



## A B/S Structural Reform for Creating a Multimedia Political Education Platform

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### ABSTRACT

In this work, we delve into the concept, characteristics, and scope of the B /S structural model and its applicability to political education reform. We address the current issues in political education, including limited educational content, outdated teaching methods, and low student engagement. We also provide insights into the underlying causes of these issues. Our proposed B/S structural reform plan for students is a practical solution, encompassing the creation of a multimedia political education platform, development of political education apps, implementation of online interactive teaching, and other tangible measures. We evaluate the effectiveness of this plan through experiments, identify potential challenges, and offer solutions.

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### 1. Introduction

*In recent years, multimedia technology has become one of the best applications of computer technologies in China's education field. Many colleges and universities have gradually established multimedia classrooms, actively promoting the teaching method of computer multimedia. However, ideological and political education in colleges and universities is very comprehensive and complex in China, and there are still many problems with the application of multimedia technology in teaching ideological and political courses in colleges and universities. This is mainly because the key point of ideological and political education in colleges and universities is to enhance students' comprehensive literacy and political awareness. Multimedia technology, as an important technical means, has little effect on improving students' ideological level to some extent. In the process of ideological and political education for students, currently, most of our colleges and*

universities still adopt the traditional classroom teaching model even though the computer multimedia teaching method has already been introduced, so the actual ideological and political education is still relatively traditional, and the ultimate educational effect is not ideal enough. Therefore, the research on how to apply multimedia technology to realize effective multi-dimensional ideological and political education in colleges and universities is of great importance.

Based on this, the topic of multi-dimensional ideological and political education in colleges and universities based on multimedia platforms was analyzed and studied by constructing a structural model in this paper.

## 2. State of the Art

Scholars at home and abroad have researched multimedia ideological and political education platform systems and achieved some research results. Overseas scholars began studying multimedia ideological and political education early on, and their achievements were remarkable. There are many research achievements on Multimedia Teaching in our country, but few achievements in multimedia ideological and political education. Gao believes multimedia platforms can promote the diversified development of ideological and political education [1]. Wang believes that the application of multimedia platforms greatly improves the interestingness of modern ideological and political education and the enthusiasm of students [2]. Chen believes that ideological and political education in the form of multimedia in colleges and universities has some disadvantages; that is, the communication between teachers and students is somewhat hindered [3]. Chen considers that the multimedia platform easily makes the teaching process very programmatic to influence the teaching effect [4]. Wang believes that the multimedia teaching platform has a positive impact on the diversification of dimensions of ideological and political education in colleges and universities [5].

The above studies are based on introducing the research status of multimedia teaching platforms and ideological and political education. Although these studies have discussed the multimedia platform in detail, the lack of substantive research that combines ideological and political education and the multimedia platform is not conducive to the effective development of multimedia teaching platforms. Therefore, given the insufficiency of the existing research, the research on ideological and political education in colleges and universities based on multimedia platforms through the construction of the B/S model was put forward in this paper. In addition, the concrete content of model construction was expounded in the third part of this paper. The model analysis and questionnaire survey data were obtained and analyzed in the fourth part. The summary and relevant conclusions were drawn in the last part.

## 3. Methodology

In recent years, much research on the platform of multimedia education systems has been done by academic circles at home and abroad. Through the construction of the B/S algorithm model and simulation experiments, multi-dimensional ideological and political education in colleges and universities based on computer multimedia platforms has been analyzed and studied. Huang believes that the Internet has become an important carrier and tool for college students to study, live and entertain. The Internet is taken as the propaganda platform of ideological and political education in colleges and universities, and it will become an important medium for enhancing discourse expression [6]. At the same time, the rapid development of internet media enriches students' knowledge, dilutes and dispels the discourse bank of traditional ideological and political education, enhances students' autonomy, and deconstructs the traditional mode of ideological and political education. Ren believes that under the "Internet plus" background, the ideological and political education in colleges and universities should continue to build and use the network platform to optimize the network discourse environment further [7]. On the one hand, constructing ideological and political education websites and expressing educational discourse should be strengthened. Colleges and universities should create favourable conditions for discourse expression on both sides of education by establishing ideological and political education platform systems so as to carry out ideological and political education effectively.

So far, many colleges and universities have established multimedia classrooms and gradually enriched the multimedia teaching forms of each course. Table 1 shows the specific information on teachers' and students' authority in using the multimedia teaching system in colleges and universities. Liu believes that multimedia computer technology refers to dealing with text, sound, image, animation, video and other multimedia elements through the application of computer technology, making the elements in a logical order and combining them together reasonably, thus forming the system technology with interactive function [8]. Multimedia technology can integrate text, sound, image, animation and various kinds of information together according to certain rules and requirements, thereby forming complete multimedia information. In addition, multimedia technology can combine the computer system, audio and video equipment, and so on organically and effectively to realize the integrated processing of multimedia elements. Table 2 shows each module's specific content and authority description in the current multimedia teaching platform system. Education is the earliest field to apply multimedia technology. At the same time, the speed of development and progress of multimedia technology in education is also higher than in other fields. This is because multimedia technology is very suitable for application in the teaching process, which can not only help teachers diversify, display and teach the teaching content but also improve students' enthusiasm and initiative in learning. The most important application of multimedia technology in education is computer-assisted instruction. Huang believes that in the teaching process, multimedia teaching can visually stimulate the curiosity of students and attract students' attention in class, thus greatly enhancing the teaching effect to a certain extent [9]. Multimedia teaching can also arouse the students' senses to accept the knowledge and information that teachers impart better and improve the class effect of students entirely.

Content	Information	Scores	Material	Question bank	Homework	Experiment	Exam
Teacher's authority	Inquiry	Assessment	Amendment	Amendment	Assessment	Amendment	Assessment
Student's authority	Inquiry	Inquiry	Inquiry	Inquiry	Inquiry	Inquiry	Inquiry

**Table 1. The task authority table of multimedia education platform system**

	Student	Teacher	Political counsellor	Ideological and political students 'affairs committee
<b>Basic information</b>	R	R	RE	R
<b>Curriculum</b>	R	R	RE	R
<b>Thought tendency</b>	R	R	RE	R
<b>Awareness improvement</b>	R	R	RE	R
<b>Attendance record</b>	R	R	RE	R
<b>Action tracking</b>	R	R	RE	R
<b>Evaluation feedback</b>	R	R	RE	R

**Table 2. The module distribution of multimedia ideological and political education system**

Zhang believes that the B/S structure is a network structure model after the rise of WEB, and the WEB browser is the client's most important application software. This model unifies the client and centralizes the kernel that implements system functions on the server, simplifying the development, maintenance, and use of the system [10]. Ji believes the biggest advantage of the B/S model is that it can be used and operated at any place without installing any software specifically [11]. The only prerequisite is to have a computer that connects to the internet, so the structure implements zero maintenance of the client. Fan believes that in addition to this, the structure makes the system expansion particularly simple and convenient. In the premise of accessing the internet, as long as a user name

assigned by the system administrator and a matching password are obtained, it can be used unconditionally arbitrarily [12]. Deng considers that when it is inconvenient to contact the system administrator, accounts can be applied online, and as long as the application passes the certificate of safety certification within the company, the system will automatically assign an account to the applicant, which doesn't require any personnel involved in, and the applicant can enter the system for use and operation [13].

$$\operatorname{arsh}x = \ln\left(x + \sqrt{x^2 + 1}\right) \quad (1)$$

Shen believes multimedia technology can fully arouse the students' desire for knowledge and their learning interests in teaching and play their main role, thus achieving the purpose of "teaching goes together with pleasure" [14]. This new form of information changes the monotonous teaching mode, which allows the students to understand information more vividly, develop their hobbies and interests in learning, acquire information actively and timely, and stimulate their desires of expression, thus forming the interaction between teachers and students and the interaction between students, so that students are no longer passive recipients in classroom teaching. In Jin's opinion, the multimedia teaching system makes the comprehensiveness, practicality, interest and practicability of teaching further strengthened [15]. Therefore, the structure model proposed in this paper should analyze and study the multi-dimensional ideological and political education in colleges and universities based on multimedia platforms comprehensively.

$$\operatorname{arsh}x = \frac{1}{2} \ln \frac{1+x}{1-x} \quad (2)$$

**The main process of building the B/S structure model is as follows:** first, the applied formula (1) classifies explicitly and qualitatively calculates the dimensions of multimedia ideological and political education in colleges and universities. This step mainly determines the dimensions of algorithmic model analysis and various influencing factors of the study object, thereby more comprehensively analyzing and studying the ideological and political education based on the multimedia platform. Secondly, based on the identified analytical dimension of the research object, the applied formula (2) further verifies the dimensions and factors that have been identified. In the process of verification, it is necessary to carry out multi-dimensional repeated verification and calculation on various influencing factors so as to ensure the specific role of influencing factors in practical applications. This is mainly to improve the accuracy of the research results. In addition to confirming the influence factors of multimedia platforms on ideological and political education in colleges and universities, the application requirements of ideological and political education to multimedia platforms should be investigated in detail, and a favourable research basis should also be obtained.

$$ds = \sqrt{1 + y'^2} dx \quad (3)$$

Thirdly, the applied formula (3) investigates and qualitatively calculates the application feasibility of multimedia teaching platforms in multi-dimension ideological and political education in colleges and universities. The application effects of multimedia technology and teaching platform systems in college education in our country have been approved by most teachers and students. However, multimedia teaching systems' application feasibility and effects on ideological and political education in colleges and universities are waiting to be studied. The calculation of the application feasibility is relatively complicated, especially for the results of ideological and political education in colleges and universities. Therefore, teachers' and students' demands for multimedia ideological and political education platform systems are investigated through the methods of questionnaires and sample extraction first. Then, based on this, the feasibility calculation and analysis are carried out to better verify the actual effect of multimedia ideological and political education and teaching.

$$K = \left| \frac{dx}{ds} \right| = \frac{|y''|}{\sqrt{(1+y'^2)^3}} \quad (4)$$

Finally, the applied formula (4) qualitatively calculates the degree of influence of the application effect of the multimedia ideological and political education platform. At the same time, after the calculation and analysis of the feasibility and the effect degree, the simulation test and questionnaire survey on the application experience of multimedia platform systems of Ideological and political education in colleges and universities should be carried out. In this paper, the selected students were divided into the experimental class and the control class. The same teacher taught the experimental class and the control class, and the teaching ground, content, teaching progress and other factors of these two classes were also the same. Students in the experimental class and the control class studied in the normal order in the normal teaching natural class all the time. They were not told whether they were the experimental subject or the control object so as to avoid the students having some psychological hints after knowing they were experimental subjects, thus affecting the test results after the test. Before and after teaching, the tests of the indexes of the two classes' students were conducted under the same conditions. Both theoretical and technical examinations adopted blind tests; that was, the grading teacher did not know which class the students were from. The grading teacher was not the teacher who taught the two classes, so the objectivity and accuracy of the test results could be ensured. When the ideological and political teaching was conducted in the experimental class, and the control class, the same teaching schedule and method were adopted under the traditional teaching mode. Besides, teachers used the network multimedia ideological and political teaching system in theoretical teaching in the experimental class. They carried on the computer-assisted instruction in ideology and politics to students.

#### 4. Result Analysis and Discussion

The experimental class A and the control class B were selected as the experimental objects in this paper. The ideological and political education mode of the experimental class was multimedia teaching. The ideological and political course of the control class was the traditional teaching mode. The subject research was carried out through the after-school questionnaire survey and experimental test of the students in two classes.

Degree	Frequency	Percentage	Valid percentage	Comprehensive percentage
Capable	29	97	97	97
General	1	3	3	100

Table 3. The analysis of the effect of multimedia instruction on deepening memory

Students' impressive degree in course contents after ideological and political course teaching is shown in Table 3. Students in multimedia teaching experimental classes were more impressed with the content of ideological and political education. It can be seen that multimedia and multi-dimensional ideological and political education can greatly enhance students' memory of ideology

Effects	Frequency	Percentage	Valid percentage	Comprehensive percentage
Very satisfied	26	87	87	87
General	4	13	13	100

Table 4. The investigation and analysis of multimedia teaching experience

cal and political content. Table 4 shows the feedback results of students in the experimental class on the multimedia teaching experience. The data shows that most students were satisfied with the ideological and political education of multimedia platforms. This indicates that multimedia ideological and political education can have a great positive impact on ideological and political education in colleges and universities

Category	Teaching effectiveness	Understanding efficiency	Memory effect	Communication effect
Multimedia teaching	90	87	79	73
Traditional teaching	75	63	56	86

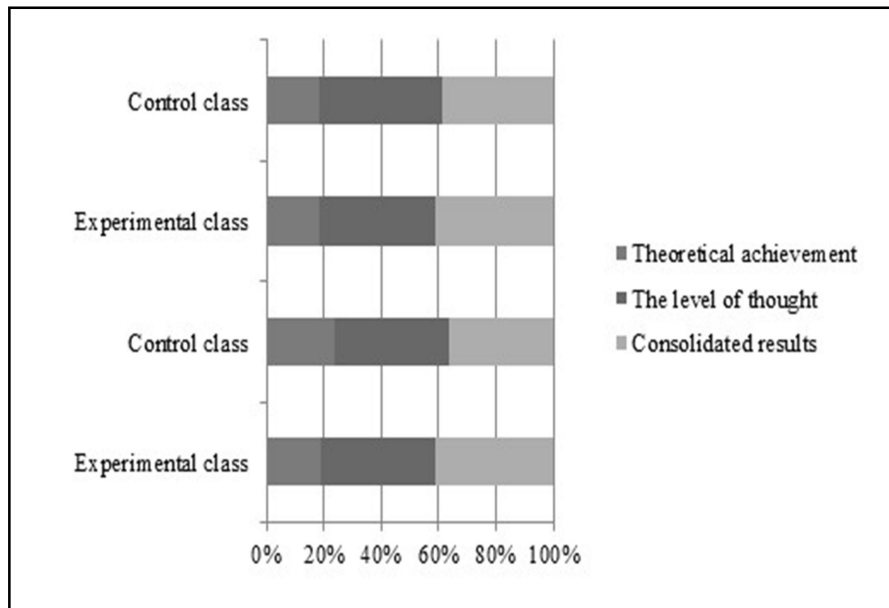
**Table 5. The investigation and analysis of multimedia teaching effectiveness**

In this paper, the students in the experimental class took part in the multimedia teaching of ideology and politics earlier than the students in the control class. The ideological and political teaching that the students in the experimental class participated in originally was the same as the control class, namely, the traditional classroom teaching model. Therefore, in the experiment, the students in the experimental class could also provide part of the feedback on the impact of multimedia teaching according to the transformation of before and after teaching. From Table 5, it can be seen that the students in the experimental class believed multimedia ideological and political education was obviously superior to traditional teaching in three aspects, namely, teaching effect, comprehension efficiency and memory effect. However, the impact of communication between teachers and students was still not as good as the traditional teaching method. Thus, it can be found that multimedia ideological and political education is beneficial in the promotion of the teaching effect, memory effect, and comprehension efficiency. Still, there are certain adverse effects on the communication between teachers and students.

Class	Category	Theoretical achievements	The level of thought	Consolidated results
Experimental class	Averages	15.43	33.01	33.60
Control class	Standard deviation	2.10	3.53	3.18
Experimental class	Averages	13.83	30.70	31.20
Control class	Standard deviation	1.91	4.40	4.02

**Table 6. The comparison of experimental results**

The overall experimental results of the experimental class and the control class are shown in Figure 1 and Table 6. According to the data, ideological and political theoretical achievements and ideological awareness of students in the experimental class were higher than those in the control class. Meanwhile, the overall improving amplitude of ideological and political comprehensive quality of students in the experimental class was higher than that of the students in



**Figure 1. The comparative analysis of teaching parameters**

the control class. Hence, the students' comprehensive ideological and political quality in the experimental class with the multimedia platform teaching mode was better than that of the students in the control class with the traditional teaching mode. Therefore, applying computer multimedia teaching platforms in ideological and political education in colleges and universities plays a greater positive role.

Options	Frequency	Percentage	Valid percentage	Comprehensive percentage
Can only choose to watch	4	13	13	13
Making choices and controlling by ourselves	25	83	83	97
Only videos	1	4	4	100

**Table 7. Investigation and analysis of system video demands**

To sum up, there is no doubt that the multimedia platform plays a positive role in multi-dimensional ideological and political education in colleges and universities. However, the application of multimedia platform still has some deficiencies that are not conducive to communication between teachers and students. The application effects of multimedia platforms in ideological and political education in colleges and universities are further analyzed through the opinion survey of the multimedia system in video teaching to find out the beneficial aspects that can improve the application effect of multimedia platforms. It can be found in Table 7 that most of the students think that the multimedia teaching system should provide students with the opportunity to choose and play videos by themselves and conduct ideological and political self-education. So, the unreasonable problem of video selection and student rights settings exists in the application of multimedia system platforms. Therefore, it is believed that Chinese colleges and universities can optimize and improve the effective application of multimedia

ideological and political education platforms from the following aspects. The first is to start from the point of view of teaching communication. In the process of Ideological and political education, teachers should rationally control the time of system application, avoid excessive reliance on the multimedia education platform system, and ignore the teaching communication between teachers and students. The second is from the perspective of independent learning. Ideological and political education multimedia systems should be constructed actively, and the contents and resources of system education should also be enriched. The last is to provide students with comprehensive and reasonable access to multimedia platform systems, thus providing more opportunities for students to carry out ideological and political self-education, enriching the way of ideological and political education, and ultimately achieving the purpose of promoting students' ideological and political comprehensive quality.

## 5. Conclusions

To better improve the actual effect of multimedia ideological and political education, the model analysis and effect investigation on the multimedia education platform system based on the B/S structure model were carried out in this paper. Finally, the main conclusions are as follows: Multimedia ideological and political education helps improve students' memory, comprehension efficiency, and learning effects of the contents of ideological and political education. Compared with the students in the control class of the traditional teaching, students in the experimental class are satisfied with the application of the multimedia platform, and students' theoretical achievements and consciousness standards of ideological and political education are relatively high in this class. The multimedia platform system's ideological and political educational effect is better than traditional classroom teaching.

In conclusion, the analysis and operation process of the B/S structure model presented in this paper is simple, and the advantage of the model lies in its high practicability and credibility. Meanwhile, the B/S structure model still has some advantages in influencing factors. However, applying the B/S structure model in education is limited, and its feasibility should be improved. Therefore, the research of this paper has a certain reference value, but there are still some deficiencies. In future research, the model's feasibility in education can be further improved by means of consistency checks and analysis of the structural models.

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