

The Study of the Relationship Between English Phonetic Learning Belief System and Learning Strategies in the Acquisition of English Phonetics*

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Zhang, Wenguang; Shim, Jaewoo & Lee, Heechul. (2021). The study of the relationship between English phonetic learning belief system and learning strategies in the acquisition of English phonetics. *The Linguistic Association of Korea Journal*, 29(4), 113-132. This study investigated the relationship between Chinese senior high school students' beliefs and learning strategies in the acquisition of English phonetics. Sixty-six subjects responded to two Likert-type questionnaires. The first instrument measured phonetics learning beliefs consisting of three dimensions and the second one assessed phonetics learning strategies with six dimensions. The results of the data analysis showed subjects had positive learning beliefs towards English phonetic learning. However, they did not use phonetic learning strategies often. Among the phonetic learning strategies use, metacognitive strategies, affective strategies, and memory strategies were the three dimensions that contributed to distinguishing high phonetic learning beliefs group from low phonetic learning beliefs group. Based on the results, some implications for teaching pronunciation were suggested.

Key Words: English phonetics acquisition, phonetic learning beliefs, phonetic learning strategies, metacognitive strategies, affective strategies, memory strategies

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1. Introduction

In today's globalized world, there is some need for people to communicate with others from different cultures and social backgrounds (Sardegna, Lee, and Kusey, 2018). In line with this trend, English language teaching has been trying to help second language learners acquire the ability to communicate in English (Derwing & Munro, 2015; Hahn, 2004). In order to make the learning processes more effective, language learning strategies were widely used by English learners and many studies demonstrated the positive correlation between learning strategies and English proficiency (Lee, Jang, & Plonsky, 2015; Thomson & Derwing, 2015; Hong-Nam & Leavell, 2007; Yalcin, 2006) and pointed out that language learners may improve their overall English level by using language learning strategies (Sardegna, 2012). With regard to phonetic knowledge learning, there are numerous approaches and methods that language learners and teachers can use (Hatch & Brown, 1995). However, teaching of English pronunciation and related phonetic learning strategies in China have been neglected by the majority of the teachers because of their lack of preservice and in-service training on phonetic knowledge and low confidence in their pronunciation (Levis, J. M., Sonsaat, S., Link, S., Taylor, & Barriuso 2016; Golombek & Jordan, 2005; Bernat, 2008; Ma, 2012; Foote, Holtby, & Derwing, 2011).

As to studies on the relationship between language learners' beliefs and the use of learning strategies, many scholars provided direct or indirect proofs on the relevance between the two elements. For example, Wenden's (1986) research showed that language learners' explicit beliefs about how best to learn a foreign language may provide a logic clue for their choices of learning strategies. In the same vein, Ghavamnia, Kassaian & Dabaghi (2011) reported that phonetic learning beliefs affected the frequency in the use of phonetic learning strategies to some extent. In addition, they found that higher phonetic learning motivations language learners hold, the more often they were likely to use phonetic learning strategies in the acquisition of phonetic knowledge. Yet, few studies examined the extent to which phonetic learning strategies contributed to distinguishing high phonetic learning beliefs group from low phonetic learning beliefs group.

In China, Xie (2006) investigated 111 university students about their phonetic learning beliefs and use of phonetic learning strategies in the phonetic learning process and found that students with higher proficiency pronunciation outperformed those with lower proficiency pronunciation in using phonetic learning strategies. Similarly, Qiu (2015) conducted a research with 342 elementary school students. The results from her research

demonstrated phonetic learning beliefs had a great impact on the use of phonetic learning strategies and that students from different phonetic learning belief groups showed significant different preference in employing phonetic learning strategies. Yet, although the relationship between phonetic learning beliefs and phonetic learning strategies has been established for elementary and university students, little has been investigated about the relationship between phonetic learning beliefs and phonetic learning strategies among high school students.

The present study attempts to answer the following questions:

1. What is the general pattern of senior high school students' phonetic learning in using of phonetic learning beliefs and phonetic learning strategies among Chinese high school learners of English?
2. What is the relationship between phonetic learning belief and phonetic learning strategy?
3. What phonetic learning strategies contribute to distinguishing higher phonetic learning belief group from lower phonetic learning belief group?

2. Literature Review

2.1. Phonetic Learning Beliefs

In the early 1970s, the focus of foreign language teaching research shifted from how teachers "teach" to how students "learn" (Flavel, 1971; Cotterall, 1999; Aek Phakiti, 2003; Bernet, 2006). In particular, some researchers began to study the impact of individual differences on foreign language learning, which was regarded as the most important factor in second language acquisition (Ellis, 1994). Language learning beliefs were one of the important categories in the study of learners' individual differences. According to Wen (1996), one of the most famous Chinese scholars in the study of language learning beliefs, defined language learning beliefs as the proposals how language learners can acquire language knowledge, language skills and communication ability. In general, she considered language learning beliefs as learners' understanding and attitude towards language learning. Motivated by Wen, Qiu (2015) focused her attention on the study of English phonetic learning beliefs. She pointed out that phonetic learning beliefs were language

learners' opinions, ideas and attitude in the process of English phonetic learning.

When it comes to the classifications of language learning beliefs, the most classical one was created by Horwitz (1983), the founder of Beliefs about Language Learning Inventory (BALLI). As a psychological measure, the BALLI established its construct validity by specifying what areas of language learning it addresses. Horwitz (1983) herself classified the items in BALLI into five areas of language learning beliefs, i.e., 1) language learning difficulty, 2) foreign language learning aptitude, 3) the nature of language learning, 4) learning and communication strategies, and 5) motivations and expectations. Qiu (2015) adopted Horwitz's classification of language learning beliefs, classifying phonetic learning beliefs into three types: phonetic learning attitude towards English phonetic learning, phonetic learning motivation for learning English phonetic knowledge, and self-concept which referred to language learners' evaluations of themselves in English phonetic learning.

In the past few years, studies in this field mainly focused on three trends: the use of phonetic learning beliefs among language learners of different English proficiency (Chen, 2005; Wu, 2014; Qiu, 2015), the correlation between phonetic learning beliefs and student's English proficiency (Wang, 2004; Wen, 2011; Qiu, 2015), and the impact of phonetic learning beliefs on the frequency in using of learning strategies (Wen, 2001; Feng & Zhou, 2007; Ghavamnia, Kassaian & Dabaghi, 2011). For example, Qiu (2015) investigated 342 students with different English proficiency and found statistical significances in the use of phonetic learning beliefs between students from higher language proficiency group and those from lower language proficiency group. She reported that students from the higher language proficiency group outperformed students in lower language proficiency group in the use of phonetic learning beliefs across all the dimensions. In addition, Wen (2011) investigated 108 first year senior high school students. In her study, she observed phonetic learning beliefs from three aspects: phonetic learning attitude, phonetic learning motivation, and self-concept on their phonetic knowledge. The results showed that phonetic learning attitude ($r = .530$) and phonetic learning motivation ($r = .586$) were moderate related with students' general English proficiency; self-concept ($r = .335$) showed low correlation with their general English proficiency. However, this result was in conflict with Wang's because their participants were in different grades. Wang (2004) investigated 104 middle school students and reported that self-concept in phonetic knowledge was highly correlated with student's general English proficiency ($r = .736$), indicating that phonetic 'self-concept' was a good predictor of English proficiency. Based on the result,

Wen (2011) argued that the correlation between phonetic self-concept and overall English proficiency may become trivial with the increase in students' school years.

Concerning the impact of phonetic learning beliefs on uses of phonetic learning strategies, they were closely related to each other; phonetic learning beliefs affected the frequency of phonetic learning strategies to some extent. At the same time, effective phonetic learning strategies changed their phonetic learning beliefs, and had a positive effect on phonetic learning. For instance, Ghavamnia, Kassaian and Dabaghi (2011) studied 80 undergraduate students in Iran and found a positive relationship ($r = .589$) between participants' motivation and the frequency in the use of learning strategies. They reported that the higher motivations students had in the acquisition of phonetic knowledge, the more often they employed various strategies for learning pronunciation.

2.2. Phonetic Learning Strategies

The research on second language learning strategies started in the 1960s (Zhou & Wang, 2011). The classical definition of language learning strategies was proposed by Oxford (1990) who argued that language learning strategies were active measures taken by language learners in order to make language learning effective. She believed that language learning strategies involved learning rules and learning regulations. In the effort to extend Oxford's language learning strategies to the area of phonetic learning strategies, Peterson (2000) defined phonetic learning strategies as the steps taken by language learners to enhance their pronunciation learning. More recently, Pawlak (2010) characterized phonetic learning strategies as deliberate actions and thoughts that were taken consciously, usually in a logical order, to learn and better control various aspects of pronunciation.

Concerning the classification of language learning strategies, Oxford's classification has been widely used. According to Oxford (1990), language learning strategies consist of direct and indirect language learning strategies. Direct language learning strategies include memory strategies, cognitive strategies and compensation strategies. Indirect language learning strategies include metacognitive strategies, affective strategies and social strategies. Corresponding to the classification of language learning strategies by Oxford, Peterson (2000) made a classification of phonetic learning strategies that include six dimensions: memory strategies, cognitive strategies, compensation strategies, meta-cognitive strategies, affective strategies and social-communication strategies. The following Table 1 provides

some comparisons between phonetic learning strategies and language learning strategies:

Table 1. Comparisons between PLS and LLS

	Phonetic Learning Strategies (Peterson, 2000)	Language Learning Strategies (Oxford,1990)
Memory strategies	Demonstrate word' s articulation in memory	To memorize words, sentences, and the pronunciation
Cognitive strategies	Practice English articulation naturally.	Mainly practice strategies
	Practice English articulation formally.	
	Analyze phonetic sound system	
Compensation strategies	Use similar articulation (replace standard articulation)	To compensate for the lack of vocabulary and the knowledge of grammar
Meta-cognitive strategies	Find out articulation rule of the target language	To make a plan for learning, or to evaluate and adjust learning
	Set up language task	
	Set up phonetic learning aim	
	Self-evaluation	
Affective strategies	Decline self-anxiety by humor when articulate	To adjust one' s affective state
Social-communication strategies	Ask for help in the process of learning	To learn to speak English with others
	Cooperate with classmates	

In the past few years, studies in phonetic learning strategies were mainly focused on two aspects: the relationship between phonetic learning strategies use and language proficiency (Gan, Humpreys & Hamp-Lyons, 2004; Ian & Oxford, 2003; Yang, 2003; Hong-Nam & Leavell, 2007; Yalcin, 2006) and factors affecting phonetic learning strategies use (Hakan, Aydin & Bulent, 2015; Aslan, 2009; Nisbet, Tindall, & Arroyo, 2005; Rao, 2006; El-Dib, 2004). For instance, Wen (2011) investigated 108 first year senior high school student from China and divided them into 3 groups (higher level language users; intermediate level language users; lower level language users). She found that language learners with higher English proficiency applied more phonetic learning strategies than those with both intermediate and lower English proficiency. In addition, learners from higher level language user group used phonetic learning strategies more often than those

from the other two groups. In terms of factors affecting phonetic learning strategies use, gender plays an important role. Aslan (2009) investigated 257 (153 males and 104 females) students from Atilim University English preparatory school. She reported that the uses of phonetic learning strategies had a positive effect on success in English learning and that females were significantly more successful than males in terms of using phonetic learning strategies. In the same vein, Hakan, Aydin & Bulent (2015) studied 120 university-level students' (67 females and 53 males) for phonetic learning strategies use preferences. Their findings showed that male students used phonetic compensation strategies more often than female students with a statistical significance. On the contrary, Nisbet, Tindall and Arroyo (2005) found a conflict result from their study in which they compared male students' use of phonetics learning strategies to female students' use of phonetics learning strategies. They found no statistical difference across all of the eight dimensions between the two groups. The eight dimensions are memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, social strategies, affective strategies, total learning strategies, and ITP-TOEFL score.

3. Method

3.1. Participants

The subjects in the present study were 66 second year high school students (22 males and 44 females) from a senior high school in China. They were from two classes, and were being taught by the same English teacher since their first year.

3.2. Instrument

The instrument adopted in the present study was a 5-point Likert's scale. It included two parts: phonetic learning beliefs and phonetic learning strategies. Phonetic learning beliefs included three dimensions: learning attitude, learning motivation and self-concept. Each dimension involved 3 items. Table 2 shows the phonetic learning belief items in the questionnaire.

Table 2. Phonetic learning belief

Dimension	Brief Description	Item	Item No.
Learning attitude	Attitudes towards English phonetic learning	3	1–3
Learning motivation	Need in English phonetic learning	3	4–6
Self-concept	Views on own situation about English phonetic learning	3	7–9

Phonetic learning strategies were classified into 6 dimensions: memory strategy, cognitive strategy, compensation strategy, meta-cognitive strategy, affective strategy and social-communication strategy. Table 3 shows the phonetic learning strategy items in the questionnaire.

Table 3. Phonetic learning strategy

Dimension	Brief Description	Item	Item No.
Memory strategy	The strategy of memorizing English phonetic knowledge	3	10–12
Cognitive strategy	The strategy of learning English phonetic knowledge	4	13–16
Compensation strategy	The strategy of using proximal Chinese articulation	3	17–19
Meta-cognitive strategy	The strategy of setting goals and objectives, self-evaluation and monitoring	3	20–22
Affective strategy	The strategy of affective control in English phonetic learning	3	23–25
Social-communication strategy	The strategy of cooperating with others	3	26–28

The internal consistency was calculated for all of the 28 items with its Cronbach alpha of 0.901.

3.3. Data Analysis

The valid data were processed with SPSS 23.0 for statistical analysis. There were three steps involved for analyzing the data. First, in order to understand subjects' general

performance on phonetic learning beliefs and phonetic learning strategies, descriptive statistics were used, including the mean score of each dimension. Second, K-means cluster analysis was used to check the characteristics of clusters based on their phonetic learning belief system. K-means clustering is a vector quantization method, whose purpose is to divide N observation results into K clusters, each cluster belonging to the cluster with the closest mean (cluster center or cluster centroid). Third, to check out what phonetic learning strategies contribute to distinguishing higher phonetic learning beliefs group from lower phonetic learning beliefs group, a discriminant analysis was employed. Discriminant analysis is a popular statistical method used for studying simultaneously the difference between two or more groups with respect to several variables. When comparing two or more groups in terms of many variables, it can not only tell whether the groups differ significantly from one another, but, if they do differ significantly, it tells what variables are the most powerful discriminants.

4. Results

4.1. Descriptive Statistics for Phonetic Learning Beliefs

In phonetic learning beliefs, the mean score for learning attitude was the highest (mean=3.77; SD=0.70); followed by self-concept (mean=3.25; SD=0.74). Compared to learning attitude and self-concept, learning motivation was the lowest (mean=2.42 and SD=0.84). It showed subjects hold a quite positive attitudes towards English phonetic learning and usually have self-concept about their learning.

Descriptive statistics for phonetic learning beliefs by Chinese subjects were reported in Table 4.

Table 4. Descriptive statistics for phonetic learning strategies.

	Dimension	No.	Min.	Max.	Mean	SD
Phonetic learning beliefs	Learning attitude	66	2.33	5.00	3.77	0.70
	Learning motivation	66	1.00	5.00	2.42	0.84
	Self-concept	66	2.00	5.00	3.25	0.74

In phonetic learning strategies, the affective strategy had the highest mean (mean=3.22; SD=0.86), followed by memory strategy (mean=3.18; SD=0.87). Meta-cognitive strategy ranked the third (mean=2.88, and SD=0.91) and compensation strategy ranked the fourth for its mean=2.83 and SD=0.67. The followings were social communication strategy (mean=2.75; SD=0.93) and cognitive strategy (mean=2.71, and SD=0.82). In general, the subjects' performance on phonetic learning strategies was quite close to the average level (mean=2.50) that means subjects did not use phonetic learning strategies much in their phonetic acquisition.

Descriptive statistics for phonetic learning strategies by Chinese subjects were reported in Table 5.

Table 5. Correlations between phonetic learning beliefs and phonetic learning strategies

	Dimension	No.	Min.	Max.	Mean	SD
Phonetic learning strategies	Memory strategy	66	1.00	4.67	3.18	0.87
	Cognitive strategy	66	1.00	4.50	2.71	0.82
	Compensation strategy	66	1.00	5.00	2.83	0.67
	Meta-cognitive strategy	66	1.33	5.00	2.88	0.91
	Affective strategy	66	1.67	5.00	3.22	0.86
	Social-communication strategy	66	1.00	5.00	2.75	0.93

Of all the correlations among phonetic learning beliefs and phonetic learning strategies, the highest correlation was meta-cognitive strategy and memory strategy ($r=0.667^{**}$). The second highest was between affective strategy and memory strategy ($r=0.664^{**}$) and the third highest was between meta-cognitive strategy and cognitive strategy ($r=0.649^{**}$). The correlation between cognitive strategy and memory strategy ranked the fourth ($r=0.620^{**}$). Other correlations were all below 0.600.

The relationships between phonetic learning beliefs and phonetic learning strategies were reported in Table 6.

Table 6. The relationships between phonetic learning beliefs and phonetic learning strategies

	Learning attitude	Learning motivation	Self-concept	Memory strategy	Cognitive strategy	Compensation strategy	Meta-cognitive strategy	Affective strategy	Social-communication strategy
Learning attitude	1								
Learning motivation	0.443**	1							
Self-concept	0.367**	0.225	1						
Memory strategy	0.577**	0.381**	0.553**	1					
Cognitive strategy	0.485**	0.393**	0.383**	0.620**	1				
Compensation strategy	-0.007	0.247*	0.012	-0.029	-0.343**	1			
Meta-cognitive strategy	0.546**	0.394**	0.472**	0.667**	0.649**	0.140	1		
Affective strategy	0.451**	0.310*	0.422**	0.664**	0.523**	-0.04	0.58**	1	
Social-communication strategy	0.347**	0.300**	0.310**	0.555**	0.597**	0.343**	0.559**	0.549**	1

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

4.2. Cluster Analysis

The subjects were divided into two groups: high phonetic learning beliefs group and low phonetic learning belief group through K-means cluster analysis. There were 37 subjects in the first cluster, characterized by low scores in all phonetic learning belief categories. However, 29 subjects belonged to the second cluster and they had higher means across all phonetic learning belief dimensions. The two clusters differed from each other significantly across the three variables (see Table 7).

Table 7. Final cluster centers

	Cluster		Sig.
	1	2	
Learning attitude	3.35	4.30	0.00
Learning motivation	2.01	2.94	0.00
Self-concept	2.88	3.71	0.00
No.	37	29	

Discriminant analysis was run to investigate what phonetic learning strategies contribute to distinguishing higher phonetic learning belief group from lower phonetic learning belief group. According to Table 8, the most important factors in discriminating the two groups were meta-cognitive strategy (0.430), affective strategy ranked the second (0.407), and memory strategy ranked the third (0.346). The followings are cognitive strategy (0.126), social-communication strategy (-0.045), and compensation strategy (-0.198) did not make much contribution to distinguishing the higher phonetic learning belief group from the lower phonetic learning belief group.

Table 8. Standard canonical discriminant function coefficients

	Function
	1
Memory strategy	0.346
Cognitive strategy	0.126
Compensation strategy	-0.198
Meta-cognitive strategy	0.430
Affective strategy	0.407
Social-communication strategy	-0.045

5. Discussion and Implication

Subjects had positive learning beliefs towards English phonetic learning ; the mean score of learning attitude (mean=3.77, SD=0.70) and self-concept (mean=3.25, SD=0.74) were relatively high. However, the mean score of phonetic learning strategies (mean=2.93; SD=0.63) was quite close to the score of 3 out of 5 point scale which meant that subjects

did not use phonetic learning strategies often in their English phonetic learning. This was because the majority of them were not high level language learners who did not know how to apply these strategies into their phonetic learning process (the mean score of pronunciation is 4.73). The little use of phonetics learning strategies was also observed by other researchers (Gu, 2012; Ahmed, 1989; Sanaoui, 1995). They argued that in general poor language learners were not active strategies users in phonetics acquisition and displayed little awareness of how to connect new knowledge to existing knowledge. In this study, subjects were divided into two groups (high phonetic learning beliefs group and low phonetic learning group) according to their phonetic learning beliefs scores and three phonetic learning strategies contributed to the group difference: metacognitive strategies, affective strategies, and memory strategies. The following paragraphs will provide some implications on the use of these strategies.

According to Palincsar (1986), metacognitive strategies allowed language learners to plan, implement, and evaluate strategic approaches to learning and problem solving. This strategy had some influence on how the language learners interacted with their learning situations. As a result, language learners should be aware of the goals of learning activities, obstacles that may occur, personal strengths and weaknesses in the learning activities. So, relevant teaching activities can be carried out around how to teach language learners to plan, implement and evaluate strategic approaches in order to improve their use of metacognitive strategies in phonetic learning. To achieve this, internet-assisted teaching and learning may be adopted so as to help students to make self-evaluation on pronunciation. For instance, teachers can recommend language learners two types of apps. One is for quantifying students' pronunciation from intonation, fluency, and other features so that students have a preliminary understanding of their pronunciation level (e.g., Liuli Shuo). The other type of app is for dubbing their utterances: students can choose the videos from this app that they are interested in and dub them over and over until they are satisfied (e.g., Mofun Sky). At the end, this app will provide a report about students' weaknesses in dubbing and help them find ways to improve. Based on the results from the two apps, teachers may ask students to make a report that includes the strengths and weaknesses of their English pronunciation, the goal they want to achieve in the future and the means to achieve this goal, etc. Doing so will help students get better understanding of their true pronunciation level and make a better learning plan.

The variable of affective strategies was another one that distinguished the high phonetic learning beliefs group from the low phonetic learning beliefs group. The




appropriate use of affective strategies in EFL classroom may help students improve their English pronunciation and the overall oral English because using affective strategies had a positive effect on learning attitude and motivation (Wijirahayu & Dorand, 2018; Zhou, 2017; Rossiter, 2003). To maintain the optimal affect, we may provide some cooperative learning activities to students to lower their anxiety and boost their motivation and confidence. According to Rossiter (2003), affective strategies instruction may include such activities as consciousness-raising activities, training in relaxation, visualization, positive self-talk, humor, risk-taking, and monitoring emotions. Consciousness-raising activities help language learners to gain confidence in learning because these activities allow learners to make assumptions, form rules from the patterns, and build explicit knowledge by themselves (Bankier, 2009). In addition, these activities reduce language learners' anxiety and help them feel relaxed since consciousness-raising activities encourage cooperative learning rather than individual learning (Fatemipour & Hemmati, 2015). The following table is an example of consciousness-raising activity in acquiring how to link phonetic sounds:



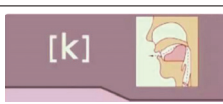

Table 9. An example of a consciousness-raising task in phonetic sounds linking.

1. The teacher passes out a handout with the following information.	
Example phrases	Phonetic symbols
That' s it	/ ð æts/ /t/
Come on	/kʌm/ /ɑ : n/
Hands up	/hændz/ /ʌp/
All of you	/ɔ : ʌ/ /əv/ /ju : /
Shut up	/ʃʌt/ /ʌp/
One of them	/wʌn/ /əv/ / ð ε m/
2. The teacher reads the above example phrases out to demonstrate “linking sounds” and ask students to pay attention to the teacher’ s pronunciation.	
3. Then, the teacher may give students more examples as shown in the following and encourage students to underline the linking sounds in those examples.	
Example phrases	Phonetic symbols
Keep it up	/ki : p/ /ɪt/ /ʌp/
Never give up	/n ε vər/ /gɪv/ /ʌp/
I mean it	/aɪ/ /mi : n/ /ɪt/
A lot of work	/ə/ /lɑ : t/ /əv/ /wɜ : rk/
A cup of milk	/ə/ /kʌp/ /əv/ /mɪlk/
4. The teacher asks students to make up several sentences or phrases based on the rule they have found and read them aloud.	

Memory strategies ranked the third among the dimensions contributing to the group differences. So, using memory strategies in English phonetics learning might be one of the ways to improve language learners' learning beliefs. According to Atal and Ozbulgan (2007), memory strategies (e.g., mnemonics) enhance memory by associating new knowledge with some previously learned knowledge by using some forms of imagery or grouping. That is learners remember better by visualizing the picture of speech organs with each sound. It is vitally important that students do visualize the association and try to memorize the "images + phonetic symbol" pairs rather than phonetic symbols only. By the end of the class, students will be able to remember images containing phonetic symbols, and thus, the symbols themselves. Therefore, when teaching phonetic symbols to language learners, the teacher can display some images of the articulatory organs in pictures that show the position of the tongue and the shape of the lips for each sound. With the help of these images, the teacher can figure out how students should adjust the position of their tongue in their mouth and they can associate this sound with a particular image. Moreover, the teacher may point out the mispronounced sound from students, then demonstrate the "right" sound: compare and contrast pairs of pronunciation sounds to help students figure out what the physical differences are. To make the picture clearer, teachers may use their hands to illustrate for the student how to adjust articulators: show the roof of the mouth with left hand and show students how to adjust tongues with right hand. The following table provides some examples in terms of place of articulation consonants.

Table 10. Examples of consonants according to their place of articulation

Place of articulation	Example image	Consonants	Example words
Bilabial (or 'two lips'): produced with the two lips.	 [b]	/p, b, m, w/	<u>b</u> uy, pie, <u>m</u> y, <u>w</u> ool
Labiodental (or 'lip and teeth'): Produced with the upper teeth and inner lower lip.	 [f]	/f, v/	<u>F</u> eel, <u>v</u> eal
Interdental (or 'between teeth'): Produced with the tongue tip on or near the inner surface of the upper teeth.	 [θ]	/θ, ð/	<u>t</u> hick and <u>t</u> hen

Place of articulation	Example image	Consonants	Example words
Alveolar (or ‘behind teeth’): Produced with the tongue tip on or near the tooth ridge.		/t, d, s, z, n, l/	to, do, sue zoo, new, light
Alveo-palatal / Palatal (or ‘top middle of mouth’): Produced by the body of the tongue approximating or touching the roof of the mouth (in the palatal area).		/ʃ, ʒ, tʃ, dʒ, j/	shin, genre, church, judge, yes
Velar (or ‘top of throat’): Produced with the tongue body on or near the soft palate.		/g, k, ŋ/	go, kite, bang’
Glottal (or ‘from the throat’): Produced by air passing from the windpipe through the vocal cords.		/h/	hi

6. Conclusion

The present study examined phonetic learning beliefs and phonetic learning strategies held by Chinese senior high school subjects. The results showed that the subjects had a positive learning belief towards English phonetic learning. However, the majority of Chinese subjects did not use phonetic learning strategies often; their scores on phonetic learning strategies dimensions were quite close to the average. Concerning the relative uses of phonetics learning strategies, the results indicated that meta-cognitive strategies, affective strategies, and memory strategies were the three dimensions that distinguishing high phonetic learning belief group from low phonetic learning group. This study provided important implications for both teachers and students to apply. For improving meta-cognitive strategies in English phonetics acquisition, two internet-assisted teaching apps was recommended (e.g. Liuli Shuo; Mofun Sky). Moreover, consciousness-raising activities may be helpful in tapping students’ affective strategies because these activities encouraged language learners to work together cooperatively to reduce their anxiety and help them feel relaxed. To help teachers adopt memory strategies in English phonetic teaching, they can be encouraged to connect some images of articulatory organs with actual pronunciation of sounds.

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