

The Use of Internet Technology in Phonics Instruction

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Abstract:

The continuous development of Internet technology brings new possibilities for phonics teaching. Through observation and a large number of literature research, this paper discusses the development status of phonics education, summarizes the advantages of phonics teaching under Internet technology, and puts forward four ways of combination of Internet technology and phonics teaching, which provides more development directions for phonics education in the future.

Keywords:

Phonics, The Internet, English Teaching, Internet-Assisted Teaching, Wisdom Classroom

1. Introduction

In the field of phonetic teaching, according to literature research, we found that previous studies on phonetic teaching, such as Wang Yueyue 2017 [1], Zhuang Bei 2016 [2], Wang Songming 2020 [3], etc., have carried out a detailed analysis of the Phonics to stimulate students' interest in learning and carry out diversified phonetic classroom teaching activities. However, how the Phonics can be more organically integrated into the classroom, and whether the ability of children to read words when they see them and write words when they hear them has been improved, remains to be further verified. In order to make students' phonetic teaching more realistic and effective, we conducted an in-depth study on the application of Phonics in teaching and learning based on existing technical means, and combined with today's Internet tools for Phonics teaching method.

2. Current status of natural spelling instruction

According to the results of the author's actual observation and inspection of primary and secondary school phonics teaching classrooms and questionnaire surveys, the main problems of current Phonics education are as follows:

1) Most teachers still treat the teaching of Phonics as a supplement to the teaching of phonetic symbols, rather than an independent part.

2) Most teachers have deficiencies in their knowledge of Phonics and lack a clear and accurate understanding of the content of Phonics instruction.

3) In terms of teaching mode, even if some teachers use the teaching method of Phonics, they only instill students with phonetic knowledge by a single means. However, for children who are just starting to learn English, this approach can stifle children's motivation and initiative to learn the language, which leads to poor and inefficient learning.

4) From the institutional point of view, the system of teaching Phonics today is not perfect and the quality is not high. According to the author's interview, the teacher of the fourth middle school in a city in Hubei Province described that the course of phonetic pronunciation is not very important, and only 10 minutes of phonetic teaching are available in a 45-minute class. And due to the demand of examinations, teachers will shorten the time of phonetics teaching and let students memorize more words and learn more grammar knowledge. This also reflects that English phonics education in China is not valued and the quality of teaching is not high. Teachers generally pay more attention to written test scores and ignore children's phonics and interpersonal skills.

3. Advantages of Internet-based phonics teaching

This is the age of the internet. The three-year epidemic situation has further polished and refined the Internet teaching mode, from simple video recordings with low image quality to live broadcasts with real-time captions and interactive question answering features. This mode has a more complete function and a more human design, which is more conducive to student learning and absorbing knowledge, as well as more conducive to teacher-student communication and interaction, thus facilitating teaching and learning. Overall, the advantages of phonics education under internet technology are as follows:

1) Phonics education is easy to motivate that engages students, it has more visual and auditory dual stimuli in the presentation mode, and it also creates effective memory points;

2) Phonics education enables effective knowledge input and testing, completing the cycle of knowledge learning and therefore ensuring continuity of instruction;

3) Adapting to the rhythms of contemporary life, breaking through the distance between time and space, and realizing learning anywhere, anytime;

4) To increase the popularity of Phonics, let parents complete the study of Phonics with enlightening objects from top to bottom.

This article will describe the advantages of Phonics education under the Internet technology from the aspects of multimedia information teaching technology used in the classroom and various social media platforms used outside the classroom (including specialized spelling teaching software).

3.1. Remarkable advantages of phonics education based on multi-media information teaching techniques in the classroom

Multimedia information technology in the classroom plays an irreplaceable role in the education of English-language literacy and spelling. Multimedia information teaching technology can condense traditional classroom teaching content that requires

significant time and human input into video or other interactive forms that are easy for teachers to display, easy for students to understand and accept, and output the essence in a short amount of time. Combined with practical phonics-inspired teaching, exemplified by common instructional videos, its mechanism of operation can be understood as follows.

Producers will make the specific content (such as the letter ABCD) into the enlightenment object easy to understand the audio video or pictures, for example, the letter A mimics into a pencil, letter O mimics into a ball, the "sound" and "shape" of the letter fusion, give full play to the implied rules of phonics, with interesting animation image to explain. The student is instructed in a series of exercises in listening, speaking, reading, writing, and in giving visual and auditory stimulus effects to the object of enlightenment. At the same time, in the form of animation, small games and other forms, strengthen the interaction between teachers and students, stimulate students' interest in learning, create multiple effective memory points and form a strong first memory; The teacher will give further detailed explanations, either in the traditional mode or by playing videos made for more specific content to enhance secondary memory of the enlightenment object. Finally, the form of assignment of review tasks is designed to constantly strengthen the recall of knowledge, thus realizing the consolidation of knowledge memory, and finally the complete understanding of knowledge, thus enabling enlightened people to make better use of knowledge.

3.2. Significant advantages of phonics education under that technology of the Internet outside the classroom

Another application scenario of internet technology is that various social media platforms and special spelling teaching software used outside the classroom can also achieve effective teaching of knowledge. This article will mainly analyze the advantages of phonetic education on social media platforms.

Currently, the most effective mechanism for information dissemination is short videos, which are inseparable from the changing rhythm of contemporary people's lives and work. From text to image to voice and video, the pace of contemporary people's lives is getting faster and the forms of communication are becoming more abundant. At the same time, the video duration is required to be shorter. Short videos adapted to this fast-paced life emerge as the times demand, quickly spreading effective information in a relatively short time. According to reports from major platforms, the optimal length for short knowledge videos is less than 5 minutes. Short videos from this time period generally have higher video completion rates and greater exposure, and therefore better promotional results.

Extracurricular phonics education needs to follow the laws of phonics as well. The phonics teaching method, that is combining phonics with phonics, can better enable enlightenment objects to understand the meaning of words, understand English pronunciation skills, understand American and American culture, get used to the way of thinking of native English speakers, read and write words, and bring practical benefits expected by parents. To pay attention to the guidance of parents, to meet the parents' expectations for children to master fluent oral English and advanced ability (such as thinking mode).

Therefore, phonics education outside the classroom needs to capture the video duration, achieve the output of expertise, allow parents to see the practical effects and

benefits, and stimulate interest in English learning among the enlightened. However, unidirectional video output inevitably suffers from omissions, and when necessary, teaching software can be used to enable timely and efficient feedback to the enlightening object, correction and analysis, while ensuring continuity and completeness of teaching.

4. Forms of Integration of Internet Technology and Phonics

4.1. Online interactive teaching platform for Phonics

Online interactive teaching platform is a set of online teaching platform specially designed to strengthen online teaching to assist classroom teaching and provide interactive communication. It aims to build a digital and intelligent teaching environment, realizing a teacher-led, student-led, hybrid teaching environment that organically combines traditional face-to-face teaching and online teaching activities. Because of its flexible, convenient and efficient teaching mode, it is favored by more and more educators and students.

For teachers, the online interactive teaching platform helps teachers integrate lesson preparation resources, realize interactive learning for students, and achieve efficient classroom management and post-class monitoring.

1) Integrate lesson planning resources

In addition to creating their own topics, teachers can also import other teachers' quality topics for lesson planning, thus accumulating and exchanging topics, and enriching students' learning materials.

2) Realize students' interactive learning

In phonics teaching, language knowledge and language ability, form and meaning, accuracy and fluency should be handled in a coordinated manner and not be neglected. "Parts are not equal to the whole, and the whole is greater than the sum of its parts." Therefore, while learning language fragments, we also need to strengthen listening and reading activities at the level of vocabulary to sentence and then to discourse. Let students apply what they learn, learn and consolidate phonological knowledge and phonological skills in application, and develop their overall language quality. The online teaching platform not only helps teachers to teach from words to sentences and parts of speech in a more articulated and coherent way, but also helps to create a certain language environment where students can learn interactively in context.

3) Efficient classroom management and post-class monitoring

Phonics teaching requires a combination of imitation and practice. Imitation is an important way for students to learn phonetics, but in the process of traditional phonetics teaching, teachers and students have a one-to-many relationship, so most of the time teachers have no way to really pay attention to each student's phonetics situation. The online interactive teaching platform can not only record the teacher's demonstration pronunciation and explanation of pronunciation rules, but also record each student's speech practice. It allows students to practice a lot on the basis of seeing clearly, so that they can master the pronunciation rules; it allows teachers to better understand the real phonetic situation of each student.

For students, the online interactive teaching platform for Phonics helps to stimulate students' interest in phonics learning, enhance their absorption and understanding of knowledge, and truly achieve independent and collaborative learning.

1) Stimulate interest and motivation

The online interactive teaching platform stimulates students' interest in learning through interactivity, thus enhancing the motivation of phonics learning. Interactivity is an important concept in modern education technology, which can make students participate in learning more actively and change the situation of teacher-led and passive learning in phonics teaching classroom in the past, so that students' learning mindset develops from "I want to learn" to "I want to learn". This will make students' learning mindset develop from "I want to learn" to "I want to learn".

2) Enhance the absorption and understanding of knowledge

Secondly, the online interactive teaching platform can show students information in the form of multimedia, thus enhancing students' absorption and understanding of knowledge. According to the "multimedia principle" proposed by American educational researchers Richard E. Clark and Robert Kozma, presenting information in multiple media forms can promote learners' absorption and understanding of knowledge. The online interactive teaching platform can provide students with Phonics resources (such as text, images, audio, teaching videos, etc.), which can present the Phonics teaching content more vividly and help students understand what they have learned; at the same time, it can combine multimedia teaching resources and design various interactive activities (such as quizzes and interactive games, etc.) to increase learners' participation and interest in learning, thus promoting the mastery of knowledge.

3) Realize independent and collaborative learning

The online interactive teaching platform can provide students with Phonics learning resources and learning support anytime and anywhere, and students can learn according to their own time and needs, which greatly improves the autonomy of learning. More importantly, the format of the online interactive teaching platform helps students communicate with each other. Students can discuss and communicate online, send messages to each other, share and send files, evaluate each other's work and other interactive forms, making each group member fully participate and truly achieve cooperative learning in groups.

4.2 Phonics Online Gaming Platform

Natural phonics games and board games are educational applications for children to learn English pronunciation. Immersive reading allows children to read the most authentic English. Combined with internet technology and AI, it provides a suitable enlightenment education system for second language acquisition children, helping them establish a cross-cultural global vision and become world citizens.

The following are the integration of the game platform and natural phonics:

1) Visually, design pictures to help children understand more intuitively.

In the natural phonics game and board game, starting from the twenty-six letters, the pronunciation of A, app, cat, apple, etc. is presented with animated pictures, repeating continuously, and syllables go from short to long, progressively. According to research, using this method in a kindergarten in Beijing, children were able to

connect English with practical scenarios. The design of animations that catered to their age group interests made it easier for them to understand. When teachers pointed out the corresponding picture, children were able to recognize the word "apple" and spell it correctly.

2) Audibly, design music to make learning fun and effective.

The gaming platform has designed 26 letter songs, for example, some lyrics involve the sound of "e", allowing children to read bed, bet, dest, get, hen, etc. According to the feedback from parents of a kindergarten in Haidian District, Beijing, children learn faster through this gaming method compared to rote memorization. Evidence shows that a Hungarian medical doctor invented a lightning learning method by reciting foreign words or phrases every eight minutes under the accompaniment of a 4/4 classical music rhythm. The pace must be accurate and coordinated with the music so that learners can relax and maintain special agility in their minds. The consolidation of memory can increase from 25% to 78%, and those who benefit from this method can remember 1000 French words per day. Similarly, the natural phonics nursery rhymes designed by the gaming platform allow children to memorize while listening, aiding in memory retention.

3) Intelligent online evaluation and scoring make children's pronunciation more standard.

The gaming platform evaluates and scores children's pronunciation through online assessments and real-time scoring. Children speak into the platform's evaluation microphone, and the system gives scores and indicates pronunciation problems using examples such as "apple" and "bar", where the two "a" are pronounced differently. The system corrects the pronunciation and encourages practice while showing visual aids to enhance memory retention. According to previous feedback from teachers, children who received feedback using this platform had standard and melodious pronunciation.

4.3. Phonics education Smart Classroom

Smart Classroom is the embodiment of a typical smart learning environment. It is a new classroom built with the help of Internet of Things technology, cloud computing technology and intelligent technology. It is composed of tangible physical space and intangible digital space. Its remarkable advantages are as follows:

1) Through all kinds of intelligent equipment, it is convenient to obtain learning resources, assist in the presentation of teaching contents and promote the development of classroom interaction;

2) Provide humanized and intelligent interactive space for teaching activities, improve the relationship between people and learning environment, and promote personalized learning, open learning and ubiquitous learning.

Smart Classroom mainly includes teaching system, LED display system and other nine systems, this paper will focus on the teaching system and the organic combination of Phonics teaching method.

In this paper, teaching system mainly refers to the teaching tablet. Teaching tablet should be unified by the school to develop appropriate rules of use, the following will be discussed by the interpretation of the specific advantages of teaching tablet to

explain how to combine the advantages of teaching tablet with the Phonics education organically:

The teaching tablet is more conducive to the presentation of teaching content.

The teaching tablet can create suitable situations therefore assist the teaching of Phonics. When teachers tell specific words, relevant pictures or videos are displayed on the tablet, so that students can form specific memories of words or texts. Compared with simple word interpretation or text connotation, the display mode of pictures or audio and video can form double stimulation of vision and hearing, which is easier to create effective memory points.

The teaching tablet is more conducive to the acquisition of learning resources.

In the traditional classroom, students are always playing the role of passive recipients, and the limited access time and methods are not conducive to the acquisition of students' learning resources. After the equipment of the teaching tablet, students can solve existing problems in real time by using network resources without disturbing the normal teaching progress. For example, after the teacher explains the topic of environmental protection, he or she will always leave time for students to reflect on themselves or discuss collectively. At this time, students can independently use the teaching tablet to search for relevant difficult points, thus realize the rational utilization of resources;

The teaching tablet is more conducive to the development of interactive activities.

Students' teaching tablet should be connected to the teacher's teaching end, so that the teacher can receive real-time feedback to the teaching content of the students. At the same time, the teacher's teaching end can initiate interaction and further analyze the interaction data. For instance, when explaining the Phonics education discourse, the students can mark the existing problems in real time on the teaching tablet. The background will uniformly collect and feed back to the teacher's teaching end in the first time so that the teacher can further explain and analyze. This feedback mode is shorter than the traditional manual statistics after class, the content is more specific, the presentation mode is more intuitive, and thus it is more efficient. Moreover, students' problems can be recorded to form personalized analysis and feedback to teachers on a regular basis to realize customized teaching. Teachers can also take the initiative to initiate activities, such as matching words with specific pictures, splitting words into syllables or phonemes, teaching the classification and comparison of words, helping students distinguish sound words (such as pet and bet) and shape words (such as sign and single), understanding complex words, and training students' phonics and memory ability. To increase students' participation and interest in learning, or release exercises, through the background statistics of error rate and error distribution, timely understand students' grasp of the situation. Compared with traditional classroom, Smart Classroom can implement everyone's participation and win higher popularity. At the same time, it is more conducive for teachers to master students' learning situation, carry out more interactive activities, and realize timely grasp of teaching progress and flexibility of teaching content.

However, there are also some problems in the Smart Classroom. Children's poor self-control in the enlightenment stage and also some emergencies (power failure) may have adverse effects on the implementation of Smart Classroom, but they are still under control. As long as teachers supervise in time and make backup plans, there will be no greater threat.

To sum up, the of the teaching tablet as the representative of the Smart Classroom can be presented through a wealth of content and efficient feedback mechanism to create specific situations for teaching activities to provide a humanized, intelligent interactive space, improve the relationship between people and the learning environment, to promote personalized learning, open learning, to achieve efficient teaching of Phonics education.

4.4. Phonics Teaching Apps

Teaching apps have become an important learning tool for many students and teachers. Duolingo, for example, is one of the most popular language learning apps in the world, with about 350 million users, incorporating Phonics concepts and Internet technology. With this as the background, this section will discuss the practical application of Phonics applications.

1) Phonics teaching apps can be developed based on Phonics theory, which makes Phonics learning process more in line with teaching and learning rules.

Phonics theory emphasizes the relationship between sounds and their corresponding letters, i.e., the sound-word relationship is used to understand how words are formed and spelled. Apps can use the concept of sound-word relationships in a gamified format to help students make connections between the sounds and letters of words through speech recognition and natural language processing technology. For example, when students practice spelling, they need to listen to the sound of an English word and then choose the correct spelling that corresponds to it. If the student makes an incorrect choice, the application can give timely feedback, pointing out the mistake the student made and providing the correct spelling. This timely feedback helps students to correct their mistakes, avoid developing false memories during the learning process, and deepen their understanding of the sounds of words and the connections between letters.

2) Phonics teaching apps can provide students with personalized learning plans and instant feedback through Internet technology, while making learning data available to teachers, allowing an organic combination of online independent learning and offline classroom learning.

First, students can choose the appropriate learning mode according to their language level and learning goals, while the app automatically adjusts the difficulty level according to students' performance and provides students with appropriate review opportunities during the learning process to ensure that students can effectively master Phonics. The app provides progress tracking so that students can view their recent performance and understand their progress and performance. By analyzing and organizing past learning data, students can get a clear picture of their learning, find their weaknesses and improve. The application can provide teachers with a teacher version of the application, including class management, student data management, homework management and grade management, enabling teachers to better track students' learning progress and knowledge mastery, providing powerful support for teachers' offline classroom teaching.

3) The Phonics teaching app enhances students' engagement and interest in learning through social interaction and other means.

Through competitions and rankings among students and comparisons with other students using the app, it enhances students' engagement and interest in learning and motivates them to study harder.

In summary, Phonics teaching apps are an innovative way to combine Internet technology and Phonics. They can help students improve their Phonics learning process by providing customized learning experiences, instant feedback and progress tracking, and can also be integrated with offline classroom instruction to provide students with more comprehensive and efficient instruction with Phonics. In practice, Phonics teaching applications have been widely used and have achieved good results. With the continuous development and popularity of Internet technology, spelling apps will be more widely used and noticed.

5. Conclusions

In summary, Phonics has obvious advantages in the context of Internet technology; Phonics and Internet technology can produce four possible forms of combination, such as Internet teaching platform, Internet game platform, Phonics smart classroom, and Phonics teaching application, which include a whole set of teaching and learning process before, during, and after class, in line with the law of learning and teaching; it can realize the teaching mode of “online + offline” and create a harmonious and efficient phonics teaching mode; it can increase the richness and diversity of English teaching links, improve the teaching results of English teaching, and provide a guarantee for the construction of efficient English classroom and phonics teaching.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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References

- [1] Wang, Y.Y. Using natural spelling method to promote primary school English phonetic teaching. *Basic Education Forum (Comprehensive Edition)*, 2017, 010.
- [2] Zhuang, B. Exploring the application of natural spelling method in primary school English phonetic teaching. *Curriculum Education Research*, 2016, 026.
- [3] Wang, S.M. Research on the effective application of natural spelling method in primary school English phonetic teaching. *Reading and Writing (Teacher Edition)*. 2020, 004.
- [4] Zhong, J.L. Exploring the teaching mode of English natural spelling in elementary school under the mode of “online+offline” of mobile Internet. *China New Communication*, 2021, 23(19), 206-207.
- [5] Xiao, X.Y. Practical exploration of natural spelling method in teaching English vocabulary in elementary school. *Parent*, 2019, 301(15), 131-132.

- [6] Chi, N. Exploration of the integration of natural spelling into the teaching mode of PEP elementary school English teaching materials. *Tianjin Education*, 2019, 576(15), 45-46.
- [7] Zhang, C. Design and practice of Internet-based teaching model. *Integrated Circuit Applications*, 2023, 40(02), 346-347, DOI: 10.19339/j.issn.1674-2583.2023.02.151.



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