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A Study of Chinese Phonetic Learning Errors of Central Asian Students with Zero-based Chinese Proficiency

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Abstract: In this study, 16 Central Asian international students with zero-based Chinese language proficiency were chosen as the subject. By using the auditory discrimination method, this paper analyzes their pronunciation errors in consonants and rhymes. At the same time, the theory of experimental phonetics is used for reference and the Praatspeech analysis software is employed to explore the pronunciation errors of the participants. This paper also comprehensively analyzes the causes of these pronunciation errors from five factors: the negative transfer of the mother tongue, the negative transfer of the target language, the status of phonetics teaching, the teacher's instruction, and the learner. Then it puts forward recommendations on Chinese language teaching and practicing for Central Asian students in terms of initial consonant and simple or compound vowel in the Chinese syllable, tones, and different languages.

1. Introduction

Language is a kind of social phenomenon. As the material shell of language, the phonetics is also a social phenomenon. [1]The phonetics is one of the three elements of language. The accuracy of pronunciation will directly affect the learners' oral expression and listening. So the phonetics teaching is the foundation of second language teaching, and the prerequisite for mastering listening, speaking, reading and writing skills and cultivating communicative competence. However, due to the special phonetic system of Chinese, foreign learners often encounter many problems in the process of Chinese learning. Most of them come from Central Asian countries, so they are influenced by Russian and their mother tongues, and are prone to more unique types of phonological deviations.

In terms of the types of research on Chinese phonological errors, scholars have mainly summarized the reasons for the formation of errors in terms of initial consonant and simple or compound vowel in the Chinese syllable, and tones. They explored teaching strategies from the perspectives of teaching programs, classroom environment and students' motivation. The scope of the research mainly involved corrective strategies for phonological errors, two-word tonal errors, studies of Chinese phonological acquisition, Chinese phonological teaching methods, and the influence of negative transfer of mother tongue on Chinese tonal errors. Chai Junxing (2005) analyzed the important role of vowels and consonants in teaching Chinese as a foreign language from the perspective of their differences, and proposed relevant training methods to help

international students effectively master the teaching content.[2] In the research on Chinese learners in Central Asia, scholars such as Yao Yong and Liu Sha (2012) did sampling investigation on the learning performance of Central Asian international students in various stages of learning Chinese, and specifically tested their ability of Chinese tone perception and tone performance.[3]

In terms of the specific research methods of Chinese phonological errors, the main focus is on listening and experimentation. Fan Xiaoling and Ju Chaoyang (2014) tested junior international students from Tajikistan by listening discrimination. Through the test of 32 sets of two-character tone words, Fan and Ju analyzed the causes and difficulties of their tonal errors and pointed out the problems of mother tongue interference, teaching methods, and assessment.[4] At present, there are also some studies based on experimental phonetics using Praat software. Deng Junyu (2019) analyzed the problem of Chinese tones of Central Asian Chinese learners, and explored the causes of the error, and put forward suggestions for the teaching of Chinese tones[5]. There are other scholars analyzed the speech materials of Central Asian international students' Chinese tones through comparison with the help of Praat software. The listening discrimination method was employed to identify tonal errors and analyze their causes, so as to improve tone teaching strategies.

The above studies are of great significance in analyzing the phonological errors of Central Asian students and summarizing the teaching countermeasures. However, there are still shortcomings. The lack of a comprehensive phonological assessment system makes it difficult for phonological teaching to improve learners' language proficiency. In addition, the disconnection between theoretical research and teaching practice is a issue, which remains a large obstacle to transforming research results into effective tools for teaching practice. What's more, the singularity of teaching resources and the neglect of learners' individual differences limit the diversity and personalization of teaching methods. Teachers' professional training in phonics teaching is also insufficient, which affects the teaching effect. Consequently, this paper discusses the problems of international students from Central Asian countries in the process of learning Chinese phonetics, classifies the problems into certain types and summarizes the relevant teaching strategies based on previous studies.

2. Experimental Design

2.1 Pronunciation Subjects

In this study, the subjects of pronunciation were divided into an experimental group and a control group. The experimental group consisted of 16 Central Asian students, 9 male and 7 female, aged between 19 and 24, including 9 from Kyrgyzstan, 3 from Kazakhstan, 3 from Tajikistan, and 1 from Turkmenistan, whose daily language was Russian and their own national language. The experimental subjects were healthy and their organs of articulation function properly. Due to the relevant policies, each person had no Chinese language learning experience before coming to China. The control group consisted of one Chinese undergraduate university student, with the level of first class and second level in National Proficiency Test of Putonghua.

2.2 Experimental corpus

The test corpus was selected from Developing Chinese: Elementary Comprehensive Course (I). The textbook was the one used in the course for international students in the experimental group (the pronunciation subjects had learned the tenth lesson before this experiment). The corpus was randomly selected from the exercises in the first ten lessons, including 15 single words and 15 words each (see Table 1).

Table 1: Experimental corpus for international students

cūn	tā	chūn	zhè	jí	
zhuī	bǐ	chuī	pá	bā	
lǎo	tōu	rǎo	dōu	qí	
yī diǎnr	yī xià	xǐ zǎo	bù lái	xū yào	
jiě jie	lǜ shī	tóng xué	píjiǔ	yíngyèyuán	
tī qiú	jú zi	bù kè qi	tǐyùguǎn	diàn zǐ cí diǎn	

2.3 Experimental process

This study conducted a round of testing in October and December, 2023, with the same steps respectively. The subjects were first familiar with the experimental corpus, and then recorded after reading it several times. The recording was carried out in an empty classroom with the same recording software. The subjects entered the classroom one by one and read each word in the experimental corpus once. In this process, they kept the normal speech speed and natural pronunciation. In the same vein, the member of the control group read the same corpus at a constant speed. A total of 33 audio materials were collected in the two tests and saved in mp3 format.

3. Experimental result

3.1 Pronunciation of initials

Table 2: Statistics on the correct rate of listening discrimination for initials of experimental subjects

Categories of initial consonants	Accuracy	
	First test	Second test
Bilabial consonants	100%	100%
Labiodental consonant	/	/
blade-alveolar consonants	95%	95%
tongue-middle consonants	99.2%	99.2%
postlingual consonants	77.8%	93.1%
coronal consonants	94.7%	95.8%
dorso-velar consonants	100%	100%
zero consonants	98.8%	100%

The above Table 2 includes the correct rate of listening discrimination for initials of experimental subjects. According to the results of the two tests, Central Asian students' accuracy in the pronunciation of initial consonants has improved significantly in the process of learning Chinese. In the specific categories of initial consonants, the accuracy of pronunciation of postlingual consonants increased from 77.8% to 93.1%. The accuracy of coronal consonants increased slightly from 94.7% to 95.8%, and the accuracy of pronunciation of zero consonants reached 100%. In other initial consonant categories, such as bilabial consonants, blade-alveolar consonants, tongue-middle consonants, and dorso-velar consonants, higher accuracy rates were reflected in two tests. It reflected better stability of the pronunciation of these categories. The data suggests that Central Asian students have significantly improved their pronunciation of Chinese initial consonants especially on those consonants that had lower accuracy rates the first time.

3.2 Pronunciation of finals

Table 3: Statistics on the correct rate of listening discrimination for finals of experimental subjects

First test	Parts of the final	Head vowel	Essential vowel	Tail vowel
	Accuracy	90.5%	93.3%	87.0%
Second test	Parts of the final	Head vowel	Essential vowel	Tail vowel
	Accuracy	89.3%	95.2%	89.6%

According to the comparison of the data on the parts of the finals in the two tests (see table 3), the Central Asian students showed different degrees of progress and regression in different parts of the final pronunciation. Specifically, the accuracy of pronunciation of the essential vowel part increased from 93.3% to 95.2%. The accuracy of the tail vowel part increased from 87.0% to 89.6%. However, the accuracy of pronunciation of the head vowel part decreased, from 90.5% to 89.3%. The data show that although the Central Asian students made a significant improvement in the accuracy of the essential vowel part and the tail vowel part, there was a small decrease in the accuracy of the head vowel part. Compound finals in Mandarin Chinese consist of a the head vowel part, the essential vowel part and the tail vowel part. Phonological analysis shows that the essential vowel part is the core of a syllable and must be pronounced correctly. Although neither the head vowel part nor the tail vowel part is the core of a syllable, they have different phonological status and function differently in pronunciation.

3.3 Tone Pronunciation

Table 4: Statistics on the correct rate of single-word tones listening discrimination of the experimental subjects

First test	Types of tones	Level tone	Rising tone	Falling-rising tone	Falling tone
	Accuracy	128(82.80%)	48(75%)	48(68.75%)	16(100%)
Second test	Types of tones	Level tone	Rising tone	Falling-rising tones	Falling tone
	Accuracy	128(87.50%)	48(88%)	48(83.30%)	16(100%)

Table 5: Statistics on the correct rate of double-word tones listening discrimination of the experimental subjects

First test			Second test		
First tone	Second tone	Accuracy	First tone	Second tone	Accuracy
	Rising tone	16(37.50%)		Rising tone	16(43.75%)
	Falling tone	16(81.25%)		Falling tone	16(93.75%)
	Rising tone	16(100%)		Rising tone	16(93.75%)
	Falling-rising tone	16(50%)		Falling-rising tone	16(62.50%)
	Falling tone	16(81.25%)		Falling tone	16(93.75%)
	Light tone	16(43.75%)		Light tone	16(56.25%)
	Falling-rising tone	16(56.25%)		Falling-rising tone	16(75%)
	Light tone	16(50%)		Light tone	16(75%)
Falling tone	Level tone	16(87.50%)	Falling tone	Level tone	16(100%)
	Rising tone	16(87.50%)		Rising tone	16(87.50%)

According to the comparison of single-word tones in the two tests (see table 4), Central Asian students showed a significant increase in the accuracy of pronunciation of single-word tones. Specifically, the accuracy of level tones increased from 82.8% to 87.5%, rising tones increased from 75% to 88%, the accuracy of falling-rising tones increased from 68.75% to 83.3%, and the accuracy of falling tones was at a high level of 100% on both tests. The data show that Central Asian students have significantly improved their tone pronunciation, especially most notably in the

two tones of rising tones and falling-rising tones. This proves that their pronunciation accuracy of Chinese single tones can be improved effectively through systematic and continuous training.

The above table 5 is about the comparison of different combinations of double-word tones in the two tests, the international students showed a significant improvement in the accuracy of reading double-word tones aloud. Specifically, the accuracy of the combination of level tones and falling tones increased from 81.25% in the first test to 93.75% in the second test; the accuracy of the combination of rising tones and falling-rising tone s increased from 50% to 62.50%. The accuracy of the combination of rising tones and light tones increased from 43.75% to 56.25%. The accuracy rate of the combination of falling tones and level tones increased from 87.50% to 100%. The results show that the students made an overall improvement in the accuracy of the tone combinations of double-words after practice, further proving that practicing for the tone combinations is an effective way to improve the accuracy.

In order to understand Central Asian students' mastery of Chinese tones deeply, the paper chose exemplar M and selected single-word recordings representing four different tones which include level tones, rising tones, falling-rising tones, and falling tones, from his corpus in the two tests. Fundamental frequency measurements were made using Praat software, and the relevant images were plotted accordingly. At the same time, recordings of the same single words were selected from the subject in the control group who possesses the certificate of the level of first class and second level in National Proficiency Test of Putonghua. The same method of fundamental frequency measurement and image drawing were used for comparative analysis.The following three graphs show, from left to right,are the result of the first measurement of M (see Figure 1) , the results of the second measurement of M (see Figure 2) and the measurement results of the control group (see Figure 3).

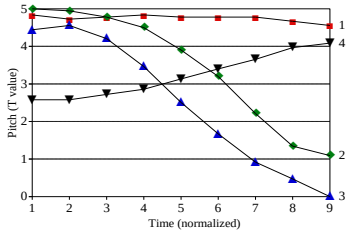

Figure 1 The result of the first measurement of M

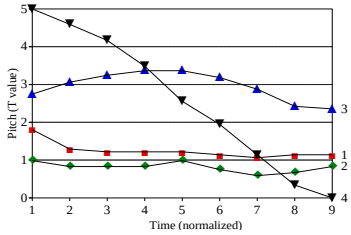

Figure 2 The result of the second measurement of M

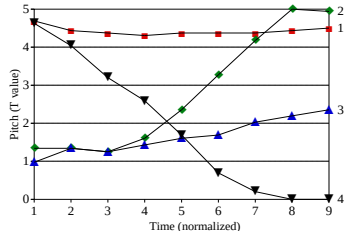

Figure 3 The measurement results of the control group

The results of the first measurement of international student M showed that the maximum

value of the average fundamental frequency was 158 Hz, and the minimum value was 95 Hz. It indicated that the international student had a limited range of control over the tones when they read aloud for the first time, which might be related to their initial mastery of the Chinese tones. The results of the second reading showed that the maximum value of the average fundamental frequency increased to 180 Hz and the minimum value increased to 103 Hz, which reflected that the international student M made significant progress in tone control, especially in the changes of tone height. After a period of training and learning, the international student was able to simulate the changes of Chinese tones more accurately and naturally. Through the figure 1 and figure 2, it can be seen that international student M showed some changes in the fundamental frequency chart of the vocal tones when M read the same corpus aloud twice. In the first reading, the fundamental frequency chart shows a relatively compact frequency range, which may indicate that the international student is relatively conservative in controlling the tone of the voice. In the second reading, the fundamental frequency chart showed a wider frequency range. It implied that the international student used a wider range of pitch variations in the pronunciation, which may be an indication of the international student's improved understanding and mastery of intonation. Overall, this trend of fundamental frequency variation suggests that international students have improved in the accuracy and fluency of their intonation pronunciation. Further comparison between the measurements of the international student M and a Chinese student of the control group revealed that the international student's maxima and minima of the average fundamental frequency at the second measurement were both improved. It approached the level of a native speaker, especially in the change of pitch of tones, which conformed with the level of the native speaker's pronunciation.

To summarize, international students' ability to pronounce Chinese tones has improved significantly after a period of study in China, especially in the range of variation of tones. However, compared with native speakers, international students still have a gap in the fluency and stability of tones. This finding emphasizes the importance of continuous training for non-native speakers to master Chinese tones and points to the necessity of imitating native speakers' tonal features. This analysis not only illustrates the progress and challenges of non-native speakers in learning Chinese, but also provides directions for further improving their phonological proficiency.

4. Influencing factors that create deviations and errors

4.1 Negative transfer of the mother tongue

Due to the complex linguistic background of international students in Central Asia, they often mix Russian and their native languages in communication and they are influenced by the pronunciation of both language. Russian belongs to the Indo-European language family and is a recognized phonetic script. Therefore, students who have a basic knowledge of Russian will borrow syllables from Russian for pronunciation when they first learn Chinese pronunciation. However, the system "pinyin" in Chinese is a self-contained system, and some pronunciations cannot find similar syllables in Russian, and some pronunciations are similar but actually different, which easily lead to confusion and deviations among students. For example, some consonants in Russian are easily mispronounced when they are similar to those in Chinese. In addition, the pronunciation pattern of Russian also affects their learning of Chinese blade-alveolar consonants, tongue-middle consonants, and dorso-velar consonants. Vowels and phonemes in Russian have one to one correspondence, whereas in the Chinese phonological system, a single final corresponds to several different phonemes in order to improve practicality. The phenomenon of one character with multiple phonemes is particularly prominent in the finals of Mandarin. For example, in the "Scheme for the Chinese Phonetic Alphabet", the final "i" represents three different phonetic values [i], [ɿ], and [ʅ], but all are written uniformly as /i/[6], which adds to the confusion of students. In addition, Central

Asian international students are unfamiliar with Chinese tones and have difficulty understanding the concepts of pitch, tonal range, and tone length. According to Zhuge Ping and Xu Laidi, Chinese pitch varies greatly, while Russian pitch is relatively stable, which explains the difficulty of international students with Russian background in mastering Chinese tone pronunciation, which is manifested as negative transfer of the mother tongue.

4.2 Negative transfer of the target language

Students may cause phonetic deviations and errors due to the rules of using the target language, insufficient mastery of the rules of the target language, and lack of understanding of the conditions of using the rules of the target language. Learners show negative transfer of the target language after learning for a period of time for the first time. The length of study for international students does not fully determine the mastery of the target language. Some students may use the acquired language knowledge for new learning, but if the foundation is not solid or the points are confused, the accuracy of pronunciation may be affected. For example, many international students may uniformly use flat tones and rising tones when pronouncing two-syllable words because they believe that Chinese pronunciation should be full of ups and downs, but the lack of proper pronunciation skills leads to intralingual transfer errors. The problem becomes more complicated as the learning time increases, so pronunciation errors must be corrected from the beginning. International students in Central Asia are exposed to a largely phonetic script, where a word in Russian consists of several letters, and the pronunciation of the word is obtained by stringing together the sounds of these letters. In this context, even if you don't know some words, you can basically spell them out. On the other hand, to learn Chinese, one must master both phonetics and writing of Chinese characters in order to communicate. Multi-syllabic words in modern Chinese are important difficulties for international students to learn, including special sound change phenomena such as tone change, soft tone and erhua (refers to a phonological process that adds r-coloring or the “ér”sound to syllables in spoken Mandarin Chinese). Since these phenomena are difficult to understand and master, they are more likely to lead to negative transfer of the target language.

4.3 The Status of Phonics Teaching

In the practice of teaching Chinese as a foreign language, not only the teachers, but also the writers of textbooks seldom have a special section for phonics teaching. In order to improve teaching efficiency, teachers will integrate phonics teaching into other courses such as listening and speaking classes to quickly bring over the important points in a short time. Therefore, it is expected that students will have a foreign and weird accent. The complexity of Chinese phonetics requires teachers to organize a lot of class time to explain and design after-class practice programs for a series of pronunciation rules. The systematic training of these basic knowledge is most suitable for international students at the initial stage of learning, so as to improve the accuracy of their learning in the later stages, and to avoid the formation of difficult-to-correct phonological errors, which may discourage them from learning Chinese in the future. The phonics teaching is relatively boring compared with other sections, and it lasts for a long time with many difficult points.Many students face great pressure when they first start to learn Chinese, and teachers need to help them find the right learning methods, and mobilize their motivation and enthusiasm for learning.

4.4 Teachers’ teaching style and method

For the teaching of Chinese phonetics, the teacher's level of phonetics has a direct impact on the learning effect of students. Currently, the Chinese language teachers at home and abroad have

uneven abilities. Some teachers have poor phonetic foundation and are unable to teach pronunciation correctly, which even leads to students' confusion of important points. Even worse, it will put students off learning. Therefore, the teaching team needs to strictly demand the level of teachers and improve themselves in time in order to avoid teaching accidents. It was found through the survey of the study subjects that teachers would try various teaching methods, such as diagramming and demonstration. However, in teaching practice, due to multiple factors such as time constraints, teachers still need to fulfill the assigned teaching tasks. Therefore, the problem of monotonous teaching methods and approaches will inevitably arise. In addition, speech teaching relies on imitation, and students need to refer to the teacher's vocalization for repeated practice and with warm-up review before and after class. A long period of boring learning may make it difficult for students to master the pronunciation rules and lead to a decline in learning motivation. At present, most foreign Chinese teachers are basically bilingual in Chinese and English, and not many of them have practiced Russian. However, mastering basic Russian language will be crucial in the practice of Chinese as a foreign language. The use of Russian can help teachers flexibly analyze students' pronunciation problems. Through third-party linguistic interventions, it can help students understand the difficulties of vocalization and achieve teaching goals in the classroom.

4.5 Personal factors of learners

Many international students from Central Asia are cheerful and brisk, and they actively ask questions in the classroom, which is conducive to promoting the sharing of learning experiences and practicing their oral expression skills. However, some international students pay more attention to the daily communication than to the accuracy of pronunciation, and it is difficult for teachers to correct their Chinese pronunciation over a long period of time. If the foundation of pronunciation is not laid well, once the habit is formed, it is easy to "fossilize" the wrong pronunciation, which is difficult to be corrected in the future.[7] For the other international students who are more introverted and lack self-confidence, they do not dare to speak in class. Moreover, their performance is not satisfactory when they are called upon occasionally. As a result, they lose most of the opportunities to correct their pronunciation one-on-one with the teacher in class and lack the opportunity to practice, leading to more tonal deviations and errors. Some students also think that accurate pronunciation is not important, as long as they master the general pronunciation. Some other students chose to practice alone because they could not keep up with the classroom progress. But because of the lack of skills, their practices are ineffective. Others have a negative attitude. They do not pay attention to learning efficiency, and basically give up learning Chinese.

5. Teaching Suggestions

5.1 Suggestions for teaching initials

The first goal for international students is to speak accurately. When they learn Chinese phonetics for the first time, they need to start from the basics. Speaking requires international students to understand the conversations, understand the grammatical composition, and organize the logical relations in their minds. Teachers should make sufficient preparation and design teaching programs for the important point, and provide accurate pronunciation demonstrations in class. And they ought to combine multimedia teaching aids to show the cooperation between the mouth and the vocal cords in all aspects of pronunciation, and mark and differentiate the tongue positions on the tongue diagrams. In this way, teachers make students have intuitive perceptions of airflow in and out of the mouth, and increase the pronunciation cues visually. There are 21 consonant initials in pinyin, and international students need to correctly grasp the relationship between different factors,

distinguish the differences between the consonants in Russian and Chinese pronunciation and recognize them accurately. For example, when teaching the pronunciation of the initial “r”, international students can easily confuse this sound with Ж in Russian. In the case of unavoidable pronunciation errors, teachers need to be mentally prepared in advance. In case of emergencies, they should use a back-up lesson plan. The concepts of the aspirated consonant and the unaspirated consonant are difficult to explain, so it is possible to choose the method of demonstration of the paper. Through the vibration of the paper, the foreign students understand the size of the air flow and direction. In addition, in order to consolidate the pronunciation, students can be sampled for demonstration during the explanation and at the end of the presentation.

5.2 Suggestions for teaching finals

Teachers need to accurately analyze the seven lingual vowels and use schematic diagrams to help students understand the lip and tongue positions. For example, although ü[y] and u[u] have the same lip shape, they are pronounced differently. Teachers can first explain the pronunciation skills of u[u] and show the ü[y] sound by comparing the tongue positions. In addition, compound vowel finals and a vowel followed by a nasal consonant are hard to learn. Teachers need to clearly explain the pronunciation of pre-sound, middle-sound and post-sound. When they find it difficult to define, teachers can briefly pass over the parts to improve the efficiency of the classroom. The finals should be taught from easy to difficult, combining comprehension and mechanical training to make it more interesting. International students’ mispronunciation of the alveolar nasal and the velar nasal is mainly due to the fact that they do not distinguish the difference between them. Hence teachers need to help students establish the correct concept of the alveolar nasal and the velar nasal opposites at the initial stage, and emphasize the difference between the two pronunciations by exaggerating the demonstration and dragging out a vowel followed by a nasal consonant when doing demonstrations. In addition, when teaching the alveolar nasal and the velar nasal, teachers can ask international students to pronounce м and н in Russian, which are the alveolar nasal and the velar nasal respectively. It is easier to memorize them by comparing the pronunciation. As for the pronunciation of phonetic collocations, teachers can help students memorize and spell the syllables by using the formulas “the alveolar nasal is light and short, the velar nasal is heavy” and “the initial is short, the medial sound is fast, and the final is loud”.

5.3 Suggestions for teaching tones

The tones of Chinese have a direct impact on semantics and communication. In the process of teaching tones, it should be divided into tones of Chinese characters, modified tones and tone teaching to clarify their logical relationship. Tones of Chinese characters include the level tone, rising tone, falling-rising tone and falling tone, which can be simplified for students to memorize as flat, ascending, ups and downs, and descending. The most commonly used training is singing four tones, which can help students feel the rhythmic beauty of Chinese tones through singing, clearly perceive the changes brought by the rise and fall of syllables, and thus gradually develop the ability to perceive the four tones. The easiest for international students to master is the falling tone, followed by the level tone, rising tone, and falling-rising tone. The Central Asian students have lower pronunciation, so the level tone is similar to the tone of their mother tongue, so they can master it easily. Since the falling-rising tone belongs to the zigzag tones, it tests two pronunciation skills of international students. It means that the falling-rising tone is the most difficult to learn. The order of teaching can be adjusted to teach the first tone and fourth tones first, then bring in the second tone, and finally learn the third tone. For international students, they should master the tones of single-syllable words before learning polysyllabic words. Teachers should strengthen the pairing

practice to correct the pronunciation of polysyllabic words with wrong pronunciation of tone combinations. At the same time, teachers should encourage students to communicate with locals in order to imitate the tone modulation of locals and strengthen the practice in daily communication.

5.4 Suggestions for teaching different languages

In view of the complex linguistic background of international students in Central Asia, teachers need to flexibly apply teaching methods and design targeted teaching programs. By comparing the phonetics of Russian, mother tongue and Chinese, teachers can help students recognize the differences between languages and cultivate rational cognition. Generally speaking, international students tend to compare “pinyin” with Russian letters, and it can help them memorize the pronunciation, but the negative transfer of Russian will bring about interference in learning, and international students will show frequent deviations and errors in learning Chinese phonology that is similar to or different from Russian phonology. Based on this characteristic, teachers can correct students' phonological errors through comparative research and strengthen the similarities and differences between Russian and Chinese phonology in teaching practice. International students’ systematic cognition of phonological learning can be improved. Chinese phonology is logical and systematic, especially in phonemic combinations, which helps to improve teaching efficiency. For international students, when learning Chinese stop consonants, they not only need to overcome the influence of Russian pronunciation, but also need to reacquaint themselves with these phonemes. To address the difficulties of international students, teachers can focus on the distinction between aspirated and unaspirated consonants in Chinese and voicing in Russian. In addition, the learning content can also be broken down into two parts: the initials and finals to simplify the learning difficulty. For international students who are new to Chinese, some complex phonemes may be difficult to master, especially lingual consonants such as j, q, x, etc. Classroom practice and demonstration may also not help them to pronounce these consonants accurately, so it is better to use approximate pronunciation to aid comprehension.For example, the pronunciation q is similar to the Russian "ть", which requires the tip of the tongue to be pressed against the upper teeth and pronounced with the flow of air, and x is close to the pronunciation of the Russian letter "щ". Teachers also need to be aware of students’ possible mispronunciations, such as tongue twitching, and guide them to keep the tongue surface stable.

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