

An Empirical Study on Improving Rural Pupils' Phonics Skills by Raising the Awareness of Syllable and Stress

Wenping Luo^{1*}, Qiuyun Wang¹, Min Li²

¹ School of Foreign Studies, Zhaoqing University, Zhaoqing, China

² Zhaoqing No. 16 Primary School, Zhaoqing, China

Email Address

1993020031@zqu.edu.cn (Wenping Luo)

*Correspondence: 1993020031@zqu.edu.cn

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Abstract:

Phonics advocates students to be able to read words and distinguish words. Numerous studies have shown that the phonics teaching method can improve students' interest in learning English vocabulary and phonics ability. However, this method may not be fully applicable to Chinese-speaking English learners due to the significant difference between English and Chinese in terms of syllables and stress. However, there are few empirical studies on phonics ability from the perspective of stress awareness and syllable awareness in the current academic research field. This study aims to explore the improvement of phonics ability in students with English learning difficulties in rural primary schools according to syllable and stress classification of primary school English vocabulary teaching. The students are divided into an experimental group and a control group for a two-week teaching experiment. The experimental data is analyzed by SPSS 27.0, and the results show that a positive correlation between syllable and stress awareness and phonics ability. This study aimed to investigate and relationship between syllable and stress awareness and phonics ability in 40 students in Grade 6 with English learning difficulties in rural area. Therefore, improving syllable and stress awareness is crucial for enhancing phonics ability in students with English learning difficulties. Improving syllable and stress awareness can enhance the interest of students with English learning difficulties in learning English. Syllable and stress awareness is quintessential for developing Chinese students' phonics ability.

Keywords:

Phonics, Syllable Awareness, Stress Awareness, Rural Primary School, Students With English Learning Difficulties

1. Introduction

English phonics teaching has been introduced to China for decades, however it doesn't help Chinese students to pick up English in an obvious way due to the vast differences between English and Chinese. The most fundamental barriers for Chinese students to learn English have been neglected for decades, i.e., syllable awareness and stress awareness. The research findings in contrastive phonetics and phonology

studies have not been applied in primary school English textbooks, which explains the passive situation the students are facing. The phonic rules are mostly based on alphabetic language and overlook the quintessential hindrances the other language system learners face, such as monosyllable of Chinese, and the four tones of Chinese characters.

This research attempts to apply the awareness of syllable and stress to an experiment of a group of 40 students with learning difficulties in a primary school and tries to prove whether it works for them after the experiment or not. So the research background, purpose and significance of the study and a clear structure of the research are clearly presented in the following parts.

1.1. Research Background

English learning in China typically begins in Grade 3 of primary school. Learners tend to associate pronunciation with spelling due to the alphabetic nature of the language. Therefore, beginners must focus on improving their phonics ability and cultivating syllable and stress awareness.

According to *the Compulsory Education English Curriculum Standard (2022 Edition)* [1], Grade 6 primary school students are required to have phonetic literacy. This includes the ability to perceive and understand the meaning, intention, and attitude of the speaker based on changes in stress, meaning group, intonation, and rhythm. Additionally, students should be able to express different meanings, intentions, and attitudes through changes in stress, meaning group, intonation and rhythm. Finally, it is suggested that primary school students should initially acquire a vocabulary of approximately 500 words and be able to communicate and express themselves on specific topics.

Phonics is widely recognized by researchers both domestically and internationally as a crucial component of current English pronunciation teaching in primary schools. It has been suggested that phonics teaching method can enhance students' interest in learning English vocabulary and improve their phonics abilities. Developing students' phonics skills is beneficial for the development of their listening, speaking, reading and writing abilities. The age of Chinese students learning English is decreasing every year, and it is undoubtedly important to establish strong foundation for English learning.

In recent years, phonics has been a popular trend in English language teaching. Unlike the International Phonetic Alphabet, phonics helps students to directly connect letters with pronunciation and enables them to quickly identify words. Phonics is widely used method in English-speaking countries for teaching the native language. The purpose of this method is to help students learn words by associating the pronunciation of letters with their meanings. This approach includes both visual ("seeing words and read") and auditory ("listening to words to distinguish") components, which aid in word recognition and spelling retention. It serves as the foundation for English language acquisition and reading proficiency.

Phonological awareness is a crucial skill in learning a foreign language. It enables learners to manipulate and identify the phoneme segments of the language, recognize word stress, and attend to syllable structure. This, in turn, enhances students' phonics ability. Phonological awareness training has been shown to improve performance on certain types of word assignments and reading ability [2]. The study indicates that children with low levels of phonological awareness are less likely to become

proficient readers. Therefore, it is crucial to establish a strong foundation of phonological awareness for primary school students (Ding, 2023) [3].

While there are some phonics courses available in English-speaking countries, they may not be entirely suitable for Chinese learners due to the differences in the background of the two languages.

Chinese originated from hieroglyphs, and characters are identified by their shapes. In contrast, identifying an English word requires associating the letters with their pronunciation, identifying the pronunciation of morphemes, and distinguishing syllables and stress [ibid]. The primary objective of phonics instruction in English-speaking nations is to aid native children in learning to read. This involves starting with letter recognition, mastering the pronunciation of letters and letter combinations, and ultimately being able to distinguish the meaning of words while reading. By comprehending the sentences, readers can understand the intended information or expression, thereby establishing the groundwork for independent reading. The primary objective of phonics instruction in China is to assist students who are learning English as a second language in mastering word spelling. This enables them to read, listen, and write, even if they do not understand the meaning of the words. This approach is beneficial for word retention.

Currently, there have been limited empirical experiments conducted in China to enhance the phonics proficiency of rural primary school students by focusing on stress and syllable. It is crucial to conduct further research in this area to improve the literacy skills of these students. This study aims to investigate whether cultivating students' syllable and stress awareness can improve the interest of rural English learning difficulties in learning English and enhance their phonics ability. An empirical experiment in a primary school in C City, using a clear and concise language structure with a logical flow of information. This study will adhere to conventional academic formatting and citation styles, while avoiding biased or ornamental language. The text is grammatically correct and from spelling and punctuation errors. No changes in content have been made.

1.2. Research Purpose

This research classifies primary school English vocabulary according to syllables and stress as a phonetic textbook, which sums up to 500 English words. The goal is to investigate the impact of phonics teaching based on the development of syllable and stress awareness on primary school students' phonics ability. The research will focus on four main questions:

- a. Is there a correlation between syllable and stress awareness and phonics ability?
- b. What are the effects of syllable and stress awareness on interest in learning English?
- c. Can improving syllable and stress awareness enhance the phonics ability of students with learning difficulties?
- d. Is awareness of English syllables and stress the foundation of phonics for Chinese young learners?

1.3. Research Significance

The research significance lies in two aspects: theory and practice.

From a theoretical perspective, *The Compulsory Education English Curriculum Standard (2022 Edition)* [1] states that primary school students should initially master approximately 500 words and be able to communicate and express themselves on specific topics.

Given that speech decoding ability is a crucial factor in reading, communication, and expression, it is reasonable to examine this issue from a speech perspective. Therefore, this study will investigate whether a new phonetic textbook, which classifies primary school vocabulary according to syllables and stress, can improve the syllable and stress awareness of Grade 6 primary school students with learning difficulties. The current situation of English vocabulary teaching and learning in rural primary schools in some areas of China, as well as the family education environment, are not ideal.

For English language learners, developing awareness of syllables, stress, and phonics is crucial. However, there is a lack of practical research in this area. This study aims to provide practical research support for teaching phonics by cultivating stress and syllable awareness, improving students' phonics abilities, and offering teaching ideas to English teachers in Chinese primary schools.

2. Literature Review

The research articles relating to the definition of phonics, syllable awareness, and stress awareness are reviewed.

2.1. Review on Phonics

Phonics is a method for learning English vocabulary that helps students establish the correspondence between letters or letter combinations and word pronunciation. It guides students to learn the pronunciation rules of 26 letters and letter combinations in words, improving their vocabulary learning efficiency. This enables them to read and listen to words, quickly memorize words, and understand reading.

Scholars both domestically and internationally have conducted research on the positive impact of phonics. The practical value of phonics in teaching English vocabulary after conducting a large-scale study of various teaching methods that can aid children in memorizing vocabulary. Bishop & Adams [4] believed that children's reading materials primarily consist of simple vocabulary, thus English vocabulary is essentially in line with the principles of phonics. After analysing and evaluating 38 research reports on phonics teaching, the National Reading Research Group (1997) in the United States concluded that phonics can enhance students' English vocabulary recognition and phonic ability, improve their vocabulary learning, boost their self-confidence, and stimulate their motivation to learn. The American National Research Conference (1998) confirmed the link between phonics and students' vocabulary acquisition, phonological awareness, and reading proficiency. According to Harris [5], teaching students the relationship between letters and pronunciation in context is an engaging method to enhance their reading and phonics skills.

There has been discussion among domestic scholars regarding the applicability of the learning method produced in English-speaking countries to English teaching practice in China. Experts and scholars with an innovative spirit have applied phonics to English vocabulary teaching practice. Phonological system training can enhance students' phonological and morpheme awareness to a certain extent. The feasibility of phonics in actual English as a second language classrooms is also highlighted.

According to Gao [6], phonics has two advantages. Firstly, it can enhance learners' self-esteem and motivation with regard to the subject matter, which can facilitate their engagement with language and facilitate the acquisition of phonics skills. Secondly, primary school students in lower grades can gradually improve their phonics ability through learning phonics.

2.2. Review on Syllable Awareness

The syllable is a fundamental phonetic unit that lies between a segment and a morpheme. It usually comprises a vowel, with one or more consonants preceding or following it. Pronunciation awareness is a constituent of phonological awareness, Phonological awareness comprises three components: syllable awareness, onset-rime awareness, and phoneme awareness [7].

According to Wagner et al. [8], and Cunningham et al. [9], phonological awareness is crucial for children's reading, word recognition, writing, and short-term memory. They suggest that children possess syllable and phoneme awareness prior to learning to read. According to Xu [10], English is classified as an "inflectional" language, which tends to produce multi-syllable words. In contrast, Chinese is classified as an 'isolating' language, which often forms words based on monosyllables. He discovered that each Chinese character corresponds to a syllable, while English words consist of multiple syllable groups. The low level of development in syllable awareness is believed to be related to students' lack of understanding of English phonetic knowledge and syllable structure characteristics.

2.3. Review on Stress Awareness

Stress is divided into metrical stress and lexical stress. Among them, prosodic stress refers to the stress pattern of phrases (such as noun phrases) or multi-syllable language units, which can effectively distinguish compound nouns from noun phrases (such as greenhouse vs.green house); word stress refers to the stress pattern of a single word (such as desert vs.dessert) [11].

Studies abroad have also found that children's stress awareness is formed earlier than the formation of their phonological awareness, and their stress awareness can also reflect the differences in their reading and writing levels. Jusczyk [12] believed that only 9-month-old infants can be sensitive to stress (front-heavy and back-light) words, that is, stress awareness, which promotes the development of their phonological awareness. Wood [13] believed that word stress awareness can effectively explain the variation of reading, spelling, rhyme awareness, letter-pronunciation knowledge and pseudo-word spelling, and after controlling age and vocabulary, word stress awareness can still effectively explain the variation of spelling. Holliman, Wood & Sheehy [14] found that stress awareness can not only reflect the differences in children's reading and writing levels, but also is not affected by various phonological awareness measurement indicators under the condition of controlling the age and vocabulary of the subjects. Goodman et al. [11] believed that word stress awareness can not only effectively predict the accuracy of reading, but also help children establish word phonological representation and develop shape-sound correspondence awareness.

The pitch change of a word has a very high psychological "value". It is difficult for native Chinese speakers to perceive the stress contrast of English. For Chinese learners, this psychological value is not high. The component with low psychological

value is the “blind spot” mentioned by Peperkamp et al. [15]. They believe that in terms of suprasegmental phonemes such as tone, length and stress, if the listener's mother tongue lacks some contrast, it will cause perceptual difficulties.

2.4. Summary

Research on phonological awareness and phonics has been extensive both domestically and internationally. Many studies have suggested that phonics teaching method can enhance students' interest in learning English vocabulary and improve their phonics abilities. However, there has been less research from the perspective of stress awareness and syllable awareness. This study aims to provide an in-depth analysis of English vocabulary teaching in rural primary schools. Therefore, it will analyse how to make phonics more suitable for rural primary schools by emphasizing syllable awareness and stress awareness.

3. Theoretical Framework

Theoretical framework involves Carl Rogers' significant learning theory and Krashen's comprehensible input and affective filter hypothesis.

3.1. Carl Rogers' Significant Learning

Significant learning proposed by Rogers [16] refers to a kind of learning that makes great changes in individual behavior, attitude, personality and choice of action in the future. This is not only a kind of learning to increase knowledge, but also a kind of learning that integrates with the experience of each part of everyone. Rogers divided learning into two categories: meaningless learning and meaningful learning. Rogers' significant learning is based on the development of people's autonomous learning potential, with the purpose of learning freedom and self-realization, with the content of self-selected knowledge and experience that think of life and practical significance, characterized by self-active learning, and completely independent and free learning without external pressure, that is, learner-centered free learning has become an effective learning principle that Rogers has always advocated.

Significant Learning combines learning with learners' interests and aspirations, and it is necessary to inspire scholars to remember their own experience. A lively and interesting classroom can stimulate students' interest in learning. An interesting classroom can be designed according to students' personal feelings and characteristics, which can make up for the dullness of vocabulary teaching and phonics rule teaching, and make the learning of phonics more effective.

3.2. Krashen's Comprehensible Input

Comprehensible input proposed by Krashen means that in order to make language learners enter the next higher stage from one stage, the language input provided must include a part of the language structure of the next stage. [17,18]. In Krashen's $i + 1$ language input principle, i represents the learner's current level and 1 represents a slightly higher level. This principle indicates that only when the input content is slightly higher than the students' current level, can the students effectively absorb the input information through their efforts. Krashen believes that language acquisition depends on a large amount of language input, which must be effective. Effective input should have four characteristics: comprehensibility, interestingness, non-grammatical programming and sufficient input.

Learning English is also a kind of language acquisition. According to the Effective Input Theory, in the process of English teaching, students' age, personality and other characteristics should be considered. It is not too easy or too difficult to select the learning content, so that students can effectively absorb the learning content through their efforts.

3.3. Krashen's Affective Filter Hypothesis

Krashen's [19] Affective Filter Hypothesis holds that learners have a mechanism, also known as a filter, a filter that will hinder the entry of language acquisition devices under certain conditions. The Affective-Filter Hypothesis describes the influence of emotional factors on foreign language learning. If learners are not confident and self-motivated while learning, these emotional factors will affect learners' input and learning. Although the input can be understood, the information will not be processed by the brain. On the contrary, if the learning state is relaxed and interested in learning content, learners can acquire language faster.

Within a lively and interesting classroom atmosphere, students will be introduced to a relaxed state. According to this hypothesis, students will naturally enter the vocabulary learning state of phonics in a relaxed state of mind, and students will be more willing to decode and spell words and reading articles.

4. Research Methodology

The research methods include research questions, research objects, research tools, research process, data collection and data analysis.

4.1. Research Questions

The purpose of this research is to verify the effect and correlation of the combination of phonics and picture books on improving Chinese primary school students' English phonological awareness and phonics ability. In this study, pronunciation ability refers to the ability to encode a word. When you see it, you can pronounce it. Phonics ability refers to the ability to decode a word. When you hear it, you can identify and spell it. Previous studies have shown that phonics teaching can help students establish phonological awareness and phonics ability. This study is based on the cultivation and improvement of students' stress awareness and syllable awareness, so as to improve students' phonics ability, so that they can achieve the effect of seeing words and listening to words, and increase their interest and confidence in English learning. This paper will answer the following four research questions:

Question 1: Is there a correlation between syllable and stress awareness and phonics ability?

Question 2: What are the effects of syllable and stress awareness on interest in learning English?

Question 3: Can improving syllable and stress awareness enhance the phonics ability of students with learning difficulties?

Question 4: Is awareness of English syllables and stress the foundation of phonics for Chinese young learners?

4.2. Participants

The experiment is carried out in D school. Forty students with English learning difficulties from Class 14 (Grade 6) and Class 15 (Grade 6) participated in the two-week experiment. These students have been learning English since the third grade and can recognize 26 letters and their respective pronunciations. Twenty students with English learning difficulties in Class 14 of Grade 6 were assigned to the experimental group (EG). They are taught by phonics. The new curriculum primary school vocabulary classified according to syllables and stress is used as a phonetic textbook in order to cultivate syllable awareness and stress awareness and improve their phonics ability. Other twenty students with English learning difficulties in Class 15 of Grade 6 are assigned to the control group (CG) for free learning.

4.3. Teaching Materials

In this study, flash cards with vivid pictures combine with primary school English words, primary school English words classified by syllables and stress, and audio recorded by professional foreign teachers are selected for experiments. For Grade 6 students, most of them have learned English words in primary school, which helps them understand the concepts of syllables and stress and master spelling rules.

4.4. Research Instruments

This research adopts the teaching experiment method. The research instruments include pre-test and post-test of syllable and stress awareness, word pronunciation and reading test. After data collection, SPSS 27.0 is used to compare and analyze the data.

4.4.1. Pre-test and Post-test of Syllable and Stress Awareness

The pre-test is set at the beginning of the first semester of the sixth grade. A 76-word sixth-grade reading material is selected and adapted. The students in the experimental group and the control group are tested for syllable and stress awareness, mainly focusing on syllables, stress, rhythm, phonetic accuracy and intonation. Each part accounted for 20 points and the total score is 100 points. The post-test is set up two weeks later, and the test form was the same as the pre-test. The test materials are selected from the English textbook of the sixth grade which were learned last semester, a 66-word new text.

4.4.2. Pre-test and Post-test of Phonics Ability

This test is to test whether students can read the words they see. These test words are extracted from the vocabulary of the new curriculum standard of primary school English and tested in class.

4.5. Research Procedure

This chapter explains the schedule of research procedure and mainly introduce the teaching procedure of the EG.

4.5.1. Schedule of Research Procedure

At the start of the experiment, the students' ability in syllables, stress, and spelling is tested. Following the pre-test, the primary school English word data, classified by syllables and stress, is distributed to 20 students in the EG. Additionally, audio recordings made by a professional American teacher are sent to the parents of the experimental students for review at home.

During the class, the teacher instructs students in phonics vocabulary and encourages active participation through answering questions, attentive listening, and paying attention to word syllables and stress. The teacher also guides students in decoding words while reading, considering their meanings, summarizing, and practicing after reading. This approach is then applied to reading new words.

During the same hosting period, the control group is given the opportunity to learn or complete homework independently.

The post-test is conducted two weeks after the experimental teaching, with the same focus as the pretest.

4.5.2. The Teaching Procedure of the EG

This researchers use primary school word cards and primary school word materials in the EC. Vivid pictures are combined with primary school English words. Primary school English word materials and related word audio are used as teaching materials. As a textbook, it mainly focuses on teaching syllables and stressing words. In the textbook, words with spelling rules for monosyllable words are arranged, and then the listening and spelling exercises are presented, mainly based on skill training. Teachers use word information cards and related audio to help students practise through various activities.

This experimental course is arranged according to the main teaching contents of syllable and stress classification. The order of teaching is monosyllabic words, disyllabic words, trisyllabic words and tetrasyllabic words. There are five steps in a lesson: introduction, demonstration, practice, production and homework. The specific teaching steps of the experimental class take the following two-syllable word teaching steps as an example.

Step 1: Introduction

After a simple greeting between teachers and students to activate the classroom atmosphere and arouse students' interest in learning, teachers show the awards to students who are active in the classroom, and then enter into today's lesson, which is the phonics of two-syllable words. Two-syllable words are divided into two-syllable words with stress in the first syllable and two-syllable words with stress in the second syllable.

Step 2: Presentation

The teacher first plays the audio corresponding to the two-syllable words in the primary school, so that the students can watch the word data and follow the recording. Then the teacher shows the classified two-syllable word cards to the students one by one, let them guess what the words are, then decode the words on the back of the card, and present the phonics rules to show how to pronounce the words that follow the rules, and guide the students to think about the distinction and spelling rules between the two-syllable words with stress in the first syllable and the two-syllable words with stress in the second syllable. After asking students questions, teachers help students summarize the spelling rules of disyllabic words, decode words and practice spelling rules, that is, disyllabic words with stress in the first syllable are generally nouns, such as: 'pic-ture,' win-dow; disyllabic words that are stressed on the second syllable are generally verbs, such as be-' gin (beginning), ex-' cuse (forgiveness) ; the stress of compound nouns is usually on the first syllable, such as: 'class-room, 'black-board, 'foot-ball.

Step 3: Practice

After summarizing, students need to practice some spelling rules of new words, and teachers show some spelling rules of new words. Students use the spelling rules of disyllabic words to decode and pronounce unlearned disyllabic words, and then complete the practice of “listening and circle”. Teachers read words, and students need to circle the words they hear. These words are the newly decoded disyllabic words in front of them. This is a drill stage where teachers use various activities to help students practice this phonics rule.

Step 4: Production

In this step, students need to use the stress rules of disyllabic words to make some words by themselves.

Step 5: Homework

The homework is arranged about reviewing and consolidating what they have learned today, that is, with the help of parents playing the audio of disyllabic words, students follow the spelling principles of disyllabic words according to the spelling principles of disyllabic words, especially the position of stress in disyllabic words.

4.6. Data Collection and Analysis

This study needs to collect the results of pre-test and post-test, and collects the test data of syllable and stress awareness and the test data of phonics ability. All the pre-test and post-test are completed in two groups to ensure the validity of the data. Through the test, the independent sample t test is carried out on the obtained data, and the P value is used to judge whether the test results are significant. Then the researchers compare the correlation between syllable awareness, stress awareness and phonics ability so as to draw the conclusion whether the experimental hypothesis is established. These data are analyzed by SPSS 27.0.

5. Results and Discussion

This chapter is mainly about the analysis of the research results and the discussion of the research questions. These statistical results show the influence of syllable awareness and stress awareness on phonics ability respectively, and the correlation between syllable awareness, stress awareness and phonics ability.

5.1. The Influence and Discussion of Vocabulary Teaching Method Classified by Syllable and Stress Based on Syllable and Stress Awareness

In order to investigate the effects of the vocabulary teaching method classified by syllable and stress on syllable awareness and stress awareness, pre-test of syllable awareness, stress awareness and phonics ability are set up at the beginning of the study. At the end of the experiment, the post-test is used to verify the effect of vocabulary teaching based on syllable and stress classification on phonics ability, which is in the same form as the pre-test. The post-test data are collected and analyzed by independent sample t test. The analysis of syllable awareness and stress awareness tests respectively is intended to answer the first research question of this study.

The scores of the EG and the CG are analyzed by SPSS 27.0.

5.1.1. Pre-test and post-test results of syllable and stress awareness in the EG and CG

The pre-test data of syllable awareness and stress awareness are collected and analyzed by independent sample *t* test, aiming to illustrate that the initial syllable awareness of the EG and the CG is similar, and the initial stress awareness is similar. The detailed results of the pre-test of syllable awareness and stress awareness in the EG and the CG are shown in Table 1.

Table 1. *Pearson Correlation Analysis.*

	Pre-test Syllables	Pre-test Stress	Pre-test Rhythm	Pre-test Speech Accuracy	Pre-test Intonation
Post-test Syllables	0.950***	0.930***	0.876***	0.657***	0.825***
Post-test Stress	0.903***	0.953***	0.851***	0.547***	0.774***
Post-test Rhythm	0.912***	0.898***	0.972***	0.701***	0.782***
Post-test Speech Accuracy	0.844***	0.796***	0.825***	0.896***	0.875***
Post-test Intonation	0.834***	0.785***	0.747***	0.713***	0.974***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 1 presents the correlation data between the pre-test and post-test of the EG and the CG to visually test the correlation between syllables and stress and speech accuracy. Through Pearson correlation analysis, the correlation analysis results between post-test syllables and pre-test speech accuracy are significant, showing a significant positive correlation ($r=0.657$, $p=0.000<0.05$). The correlation analysis results between the post-test stress and the pre-test speech accuracy were significant, and there was a significant positive correlation ($r=0.547$, $p=0.000<0.05$). The correlation analysis results between the post-test speech accuracy and the pre-test syllables were significant, and there was a significant positive correlation ($r=0.844$, $p=0.000<0.05$). The correlation analysis results between the post-test speech accuracy and the pre-test stress are significant, and there is a significant positive correlation ($r=0.796$, $p=0.000<0.05$). Therefore, the results show that analysis results of the speech accuracy and syllables and stress correlation of EG and that of CG are very significant.

The following is a comparison of the pre-test and post-test scores of 40 students in Table 2.

Table 2. *Independent Sample *t* Test.*

	Group (Mean $\pm$ Standard Deviation)		<i>t</i>	<i>p</i>
	EG(n=20)	CG(n=20)		
Pre-test Syllables	11.550 $\pm$ 2.743	10.350 $\pm$ 2.159	1.537	0.132
Pre-tested Stress	11.350 $\pm$ 2.681	10.400 $\pm$ 1.667	1.346	0.186
Pre-test Speech Accuracy	10.600 $\pm$ 2.458	11.300 $\pm$ 2.203	-0.948	0.349
Total Score of Pre-test	55.800 $\pm$ 11.588	52.850 $\pm$ 9.343	0.886	0.381
Post-test Syllables	13.050 $\pm$ 2.645	11.250 $\pm$ 1.943	2.452	0.019*
Post-test Stress	12.650 $\pm$ 2.961	10.600 $\pm$ 1.818	2.639	0.012*
Post-test Speech Accuracy	11.950 $\pm$ 2.625	11.850 $\pm$ 2.390	0.126	0.900
Post-test Total Score	60.650 $\pm$ 12.223	55.100 $\pm$ 9.267	1.618	0.114

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

There is no significant difference between the EG and the CG in the pre-test indicators. Specifically, although the mean values of the two groups were different, the *t*-value and *p*-value did not reach the significant level ($p > 0.05$), whether it was the pretest syllable, pretest accent, pretest pronunciation accuracy or pretest total score. This indicates that before the experimental intervention, the two groups of subjects were at a similar level in terms of related abilities or performance.

However, in the post-test, there are significant differences in some indicators between the EG and the CG. Especially in terms of post-test syllables and post-test stress, the average value of the experimental group was significantly higher than that of the control group, and the corresponding t value and p value show that these differences are statistically significant ($p < 0.05$). This shows that the EG has a significant improvement in the mastery of syllables and stress after certain training or intervention, while the CG has no similar progress. However, the difference between the two groups does not reach a significant level in terms of post-test speech accuracy and post-test total score, which may mean that the effect of experimental intervention on speech accuracy and overall performance is not as significant as that of syllables and stress.

In summary, the results of the independent sample t -test show that the intervention measures of the EG have achieved significant results in improving syllables and stress, while the CG has not changed significantly. However, the effect of experimental intervention on speech accuracy and overall performance is not obvious. These results provide us with preliminary information about the effect of experimental intervention, but further research is needed to explore the mechanism and influencing factors behind it.

5.1.2. The Discussion of the Influence of Vocabulary Teaching Classified by Syllable and Stress Based on Syllable and Stress Awareness.

According to the pre-test and post-test results of the EG and the CG, it can be proved that English vocabulary teaching classified by syllables and stress is helpful to improve students' syllable awareness and stress awareness; the improvement of syllable awareness and stress awareness is conducive to the enhancement of phonics. From the post-test results, it can be seen that the students in the EG scored higher and made more significant progress. That is to say, the students in the EG can read words and passages more accurately.

The following is the reason why phonics teaching based on syllable and stress classification can improve syllable awareness and stress awareness more effectively.

According to the pre-test and post-test results of phonics ability, EG made more significant progress than CG after the experiment, and the phonics ability was stronger, and most of EG group students pass the post-test and reach 60 points while the CG students still remains the same point, i.e. 55 points.

First of all, in addition to being familiar with spelling rules, EG students also need to learn to encode and decode words in order to decode words more effectively, and realize that words are composed of syllables and stresses. Therefore, in the process of reading out the words, EG students can effectively read them and improve phonetic accuracy. CG students are familiar with the rules of phonics, but their ability to decode words is weaker than that of EG students, because CG students have weaker syllable and stress awareness.

Secondly, as Wang [20] pointed out, the combination of sound and word form cannot achieve meaning, and isolated sound-form matching is a tedious process for learners. As one of the teaching aids in experimental teaching, the vivid pictures on the word card can show the words and their meanings. As Carl Rogers(1969)' [21] Significant Learning theory says, meaningful learning must combine learning with learners' interests and aspirations, and it is necessary to inspire learners to remember their own experience. In the teaching process of the experimental group, students'

interest in the phonics class is obvious, because the teacher's class style is interesting, and vivid word cards and PPT also stimulate students' interest in learning. With the praise and encouragement of the teachers, the students bravely use the knowledge they have learned to read and decode the words.

Thirdly, Krashen's [7] $i + 1$ language input principle shows that only when the input content is slightly higher than the students' current level, can the students effectively absorb the input information through their efforts. In the Effective Input theory, Krashen believes that language acquisition depends on a large amount of language input, which must be effective. It should have four characteristics: comprehensibility, interest, non-grammatical program arrangement and sufficient input. Therefore, in the experimental teaching of this study, through interesting primary school word cards and PPT, primary school students who have just entered the sixth grade are given a large number of primary school vocabulary, learned words and new words, which is conducive to students' effective absorption through efforts.

Finally, according to Krashen's [17] Affective Filter Hypothesis, a stress-free classroom atmosphere can stimulate students' interest in learning, and an interesting phonics class can eliminate students' anxiety and reduce students' psychological preparedness. Students can master the rules of phonics in a relaxed and pleasant vocabulary teaching atmosphere, which effectively improves students' syllable and stress awareness and is conducive to improving students' phonics ability.

It can be seen that syllable and stress awareness can improve students' interest in English vocabulary learning, which answers the second research question.

5.2. Results and Discussion of the Correlation Between Syllable and Stress Awareness and Phonological Accuracy

In order to explore whether the enhancement of syllable and stress awareness can improve the phonics ability of students with learning difficulties, both groups of students participated in the pre-test of phonics ability set at the beginning of the study. This test requires students to read aloud 76-word passages, and professional teachers score students' syllables, stress, rhythm, phonetic accuracy and intonation. The analysis of the pre-test and post-test is intended to answer the third research question of this study.

5.2.1. Results of the Correlation Between Syllable and Stress Awareness and Phonological Accuracy

Table 3 presents the correlation data between the EG and the CG in the pre-test and post-test to intuitively test the correlation between syllables and stress and speech accuracy.

Table 3. Pearson Correlation Analysis.

	Pre-test Syllables	Pre-test Stress	Pre-test Rhythm	Pre-test Speech Accuracy	Pre-test Intonation
Post-test Syllables	0.950***	0.930***	0.876***	0.657***	0.825***
Post-test Stress	0.903***	0.953***	0.851***	0.547***	0.774***
Post-test Rhythm	0.912***	0.898***	0.972***	0.701***	0.782***
Post-test Speech Accuracy	0.844***	0.796***	0.825***	0.896***	0.875***
Post-test Intonation	0.834***	0.785***	0.747***	0.713***	0.974***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

5.2.2. The Discussion of Correlation Analysis Between Syllable and Stress Awareness and Phonological Accuracy

Through Pearson correlation analysis, the correlation analysis results between post-test syllables and pre-test speech accuracy are significant, showing a significant positive correlation ($r=0.657$, $p=0.000<0.05$). The correlation analysis results between the post-test stress and the pre-test speech accuracy are significant, and there is a significant positive correlation ($r=0.547$, $p=0.000<0.05$). The correlation analysis results between the post-test speech accuracy and the pre-test syllables are significant, and there is a significant positive correlation ($r=0.844$, $p=0.000<0.05$). The correlation analysis results between the post-test speech accuracy and the pre-test stress are significant, and there is a significant positive correlation ($r=0.796$, $p=0.000<0.05$). Therefore, the experimental results show that the experimental group and the control group of speech accuracy and syllables and stress correlation analysis results are very significant.

5.3. Results and Discussion of the Correlation Between Syllable and Stress Awareness and phonics ability

The ability of phonics can be viewed from the aspects of syllable, stress, rhythm, phonetic accuracy and intonation. The pre-test and post-test of the EG and the CG are to test the syllable, stress, rhythm, phonetic accuracy and intonation. It can be seen that the total score of the test can reflect the phonics ability.

5.3.1. Results of Correlation Between Syllable and Stress Awareness and phonics Ability

Table 4. Paired Sample *t* Test of CG.

Paired Number	Item	Mean Value	Standard Deviation	Mean Value Difference	<i>t</i>	<i>p</i>
CG	Pre-test score	52.850	9.343	-2.250	-4.579	0.000***
	Post-test score	55.100	9.267			

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

According to the above table, the paired sample *t* test was performed on the total score of the pre-test and the total score of the post-test. The results showed that the average value of the total score of the pre-test was 52.85, and the standard deviation was 9.343; the average score of the post-test was 55.1, and the standard deviation was 9.267. The average difference between the two groups of data was -2.25; the *t* value is -4.579, and the *p* value is 0.0. It shows that there is a difference between the pre-test total score and the post-test total score data of the CG ($p<0.05$).

Table 5. Paired sample *t* test of EG.

Paired Number	Item	Mean Value	Standard Deviation	Mean Value Difference	<i>t</i>	<i>p</i>
EG	Pre-test score	55.800	11.588	-4.850	-10.162	0.000***
	Post-test score	60.650	12.223			

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

According to the above table, the paired sample *t* test is performed on the total score of the pre-test and the total score of the post-test. The results show that the average value of the total score of the pre-test is 55.8, and the standard deviation is 11.588; the average score of the post-test is 60.65, and the standard deviation is 12.223. The average difference between the two groups of data is -4.85; the *t* value is -10.162, and

the p value is 0.0. It shows that there is a difference between the pre-test total score and the post-test total score data of the EG ($p<0.05$).

5.3.2. The Discussion of Correlation Analysis of Syllable and Stress Awareness and Phonics Ability

In order to investigate the correlation between syllable and stress awareness and phonics ability, correlation analysis can better answer the relationship between phonological awareness and phonics ability. The pre-test and post-test scores of the EG and the CG are analyzed by SPSS 27.0 to answer the fourth research question of this study. The detailed results of the correlation are shown in the following Table 6.

Table 6. Paired Sample t Tests of EG and CG.

Paired Number	Item	Mean Value	Standard Deviation	Mean Value Difference	t	p
EG	Pre-test syllables	11.55	2.743	-1.5	-9.747	0.000* **
	Post-test syllables	13.05	2.645			
EG	Pre-test stress	11.35	2.681	-1.3	-7.935	0.000* **
	Post-test stress	12.65	2.961			
EG	Pre-test speech accuracy	10.6	2.458	-1.35	-5.107	0.000* **
	Post-test speech accuracy	11.95	2.625			
EG	Total score of pretest	55.8	11.588	-4.85	-10.162	0.000* **
	Post-test total score	60.65	12.223			
CG	Pre-test syllables	10.35	2.159	-0.9	-5.107	0.000* **
	Post-test syllables	11.25	1.943			
CG	Pre-test stress	10.4	1.667	-0.2	-1.71	0.104
	Post-test stress	10.6	1.818			
CG	Pre-test speech accuracy	11.3	2.203	-0.55	-2.773	0.012*
	Post-test speech accuracy	11.85	2.39			
CG	Pre-test total score	52.85	9.343	-2.25	-4.579	0.000* **
	Post-test total score	55.1	9.267			
* $p<0.05$ ** $p<0.01$ *** $p<0.001$						

It can be seen from the Table 6 above that the EG and the CG show significant changes in multiple test items. For the EG, whether it is in the pre-test syllable, pre-test stress, pre-test speech accuracy or pre-test total score, the average value is lower than the average of the corresponding items in the post-test. Among them, the mean differences of pretest syllable, pretest stress, pretest speech accuracy and pretest total score were -1.5, -1.3, -1.35 and -4.85, respectively, and the corresponding t value and p value indicated that these changes are statistically significant ($p<0.001$). This shows that after certain intervention or training, the EG has significantly improved in syllables, stress, speech accuracy and total score.

For the CG, although the post-test mean value is higher than the pre-test mean value in most of the test items, the magnitude of the change is relatively small. Among them, only the changes of pre-test syllables, pre-test phonetic accuracy and pre-test total scores reach the statistical significance level ($p < 0.001$, $p < 0.012$ and $p < 0.001$). In terms of pre-test stress, although the average value has increased, the change has not reached a significant level ($p > 0.05$). This shows that the control group has also made progress in some aspects, but the magnitude and significance of its progress are not as good as the EG.

In general, the progress of the EG is more significant. The vocabulary teaching method based on syllable and stress classification has an effective influence on syllable awareness and stress awareness. The enhancement of students' syllable and stress awareness is conducive to improving their phonics ability. It can be seen that syllable and stress awareness are the core of phonics ability.

6. Conclusions

Based on the analysis and discussion of the experimental results, this final conclusion part mainly expounds the main findings, implications, limitations and suggestions for future research.

6.1. Major findings

The purpose of this research is to explore the influence of vocabulary teaching method based on syllable and stress classification on students' syllable awareness and stress awareness, focusing on the influence of syllable and stress awareness on phonics ability and its correlations. Through the analysis of the research results, the main findings of this study are as follows:

First of all, there is a significant positive correlation between syllable and stress awareness and phonics ability. The enhancement of students' syllable and stress awareness is conducive to improving their phonics ability. The vocabulary teaching method based on the classification of syllables and stress is an important method to improve the awareness of syllables and stress, which has an effective impact on syllable awareness and stress awareness. With the improvement of syllable and stress awareness, the vocabulary teaching method based on syllable and stress classification can also effectively improve the phonics ability of primary school students. This helps students to pay attention to the stress of words and realize that words are composed of syllables, and can effectively decode words and read them.

Secondly, syllable and stress awareness can improve students' interest in English vocabulary learning. The students' interest in phonics is obvious because they have learned how to decode the syllables and how to find the stress. In the process of interesting vocabulary teaching, students should not only pay attention to the stress of words, but also learn to divide words into sound parts, which has a very positive impact on students' syllable and stress awareness. Based on the cultivation and enhancement of syllable and stress awareness, with the praise and encouragement of teachers, students are more willing to try phonics, which is conducive to improving their interest in English vocabulary learning.

Thirdly, enhancing the awareness of syllables and stress can improve the phonics ability of students with learning difficulties. In the experimental class, the students with learning difficulties in EG are gradually active, and most of them can clearly feel the interestingness of the syllables and stress of English words. Their awareness of

syllables and stress is cultivated and enhanced, and they are gradually interested in the spelling of English words, which can stimulate their desire to challenge and be able to spell words more accurately in class. Through the data of the pre-test and post-test of the experimental group, it is found that the phonics ability of EG has been significantly improved.

Fourthly, English syllable and stress awareness is the core of phonics to Chinese-speaking young learners. After some interventions or training, the experimental group had a significant improvement in syllables, stress, speech accuracy and total score, and the progress was more significant. The vocabulary teaching method based on syllable and stress classification has an effective influence on syllable awareness and stress awareness. The enhancement of students' syllable and stress awareness is conducive to improving their phonics ability. It can be seen that syllable and stress awareness is the core of phonics ability.

To sum up, there is a significant positive correlation between syllable and stress awareness and phonics ability. The enhancement of students' syllable and stress awareness is conducive to improving phonics ability. Syllable and stress awareness can improve students' interest in English vocabulary learning, so syllable and stress awareness are the core of phonics ability.

6.2. Implications

First of all, Chinese English teachers should pay attention to cultivating students' awareness of syllables and stress. It is very important to develop primary school students' phonological awareness, which is significantly positively correlated with phonics ability. The awareness of initials, vowels and phonemes is closely related to the mastery of the rules of phonics. The ability to add and delete words is the basis for identifying and memorizing new words. However, the awareness of syllable and stress is the core of phonics to Chinese language students.

Secondly, a solid foundation of phonics should be established. As Ding [3] said, for primary school students, the study of phonics should start from the phonics of single letters, then to CVC words, and then to the pronunciation of CVCC, CCVC words and letter combinations. It should be noted that the phonics of single letters is easy to be confused with Chinese *Pinyin*, so English teachers should help students practice effectively.

Finally, teachers should pay attention to the combination of listening and reading in teaching and improve the ability of phonics. The experimental teaching of this study also adopts the combination of listening and reading, that is, the teacher plays the word audio recorded by the professional American teacher to let the students follow. After a period of testing, it was found that the improvement of phonics ability of EG was more significant than that of CG.

6.3. Limitations and Suggestions

In the process of implementing this empirical research, there are still some unavoidable practical deficiencies. The following will explain some limitations of this study and make some suggestions for future empirical experiments.

First of all, this experiment only carries out two weeks of empirical experiments. The time is limited. The cultivation of syllable and stress awareness needs a long-term process, and EG students also need time to adapt to the new teaching method. As

Wang [19] said, reading can affect or have an effect on students' phonics ability for a long time. In this study, the difference between EG and CG did not reach a significant level in terms of post-test speech accuracy and post-test total score, which may mean that the effect of experimental intervention on speech accuracy and overall performance was not as significant as that of syllables and stress. Short text reading time may be an influencing factor. Therefore, further research can extend the experimental period. If the experiment can last longer, the influence of syllable and stress awareness on phonics ability may be different, and the improvement of students' syllable awareness, stress awareness and phonics ability may be more significant.

Secondly, the subjects of this research are limited. Each group of 20 students is a small group of subjects in statistics, which will lead to sampling errors, make the survey results different from the actual situation, and affect the effect of this study. In addition, in this experimental class, some students did not listen carefully, which may also affect the results of this study. Therefore, future research can choose a larger sample group, pay attention to each student's class status and correct it in time, and try to ensure that the experimental students develop syllable and stress awareness.

Thirdly, this study only uses pre-test and post-test to measure the syllable and stress awareness of primary school students. Students need to complete the test in a limited time, and the measurement is limited to assessing students' ability. The lack of qualitative data collection affects the validity of this study. Interviews of the students are strongly recommended in the future studies. In addition, although the pre-test and post-test of this experimental study are scored by professional professors, the test results are not objective enough. After all, it is manually scored, so the data is more subjective. If more multiple measurements can be used in this experiment, or related test software can be developed and used for testing, the accuracy and authenticity of the results will be improved. Therefore, it is suggested to use more multiple measurements in future research, or to develop and use relevant test software for testing, such as using Praat to test students' stress pitch of phonics ability.

Finally, although the vocabulary teaching in this study is interesting in the classroom and the students are more cooperative, it does not combine the text, lacks the thematic meaning, and is still relatively monotonous. English teachers should pay attention to the combination of discourse, such as picture books, design interesting and practical phonics vocabulary lessons, so that students can cultivate syllable and stress awareness in the discourse, which is more conducive to their learning and mastering vocabulary, rather than learning vocabulary in a boring way, so as to make this method effective for a long time and give students sustainable development.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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