun; 31 (Pt 2):181-205.
- Butcher A, Ahmad K. (1987) "Some acoustic and aerodynamic characteristics of pharyngeal consonants in Iraqi Arabic. Phonetica.;44(3):156-72

المراجع العربية: Arabic References

- أنيس ، إبراهيم (Anees , Ibrahiim) الأصوات اللغوية ، الطبعة الرابعة ، مكتبة الإنجلو المصرية ، 1992
- ابن جني ، أبو الفتح عثمان ، (Ibn Jenny) سر صناعة الإعراب ، الطبعة الأولى ، دار الكتب العلمية- لبنان ، 2000.
- بشر ، كمال محمد ، (Bishir , Kamal) علم اللغة العام – الأصوات ، دار المعارف – مصر ، 1980
- عمر ، أحمد مختار . (Oumar, Ahmad) دراسة الصوت اللغوي ، الطبعة الثالثة ، عالم الكتب – القاهرة ، 1985 .
- العاني ، سلمان . (Al – Ani) التشكيل الصوتي في اللغة العربية ، فونولوجيا العربية ، الطبعة الأولى ، النادي الأدبي – جدة. 1983

NOTE: Because there is no translation for the Arabic references , I have written the authors' names in English .