

An empirical study on Chinese acquisition of Arabic students “Egyptian students as an example”

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Abstract: *This study focuses on the Chinese learning experience of Arab students and their Chinese teaching practice in Egypt. By comparing the pronunciation of Arabic and Chinese, and through extensive investigation and careful analysis, this study tries to reveal the common errors of Arabic students in pronunciation in Chinese acquisition. This paper is based on a survey of 60 students who had studied Chinese for one year. The respondents were asked to read the initials and finals of the Chinese consonants twice in a row to detect the degree of approaching the proper phonetics and tones. Seven teachers have been interviewed at Confucius institute in Egypt to figure out the reason for pronunciation errors and the possible ways to overcome them. Through the analysis of these acquisition errors, this work investigates some teaching methods and principles of Chinese language learning with Egyptian students as the research object.*

Keywords: *Chinese learning, pronunciation, Chinese acquisition, acquisition errors, teaching method.*

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I. Introduction

The study of Chinese acquisition has always been the focus of teaching Chinese as a foreign language. Students of different mother tongues show different errors in Chinese acquisition[1][2]. The study of Chinese acquisition of students from different countries can provide targeted teaching methods for teaching Chinese as a foreign language[3]. It can judge the key points and difficulties in advance and help to improve the efficiency of teaching Chinese as a foreign language[4]. At present, the study of Chinese acquisition mainly focuses on students whose mother tongue is English, Japanese, Chinese, etc. There are few studies on the Chinese acquisition of Arab students. Therefore, this study can add more information related to teaching Chinese language for Arabic natives. At the same time, it can also provide some reference for Chinese teaching in Arab countries.

The Main Problems of Chinese Language Teaching in Arab countries; Compared with other countries and regions in the world, Chinese teaching in Arab countries is not too early, and the foundation of Chinese teaching is relatively weak. The current problems mainly lie in the following aspects[5]:

The shortage of Chinese teachers as professionals engaged in Chinese teaching belong to multi-faceted talents as the Chinese teachers should have in-depth research on Chinese ontology knowledge, Chinese teaching technology[6], pedagogical theory and the language of the teaching country according to the current situation from the perspective of language competence of the personnel engaged in Chinese language teaching. On the one hand, Arabic is not a common language in China, and the number of learners is not significant. Thus, there are some deficiencies in the Chinese level of native Egyptian teachers, which cause obstacles to language teaching.

The teaching scale and scope are small. At present, the teaching of Chinese in Arab countries is still mainly concentrated in Institutions of higher learning, that offer Chinese departments or Chinese-related majors, The shortage of both the human and material resources directly leads to the lack of research on Chinese teaching, which restricts the development of Chinese teaching in Egypt to a certain extent.

The bigger problem is correlates with the lack of research on targeted and systematic Chinese teaching methods with the characteristics of Arabic mother tongue. Although there are still some methods in the past, the actual effect is not apparent. Based on the principle of practicability, this paper analyses and studies the problems of Egyptian students encounter in phonetics in their learning of Chinese language to get the research results that will be used in the teaching of native Chinese in Arab countries in the future.

II. Research methodology

This paper mainly includes the following methods:

1.1 Document survey method

To investigate the research results of predecessors by using textbooks and referring to relevant literature and theoretical works for the means of gaining sufficient study references.

2.2 The Contrastive and the comparative method

By comparing the differences of pronunciation between Chinese and Arabic, this study tries to find out the vowels of students ‘errors in Chinese acquisition in addition to obtaining proper methods and principles of Chinese teaching for Egyptian students.

2.3 Survey

Through the comparative analysis of Chinese and Arabic, we can find the differences and predict the problems that learners may encounter. However, as an essential aspect of second language acquisition, error study is also indispensable. A brief pronunciation survey includes 60 students who had studied Chinese for about one year; There were 60% (n=40) female students and 40% (n=20) male students based on the following selection criteria:

- Students must be Egyptian native Arabic speakers.
- Age ranges between 19-23 years old.
- All the selected students are Chinese learners at the Confucius Institute.

The respondents were asked to read the initials and finals of the Chinese consonants twice in a row to detect the degree of approaching the proper phonetics and tones. Thus, to figure out whether the teaching methods are good enough to let the students reach the optimum level of Chinese learning or not as illustrated in Fig.1.

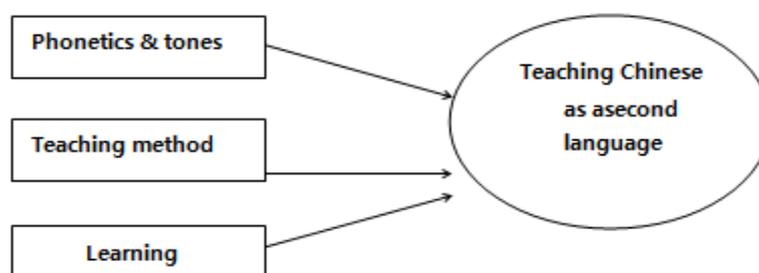


Fig.1: Research model

2.4 Interview

An interview has been done for seven teachers at Confucius institute in Egypt based on the following selection criteria:

- All the teachers should be native Egyptians.
- All the teachers should have at least three years of teaching experience.
- All the teachers should have a master degree or above.

The interview was mainly aiming to figure out the reason for pronunciation errors and the possible ways to overcome them.

III. Results and findings

According to the survey, the errors of Egyptian students in acquiring Chinese initial consonants include the following aspects:

3.1 Error Analysis and Countermeasure in Acquisition of Chinese Initials

The errors of aspiration and non-aspiration are due to the negative transfer of learners ‘mother tongue. Through the investigation of (B-P),(D-T) and (G-K) pronunciation , it has been found that 17 of 60 learners(28.3%) could not distinguish between them, where 23 (38.3%) showed insufficient aspiration, while 20 learners(33.3%) showed a high ability in distinguishing as shown in Fig.2 .

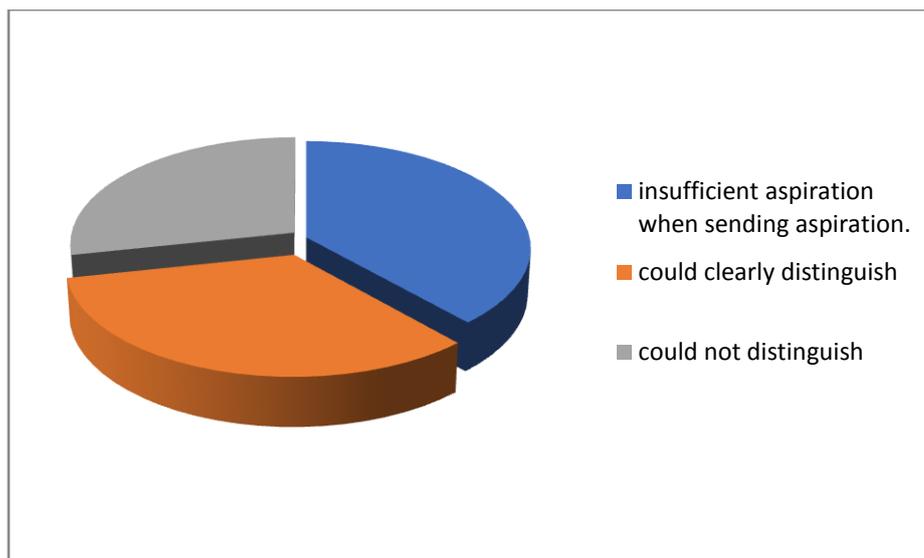


Fig.2: Errors of aspiration and non-aspiration.

Regarding the apical hind tones (ZH, CH, SH, R) and the facial tones (J, Q, X), the errors in pronunciation are due to the absence of apical hind tones and facial tones in Arabic. Meanwhile, the lingual lobes in Arabic often interfere with the pronunciation of (ZH-J, CH-Q) and (SH-X).

Through the investigation of (ZH, CH, SH), it has been found that 11 of 60 learners (18.3%) showed inability of proper pronunciation, while 21 learners (35%) are prone to tremble, or over curl their tongues where as 28 learners (46.6%) could clearly enunciate them, as shown in Fig. 3.

Regarding (J, Q, X) analysis, it has been found that 36 of 60 learners (60%) were lacking correct pronunciation, where 10 learners (16.6%) are prone to tremble, or over curl their tongues, and 14 learners (23.3%) could clearly distinguish between them as illustrated in figure 3.

As for the investigation of (R), there were 35 of 60 learners (58.3%) prone to tremble, while 19 learners (31.6%), their tongue tips do not touch the upper jaw when pronouncing (R), and 6 learners (10%) could clearly mark the letter (R).

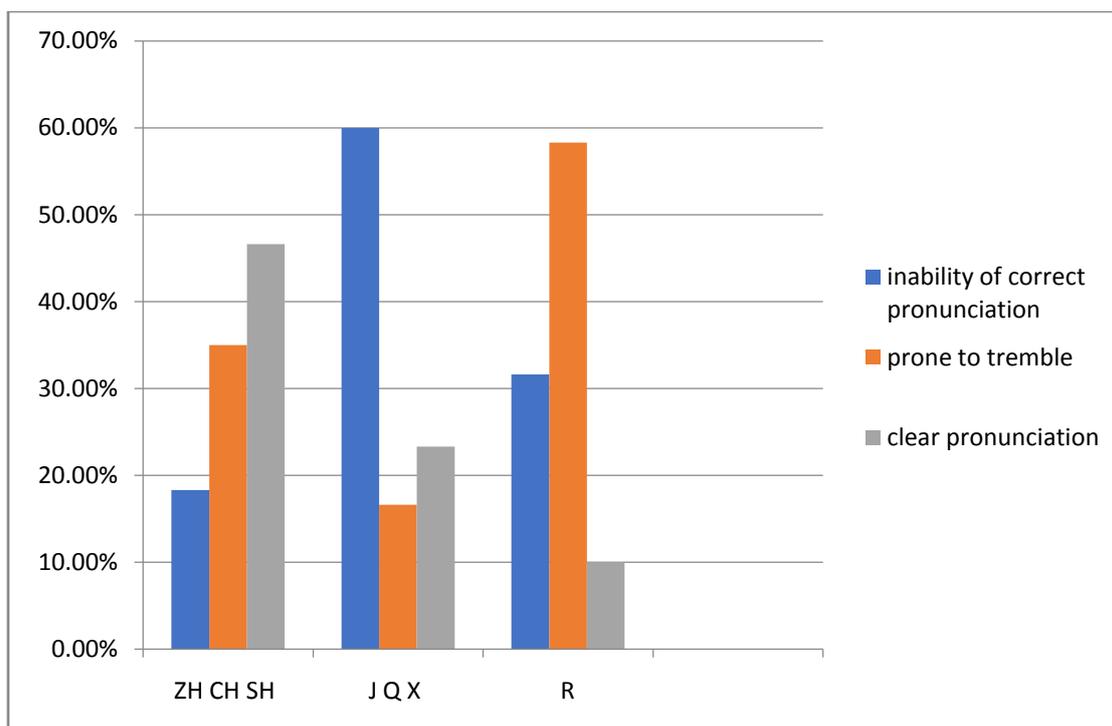


Fig.3: Pronunciation accuracy percentage of (ZH, CH, SH), (J, Q, X) and (R), respectively.

3.2 Error Analysis and Countermeasure in Acquisition of Chinese Vowels

In the process of teaching, after interviewing with seven teachers, it has been revealed that Egyptian students often make the following mistakes in the acquisition of Chinese vowels:

3.2.1 Errors due to poor grasps of opening and lip shape

Due to the few vowels in Arabic, there are often errors in the pronunciation of vowels in the process of learning Chinese. This phenomenon belongs to the negative transfer of mother tongue. For example, Egyptian students have too much opening and too low tongue position when learning monosyllable o [o], which leads to the pronunciation of [ɔ] sound. At the same time, there are more such errors when learning complex Chinese vowels. The reason is that Chinese complex vowels need to be transitioned gradually from one vowel to another vowel. In this process, it is easier to have a wrong grasp of the lip shape of the tongue. Given the errors in the acquisition of Chinese vowels by Arabic students, teachers need to help students to determine the standard of tongue position and opening degree. Thus, they can use a, I and u as the base point to determine the pronunciation of other Chinese vowels according to the changes of tongue position, lip shape, and opening degree. Therefore, correcting vowel errors of Arabic students requires more time and teachers' constant reminders and corrections in class.

3.2.2 Errors in [N] and [ŋ] in nasal vowels

The vowels in Arabic can only be spelt with the first nasal [N]. Therefore, influenced by the negative transfer of mother tongue, Egyptian students often make errors in the front and back nasal sounds when learning Chinese nasal vowels. In view of this kind of mistakes, teachers should let the students locate the tongue tip forward against the back of the lower teeth, and the lingual root against the soft palate in order to determine the pronunciation of [N] and [ŋ] respectively.

IV. Discussion

Based on the results, it is highly recommended to explain the contrastive analysis of both Chinese and Arabic pronunciations, including vowels, tones, and syllables.

1.2 Contrastive analysis between Chinese and Arabic pronunciation

A brief analysis of both similarities and differences between Chinese and Arabic phonetics regarding the aspects of consonants, vowels, tones, and syllables was performed. Table.1 and Table.2 depict both the Chinese language consonants and the Arabic language consonants analysis, respectively.

Table.1: Chinese language consonants analysis.

Articulation Area Pronunciation Method		Labial		Interdental	Denti-alveolar	Retroflex	Alveolo-palatal	Velar
		Bilabial	labiodentals					
Nasal		m[m]			n[n]			ŋ[ŋ]
Stop	Aspirated	p[p ^h]			T[t ^h]			K[k ^h]
	Unaspirated	b[p]			D[t]			G[k]
Affricate	Aspirated			C[ts ^h]		Ch[tʂ ^h]	q(tɕ ^h)	
	Unaspirated			Z[ts]		Zh[tʂ]	j(tɕ)	
Fricative		f[f]		s[s]		Sh[ʂ]	x(ɣ)	H[x]
Lateral						R[l]		

Table.2: Arabic language consonant [7].

Articulation Area Pronunciation Method		Labial		Post Alveolar	Dental	Dentalveolar		Palatal	Velar	Uvular	Pharyngeal	Glottal
		Bilabial	Labio-dental			Alveolar plain	Retroflex-emphatic					
Nasal		م[m]				ن[n]						
Stop	Voicelless					ت[t]	ط[tʰ]		ك[k]	ق[q]		ء[ʔ]
	Voiced	ب[b]		ج[dʒ]		د[d]	ض[dʰ]					
Fricative	Voicelless		ف[f]	ش[ʃ]	ث[θ]	س[s]	ص[sʰ]		خ[x ~ χ]		ح[h]	
	Voiced				ذ[ð]	ز[z]	ظ[ðʰ]		غ[ɣ ~ ʁ]		ع[ʕ]	ه[h]
Trill						ر[r]						
Lateral						ل[l]						
Approximant		و[w]						ي[j]				

As mentioned in Table.1 and Table.2, Chinese language contains 22 consonant phonemes, while the Arabic language contains 28 consonants [8]. From the ways of pronunciation, pronunciation location, and vibration of consonants, there are some differences between Chinese and Arabic.

From the way of pronunciation we found that the main pronunciation methods of Chinese consonants are [9]; stops (B,P,D,T,G,K), affricates (Z,C,ZH,CH,J,Q), fricatives (F,S,SH,R,X,H), nasal sounds (M,N,NG), and lateral sound (L), while Arabic language has seven ways of consonants pronunciation. Arabic has tremolo sounds (vibrato) which does not exist in Chinese language. However, it lacks the opposition of aspiration and non-aspiration, which is present in Chinese. Therefore, Arabic learning for Chinese native speakers is relatively difficult due to the pronunciation of tremolo. On the other hand, Arabic natives face a big problem in learning Chinese resulting from the presence of aspiration and non-aspiration. Accordingly, the main objective of this study is to focus on the difficulty that faces Arab native speakers in consonant pronunciation and suggest better ways to enhance the teaching methodology.

Arabic language has seven more consonants than Chinese. However, Chinese consonants have aspirated and un-aspirated opposition, which does not exist in Arabic. So, for Chinese native speakers, learning Arabic pronunciation is relatively complicated, and for Chinese learners who are native Arabic speakers, learning Chinese aspirated and un-aspirated sounds become a focus and difficulty in learning ways of consonant pronunciation.

In terms of articulation place, Chinese consonants have seven categories which are; bi-labial, labio-dental, inter-dental, dento-alveolar, retroflex, alveolo-palatal, and velar, respectively. While Arabic language is slightly more complicated, as it is divided into nine categories, mainly inter-dental, guttural in addition to pharyngeal categories, but it does not contain retroflex and palatal categories which are existed in Chinese, therefore, pronunciation of [Zh], [CH], [SH], [R], [J],[Q], [X] will be difficult for native Arabic speakers learners.

Regarding the level of consonants clearance, Chinese language has less distinctive sounds mainly in SH and R. On the other hand, Arabic language has many distinctive consonants sounds. As a result, Arabic speakers can differentiate between [SH] and [R] easily.

1.3 A contrastive analysis of vowels in Chinese and Arabic ;

The simplicity of Arabic vowels is an obvious feature in comparison with Chinese vowels. Arabic has only six vowels, which compose three short vowels, three long vowels, and two diphthongs [10].

Table.3: The Arabic Alphabet (Vowels)

Name	Character	Explanation	Pronunciation	Example	Transcription
Damma	◌ُ	Damma is an apostrophe-like shape written above the consonant which precedes it in pronunciation. It represents a short vowel u (like the "u" in "but").	u	بُت	but
Wāw	◌ُو	Wāw is the long vowel ū (like the "oo" in "moon"). It also represents the consonant w. When Waw is used to represent the long vowel, damma appears above the preceding consonant.	ū	بُوت	būt
Fatha	◌َ	Fatha is a diagonal stroke written above the consonant which precedes it in pronunciation. It represents a short vowel a (a little like the "u" in "but"; a short "ah" sound).	a	بَت	bat
Alif	◌ِ	Alif is the long vowel ā (a long "ahh" sound as in English "father").	ā	بَات	bāt
Kasra	◌ِ	Kasra is a diagonal stroke written below the consonant which precedes it in pronunciation. It represents a short vowel i (like the "i" in English "pit").	i	بِت	bit
Ya'	◌ِي	Ya' is the long vowel ī (like the "ee" in English "sheep"). It also represents the consonant y. When Ya' is used to represent the long vowel, kasra appears above the preceding consonant.	ī	بِيْت	bīt
Sukūn	◌ْ	Whenever a consonant does not have a vowel, it receives a mark called a sukūn, a small circle which represents the end of a closed syllable (CvC or CvVC). It sits above the letter which is not followed by a vowel.		بِنْتْ	bintu
Shadda (or tashdīd)	◌ّ	Shadda represents doubling (or gemination) of a consonant. Where the same consonant occurs twice in a word, with no vowel between, instead of using consonant + sukūn + consonant, the consonant is written only once, and shadda is written above it.		تَبَّتْ	thabbata

As illustrated in table 3, the three long vowel sounds in Arabic contain the three letters (Alif, حرف الألف, Waw - حرف الواو, and Ya' - حرف الياء) in addition to three short vowels sounds using the following symbols either above or below the letters.: [Fatha الفتحة -, Kasra الكسرة -, (Damma الضمة → Sukun سكون)] and two diphthongs which are the combination of two vowel sounds occurring next to each other within the same syllable. The two diphthongs in Arabic are the two sounds: ay as in the word (بيت) (, aw as in the word (يوم) [11].

While the Chinese vowels are more complex, for example, there are ten mono-phthongs, thirteen complex vowels, in addition to sixteen nasal vowels and nasal consonants. Thus, there is a difficult for Arabic speakers to learn Chinese vowels and consonants due to the reason that Arabic vowels are less. Therefore, Arabic speakers will be affected by the negative transfer of mother tongue in the process of learning Chinese[12].

The ten monosyllables of Chinese are[13][A]、[o]、[ɤ]、[ə]、[u]、[y]、[i]、[e]、[ɿ]、[ʅ], the three-unit sounds [A],[I] and [U] resembles the pronunciation of the open short sound, the full-toothed short sound and the combined short sound in Arabic language. So the acquisition of these three vowels for Arabic mother tongue students is not a problem. But, the in-existence of the others even vowels[14] leads to a difficulty in pronunciation as students should pronounce them as shown on Fig.4.

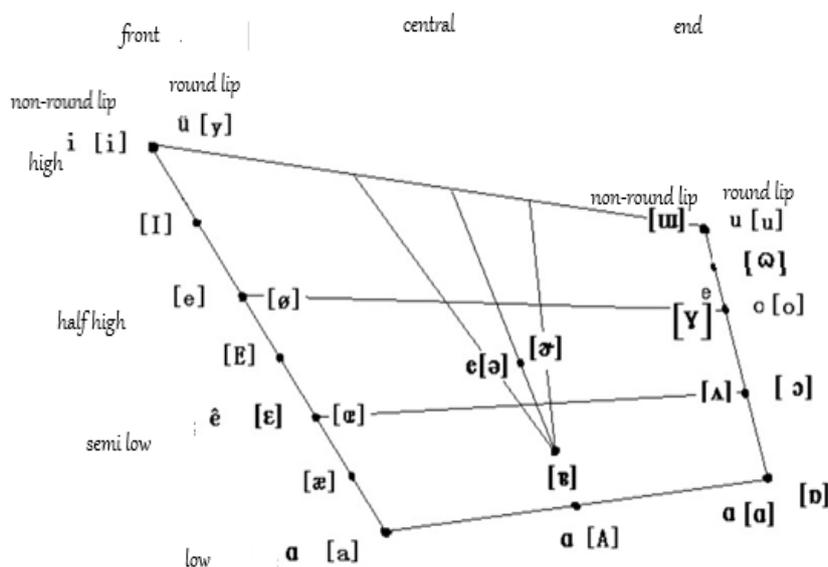


Fig.4: Chinese vowels.

The tongue vowel [o] o is a back, half-high and round-lip vowel. For proper pronunciation, the mouth is half-closed, the lips are round, and the tongue is high. Compared with vowel u, the lip shape is more relaxed, and the tongue position is slightly lower.

The pronunciation of the tongue vowel [ɤ] e, is the same as that of the vowel [O] o, except that the lips are unfolded naturally without the use of round lips.

The vowel [e]e, as being a front and half-low, non-rounded lip vowel can be compared with the vowel [I]familiar to Arab students, with a slightly larger mouth and lower tongue position.

The tongue vowel [y] u is a front and big round lip vowel. Although it is not common in other languages, it is similar to the pronunciation method of the vowel [I]. Its correct pronunciation requires the lips to be up and round.

The apex of the tongue-i [ɿ] is a vowel with front, high and non-round lips. When pronounced, the apex of the tongue approaches the back of the upper teeth and is slightly raised compared with the apex of the tongue [i].

The apex-i [ʅ] is a back, high, and non-rounded vowel of the tip of the tongue. Compared with the pronunciation of the tip of the tongue, there is no significant change in lip shape and opening. The main difference lies in the front and back of the tongue, which can be moved back slightly based on the vowel [ɿ].

Concerning the vowel [ER], it is considered as a particular vowel as the tongue should be rolled, located in the middle of the mouth without rounding the lips.

1.4 Contrastive analysis of tones and syllables in Chinese and Arabic

Chinese is considered to be a tone language. Modern Mandarin Chinese has four tone categories[15]:Yinping, Yangping, Shangsheng and Qusheng in addition to five-degrees tone contour encompasses as Yinping 55(1st), Yangping 35(2nd), Shangsheng 214(3rd) and Qusheng 51(4t).Thus, tones play a distinctive role in Chinese. On the other hand, Arabic belongs to non-tone languages where the inflection of the pitch of a syllable does not affect the semantics of the syllable.Fig.5 shows the development of the traditional tones as reflected in modern standard Chinese.

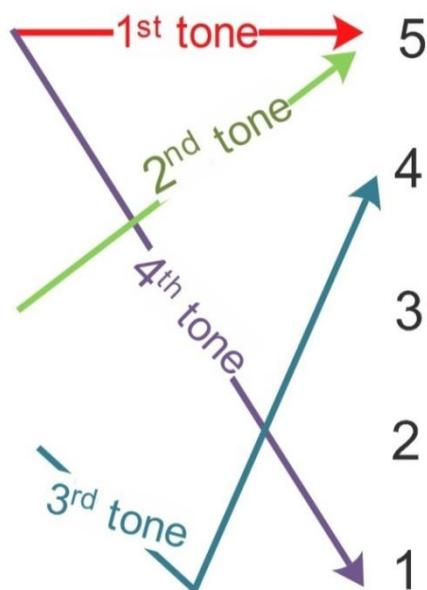


Fig.5: Development of traditional tones.

Chinese syllables have their characteristics, and Chinese characters also have individual correspondence with syllables. Generally speaking, a Chinese character is a syllable, and the boundaries of syllables are distinct. The characteristics of Chinese syllables can be briefly summed up as below;

The vowel is dominant in Chinese syllables. A Chinese syllable can have no consonants, but it must have a vowel, In many cases, the vowel itself can form a syllable, and it can appear as ahead vowel, tail vowel or as an essential vowel.

In Chinese syllables, consonants can only be either at the beginning or at the end of the syllables. At the end of the syllable, it is limited to [N] and [NG], and there is no consonant cluster.

Chinese syllable must-have tone and essential vowel.

Chinese syllable can be represented by at most four phonemic symbols.

In contrast, the syllable of Arabic has at least two phonemes, and these two phonemes cannot be vowels or consonants at the same time, and each syllable in Arabic begins with a consonant..

In Arabic, the combination of vowels and consonants is relatively free in Arabic[16]. Vowels and vowels, consonants and consonants are not spelt together, but any consonant is spelt with any vowel. Furthermore, Arabic syllables[17]contain short syllables as; (أ- و- ي- ك- ت- ب) and long syllables as; ما - لا - فى - أئى - بئى- (شئى - هئى - بئى - كئى)

Through the comparative analysis of Chinese and Arabic, we can find the differences and predict the problems that learners may encounter. However, as an essential aspect of second language acquisition, error study is also indispensable.

4.4Error analysis and countermeasures in the acquisition of Chinese initials

According to the survey, the errors in acquiring Chinese initials for Arabic native students mainly include the following aspects [18].

The aspirated and non-aspirated sound; Regarding the investigation of (B,P, D-T), and (G-K), it has been demonstrated that only 20 students can clearly distinguish between them while the rest of the students either showed inability to distinguish or insufficient aspiration due to the negative transfer of their native language That leads to a severe problem .

In view of the above situation, the instructor has given specialized training for students in order to make students understand the difference between aspiration and non-aspiration, The teacher used the "paper-blowing game" which is a tool for differentiating between aspiration and non-aspiration where the students pronounce (B,P, D-T), and (G-K)On a paper in-front of the teacher to figure out it's blowing, so that the students can master the main points of pronunciation, in addition to "quick response" exercises combined with Pinyin opening and related diagrams. Initially, the pictures indicating whether to breathe or not will be given together with Pinyin to prompt students on how to pronounce, and then the images will be withdrawn to exercise students' memory ability. After an hour of practice, the students can recognize the aspirated and non-aspirated sounds for (B, P, D-T), and (G -K).

The apical hind tones (ZH,CH,SH,R) and the lingual tones (J,Q,X) ; The apical hind tone and the lingual surface tone do not exist in Arabic, At the same time, the lingual sounds in Arabic often interfere with the pronunciation of (zh-j, ch-q) and (sh-x).Other errors involve the negative transfer of mother tongue. In view of this situation, the teacher used simple aspects to make the compulsive correction. When pronouncing the apex of the tongue, the students bite a toothpick, force the tip of the tongue to turn upward and imitate the teacher's pronunciation. After many demonstrations and imitations within the tongue bitmap pronunciation, the teacher explained the pronunciation parts and methods of several sounds and asked the students to practice them for achieving better results. When teaching the tongue pronunciation. The teacher asked the students to hang the tip of the tongue deeply behind the lower teeth, raise the surface of the tongue, and touch the hard palate. At the same time, the angle of the mouth extends to the left and right, with tightening the upper and lower teeth. This plays an essential role in improving the tongue surface sound by controlling the tip of the tongue.

When Arabic natives speakers pronounce (R), they are prone to tremble or over curl their tongues, and their pronunciation is tense. Teachers must point out the difference between the pronunciation of (R) and tremolo in The same time, The tongue tip does not touch the upper jaw when pronouncing (R) and the tongue remains stable within a light airflow. The hand can demonstrate the difference between the two tongue positions. It is pointed out that the tongue tip does not roll backward, but only rises close to the upper astonishment, and the whole tongue shrinks slightly backward.

V. Conclusion

Language acquisition is mainly Correlates with speech, and it has a substantial impact on communication. This paper concluded a profound summary and analysis of the drawbacks in a language study course via a comparison between Arabic and Chinese speech sounds and evaluation of the enrolled students in addition to obtaining a promising solution. Through the analysis of these acquisition errors, the author found that the main problems of Arabic mother tongue students in studying Chinese language include the Acquisition of Chinese Initials (B,P, D, T, G,K, ZH, CH, SH, R J, Q, X) , and Chinese Vowels o [o], n, ng).The interview for the teachers was mainly aiming to figure out the reason for pronunciation errors and the possible ways to overcome them; it has been concluded that Chinese teachers should have in-depth research on Chinese ontology knowledge, Chinese teaching technology, pedagogical theory and the language of the country. It is highly recommended for the teachers to take extra professional training courses to overcome the errors facing the Arabic native's students and achieve the proper teaching methodology to reach an enhanced level of learning.

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