

Analysis of College Students' Satisfaction with Multimedia Teaching in English Courses under the Background of "Internet Plus"

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Abstract: This paper is based on a study of college students' satisfaction with the use of such human-computer interactive multimedia teaching methods in college English learning under the background of "Internet Plus". By analyzing the data, it is concluded that college students are basically satisfied with this teaching method. It also provides advice for the development of this teaching methodology to improve the efficiency and quality of teaching and learning.

Keywords: Multimedia; Satisfaction; College Students; English Course.

1. Introduction

Under the background of "Internet Plus", "Internet Plus Education" has impacted and changed the traditional teaching mode. At the same time, combined with the current requirements of promoting the development of high-quality education, the use of multimedia technology to assist teaching has become an inevitable trend of the modern teaching mode, and the inevitable requirements of innovative teaching mode and improving the efficiency of teaching. The inevitable requirement of innovating teaching mode and improving teaching efficiency. English teaching should adapt to this process and meet the transformation needs of the industry. The deep integration of multimedia technology in college English teaching optimizes the teaching mode and promotes the high-quality development of "Internet Plus education". At present, teachers are still challenged by the way in which they integrate multimedia technology with their teaching and learning and the mode of integration. How to effectively utilize multimedia teaching methods to improve the efficiency of college students in college English learning, and improve their satisfaction, is a new topic in college English teaching. Nowadays, more multimedia teaching methods emerge, such as many teachers combining tools such as the Chaoxing platform, TED, and Criticize.com to teach. It is on the basis of university students' satisfaction with the use of such human-computer interactive multimedia teaching methods in university English learning that this paper is conducted. Based on the above background, this paper takes college students receiving English teaching as the research object, conducts research on the degree of satisfaction with the combination of multimedia technology in college English teaching, analyzes the problems reflected therein and puts forward solutions to provide reference for the development of English teaching mode.

2. Literature Review

2.1. A Review of Multimedia Teaching Research

Research on multimedia teaching by scholars at home and abroad mainly focuses on the application and effect of

multimedia teaching. Among these studies, foreign studies are dominated by the cognition in multimedia learning environment, for example, Duygu Mutlu-Bayraktar pointed out that multimedia design and presentation form are the most concerned research direction.[1] Zhang Qiliang and Wang Aichun pointed out that the teaching mode in which students passively accept the knowledge instilled by the teacher ignores the cognitive subjective role of students, which is not conducive to the cultivation of students' innovative thinking and innovative ability.[2] Chen Pu mentioned in his early research that multimedia combined teaching is to enable students to learn through multiple senses, so that students' learning activities are in an active state, to stimulate students' enthusiasm for learning, and to promote students' understanding and memorization of knowledge. In the following decades, multimedia technology has rapidly developed and matured, and the learning effect of students has been obviously improved.[3] At different stages, people have different understanding of multimedia teaching. Hu Junru explained the essence of network multimedia teaching, that network multimedia teaching is the product of the development of education informatization refinement, the essence of the use of network multimedia technology to assist in classroom teaching to promote the effect is to ensure that the teaching efficiency on the basis of the enrichment of the teaching form, to provide students with high-quality resources.[4]

2.2. A Review of Satisfaction Theories

The research on satisfaction can be traced back to the 1970s, which was initially used to study the consumers' evaluation of product quality and service in the market. Lorin W. Anderson's revision of Bloom's educational objectives suggests that college students make development and progress in all aspects when they participate in learning activities, which are mainly reflected in the fields of knowledge, motor skills and emotion, which is also the basis for the assessment of college students' learning satisfaction. This is also the theoretical source of college students' learning satisfaction assessment. YU Wenhao summarizes learning satisfaction as learners' attitude towards learning after evaluating the characteristics of the actual course, [5] and Wen

Jing proposes that college students' learning satisfaction is one of the important contents of higher education assessment and management, and it is the most direct evaluation of students' perception of higher education after they participate in it, and therefore the results of this evaluation have important reference value for the evaluation leaders. It has important reference value. Reflecting the fact that college students' learning satisfaction is a cluster of indicators that intuitively reflects their self-evaluation of learning experience, it is the base point for measuring and evaluating teaching quality. [6] By studying college students' learning satisfaction in the online environment, Liao Bao et al. proposed that learning satisfaction is based on the learners' sense of learning experience, which is an important indicator reflecting the effect of online learning implementation.[7]

2.3. Review

The early studies on multimedia teaching and satisfaction theory at home and abroad have been studied in different aspects and in different depths. Most of these studies are only conceptual studies on the use of such multimedia technology in college English teaching, and mostly starts from the teachers' point of view. In this paper, we evaluate the effectiveness of such methods from the students' point of view, analyze the limitations of such teaching methods at the present stage, and put forward suggestions.

3. Research Design

3.1. Preparation and Investigation

The development of this questionnaire was compiled in two parts, the first part was student information, which investigated the distribution of students' grades, and the second part was a survey of students' satisfaction with the use

of multimedia teaching in college English courses. This part of the survey was conducted to evaluate the students in the aspects of multimedia courseware resources (2 questions), multimedia teaching content (2 questions), and overall satisfaction (6 questions).

3.2. Research Methods

This study focuses on the collection and study of quantitative data, so it is proposed to use the literature analysis method at the same time using a questionnaire to collect data, using the form of self-administered questionnaires, with reference to the existing questionnaire form of satisfaction, with the support of the theory of satisfaction, to investigate the degree of their satisfaction with the multimedia teaching methods.

3.3. Data Collection and Procession

In this study, a web-based questionnaire survey was conducted using the Wenjuanxing platform with college students who have college English courses as the research subjects. A total of 100 questionnaires were distributed, among which 80 questionnaires were valid, and the validity rate of the questionnaire was 80%. The data obtained from the questionnaire were analyzed using the SPSSAU platform.

4. Research Result

4.1. Reliability and Validity Tests

In order to test the reliability and validity of the questionnaire on college students' satisfaction with multimedia teaching of English courses, the data was tested using the SPSSAU platform. The test results show that the Cronbach alpha coefficient is 0.810>0.8, which indicates that the ten evaluation factors in this questionnaire are credible.

Items	Factor Loadings			Communalities
	Factor 1	Factor 2	Factor 3	
Do you think that teachers' use of multimedia teaching methods enhances your learning efficiency?	0.685	0.212	0.238	0.570
The use of multimedia teaching has increased my interest in learning	0.757	0.236	0.193	0.666
Using multimedia learning can help me learn the way to study and do research	0.733	0.243	-0.308	0.691
Multimedia classroom teaching can lead to richer and more diversified teaching content	0.666	-0.085	0.432	0.637
The use of multimedia classroom teaching makes it easier for students to understand and master the teaching content	0.674	0.193	0.217	0.538
Are you satisfied with the richness of teaching resources (e.g., PPT, videos, etc.) used by teachers in multimedia teaching?	0.208	0.794	0.055	0.677
Are you satisfied with the quality of teaching resources (e.g. audio and video materials, documentation, software, etc.) used by teachers in multimedia teaching?	0.005	0.796	0.341	0.750
The use of multimedia classroom instruction can help students better identify their strengths and weaknesses.	0.392	0.641	-0.159	0.590
Do you think that teachers' use of multimedia teaching methods improves classroom interaction and engagement?	0.312	0.462	0.529	0.591
Are you satisfied with the frequency with which teachers use multimedia teaching methods?	0.152	0.084	0.781	0.639
KMO	0.767			-
Bartlett's Test of Sphericity (Chi-Square)	253.001			-
df	45			-
p value	0.000			-

Fig 1. Validity Analysis

From Figure 1, it can be seen that all the research items correspond to a commonality value higher than 0.4, which indicates that the information of the research items can be extracted effectively. In addition, the KMO value is 0.767, which is greater than 0.6, and the data can be effectively extracted information.

4.2. Analysis of College Students' Overall Satisfaction with College English Multimedia Teaching

(1) Description

According to the students' questionnaires that have been

recovered and analyzed, the satisfaction score of college students with the use of multimedia teaching methods in the English classroom is 3.88 (out of 5), with a satisfaction index of 72.39%, which indicates that college students generally have a favorable attitude towards the use of multimedia teaching methods in college English. Among them, students' satisfaction with multimedia technology for improving the richness of classroom content is high, while their satisfaction with multimedia technology for helping students find their own strengths and weaknesses is low.

(2) Analysis on the Satisfaction of Multimedia Teaching methods among College Students of Different Majors

Parameter Estimates (n=80)

	Unstandardized		Standardized		<i>t</i>	<i>p</i>
	Coefficients		Coefficients			
	<i>B</i>	Std. Error	<i>Beta</i>			
Constant	3.321	0.457	-		7.269	0.000**
Do you think that teachers' use of multimedia teaching methods improves classroom interaction and engagement?	-0.014	0.216	-0.010		-0.067	0.947
Do you think that teachers' use of multimedia teaching methods enhances your learning efficiency?	0.534	0.200	0.388		2.670	0.009**
Are you satisfied with the richness of teaching resources (e.g., PPT, videos, etc.) used by teachers in multimedia teaching?	0.174	0.150	0.159		1.160	0.250
Are you satisfied with the quality of teaching resources (e.g. audio and video materials, documentation, software, etc.) used by teachers in multimedia teaching?	-0.139	0.182	-0.105		-0.765	0.447
Are you satisfied with the frequency with which teachers use multimedia teaching methods?	0.206	0.138	0.179		1.495	0.139
The use of multimedia teaching has increased my interest in learning	-0.291	0.170	-0.260		-1.713	0.091
Using multimedia learning can help me learn the way to study and do research	-0.084	0.136	-0.079		-0.613	0.542
Multimedia classroom teaching can lead to richer and more diversified teaching content	-0.398	0.175	-0.317		-2.270	0.026*
The use of multimedia classroom teaching makes it easier for students to understand and master the teaching content	-0.156	0.192	-0.118		-0.814	0.418
The use of multimedia classroom instruction can help students better identify their strengths and weaknesses.	-0.072	0.147	-0.065		-0.491	0.625

Fig 2. Parameter Estimates

This study was conducted for students in four grades from freshman to senior, with the highest percentage of surveyed sophomores and juniors, totaling 60%. In order to study the differences in satisfaction of different factors by different grades, the results of Figure 2 were obtained by one-way ANOVA, and there were eight factors with p-values <0.01, indicating that no significant differences would be produced; however, there was a significant difference in students' satisfaction with multimedia classroom teaching for being able to make the teaching content richer and more diversified by different grades.

5. Conclusion

The results of the above analysis show that college students are generally satisfied with the multimedia technology used at the present stage and college English teaching, and it also reflects that the degree of satisfaction varies for different factors, and students complain about some factors, for example, students think that this model does not help much in finding their own strengths and weaknesses, so it is necessary to develop some new functions, such as summarizing the students' weaknesses and helping them to find the boards that need to be improved faster. summarize the students' weak points and help them find the boards they need to improve more quickly.

At the same time, in order to better improve the quality and level of teaching, enhance teaching efficiency, as teachers should provide high-quality teaching resources and an excellent teaching environment, in order to better promote the integration of multimedia technology and the classroom in colleges and universities, to promote the "Internet + education" program.

6. Analysis of Optimization Strategies

This study investigates the satisfaction evaluation of university students of different grades on the methods of using multimedia to have college English courses, and analyzes the quality of college English teaching and teaching strategies

from the students' point of view by understanding their evaluation of multimedia teaching resources and content aspects and their evaluation of them in general. In response to the results of the analysis, this paper tries to provide teaching suggestions for schools using multimedia teaching strategies.

(1) Improve teaching resources quality and utilization efficiency

Multimedia teaching resources are one of the important components. The quality of multimedia teaching resources has a decisive influence on the learning effect of students. In the current era of rapid development of multimedia, the emergence of a large number of new multimedia teaching resources has greatly improved the teaching efficiency and teaching level, and increased the frequency of interaction between teachers and students. However, many good and bad quality teaching resources are intermingled. Low-quality teaching resources that are not professional and scientific are spread on the Internet, and some students who are not capable of distinguishing between the good and the bad have wasted a lot of time on studying them but gained little. Therefore, teachers must play their role in the selection of teaching resources for professional identification, to prevent students from wasting time to learn ineffective learning resources. Teachers can develop a personalized learning resources selection program according to the characteristics of the students. For example, teachers can choose to explain the conceptual and basic knowledge in class, the improvement and expansion of basic knowledge for students to independently use multimedia learning resources for learning. The advantage of doing so is that students can watching the teaching video repeatedly with unlimited playback until they master it ; secondly, there are many high-quality learning resources on the Internet, which can enable students to understand a variety of methods to expand their ideas. At the same time, teachers should also improve their professionalism, carry out systematic teaching design, develop learning programs suitable for students, and maximize the efficiency of the use of teaching resources.

(2) Emphasize the student-centeredness and focus on observing effects

As a new auxiliary teaching method, multimedia teaching in its way of use and the use of effectiveness should continue to pay great attention. As students' auxiliary learning tools, should pay attention to the student-oriented, teachers must be through the students' learning results of a large number of in-depth analysis, to find out the general weaknesses of students' learning, in order to understand the students' learning needs, combined with the characteristics of the students and the teaching requirements, the learning environment, and other factors to choose suitable for the students' teaching resources, more close to the students' habits of use as well as use of scenarios, to become a powerful learning tool instead of a heavy burden, to help students better understand and master professional knowledge effectively to get twice the result with half the effort. The learning effect of students should also be regularly examined by teachers. In addition to regular tests on learning content, teachers should also combine students' behavioral data on major platforms, such as the course viewing time and playback rate, interactive discussion rate, etc., to analyze the correlation between students' positive human-computer interaction rate and their learning effect. In addition, students' feedback on learning content and methods is equally important. Teachers should regularly collect students' opinions, including students' evaluations on teaching content, interactive methods, learning environment and other information, and teachers should combine the results with multi-faceted, multi-angle, multi-level in-depth understanding of students' evaluations to make timely adjustments to the teaching methods and improve students' learning efficiency.

7. Shortcomings and Prospects

7.1. Limitations in Sample Selection

The questionnaire was selected from students who are conducting university English courses nationwide, and the questionnaire was only distributed and filled out on the Internet, which led to insufficient publicity. From the sample size, the effective sample size is 80, which still needs to be improved. From the results, the number of participants in the survey is unevenly distributed among all grades, with a relatively small proportion of freshmen and fourth-year students, mainly because at the beginning of the new semester, freshmen have not yet been exposed to too many courses,

while most of the fourth-year students are busy looking for a job, studying for graduate school and so on. Therefore, in the follow-up study, the attention to the distribution of sample selection can be strengthened in order to better develop better multimedia-integrated teaching programs for different grades and improve student satisfaction.

7.2. Imperfect Evaluation System

In the process of designing this questionnaire, the author has referred to many existing satisfaction questionnaires. This questionnaire mainly focuses on the evaluation of students' satisfaction with the overall learning effect, while the evaluation of the factors affecting student satisfaction is very little, and has a certain one-sidedness. In the follow-up study, we should pay more attention to the comprehensiveness of the questionnaire design, and try to use authoritative and scientific evaluation system for consideration.

References

- [1] Duygu, M.B. (2019) Cognitive load in multimedia learning environments: A systematic review, *Computers & Education*. Volume 141.
- [2] ZHANG, Q. L., Wang A.C. (2014) The Design of New Blended Learning Model Based on Flipped Classroom, *Modern Educational Technology*, 2014 24(04), 27-32.
- [3] CHEN, P. (1995) Multimedia combination teaching is the optimization of modern teaching media, *Higher Education in Chemical Engineering*, No.2, 51-55.
- [4] HU, J. R. (2023) Innovative Strategies of English Teaching in the Network and Multimedia Environment, *Journal of HUBEI Open Vocational College*, Vol.36, No.9, 17-19.
- [5] YU, W. H. (2015) Student Satisfaction Levels in Flipped Classroom.
- [6] An Action Research in Higher Education, *Open Education Research*, Vol.21, No.3, 68.
- [7] WEN, J. (2015) Learning Satisfaction of College Students: The Origin of Higher Educational Quality Judgment, *Educational Research*, General No.240, 75.
- [8] LIAO, B., LI, M., LI, X. (2023) A Study of College Students' Satisfaction with Collaborative Learning in an Online Environment, *Journal of Jiamusi Vocational Institute*, Sum 245, 31.