

# Research on the Cultivation of Students' Cultural Literacy in Application-oriented Universities Against the Background of Informatization

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## ABSTRACT

According to the characteristics of college English learning, students should use information-based learning methods in the self-improvement of cultural literacy. With the development of information technology, especially the arrival of 5G era, the main role of students and the guiding role of teachers will be truly realized, and students' self-learning ability will be constantly cultivated and improved, so as to improve the overall cultural quality. Therefore, on the basis of previous studies, this paper deeply discusses the characteristics and problems of students' autonomous learning in the era of 5G informatization, investigates the current situation of college students' self-learning by means of information technology, and puts forward some constructive suggestions for teachers, students, universities and even resource providers, which not only enriches the theory of information-based teaching, but also plays a guiding role for teachers to carry out mobile teaching better.

*Keywords: informatization, cultural literacy, college English*

## I. INTRODUCTION

With the advent of the "Internet +" era, artificial intelligence is no longer a tool to facilitate people's lives, but also an important force in changing society. In 2007, American Salman Khan founded Khan college, a non-profit educational institution. Since then, the online education model has developed rapidly. In 2013, Bill Gates clearly pointed out that "the future of education is data" at the SXSW Interactive Conference held in Austin, Texas, the United States. Since 2013, the development of online education in China has also entered the fast track, and the learning platforms and learning software are increasing day by day. Learning platforms such as rain classroom, u campus and Chaoxing learning provide online platforms for mobile teaching of college English. However, due to the late start of network teaching in China, the research on online teaching in China is still in the exploratory stage, and has not yet achieved large-scale effective application. At present, more and more attention and research have been paid to the application of 5G technology in teaching in China and foreign countries. 5G+VR virtual situational teaching has been recognized and deployed by the world's top universities such as University of California, Berkeley and Harvard University, and has been applied in Tsinghua University, Beijing University of Aeronautics and Astronautics, Xiamen University, Northeast University and other universities in China in physics, chemistry

and other subjects with strong experiment and high risk. In other aspects, the development is also very fast, such as building smart campus, smart family. However, there are few studies on how to create cultural scenes to improve college students' English cultural literacy.

As an essential basic quality of college students, English humanistic quality has its application value and social significance. In recent years, the situation of Chinese college students' English humanistic quality is not very ideal, especially in ordinary engineering colleges and universities. At present, the research on humanistic quality mainly focuses on value interpretation and historical reason. In the new digital era, there are few researches on how to use new educational means to improve students' English cultural heritage and create a new teaching mode. In recent years, the form of mobile learning is limited to text, audio and video. The problems of traditional network bandwidth and delay greatly weaken students' learning enthusiasm. According to the theory of situational cognition, learning is the most effective when it occurs in meaningful situations, whether the situation is real world or virtual space. In the theory of situational cognition, knowledge can be produced only when the situation and the subject interact with each other. English learning is not just a matter of teachers unilaterally transferring knowledge to students. The application of 5G technology has undoubtedly created a learning atmosphere full of situations and explorations

for students in the mobile Internet era. Therefore, with the development of 5G technology, how to use digital learning to improve students' cultural literacy has gradually become a research hotspot.

## **II. CURRENT SITUATION OF CULTURAL LITERACY IN GENERAL ENGINEERING COLLEGES AND UNIVERSITIES**

Through literature review method, this paper analyzes the concept, connotation and research results of 5G and cultural literacy in China and foreign countries, and summarizes the current research status on this basis. Under the mobile learning mode of mobile phone and PC, the traditional online teaching platforms such as MOOCs, microlecture, rain class and Chaoxing Learning show the disadvantages. The problems of stuck phenomenon, low speed and high delay have become the bottleneck of digital teaching. The fast and fragmented learning characteristics make the cultural acquisition superficial, and the precipitation of cultural literacy is out of the question. Students in science and engineering colleges often give people the impression that they are immersed in hard study, do not ask about the world, and focus on the laboratory and library. In fact, they are very rich in heart, and many science students have high attainments in humanistic quality. However, the main purpose of most students to learn English is to pass CET-4 and CET-6. The focus of their study is to grasp the knowledge points and effective answer skills, but they have little knowledge of English language and culture.

## **III. THE CONSTRUCTION OF COLLEGE ENGLISH CULTURE AND EDUCATION ENVIRONMENT IN THE INFORMATIZATION AGE**

The coming of 5G era has injected new power into education informatization. Education informatization makes students' learning environment no longer limited to the schools. Students can learn online anytime and anywhere, and get nearly real classroom experience of famous teachers. Foreign literary works, architectural art and cultural landscape are presented in a multidimensional and three-dimensional form. The integration of 5G and virtual technology can realize the students' immersive learning experience. Students can fully realize barrier-free independent learning experience in an almost real environment, and teachers can also realize effective interaction with students and fully mobilize the enthusiasm of students. The colleges and universities can create a virtual laboratory by signing a 5G technology contract with the relevant technical department. The teaching resources and environment are all developed and designed based on U3D. Colleges and universities no longer need to provide teachers and students with physical equipment and teaching resources for experiments. They can use

the material library and open source code of the virtual reality laboratory to build a virtual learning environment for teachers and students. Teachers and students can quickly log in to the virtual reality laboratory through 5G network to complete autonomous learning tasks. This not only saves the cost of physical equipment, but also reduces the cost of manpower management.

## **IV. STRATEGIES TO IMPROVE STUDENTS' CULTURAL LITERACY IN AN INFORMATION ENVIRONMENT**

First, it is to use questionnaire survey and interview methods to investigate and study the cultural literacy of non-English majors and analyze the problems. On this basis, a series of strategies are proposed on how to improve the cultural literacy of non-English majors. For example, teachers can incorporate cultural knowledge into the teaching plan, make students have the listening remotely in self-learning classes or listening labs or watch celebrity live speeches, dialogue scenes, movie and TV scenes, and evaluate the improvement effect of students through self-learning of basic knowledge of British and American history and general situation of Britain and the United States. And the improvement of students' abilities of British and American cultural literacy can be an assessment standard of student performance. The specific strategies are as follows:

### *A. Changing the teaching model*

In the context of big data and the "Internet +" era, teachers should promptly change from the traditional teaching model to the new teaching model. In traditional classroom teaching, teachers are the disseminators of knowledge, and most students passively accept and lack the initiative to learn. College English teacher should change the role from a speaker to a director. Teachers should not only act as disseminators of knowledge, but also divide different learning tasks according to the different learning levels of students, so that each student can play his own role according to his own ability. With the help of the Internet, teachers can also track, observe and record students' learning activities according to the data of the network platform. With such a role change, it can not only reflect the autonomy of students' learning, mobilize students' learning enthusiasm, but also reflect the guiding role of teachers.

### *B. The construction of teaching and learning model in the new form*

Studies in China and foreign countries have shown that blended teaching is based on the concept of constructivism. Constructivism establishes the dominant position of students in the teaching process. This teaching mode combines traditional classroom

teaching and network-assisted teaching, and is a multi-modal learning form. Therefore, it is necessary to build a completely new learning mode of "online courses + online communication + classroom teaching + extracurricular practice". At present, the college English textbooks used in university are the new version of "new progressive college English (integrated courses)" and "college English listening and speaking course". The teaching process includes introduction, listening and speaking, reading, review, translation and writing. The new form of learning mode can focus on the cultivation of listening and speaking ability, strengthen exercise training and improve writing ability with the increasing variability, and provide appropriate learning resources. The web-based learning platform can provide abundant learning resources for students to learn autonomously (including writing software iWrite). In addition, for some abstract grammar knowledge difficult to grasp, students can learn by watching MOOCs on the learning platform and microlecture resources on the school's official account platform. For the improvement of English humanistic quality, the universities can integrate the platform resources to establish its own database for the majority of learners to learn in fragmented time. Students can also choose suitable vocational English learning courses according to their own subject background. Students can fully experience the "famous teachers' excellent courses" through mobile terminal or computer terminal anytime and anywhere, breaking the regional limitation of uneven learning resource distribution. Teachers and students can have interaction and discussion based on platforms such as corporate WeChat and Tencent software. In terms of classroom teaching and extracurricular practice, teachers can adopt the flipped classroom model that assigns learning tasks first, then teaches key and difficult points in class, followed by guidance after class. The combination of online and offline teaching can effectively improve students' understanding ability and application ability according to different learning focuses and difficulties.

### *C. Studying and constructing reasonable evaluation strategies*

The evaluation method is an important way to test the teaching effect. It is necessary to build a reasonable and effective evaluation method with a development perspective to realize the diversification of the evaluation subjects. The evaluation index of college English classroom teaching should not only stay at the language level, but also include the emotional attitude, communication ability and cross-cultural evaluation factors. In the information age, the rich and colorful information forms and numerical statistics combine the qualitative and quantitative evaluation, and the process evaluation runs through the whole learning process of students. Quantitative evaluation refers to the fact that

teachers can inspect students' mastery of basic knowledge according to the times and number of homework completed by students, the times of clocking on the learning platform, the number of tasks completed, and the situation of classroom speech; qualitative evaluation means that teachers can make a comprehensive investigation according to the quality of students' homework, messages and comments on learning platform, classroom presentation, group discussion and cooperation, etc.; and summative evaluation refers to a series of written examinations, such as usual scores, mid - and final examinations, compositions, papers and so on.

## **V. SOCIAL SIGNIFICANCE AND APPLICATION VALUE**

With the advent of 5G era, the continuous development of computer technology has brought tremendous changes to people's lives and learning. From the perspective of the development of human history, the combination of humanities and technology is the trend of future development, and it is an inevitable request that a country stands in the world. With the deepening of the reform of college English teaching, the goal of college English learning is not only language knowledge, but also the mastery of language and culture. College students shoulder the important task of cultural exchange and communication in the future, and must continuously improve their language ability and cross-cultural level, so as to meet the needs of social development. Guided by 5G high-speed, low-latency, and large-capacity technologies, based on the blended teaching and flipped classroom teaching mode, exploring and improving the efficiency of "teaching" and "learning" is an important process to construct a complete learning and teaching evaluation, and to improve students' humanistic literacy and develop students' mobile learning habits. It has a positive role and significance in education.

At present, the campus network, WiFi, multimedia teaching, mobile phones, computers, etc. are promoting the transformation and upgrading of education. The contents mostly refer to explanations on English vocabulary and grammar. There are few introductions to literature and history. The learning platforms that students often use such as u campus and Chaoxing learning often have problems such as network paralysis caused by large-scale users. With the performance lag of 3G/4G network latency, security management, terminal cost, etc., it is difficult to meet the current demand for high-definition, smooth VR/AR learning scenarios. With 5G technology, learners are no longer constrained by PCs, WiFi, and learning venues. They can use the Internet of Things and VR technologies to obtain a learning experience similar to that of a real classroom almost anytime and anywhere. In order to

understand more in-depth knowledge, students should use mobile or computer terminals to fully enter immersive English learning.

However, in addition to the many benefits brought by the 5G era, there are also certain problems, such as how students choose high-quality learning resources in a learning environment that is available everywhere, how to make good use of technology platforms to improve cultural literacy, and how to reasonably arrange, control and regulate their own behavior, how teachers can give guidance in this regard. Therefore, students have clear goals and get cultural literacy in an immersive learning environment. This thesis has certain practical significance.

## VI. CONCLUSION

With the continuous development of the 5G era, the "Internet +" college English teaching will move from "freshness" to "new normal". Especially, in the 2020 teaching experience during the outbreak of the new crown virus, it can be seen that "Internet + intelligence technology" has become an important development direction of China's higher education in the world. At the online teaching conference on May 14, 2020, Wu Yan, the director of the higher education department of the ministry of education, said that changes in teachers' teaching, student learning, school management, and the form of education can be shifted from "wartime" to peacetime. "We should never and cannot return to the old normal before the epidemic", Wu Yan said.

With the deepening of the reform of college English teaching, the goal of college English learning is not only language knowledge, but also the responsibility of cultural exchanges between different countries and improving self-learning ability, so that students can adapt to the future development of society. Humanistic literacy has very important guiding significance and practical value for engineering students. In the work of innovation and creation, strong divergent thinking and imagination are required, and the cultivation of these abilities needs to be learned from many books about culture. Only by combining rational thinking with perceptual thinking can people view the world from a comprehensive perspective and science students be provided with more ideas and methods. However, the formation of cultural literacy does not happen overnight, nor can it be obtained in the classroom only by the teacher's narration. The way to solve the cultural literacy problem of science students is to continuously improve the students' self-learning ability. Teachers also need to continuously improve their own humanistic literacy, so as to better guide and nurture students. Therefore, it is necessary to make full use of the advantages of digital multimedia to activate students' potential learning ability. It is better to make full use of

the network communication platform to enhance the effect of literary quality education.

This paper combines the actual situation and the reform of college English teaching to explore the development direction of college English teaching in the Internet era. It is in line with "student-centered", "people-oriented", "leveled, individualized, and autonomous" teaching concept, which is fully prepared for future reforms. Based on the increasingly internationalized education reform, it promotes development through transformation, meets challenges through development, and seeks breakthroughs in knowledge structure, teaching philosophy and teaching research, which has practical application value to college English teaching reform.

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