

## Research on the New Eco-construction of College English Teaching in the Data Age

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### Abstract

Along with the in-depth application of computer and network technology in the field of education, the concept and strategy of College English teaching is quietly undergoing a major change. The era of big data has brought a new perspective and direction to college English teaching reform. Under the development trend of continuous integration of education and digital technology, College English teachers need to build a new ecology of College English based on the era of data, explore a hybrid teaching model by breaking the time and space constraints, reconstruct the evaluation mode of education quality by applying data mining and develop teaching team building by changing self-role. In this way, a systematic, open, dynamic and three-dimensional College English curriculum system can be established to better meet the needs of college students getting high-quality and diversified college English teaching, and to meet the requirements of national economic and social development for talent training.

**Key words:** Data age; College English; New ecology

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### INTRODUCTION

We are in a new and great era, and the current “big data” has penetrated into various industries and fields. Nowadays, the students who step into the university campus are “born on the Internet and grow up on the Internet”. They are “new people” who like the learning methods on their fingertips. They are full of sensitivity and dependence on the Internet life. How does College English teaching conform to the pace of the times, social development and students’ needs? How to make full use of the tide of network and digitalization to realize the leap of concept, content and method? Many education experts have pointed out that the characteristics of interaction, openness and freedom of the network enable contemporary college students to develop an equal, interactive personality. To instill knowledge blindly is no different from a personality challenge for them. Under the background of the new situation of comprehensively revitalizing undergraduate education and the rapid development of high and new technologies such as artificial intelligence, college foreign language education needs to take the initiative to change, build a “golden course” with high level, innovation and challenge, and meet the expectations of students and the whole society. College English education should focus on research and teaching, strive to cultivate high-quality international talents with international vision and “professional + foreign language”; focus on the construction of first-class courses, strive to create online and offline hybrid “golden course”, virtual simulation “golden course” and social practice “golden course”. The construction of teachers’ team should be strengthened for combining teaching with education. The latest *College English Teaching Guide* stipulates that “College English should vigorously promote the integration of teaching and information technology”( Li, 2018). It puts forward that College English teaching should attach great importance

to the significance of College English course for national development and talent training, and provide personalized learning to meet the needs of students by using a variety of curriculum settings and digital teaching modes according to different levels and differences of students. Under the development trend of continuous integration of education and digital technology, a new teaching ecosystem for College English is coming out. In the trend of Internet +, it is a difficult problem for all College English teachers how to perfect the combination of College English education and high technology, achieve seamless docking, change the teaching idea, explore new teaching methods, and promote the leap of College English education.

## 1. THEORETICAL BASIS

Known as “the prophet of big data era”, Mayer Schönberger, a professor at the Internet Research Institute of Oxford University and Kenneth Cukier, a commentator of big data development, said that the information storm brought by big data is changing our life, work and thinking, and big data has opened a major era transformation. Big data is changing the way we understand the world, becoming a source of new inventions and services, and more changes are on the way. They wrote in *Learning with BIG DATA: The Future of Education* (Mayer-Schönberger & Cukier, 2014) that in the future, learning will never be in the same order and pace as a given textbook, subject or course, but will be in thousands of different combinations. Teachers no longer need to rely on subjective judgment to choose the most suitable books for teaching, and big data analysis will guide them to select the most effective textbooks that support further improvement and personal customization. “It’s a revolution,” said Gary King (Washington Post Live, 2016), a professor of sociology at Harvard University. “Huge data resources have started the process of quantification in all fields, including academia, business and government.” In the face of a fierce revolution, it has also greatly impacted and influenced the traditional college education system. With the in-depth application of computer and network technology in the field of College English education, the concept and strategy of College English teaching is quietly undergoing a major change.

## 2. RESEARCH ON THE NEW ECO-CONSTRUCTION OF COLLEGE ENGLISH TEACHING IN THE DATA AGE

### 2.1 Building a New Ecology of College English Based on the Data Age

Data is the carrier of recording information and the source of knowledge. The explosion of data means that the scope of human record, measurement and analysis is expanding, and the boundary of knowledge is extending. The

development of information technology and its continuous and profound integration into the teaching process will thoroughly change the current College English teaching form, deduce and enrich new educational theories and teaching concepts. The new concepts of time and space brought by big data bring about new ways of behavior and thinking. College English teachers need to reform teaching from top to bottom, from outside to inside and from inside to outside. They should inspire students’ advanced thinking, enrich teaching strategies and stimulate students’ interest in learning. Teaching contents should be characterized by knowledge, entertainment, epochality and relevance; teaching materials should be mainly short, highly targeted and meet individual needs. Teaching resources should be abundant in sources, various media, and support personalized choice. Teaching process should be combined with macro-task and micro-ability and teaching methods should be “student-centered”. The flipped classroom mode should be adopted to achieve the interaction between teachers and students, the integration of input and output, and the integration of purpose and means (Phillips, 2015). Students’ learning methods should rely on science to ensure efficiency, have interest to ensure input and personalized choice to ensure effect. Learning objectives should change from grand to concrete, from distant to present, from form to ability, from unity to diversity, to ensure the overall development of language, culture, speculation and other comprehensive qualities. Learning content should be a combination of self-selection and recommendation, with knowledge, entertainment, timeliness and relevance. Learning process should be cooperative learning, project/task-based learning, case-based learning, exploratory learning. Students can get timely, automatic, comprehensive, targeted feedback based on diverse data. College English teaching will change from large-scale to decentralized, networked, digital, intellectualized and personalized new ecology. Under the teaching mode of openness, sharing, interaction and cooperation, the leap-forward development of College English education will be realized.

### 2.2 Breaking the Space-Time Restriction to Explore the Hybrid Teaching Mode

Internet has changed the way of information transmission in human society, making the channels for people to acquire knowledge wider. Education has broken through the space restrictions. In the era of data, College English teaching mode is more informative, data-based and mobile, and video becomes the main carrier. The new teaching modes such as MOOCs, micro-class and flipped classroom will gradually become a trend with the combination of reality and virtual, online and offline, in class and out of class. This multi-modal, multi-media and multi-environment hybrid on-demand learning mode, which makes full use of learners’ senses, uses different media to transfer resources, and encourages learners

to interact with the environment, will reconstruct the College English learning process of campus students, and promote the internalization of knowledge and the improvement of learning effectiveness. The new education model that combine online education, gamified learning, virtual communities, and real classrooms are constantly emerging, dissolving the traditional concept of cultivating time and space, and realizing the super space-time learning and super space-time interaction. Network classroom, distance learning, online education, cloud education, cloud computing, big data and other virtual, flat interactive learning platform will become new ways of English learning. Through the development and integration of digital resources, the best foreign language environment will be created. Through the design of school-based curriculum, better shared-resources for foreign language education system will be provided. Through the construction of digital teaching, the practice of scientific research and teaching reform with different characteristics will be explored. College English teachers need to create a variety of cooperative and interactive learning environments, provide a variety of rich, interactive input and output language materials to meet individual needs, and recognize the changes in learners' learning attitudes and learning objectives, so as to truly improve the efficiency of College English learning by means of technology and realize the real purpose of College English teaching reform.

### **2.3 Applying Data Mining to Reconstruct the Evaluation Method of Education Quality**

In the era of big data, the leap from knowledge to wisdom is everywhere. College English teachers need to improve their ability constantly to analyze and identify data. By applying data mining technology to the analysis of College English teaching quality, the important factors that affect the quality of College English teaching in the process of teaching will be discovered and manifested. And College English teachers can monitor, track and record the learners' learning trace, that is, at which stage they encounter difficulties, spend more time repeatedly visiting pages, and have preferred learning methods and the best time period of learning effect. Through the analysis of these data, teachers can model each student's behavior, judge their ability in future learning and the difficulties they may encounter, and then put forward targeted guidance and suggestions. It is necessary to carry out comprehensive, individualized, diversified and socialized evaluation on students, pay attention to the evaluation of learning input, learning strategies, learning records, participation in extracurricular activities and other processes, as well as the evaluation of the ability improvement, language features, assignments, research projects, written tests, oral tests, term papers, presentations, etc. Teachers can realize the transformation from "the evaluation of curriculum" and "the test of

learning" to "the evaluation of promoting curriculum" and "the test of promoting learning", and establish a more scientific, reasonable and objective feedback system of College English teaching effect. Based on the data generated by students, a more intelligent and targeted teaching and evaluation system will be developed. The data generated by students can be used to develop a more intelligent and targeted teaching and evaluation system to effectively identify students of different qualities. More personalized and flexible measures can be taken to cultivate different types of students, enhance the real-time interaction and form an efficient inductive College English learning evaluation system based on big data analysis (Mabić, 2017). This system aims at formulating more targeted strategies for improving College English teaching, enabling students to absorb and master new knowledge more quickly and effectively. A scientific examination evaluation system can be established, realizing the leap from examination to evaluation, and making it a bridge between education and teaching, talent training and social contact. By monitoring and evaluating the quality of education process, exploring the hidden laws of educational development, the track of students' growth and the mode of talent cultivation hidden, it will have a significant impact on students' learning, teachers' teaching and the formulation of educational policies, and students' comprehensive development will truly be realized.

### **2.4 Changing Self-Role and Strengthening the Teaching Team Building**

The change of educational environment has brought about structural changes in teachers' work. Educational concepts, educational paradigms, teaching ideas, teaching essence, curriculum construction and classroom models are a challenge to College English teachers. In order to keep pace with the times and actively adapt to the changes of the times, foreign language teachers in the era of big data need to change their teaching concepts, possess English teaching philosophy based on modern educational technology, and possess modern foreign language educational technology literacy. Teachers are no longer the only authoritative source of knowledge, and the network has become the students' knowledge exterior space. The "dominant" focus of the role of College English teachers has shifted from the possessor of knowledge to the guide of learning, and from the imparter of knowledge to the organizer, coordinator, guide, assistant, promoter and commentator of teaching activities. Teaching activities practice the transformation from teacher-centered to learner-centered, from book-centered to large-scale corpus-centered. Under the guidance of constructivism, multiple intelligences and humanism, College English teachers should make full use of the 4V characteristics of big data: Volume (large amount of data), Velocity (strong real-time), Variety (diversity), Veracity (authenticity) (Shu,

2016). They should be good at integrating all kinds of English resources and improving College English teaching curriculum design and the ability of teaching management under the new paradigm in order to meet the needs of future College English education reform and development. At the same time, under the new model, College English teachers are no longer the single builders of courses. They need to build learning and cooperative teaching teams to produce a qualified new ecological course of College English Teaching in the data age.

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### 3. CONCLUSION

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In the era of big data, College English teaching is experiencing an unprecedented great change. Under the trend of integration of education and digital technology, the characteristics of campus in the future, such as openness, collaboration, interaction, convenience and beyond time and space, are the trend of future development of education. Digital curriculum will bring about great changes in the form of College English education and the way of learning. The environmental factors, language factors and student factors in College English teaching have changed. More and more attention has been paid to people-oriented teaching, mode innovation, and all-round development of knowledge, ability and literacy. The era of big data has brought a new perspective and new direction to College English teaching and teaching reform. The application of digital means has brought new opportunities for foreign language teaching. In the rapid development of education, College English teachers should grasp and apply digital technology with infinite charm, so that students can absorb and master new knowledge more quickly and effectively. Students have the reasons, persistence, enjoyment, personality and harvest for learning College English. A new teaching mode combining classroom and network

is adopted, and a teaching plan is designed to meet the students' individualized learning needs by using modern information technology and resources. A variety of data acquisition, mining and analysis are used to formulate the teaching plan. A more intelligent and targeted teaching and evaluation system, a more scientific and reasonable feedback system of teaching effect will be established. A new teaching staff who are proficient in teaching and technology will be cultivated. And a systematic, open, dynamic and three-dimensional College English curriculum system will be constructed to meet the needs of college students to accept high-quality, diversified College English teaching and adapt to the requirements of national economic and social development for talent training.

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