

Research on College English Information Teaching Model Based on English Learning Motivation Analysis Under the Background of Big Data

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Abstract. Past experience indicated that the advancement of technology would greatly impact education and teaching. This essay explored the model of college English teaching of China in the age of Big Data, including the roles of teachers and students, and the methods for academic evaluation. It proposed the coping strategies for these changes at the reform and innovation of college English teaching in China.

1. Introduction

Big data is another subversive technological revolution in the IT industry after cloud computing and the Internet of Things. The term “Big Data” was first introduced in 1997 by NASA researchers Michael Cox and David Ellsworth, who first used this term to describe the challenges of the huge amount of data generated by supercomputers that emerged in the 1990s[11]. The widely accepted concept of big data is: Big data, also known as massive data, refers to the massive, high growth rate and diversity that requires new processing models to have greater decision making; insight; process optimization capabilities and Information assets. It has the characteristics of large data volume, fast change speed, multiple types, low value density, etc. It overcomes the defects of low cost and small data volume of traditional data storage methods, with large storage capacity, completeness, timely information transmission and information gathering. The combination of publishers and recipients has brought tremendous impact to the development of different industries [12].

After the application of big data in the field of Chinese education, it promotes balanced, rapid and sustainable education. While promoting the development of education, it makes the teaching more scientific, highlights the individualization of teaching, and attaches importance to the full sample of data. The “volume” feature of big data can accommodate the personal information of all students in the school, which covers a wide range of the student's age, gender, personal hobbies, personality traits, responsiveness, mental state, physical fitness, basic knowledge, learning attitude, diligence of learning, interest in the subject, and learning in the classroom. College English teaching has also been influenced by the era of big data. The changes have been enormous. The use of teaching materials, curriculum design, teaching objectives, teaching content, teaching objects, teaching models, teaching evaluation, etc. have changed the simplification model. With the development of diversification, college English teachers will enrich the teaching content of English through various channels such as the Internet, so that they can be presented in front of students in a diversified form. Adopting the mixed learning method, the online and offline modes are organized to explain the difficulties encountered by the students. The effective use of incentives for students' learning behaviors encourages students to focus more on learning and can develop a sense of accomplishment.

2. Analysis of Online English Learning Motivation

2.1 Research Background

Gardner & Lambert believes that there are two main types of motivation or orientation: one is “instrumental motivation”, which means that the language is used to achieve a practical purpose; the second is “integrated”, that is, to understand and integrate into the target language culture [5].

Motivation orientation and intellectual factors affect learning outcomes. Later, mainstream psychology studies the social function that triggers individual behavior. The most important theory is the distinction between intrinsic motivation and extrinsic motivation. Internal motivation refers to the motivation of learning caused by the interest in the learning activity itself, which depends on the inherent needs of the second language learner. External motivation is derived from external influences. It refers to the learning activities that learners are promoted by external forces. When a learner completes a study, the perception of personal abilities and skills is the desired component. Emotion refers to the emotions that learners feel during the learning process. This experiment mainly refers to students' test anxiety and mainly aimed at the relationship between the main components of students' learning motivation and the uncontrollable factors in individual differences in the context of big data, and gives suggestions for the construction of college English information teaching mode.

2.2 Research Object

In this study, MLSQ (Learning Motivation Questionnaire) was used to evaluate and compare the different components of 210 students from different degrees in the three universities of science and technology. The subjects are divided into 70 undergraduate students, 70 master students and 70 doctoral students.

2.3 Methodology

This study used Pintrich's Learning Motivation Questionnaire (MSLQ) [8]. The questionnaire has 81 questions, including the Learning Motivation Scale (31 questions), the Strategy Scale (31 questions), and the Resource Management Scale (19 questions). This scale uses the Likert 7-level scale, ranging from "very inconsistent with my situation" to "very consistent with my situation". The internal consistency of the components of this scale is between .52 and .93, and most of them reach the level of .70.

2.4 Data Collection and Analysis

The sociological statistical software SPSS is used for analysis. The analysis is divided into three steps: (1) After analysis, the relationship between the individual differences of students and the three components of learning motivation is obtained; (2) Descriptive statistics are used to analyze the differences of motivation of students at three levels. (3) Using correlation analysis to examine the relationship between the three components of learning motivation of all students.

2.5 Analysis

2.5.1 Differences in learning motivation between three levels of students

Table 1 Descriptive statistical analysis of differences in learning motivation

Level		Value Component	Expectation Component	Emotion Component
Undergraduate Students (N=70)	Average Value	5.42	5.37	3.54
	Standard Deviation	1.49	1.41	1.86
Master students (N=70)	Average Value	5.31	5.56	3.17
	Standard Deviation	1.45	1.27	1.79
Doctoral students (N=70)	Average Value	5.56	5.73	3.13
	Standard Deviation	1.41	1.24	2.02

Table 1 shows that the differences in the components of the three levels of students are not significant; the three levels of students generally get high values in the value component and the

expected component (average is about 5, 4 is the intermediate value). It is much higher than the emotional component (average of 3); in terms of value and expected component, doctoral students are better than graduate students, graduate students are better than undergraduates, and doctoral students have the lowest emotional component. This shows that doctoral students have higher motivation to learn than non-foreign language undergraduate and master students. Doctoral students have obvious learning objectives and strong learning motivations in the network learning environment, and their learning experiences are more abundant. High capability of English is beneficial to scientific research and writing papers, so the autonomy is stronger. For undergraduate and postgraduate students who are not foreign language majors, English learning is not at the core of the learning task, so the motivation for learning is not very strong. For different students, the content of online learning should be adjusted.

2.5.2 Learning motivation three-component relationship

Table 2 Learning motivation three-component correlation coefficient

Level	Variable	Value Component	Expectation Component	Emotion Component
Undergraduate Students (N=70)	Value Component	1.00	1.72 * *	-0.13
	Expectation Component	0.74 * *	1.00	-0.30
	Emotion Component	-0.11	-0.32	1.00
Master students (N=70)	Value Component	1.00	0.65 * *	0.05
	Expectation Component	0.65 * *	1.00	-0.17
	Emotion Component	0.05	0.17	1.00
Doctoral students (N=70)	Value Component	1.00	0.77 * *	0.12
	Expectation Component	0.75	1.00	0.03
	Emotion Component	0.12	0.02	1.00

Table 2 shows that the value components of the three levels of students are positively correlated with the expected components, and reach the level of significance (p is generally higher than 0.66, the significance level is 0.001): the emotional component and the value component; the desired component negatively correlated, and the correlation coefficient of doctoral students is generally low (r is generally less than 0.1).

It can be seen that the value component of student motivation is closely related to the desired component. Highly expected learners are more convinced that they can complete their learning tasks, making it easier to develop a positive view of the learning task. Therefore, in the online teaching environment, teachers should actively use the expected components of learning motivation to cultivate students' self-confidence and form a benign learning cycle.

3. Construction of College English Information Teaching Model

According to the analysis and summary of the previous article, in the context of big data, how to integrate college English teaching with advanced technical means and improve students' learning motivation is a problem we explore. Whether it is traditional college English classroom teaching, multimedia teaching and MOOC teaching based on computer network technology, or flipping classroom teaching that has already shown results, all show their own advantages and disadvantages in practice. To arrange a branch in a limited college English class, combined with the background of the big data era, multimedia and computer technology as a means of teaching, and using the flip classroom to improve classroom efficiency, we must construct a three-dimensional teaching mode of college English classroom, which should have the following elements.

3.1 Classroom design based on clear teaching results

In October 2012, the US Department of Education proposed that “the current application of big data in the field of education mainly has two major directions: educational data mining and learning analytics”. The former refers to “the comprehensive use of mathematical statistics, machine learning and data mining techniques and methods, processing and analysis of educational big data, through data modeling, to find learners learning outcomes and learning content, learning resources and teaching behavior variables. Relevance, predicting learners' future learning trends”; The latter refers to “the comprehensive use of information science, sociology, computer science, psychology and learning science theory and methods, through the processing and analysis of general education big data, the use Models and methods are known to explain major issues that affect learners' learning, assess learner learning behavior, and provide learners with adaptive feedback (U. S. Department of Education) [13]. In the era of big data, the solution to teaching problems no longer depends on the vague experience that stays in the minds of every teacher, but on the description of a large number of teaching problems and solutions to teaching problems and analysis.

Therefore, different from the traditional college English classroom teaching method, after the teacher develops the syllabus, the lecture is to gradually complete the teaching objectives above the syllabus, and the way to accomplish the teaching purpose can be diversified, the content of the classroom and forms are rich enough to keep students focused. Deepen the memory of students by playing audio or video. Requiring students to show their learning results individually or in groups can motivate most students to learn. Effective homework and timely job feedback can arouse students' enthusiasm for learning. Rich teaching resources can increase students' expectations of the classroom.

3.2 Achieve comprehensive and objective educational evaluation

The intuitive meaning of the education evaluation cannot be interpreted by simple figures. In the era of big data in which the Internet has become a basic and everyday learning platform for people, “the use of technologies such as data mining, learning analytics, content analytics, and the development of disciplines has made the ‘quantitative evaluation’, ‘progressive evaluation’ is a developmental evaluation of traits, with the guarantee of technology and methods.” [3]Big data can not only change the concept of educational evaluation, expand the scope of educational evaluation, but also provide technical and methodological support for the development of educational evaluation.

3.3 Gradually use big data technology to guide teaching in teaching

“Educational decision-making is large and complex system engineering. Research and policy advice on complex education issues must also rely on informative and reliable data, relying on automated processing and analysis of these data reflecting objective educational realities. In the era of big data, It provides guarantee and possibility for the scientific and modernization of educational decision-making” [4].Big data can help teachers improve teaching effectively. In the past, teachers' evaluation of students was often based on students' classroom performance, homework completion or test results. In college English teaching, a teacher is very likely to face hundreds of students in the same semester. It is basically impossible to ask the teacher to know the learning situation and information of each student. Through big data technology, collect the bit information of a student's learning stage, and conduct effective data analysis at the end of the period. The teacher can analyze and master the student's learning more accurately, thus counteracting the teacher's teaching and forming a good mechanism. .

3.4 Feedback from Open Classroom on Students' Self-study Results and Promotion of Smart Classroom

The open classroom here is actually equal to the flipping class mentioned above. This paper also discusses that under the current trend of teaching reform, the proportion of class time in college English has reached the lowest point. It is unrealistic to complete a large amount of teaching content in a limited class time. The atmosphere is active, but it is not practical to help students master the knowledge. Therefore, the output-oriented education concept was introduced into the college English

classroom, and the wisdom classroom came into being. “Educational big data gathers and stores the information assets in the education field, which is the most important foundation for the development of 'smart education', while data mining and learning analytical technology is the bridge between educational big data and smart education” [6]. The full application of big data in the construction of smart campus is an effective means to improve the level of construction and improve service quality. Data technology is the 'smart pillar' of smart education system construction. Internet of Things technology can enhance the perception of educational environment and teaching activities, and big data technology can improve the wisdom of education management, decision-making and evaluation. Wisdom education covers elements such as smart teaching, smart management, smart research, smart evaluation, smart service, and smart environment (campus), in the era of big data, big data thinking and technology.

4. Conclusion

This paper first discusses the impact of big data technology on education, and thinks about the changes that Chinese college English teaching will produce in the big data environment and the adjustments and countermeasures made to adapt to these changes. The introduction of big data will make English teaching more flexible and more diverse. Under this circumstance, English teaching practitioners and planners must change their mindsets, adjust their roles, improve their knowledge structure and update their educational concepts, thus combining big data technology with college English teaching and promoting the development of college English teaching in the new era. In the age of information technology, college English teaching can no longer be controlled by the traditional knowledge-instilling teaching mode, but must keep up with the pace of the times, and make use of the convenience of rapid transmission of network information and information to create a more realistic language learning environment for students and provide more Rich learning content, while encouraging students to develop self-learning ability and thinking ability. At the same time, teachers can't ignore the role they should play in teaching, not only the designers of classroom practice activities, the answerers of students' learning questions, the learners of student learning methods, and the testers of student learning outcomes.

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