

Exploration of Hybrid College English Teaching Mode Based on Big Data and Internet

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ABSTRACT

The Era of Big Data has brought tremendous changes and possibilities for the transformation of individualized English teaching. Digital College English teaching mode based on big data is a challenge to the traditional teaching mode. This paper explores the application of "big data" in the process of teaching design, teaching content, teaching methods and teaching evaluation of hybrid English teaching. Meanwhile it compares data from the perspective of learning motivation, method, academic performance and satisfaction with the reference group and promotes digital teaching experiments. The teaching mode can not only give full play to teachers' leading role of guiding, enlightening and monitoring in the teaching process, but also vividly reflect students' initiative and enthusiasm as learning subjects and creativity. Hybrid College English teaching mode, based on big data and Internet, as one of the important teaching approaches, is a key factor affecting the future English educational reform.

Keywords: *Big Data; Hybrid College English Teaching Mode; Digital Teaching*

1. INTRODUCTION

Traditional classroom teaching mode has undergone profound challenges with the emergence of MOOC, SPOC, micro class and so on. Big Data provides massive resources to satisfy college English teachers' teaching need. Big Data integrate the latest information technology into modernized education to realize the all-round innovation of macro concept and micro practice. Online and offline hybrid teaching mode can integrate the advantages of offline class teaching system group learning with the individualization of online learning, and give a deep integration of information technology, current effective teaching and learning. Our experiment is carried out based on current educational informatization and the development of Big Data. The digital teaching mode, which is suitable for talent training in the new era is achieved by data sharing, flip classroom, micro-class, MOOC, self-learning, and other multi-channel data collection. According to the data, the teaching process is comprehensively recorded to provide Hybrid college English teaching mode strong data support. Therefore, our research is of great significance to the supplement of present College English teaching.

2. CHALLENGES OF NEW ERA

College English course is an important part of humanistic education in colleges and universities, which is both instrumental and humanistic. As a compulsory course in colleges and universities, College English has the coverage of large span, many class hours and many credits. The teaching content includes such fields as linguistics, humanities, and social sciences. It represents the contradiction and collision between Chinese and Western cultures and values, which is very conducive to the development of curriculum construction.

2.1 Limitations of Traditional teaching mode

Traditional teaching mode has a lot of limitations such as teaching environment and teaching equipment, because students can only complete the corresponding tasks in accordance with the teacher's requirements at the specified time, and fail to learn knowledge initiatively. The drawback includes the following: First, the teaching process is monotonous, teaching link is single and has low efficiency. Secondly, the assessment of the course is too rigid, and the mechanism of assessment process is not mature enough. Thirdly, closed-loop teaching shields online learning resources, and students have limited learning channels.

2.2 Opportunities and Challenges of College English Teaching in the Big Data Era

Big Data Era and the Internet offer great opportunities and challenges in College English Teaching and related fields both for teachers and the students.

2.2.1 Challenges for Students in the Big Data Era and the Internet

In the first place, in an effective English teaching class, students should have an active state of mind and a strong curiosity and interest in both the content of the classroom and the teaching form. The traditional classroom education model cannot fulfil the demand of the students.

2.2.2 Challenges for Teachers in the Big Data Era and the Internet

In addition, teachers need to improve the ability to operate information technology, to enhance classroom efficiency. Teachers must be proficient in controlling information technology operation. In the Era of Big Data, college English teaching should take cultivating practical language ability as its objective, approach English tasks from multiple perspectives, and design teaching plans with multiple dimensions. Meanwhile, teaching platforms should integrate various web-based learning tools and applications into a whole, while web-based teaching and assessment systems should be merged seamlessly into the teaching of college English. Teachers of college English should also equip themselves with the necessary theories and strategies, develop their own information technology competency and seek active cooperation with professionals of education technology.

2.2.3 Research Status and Theoretical Basis of Hybrid Teaching Mode

Hybrid Teaching Mode comprehensively uses different teaching theories, various teaching techniques and diverse teaching methods to implement the teaching strategies, which can be understood as “traditional classroom + online learning + flipped classroom”. In the teaching process, we always take students as the centre, cultivate students’ ability to construct, think independently, and learn independently, and take teachers as the guide to strengthen the management, feedback, supervision, and assessment of students in the process of learning.

2.2.4 Related Research Abroad

Hybrid Teaching Mode is frequently applied in foreign countries. According to statistics, 45% of American universities and more than 50% of the British university students are in the mode. In Asia, more

universities are involved in using blended instruction. According to the survey, since the number of national and private universities in South Korea is increasing, it is very difficult for teachers and students to communicate and interact with each other⁵. The problem can be solved by a network platform. Some foreign scholars are also committed to the Hybrid Teaching Mode. Routledge put forward the idea of Hybrid Teaching, which can not only improve the teaching efficiency, but also promote the development of students^[8].

2.2.5 Domestic Research Achievements

At present, domestic research on Hybrid Teaching Mode has made some progress, but the results are not rich. It has become a new hot spot in the field of education, which attaches great importance to personalized learning needs for different learners. This teaching mode can give full play to teachers. Teachers play the leading role of guiding, enlightening, and monitoring students effectively in the teaching process^[4]. Students are more initiative and enthusiastic as learning subjects to learn creatively. Hybrid Teaching Mode, as one of the important learning methods, is a key factor affecting the future educational reform. Professor Huang Ronghuai of Beijing Normal University proposed that Hybrid Teaching Mode to let learners learn at the right time and place; Learn and achieve the best learning effect^[1]. At the National Academic Conference on multimedia technology, Cao Xiaomin and Wang Park and Wu Tao (1998) analysed the advantages and disadvantages of the traditional teaching mode. They suggested integration of traditional teaching mode and network teaching mode. Ma Guogang et al. (2012) emphasized that in university education, we should explore and build a mixed teaching mode from different levels, such as teaching methods, organizational forms, learning methods and comprehensive evaluation. Feng Xiaoying et al. (2018) believed that hybrid teaching is effective^[2]. The analysis framework includes three dimensions: preparation, design and implementation, construction, and influence. Some scholars have practiced hybrid teaching, which focuses on the practical effect of mixed teaching.

2.3 Experimental Innovation and Research Conducted in Shenyang Aerospace University

Then how can we enhance the teaching effect and students’ learning efficiency by way of hybrid teaching mode? We aim to carry out the systematic and comprehensive reform of the curriculum, and make use of information technology and multimodal teaching materials. By comparative research on the classroom data collection model for smarter teaching, we try to clarify the classification of various procedural data and build and analyse data collection model from multiple dimensions and aspects.

2.3.1 Experimental Period

Through the implementation of Hybrid Teaching Mode from 2020 and 2022, our college English course has carried out the “online and offline” mixed teaching mode in Shenyang Aerospace University, and achieved good results. We try to convert the raw data of Hybrid teaching mode into the visual data, simplify the classification of the data and visualize them in different charts like column charts or tables etc. During the experiment, the teaching data generated in the teaching process were analysed. Simultaneous online and offline collection, and subsequent visual analysis will be carried out from the overall and local levels of visualization operations.

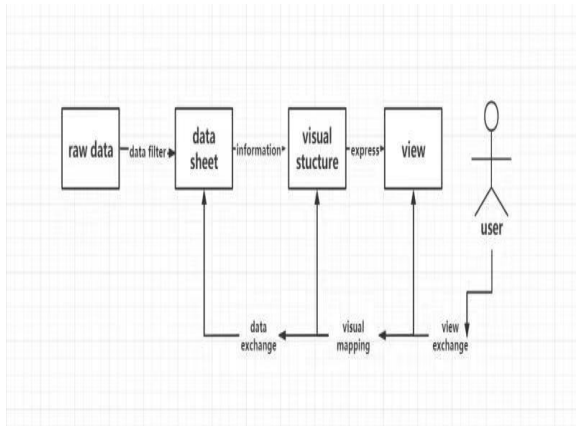


Chart 1 Visual Process of Data from Hybrid College English Teaching

2.3.2 Construction of the Teaching Process

We follow Professor Wen Qiufang’s output oriented method to construct the Hybrid Teaching Mode of college English. The teaching process is divided into three parts: pre-class driving, in-class facilitation and after-class evaluation, which can be presented in the following chart:

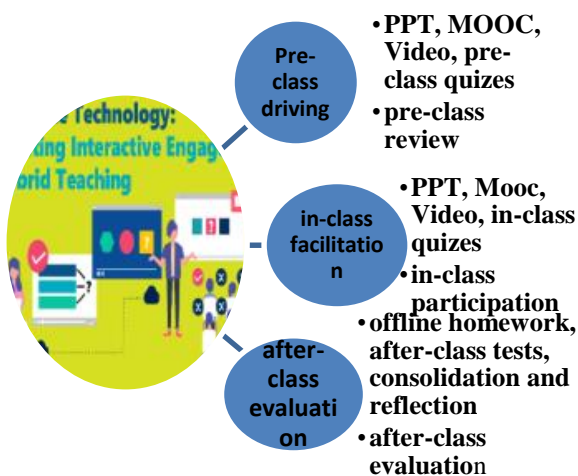


Chart 2 the Process of Teaching in College English

2.3.3 Pre-class driving

Before teaching, teachers need to refine the teaching content of this course into specific teaching goals, and arrange corresponding learning tasks and tasks around this goal [7]. Before the beginning of each class, teachers release the learning content, objectives, key points, and difficulties of this chapter to the bulletin column of Rain Classroom or Tencent Conference. Teaching PPT, online learning videos, extended reading materials, MOOC, self-test questions and other course materials are released to the Rain Classroom course database, and students are required to complete the corresponding preparation tasks and tests within the stipulated time. Then students log in to their Rain Classroom interface, view all the course resources and information released by teachers, and complete the pre-class preview tasks according to the learning requirements. If there is any content that students do not understand during the preview, they can click “Do not understand” to give feedback or directly ask questions and doubts in the message section. Students also learn some background information through the platform of Dingding, QQ Groupware, WeChat etc. and prepare for the class by learning from the Internet.

In the pre-class program, teachers can check each students’ preview progress and test results at any time, or they can communicate with students in the message section. Before class, teachers will check the completion of each student’s preview tasks and the results of self-assessment. In the process of autonomous learning, students write down the problems or go online to the course forum to communicate with others. In the pre-class stage, students learn to understand and master the basic knowledge of the task.

2.3.4 In-class Facilitation

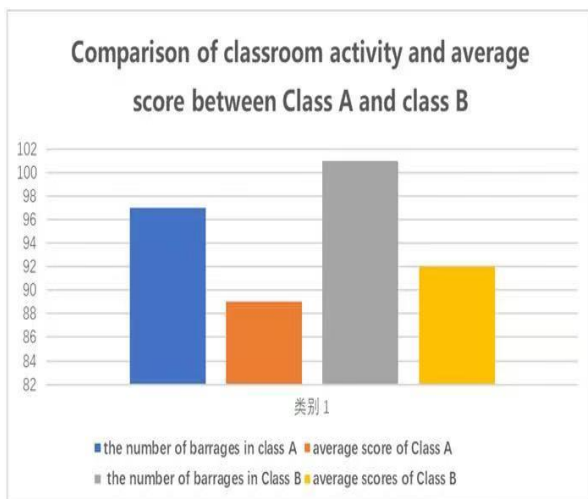
In addition, in-class facilitation is very crucial for the process of reform. In the second stage, students deepen the communication between teacher and students. The in-class process learning includes platform interaction, consolidation reflection and integrated output. In class, teachers first check the contents of students’ autonomous learning before class. Teachers will submit the answers to the test questions, see the test results after the test, which is conducive to the timely treatment of students’ problems. Then explain and emphasize the key points, solve the problems in time. Later, students display, report, discuss and share the learning contents. In the process, students’ language skills and critical thinking ability have been trained and improved before class. Knowledge is internalized through the practice of language skills.

2.3.5 After-class Consolidation

Moreover, after-class consolidation is a very important implement to the completion of the course teaching procedure [6]. After class, teachers provide

extended learning resources, including texts and contents-related film and television works, and online settings for students to expand their horizons. It mainly focuses on listening and writing to train students' language skills and critical thinking. For the evaluation of curriculum, we will change the traditional evaluation into a combination of formative evaluation and summative evaluation. Formative assessment includes the length of online MOOC study, study progress, chapter tests, and the quantity and quality of forum replies, student attendance, rain classroom test results, group report presentation, class discussion participation and performance, etc. After class, from students' online platform interactive participation and homework completion quality, reflective diary writing and cooperative learning in the group, etc. or summative assessment, we have changed the traditional way of examination and changed the traditional examination to examination plus report writing. In the method of semester report, students collected data and arranged ideas, really put what they've learned into practice and exercise their language skills and thinking skills. When comparing the number of barrages of Class A and Class B in Table 1, we have noted that students who participated more activities will have better classroom performance and better final scores than those participated less activities in class.

Table 1 Comparison of classroom activity and average score between Class A and Class B



We also got the students' feedback for Hybrid teaching mode by questionnaire, as showed in Table 2.

Table 2 Whether Students Welcome the Hybrid Teaching Mode

options	Subtotal	Percentage
Very willing to welcome hybrid teaching Mode	780	65%
Accept Hybrid Teaching Mode	96	8%

Either is ok (tradition or hybrid)	180	15%
Returning to traditional teaching mode	144	12%

From the chart, we can clearly see that 65% of the students expressed their willingness to continue to accept the Hybrid Teaching Mode based on Rain Classroom and other platforms. Yet, only 12% of students want to return to traditional teaching mode.

Based on the data collected, we can explore and analyse the teaching process, online and offline learning strategies and teaching and learning evaluation and feedback.

3. CONCLUSIONS

Through the implementation of teaching from 2020 and 2022, our college English course has carried out the "online and offline" hybrid teaching mode, and achieved good results and feedbacks. Our courses are unanimously recognized by the students. Students passed CET 4 and 6 ranked top one among the universities of same degree. More and more students participated in all kinds of English Contests and won many prizes. Teachers had won great honours in various teaching competitions.

Table 3 Some Examples of Students' Prizes in Different Contests

Students' number	Name of the Contest	Candidate	Award Grade
1	2020 "FLTRP Cup" English Writing Contest	Zhang Wei	Provincial Second Prize
2	2021 English Writing Contest	Liu Xiaojian	Provincial Excellence Award
3	2021 "FLTRP Cup" English Reading Contest	Li Zhiwei	Provincial Excellence Award
4	2021 National College English competition	Du Danni	National First Prize

From the above experimental process, we can draw the conclusion that a blended teaching model highlights students' learning position in the teaching process and stimulates their enthusiasm for self-learning and exploration through flipped classroom, group cooperation, task-driven, etc., enriches the classroom form, improves the teaching quality. At the same time, with the help of the "Rain Classroom" teaching platform, students learn with problems. Their independent learning abilities, their autonomy and efficiency are significantly improved.

Therefore, it is crucial that we should follow the trend of teaching reform and encourage more teachers to embrace the convenience brought by advanced technologies. As a result, the hybrid teaching mode should be designed reasonably based on big data and the Internet in the application to maximize its advantages.

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