The current situation of English teaching in primary schools of China and application research of SPOC-based teaching model

Lu Zhao[1], *Fei* Yu[2], and *Lanhui* Jiang[1*]

[1]Zhongwu Primary School, 518128 Bao'an District, Shenzhen, China
[2]School of Electronic and Communication Engineering, SZPT, 518055 Shenzhen, China

Abstract. With modern information technology widely applied to school teaching in all aspects, blended teaching based on SPOC is increasingly popular with colleges and universities. However, it's still rare to see the applied research into it for English teaching in primary schools. In order to explore the application of SPOC in English teaching of primary schools, this paper analyzed the current situation of English teaching in primary schools in China in detail, and then proposed a blended teaching model based on the SPOC platforms of Cloud Class and 17zuoye.com. We also conducted an experiment that lasts about one year by tracking and recording the performance of two groups of classes in Zhongwu Primary School with an experimental class and a control class in each group. After analyzing the experimental data, we found that the SPOC-based teaching model proposed in this paper can achieve good practical results, and can be applied and promoted for future teaching in other schools.

1 Introduction

With the rapid development of modern information technology, SPOC (Small Private Online Courses), as a new teaching form assisted by information technology, is widely used in more and more colleges and universities, and achievs good results [1-2].

SPOC provides a powerful impetus for the reform of education, and during the teaching process, a teacher needs to be more focused on the difficulties and key points of the course in a flipped classroom [3-4]. In contrast, MOOC (Massive Open Online course) is an online course aimed at unlimited participation and open access via the web [5].SPOC is even better than MOOC since it can overcome the defects of the later one. MOOC can't meet different needs of students with uneven learning capacities and has a low examination pass rate. Therefore, SPOC is widely recognized and applied in the teaching process of private courses in colleges and universities [6-7]. Although the significance of SPOC for teaching is widely recognized, there are few studies on the model of applying it to the teaching in primary and secondary schools [8]. Li Yujia, a teacher from Kangyouwei Memorial Primary School in Liwan District, Guangzhou, studied the SPOC-based teaching practice with information technology in primary schools [9]. Huang Difei, a teacher from the School of Education Science of Liaocheng University, made a theoretical study on the application of SPOC

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* Corresponding author: 563061591@qq.com

teaching model in primary school projects [10]. However, it's still rare to see reports on the application research of SPOC models for English teaching in primary schools. In recent years, in the context of the COVID-19 epidemic, online and offline blended teaching has attracted more and more attention in primary and secondary schools [11]. To integrate online and offline teaching organically and efficiently is a major issue and challenge faced by teachers in primary and secondary schools [12-13]. In view of the above problems, it is of great practical significance to put forward a SPOC-based teaching model suitable for English teaching in primary schools and to apply it to practice after studying the current situation of English teaching in primary schools.

2 Analysis of the current situation of English teaching in primary schools

2.1 Analysis of pupils of English learning in primary schools

2.1.1 Why pupils learn English or not

Although pupils' English learning performance can be improved by strengthening their external motivation through such ways as encouraging and praising pupils as frequently as possible, increasing interesting classroom activities, and giving them material rewards. However, it is far from enough to rely on external motivation only to keep pupils in a good state of English learning, it is also necessary to improve their interest as well. Interest is not only one of the key factors but also an important internal motivation in learning English well.

Through observation and questionnaire survey on 373 pupils in Grade 5 and Grade 6 of Zhongwu Primary School, we have found that only 56 pupils are interested in English learning and can take the initiative to learn English, accounting for 15.0% of the 373 pupils; 74 pupils learn English because they like their teachers' teaching styles or classroom activities, accounting for 19.8%; 205 pupils learn English because they are afraid of being published by teachers if they don't do that, accounting for 54.98%; There are 38 pupils who are not interested in English learning at all, accounting for 10.2%. Through the analysis of the survey results, we have found that lack of interest and lack of internal motivation are the main reasons for ineffective or low-effective teaching of teachers and poor performance of pupils' learning.

2.1.2 Major challenges of pupils in English learning

Based on a questionnaire survey of 189 pupils in two experimental classes and two control classes in Grade 5 and Grade 6 of Zhongwu Primary School, it has been found that 40 pupils believe that the largest challenge in English learning is to remember the words, accounting for 21.1%; 39 pupils think that it's difficult for them to recall what the teachers have taught in class after they return home, so they are unable to do exercises and they think that is the largest challenge for them, accounting for 20.6%; 45 pupils think that lack of appropriate English learning materials after class is the largest obstacle for them, accounting for 23.8%; 37 pupils think that the main difficulty is that English grammar learning is so boring and they just can't understand it, accounting for 19.6%; And 8 pupils say they are completely at a loss in English classes, accounting for 4.2%; Only 21pupils think English learning is easy and they like English, accounting for 11.1% .

2.2 Current models adopted for English teaching in primary schools

With the deepening of English curriculum reform, English teachers' ideas are changed, which leads to the change of English teaching models accordingly. Especially the English

Curriculum Standards (2022) has raised more requirements for English teachers, which has also promoted the transformation of English teaching mode from focusing on knowledge of language to focusing on content, and increased the efforts to cultivate pupils' cultural literacy.

Through observation and investigation methods, we have studied the classroom teaching modes of 11 English teachers in Zhongwu Primary School. It has been found that four of them have a humorous teaching style, and they pay more attention to the language content rather than the knowledge on language itself during their teaching, and pay more attention to the cultivation of pupils' cultural literacy; there are five teachers who keep strict teaching styles, pay more attention to teaching the knowledge of language, and ignore the values of cultivating language content and cultural literacy; and two other teachers insist on following the outdated, mechanical and spoon feeding teaching mode. After analyzing the survey results, we have found that although more and more English teachers in Zhongwu Primary School have been using games, songs, and other activities in English classes to add zest to the classroom and attract pupils' attention, it is difficult to pay equal attention to the mastery of pupils' knowledge of language. Finally, pupils' foundation of English learning becomes week and insufficient.

3 Design of SPOC-based model for English teaching in primary schools

We have designed a teaching model that combines SPOC and flipped classroom, including online SPOC teaching and offline teaching with flipped classroom. Online SPOC teaching consists of three parts: preparation, SPOC teaching and online interactions between teachers and pupils. The online platforms of Cloud Class of Mosoink and 17zuoye presented by 17EdTech have been adopted for SPOC teaching. Meanwhile, we make use of social platforms such as WeChat and QQ to establish groups of parents to have further communication and discussion with pupils and parents. The online SPOC teaching mode is as shown in Figure 1.
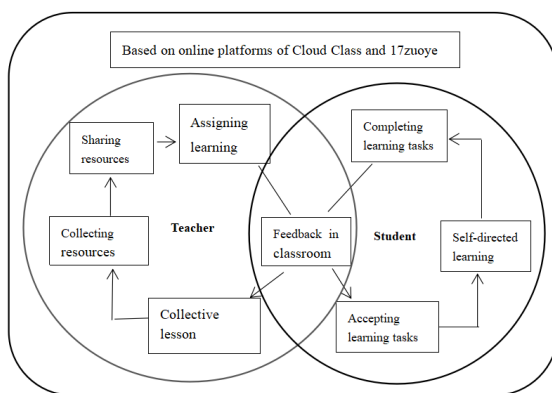

Fig. 1. SPOC teaching mode based on online platforms.

The preparation of online teaching mainly consists of two parts, namely, collective lesson preparation and collecting resources. Firstly, the teachers involved in the project prepare lessons collectively according to the content of offline teaching, and discuss what needs to be included in SPOC teaching, including the overall teaching goals of each unit, the goals of each lesson, the key and difficult points of teaching, teaching content, and teaching activities. Secondly, all the teachers in the program prepare the resources required for SPOC teaching according to the assignments divided among them; the resources include videos, audios,

picture books to be dubbed, files for learning guidance and other resources related to the teaching content.

Online SPOC teaching includes two parts: teachers share teaching resources and assign learning tasks, and pupils accept and complete learning tasks. Teachers assign learning tasks and share teaching videos on the Cloud Class according to teaching objectives, key and difficult points, and teaching activities, etc.. Most of the videos focus on culture extension related to the offline teaching, songs, grammar teaching, and teaching videos matching with the classroom teaching, etc. According to the learning tasks, pupils reflect on their own deficiencies in English learning, and select appropriate learning resources for independent learning to complete the learning tasks. SPOC teaching is not only the supplement and extension of classroom teaching, but also a major way to improve pupils' interest in English learning and help pupils check for their deficiencies and make up for their deficiencies accordingly.

After the SPOC teaching, teachers can communicate with pupils online through Cloud Class, WeChat group, QQ group and other social platforms to help pupils solve problems timely according to their performance in completing assignments and the problems they raise while they are completing learning tasks.

With the help of SPOC online teaching, pupils can make good use of their spare time and odd moments to learn online through SPOC to consolidate new knowledge learned in the classroom, expand their cultural vision, cultivate their interest in learning English, practice speaking, and prepare for new classes, so that in the offline flipped classroom, teachers can guide pupils more easily. It can help to transform classroom teaching really from focusing on knowledge of language to teaching language content and paying more attention to pupils' emotion, attitude, and values, making offline teaching more efficient and achieving better results with fewer efforts.

Offline flipped classroom and SPOC teaching complement each other, including presentation and report of pupils before class, teachers' questions, and pupil-centered classroom teaching. The first three minutes of each class is given to pupils who will make presentations and report what they learn from SPOC. Pupils can show what they learn through PPT-aided presentations, speeches, picture books reading, song performance and other ways. Teachers ask questions according to the presentations of the pupils to inspire pupils to ask questions and guide pupils to new classes. They also give detailed explanation of key and difficult points to help pupils to master the teaching content more easily.

The implementation of flipped class needs to follow the principle of pupil-centered teaching, guide pupils to adjust their learning methods, and improve their ability of autonomous learning and cooperative learning. We should help pupils learn to find and solve problems by themselves to cultivate their abilities for lifelong learning. We can promote pupils' independent inquiry through such forms as situational learning, performance, self-made stories, as well as group cooperation, inter-group competition and other forms. Finally, targeted tests and evaluation are conducted to check pupils' learning results. And teachers discuss the SPOC teaching activities and tasks with other teachers of the same grade or the same teaching research group after class, which complete the teaching model that combines SPOC and flipped classroom.

4 Application of the SPOC-based teaching model and analysis of teaching effects

4.1 Selection of study subjects

Four classes in Zhongwu Primary School were selected as subjects of our study. Among them, 44 pupils (ratio of boys to girls: 52.3 to 47.7) from Class 5, Grade 6 taught by Zhao Lu were

randomly selected as the experimental class and 45 pupils (ratio of boys to girls: 51.1 to 48.9) from Class 4, Grade 6 as the control class, and they make Group 1; Group 2 consists of 50 pupils (ratio of boys to girls: 56 to 44) from Class 3, Grade 5 taught by Zhang Jinmei as the experimental class and 50 pupils (ratio of boys to girls: 54 to 46)from Class 2, Grade 5 as the control class. The performance of the above four classes have been tracked and recorded during the 2020-2021 academic year to observe teaching effects of SPOC-based blended teaching model in English teaching in the upper grades of primary schools. The experimental classes adopted the new model, while the control class adopted the traditional mode to organize teaching. And all the pupils in the experimental classes and the control classes were of about the same academic scores before the experiment, and there was no significant difference in learning ability and interest. According to the previous English and science scores, the English level and science level of the experimental classes and the control classes were basically the same, meeting the research requirements.

4.2 Record and analysis of experimental results

In this experiment, we chose 4 class randomly to avoid the influence from other variables, and we only set the usage of SPOC as the controllable variable. Having tracked and recorded the teaching practice and pupils' performance for one academic year, we have obtained detailed records of periodic evaluation results and class participation of the pupils in the experimental classes and the control classes. The performance record form is as shown in Table 1.

Table 1. Academic performance of experimental classes and control classes.

CLASSES IN GRADE SIX

CLASS	MIDTERM SCORE	FINAL EXAM SCORE	AVERAGE DEVIATION	GROUP	TEACHER
CLASS 4, GRADE 6 (CONTROL CLASS) (SEMESTER 1)	80.71	85.00	-2.60，0.80	Group 1	Zhao Lu
CLASS 5, GRADE 6 (EXPERIMENTAL CLASS) (SEMESTER 1)	83.44	91.40	0.13，5.60	Group 1	Zhao Lu
CLASS 4, GRADE 6 (CONTROL CLASS) (SEMESTER 2)	87.97	Unified examination in the district 85.87	-0.86，0.08	Group 1	Zhao Lu
CLASS 5, GRADE 6 (EXPERIMENTAL CLASS) (SEMESTER 2)	92.40	Unified examination in the district 93.13	3.57，3.48	Group 1	Zhao Lu

CLASSES IN GRADE FIVE

CLASS	MIDTERM SCORE	FINAL EXAM SCORE	AVERAGE DEVIATION	GROUP	TEACHER
CLASS 2, GRADE 5 (CONTROL CLASS) (SEMESTER 1)	89.83	UNIFIED EXAMINATION IN THE DISTRICT 88.74	0.46，-0.18	GROUP 2	ZHANG JINMEI
CLASS 3, GRADE 5 (EXPERIMENTAL CLASS) (SEMESTER 1)	91.57	UNIFIED EXAMINATION IN THE DISTRICT 90.26	2.20，1.34	GROUP 2	ZHANG JINMEI
CLASS 2, GRADE 5 (CONTROL CLASS) (SEMESTER 2)	88.40	82.80	-1.02，-1.93	GROUP 2	ZHANG JINMEI
CLASS 3, GRADE 5 (EXPERIMENTAL CLASS) (SEMESTER 2)	92.35	88.58	2.93，3.85	GROUP 2	ZHANG JINMEI

After analyzing the above data, it has been found that the gap between the average score of the pupils in the experimental classes to which SPOC-based blended teaching model was applied and that of the pupils in the control classes is gradually increasing. The average scores of the experimental classes in the first group have increased significantly and the number of

top pupils in the experimental class has increased significantly too. However, the underachieving pupils haven't made obvious progress.

We have observed two English teachers who taught the same content in an experimental class and a control class respectively, and recorded the pupils' participation in the class and their learning effects. After analyzing the recorded data, it has been found that the total number of volunteers to answer questions in the experimental class, the frequency of hand-raising by a single pupil and the number of pupils participating in dialogue practice are all significantly higher than those in the control class. There is no significant difference in the number of group cooperation presentations between the experimental class and the control class. It shows that pupils who study under the SPOC-based blended teaching model are more confident and showing more interest in English lessons than those who study under the traditional teaching model.

4.3 Analysis of questionnaire results

After tracking and recording the subjects for one year, another questionnaire was given to them at the end of the second semester of the 2020-2021 academic year. Through SPOC learning with 17zuoye, the number of pupils who thought English words were difficult to remember decreased from 40 to 26; Through the SPOC- assisted learning with Cloud Class, the number of pupils who think that what they learn in English classes is easy to forget after going home has decreased from 39 to 27; the number of pupils who think that they lack appropriate English learning materials at home has reduced from 45 to 28; the number of pupils who still think English learning is boring and unintelligible drops to 10; the number of pupils who think English is interesting and have become increasingly interested in English has increased to 98. The results show that SPOC-based blended teaching can improve pupils' interest in English learning, and it is of practical significance as a supplement to classroom teaching.

5 Conclusions

Based on the analysis of the current situation of English teaching in primary schools in China, this paper proposes a SPOC-based English teaching model for primary schools, and it has been applied to some pupils in Shenzhen Zhongwu Primary School as an experiment. After comparing and analyzing the data of the experimental classes and control classes, it has been found that the new SPOC-based blended teaching model can be complementary to the offline English teaching in primary schools, and it is very helpful to add zest to pupils' English learning and improve their interest. It is especially useful for top students and students with weak knowledge base.

However, SPOC-based blended teaching also has some limitations. For example, parents' support is necessary, and it can be quite complicated to use the software for SOPC. In addition, students' autonomous learning lacks effective supervision. How to overcome the above limitations and make better use of information technology in English teaching in primary schools are also worthy of future research.

Acknowledgements

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