

Retraction

Retracted: Design and Dynamic Analysis of Ideological and Political Education Platform Based on Network Multimedia Technology

Advances in Multimedia

Received 15 August 2023; Accepted 15 August 2023; Published 16 August 2023

Copyright © 2023 Advances in Multimedia. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their

agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] X. Chen, "Design and Dynamic Analysis of Ideological and Political Education Platform Based on Network Multimedia Technology," *Advances in Multimedia*, vol. 2022, Article ID 1364244, 13 pages, 2022.

Research Article

Design and Dynamic Analysis of Ideological and Political Education Platform Based on Network Multimedia Technology

Xiaowen Chen 

School of Marxism, Zibo Vocational Institute Shandong, Zibo 255300, China

Correspondence should be addressed to Xiaowen Chen; 12060@zbc.edu.cn

Received 22 August 2022; Revised 15 September 2022; Accepted 29 September 2022; Published 17 November 2022

Academic Editor: Tao Zhou

Copyright © 2022 Xiaowen Chen. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Network multimedia is a shape of mass media supported by the new technique system, and its main equipment includes mobile phones, notebook computers, and digital TVs. With the growth of science and technique, multimedia technique is also evolving rapidly and has got a section of people's activity. The emergence of network multimedia has introduced the technology of the new era into people's lives, which has had a significant influence on the thought-political teaching of today's learner. As a group of users in the "digital age", college students' thinking, behavior, and concept are all influenced by the multimedia network. The fast growth of multimedia network not only brings thought-political opportunities to students, but also brings problems. Because of the thought-political education platform design and ideological dynamic analysis of network multimedia technology, this study analyzes the construction and teaching circumstances of the platform, and then uses principal component analysis to analyze students' political theory, political attitude, civilized etiquette, observance of thought, collective thought, public welfare thought, analysis of learning ideas, get the eigenvalues and variance %, of which the proportion of variance of the first four principal components exceeds 90%; public welfare activities and the idea of abiding by laws and regulations have a better influence on the first main component; collective thinking has a comparison on the impact of the second principal component, the correlation between the indicators of thought-political education and the concept of students' quality is greater than 0.75; it shows that each index has a large degree of correlation with the concept of students' quality, among which Political attitudes have the greatest impact on students' quality outlook, with a correlation coefficient of 0.911; secondly, using a nonhomogeneous hidden Markov model to analyze ideological dynamics, we can get the learning situation in different ideological states; finally, the hot spots during the epidemic are related to ideological dynamics Sexual analysis showed that the p values were all less than 0.05, and the correlation analysis between hotspots and ideological dynamics during the epidemic was significant, namely "national sentiments", "social responsibility", "angels in white", "Chinese power", and "the benevolence of doctors". The hot words of "Youth Responsibility" have an active impact on the ideological state of learners, and their correlations are all above 0.7, and the correlation is strong. Network multimedia is a shape of mass media supported by the new technique system, and its main equipment includes mobile phones, notebook computers, and digital TVs. With the growth of science and technique, multimedia technique is also evolving rapidly and has got a section of people's activity. The emergence of network multimedia has introduced the technology of the new era into people's lives, which has had a significant influence on the thought-political teaching of today's learner.

1. Introduction

To meet the needs of the construction of thought-political education courses in colleges, took advantage of the existing campus net courses and material environment, and implement interactive teaching of students' thought-political education. To this end, the theoretical and political information of thought-political education in science and technology is

developed and systematized. According to ASP, information management is realized through the process of system devise, system analysis, system fulfillment, system test, and database system [1]. In the ideological and political network, the multimedia learning system is suitable for multicast IP applications. Among these functions, it is more appropriate to use the IP multicast mechanism. Each group uses the enhanced session host for multicast, and the members of

the multicast group represent the members, which is convenient for management. It can be seen from the case study that this method can decrease the load of the system and enhance the efficiency, and the number of multicast participants is not limited, which has a good auxiliary effect in the search procedure. With the help of multimedia Internet technique, the innovation of thought-political theory has been realized, the amount of learning has been increased, the courses of thought-political theory have been expanded, and the education system has been improved [2]. Multimedia technique and three-dimensional technique can develop the thought-political teaching system of the course, which is a new attempt to promote the innovation of thought-political teaching ways [3]. Relying on the multimedia technology platform, the faculty team combines online learning with offline learning to form a new concept of the college. Students should have more opportunities to interact with learner, improve students' understanding and acceptance of thought-political class, strengthen the flow of teachers and students, and promote courses theory class. According to the old and new ideas, students gain new experiences, and corresponding professors and teachers also have new opportunities for improvement. This beneficial cycle contributes to the development of ideas and theoretical courses [4]. The thought-political management of colleges adopts Microsoft Visual Studio 6.0 as the growth tool, and SQL Server 2005 as the data store system and ASP.NET 2.0 for web application developers. In addition, students' progress in cluster analysis is analyzed using methods from the field of data mining. The test outcome display that the server system operates normally and is in a stable state. The theoretical support of thought-political education is also very important [5]. With the growth of network technique, the thought-political structure of network education in colleges is in line with the needs of college education reform, the needs of network development trends, and the needs of excellent personnel training. The thought-political education network builds an active platform for thought-political education in colleges, solves opportunities, solves problems, and promotes the modernization of thought-political education in colleges [6]. In order to enhance the quality of data collection and thought-political education, a decision support algorithm is proposed to be used in the analysis and management of thought-political education quotations. The test results show that the purpose of curriculum and purpose education system analysis performs well in the following aspects. The novelty and accuracy of information are powerful resources to enhance the effectiveness and quality of purpose learning in management courses [7]. Scoring is primarily used as a method of filtering learning resources and learning resources that can be recommended to users. By introducing the collaborative recommendation filtering algorithm into the network platform, the algorithm can be applied to new fields, and more researchers can study the appliance of collaborative filtering technique in the network at different levels and angles, thereby increasing the number and effectiveness of recommendations [8]. The characteristics of the network environment determine its dual role, which is both an opportunity and a challenge to the

thought-political education in colleges. The net system has changed students' cognition of the world and affected their life and physical and psychological health, which requires the thought-political education in colleges to actively adapt to the challenges of informatization and constantly update topics and concepts [9]. Under the new situation of global political multipolar, economic world, cultural diversification, message networking, social class diversification, lifestyle diversification, geographical diversification, and diversification of usage forms, thought-political education in universities is confronting serious challenges. According to the research of Moodle, it is of great research significance to use Moodle's open technology to promote the thought-political learning platform in universities [10]. As a new type of online learning, the thought-political platform of online learning is more prominent. Learn the interactive thought-political education platform for teachers and students, and clarify the mechanism of the online thought-political education platform. Qualitative and quantitative analysis of influencing factors by means of questionnaires, expert interviews, etc., is an important method to increase the possibility of theoretical teaching communication on the thought-political nature of the network platform [11]. The thought-political education system is an important system for cultivating students' thought-political innovation ability. The connection between basic learning and selective network resources, the connection between teaching ways and technology and the humanization of teaching methods, the connection between the main role of institutions and the subjective learning of people when they use the Internet and educational platforms for thinking [12]. The article first analyzes the development needs of the educational thought-political information terrace, then discusses the design requirements of the thought-political information platform, and summarizes the design and implementation of the thought-political message platform from education [13]. The Ministry of Education conducted a theoretical assessment of the thought-political structure. By the analysis, study, and development of the whole thought-political evaluation system, and the application of modern thought-political message evaluation technique, the best method of the advanced system structure is shown. The ideological and political assessment network has a good scale and stability, and is easy to promote and use within the framework of ideological and political considerations [14]. The study puts forward the present thought-political policies based on multimedia technique, and analyzes the multimedia learning theory and cognitive load theory by introducing relevant theories and technologies, and proposes the basic process of multimedia curriculum planning. Then, combined with the growth trend and design characteristics of the present media, the characteristics of multimedia and the new presentation methods of media courses and system elements are summarized, and the learning content, structure and writing system of the media interface are proposed. Experimental results show that standard design schemes can cover and enhance the design and application of a range of media tools. Although it can be detected, it can effectively help students achieve higher scores [15].

2. Thought-Political Education under the Network Multimedia Technology

2.1. Problems Existing in the Construction of Thought-Political Education Platform. The establishment of the online thought-political education terrace is not achieved overnight, but has gone through a relatively long process. In the process of building an online educational thought-political platform, some online educational ideological and political platforms have also emerged. Some online ideological and political education platforms are in response to national policies, and there is no dedicated person responsible for maintenance and management. Some colleges and universities are not only responsible for building an ideological and political network platform without advertisements, but also just hanging it on the school homepage, and no one cares. Some serious problems are: First, there is no high-level planning for the creation of an online terrace education terrace. The construction of thought-political education network platform in colleges and universities should not only be based on national standards or “forms”, but also clarify the concept, direction, and goal of thought-political education net terrace construction. Second, the service lacks understanding of the thought-political platform of online education. Insufficient operation is a significant problem in thought-political network education. To understand the needs of college students, students cannot solve problems and meet needs, especially lack of direction and psychology in the direction of use. Over time, students lose interest in navigating the site, and site hits drop. Third, the online thought-political education platform lacks an efficacious mechanism. The lack of effective educational ideological and political management network in colleges is a serious problem, and the network is the platform for thought-political education. The failure of the management system not only fails to provide the necessary conditions to sustain the construction of a thought-political platform, but also creates a situation of “everyone manages, no one manages”. Factors such as chaotic management, imperfect policies, and imperfect mechanisms affect the construction and maintenance of the thought-political education platform network in universities. Full-time thought-political theory teachers cannot undertake all the tasks of thought-political education, and the overall management system of the party, government, and industry groups has not yet been established. The student exchange mechanism, student activity mechanism, and student management mechanism have not yet been announced.

2.2. Development Opportunities Brought by Network Multimedia Technology to the Construction of Thought-Political Education Platforms in Colleges. Network multimedia technology is a new media system. It is a modern communication method that effectively utilizes mobile communication and network technology, combines the Internet, TV, and radio to realize a variety of media communication modes that truly complement old media and new media. General Secretary Xi Jinping advocates accelerating the integrated development of media, improving the pres-

tige, dissemination, and influence of mainstream media, changing traditional business models, and completely changing the way of knowledge dissemination. In the period of multimedia network, the establishment of thought-political learning platforms in colleges has opened up new opportunities for development. The traditional thought-political education methods in colleges are rigid and dogmatic, which limits students’ grasp of ideas. Multimedia network technology validly combines the merit of traditional media and new media. Thought-political educators in colleges should effectively take advantage of the opportunities and advantages of the multimedia network, use the network language that students can easily accept and participate in, and promote advanced learning and culture through various channels and methods. In terms of thought-political education, and to better comprehend students’ acceptance of thought-political doctrines. Traditional ideological and political educators lack blood ties in colleges, and their awareness of attaching importance and importance has not been profoundly rooted in the hearts of the people. The path of online multimedia communication with psychological characteristics lies in the desire of students to communicate equally, because college students can reduce psychological defense, reduce social costs, and improve the ability to communicate with strangers in the virtual world. College network thought-political teachers should use WeChat, auto media, Weibo, and other forms to freely communicate with college students, and simultaneously have some understanding of thought-political teaching, so that college students can know it correctly. From the heart, this form of education has greatly enhanced the effectiveness of thought-political teaching in colleges. Traditional thought-political education in colleges pays more attention to simple preaching and one-sided indoctrination, but from the view of multimedia networks, thought-political education in colleges and universities has gradually transformed into exchanges; pluralism and transaction characteristics. Multimedia networking means transforming boring educational content into vivid and intuitive educational content, including massive images and vivid text, video, and audio, that students want to receive, respond to, and engage with. At the same time, the socialist core values and network of thought-political education can be more effectively integrated, which will greatly increase the subjective initiative of college students to join in thought-political education.

Network multimedia involves transforming traditional educational content into vivid and intuitive educational content, including a large number of pictures, texts, videos, and live sounds, so that students are readying to receive, respond positively, and participate actively. At the same time, the socialist core values can be better linked with thought-political online teaching, which greatly improves the subjective initiative of colleges to participate in thought-political education.

2.3. The Realization Procedure of Thought-Political Education of Network Multimedia Technology. Education is a huge and complex systematic goal of thought-political networks. For educators, the cultivation of thought-political

networks is an educational activity. In terms of educational purposes, thought-political networks, education is an activity of learning and acceptance. From the angle of opinion of the network, network thought-political education is an information activity, which is not only the procedure of transmitting the main body of network education, but also the process of acquiring network information materials. Therefore, the thought-political network of the education spiral circulation system composed of three subsystems: the educator system, the education object system, and the education process feedback system. The thought-political education network platform is an environment beneficial to continuous activities. As shown in Figure 1.

The educational ideological and political network is a spiral circulation system composed of three subsystems: the educator communication system, the educational object receiving system, and the educational feedback process system. The ideological and political education platform is a means to promote the continuous operation of the system.

In the information age, "thought-political education is a specific phenomenon and activity of disseminating social information in a class society, and is the core of the dissemination of thought-political education behaviors and processes with ideological concepts, political viewpoints, and moral norms as the main body." Online educators populate political education in the situation of disseminating information networks. The main goal of thought-political education is to popularize cultural knowledge, labor skills, values, political beliefs, social norms, etc. in a purposeful and organized manner, so that the educated can form a proper world prospect on life and outlook on commodities. Therefore, in the procedure of online thought-political education, knowledge such as cultural knowledge, labor skills, values, political outlook, and social norms constitute the foundation of all online thought-political education. They also have to train the decentralized network information flow. In a network of dissemination of information, educated people prefer to disseminate "autonomous" information that is closest to their interests and meets their needs. This interactive approach to disseminating information not only gives educators an advantage in networking, but it also challenges educators to disseminate information online. Educators disseminate educational information on online platforms, whether scientists can influence their ideological development, seeing that online information should be consolidated through offline practice. So as to make online thought-political education continue to play a positive role, it is also essential to implement online and offline practical activities through online platforms, strengthen the content of online education, and alternately understand the object of thought-political education.

Any education is effective and successful if it is received by the object of education. The internet has nothing to do with science and politics. We trust that the net acceptance of thought-political education refers to the continuous activities constituted by the selection of information network goals, knowledge, emotion, temperament, will guidance, and external acceptance through the network. Educated in a certain point of view. Therefore, the

process of forming through the thought-political network is a dynamic and intricate process, which is formed by the interaction of many factors and variables. As shown in Figure 2.

Internet thought-political education is a systematic plan, carried out in different levels, and each level has certain responsibilities. Whether the network data distributed by the teacher is accepted by the educational object, the acceptance level is restored to the teacher. Based on these feedbacks, teachers constantly adjust and revise the content and methods of analyzing network information. Generally speaking, the educational process system includes the procedure of institutional analysis, the process of adjustment and improvement, and the process of data redistribution.

2.4. The Method of Constructing the Thought-Political Education Platform in Colleges from the Perspective of Network Multimedia. From the perspective of network multimedia, it is necessary to constantly change teaching concepts, improve and optimize teaching methods, fully use to the role of multimedia network carriers, and improve the usefulness of thought-political teaching. Simultaneously, college teachers and thinkers realize their mission from the perspective of multimedia networks, focus on the advantages of multimedia networks in forming thought-political exchanges, and support the thought-political effects of colleges. The thought-political education methods in universities must adapt to the requirements of the times, ensure the full circulation of the multimedia network, and use the multimedia network as the carrier to analyze the ideological situation on the spot and facilitate the growth of thought-political undertakings. Political theory establishes a three-dimensional education system, establishes standardized courses, and strengthens thought-political theory. Finally, it sets an example for high school students to teach in the virtual world, and trains a group of students with high theoretical level, solid writing foundation and high teaching awareness to play an exemplary role. Guiding public opinion by posting multiple comments has indeed achieved the goal of "walking out from the masses to the masses". With the growth of network technique, network message is of great meaning to the shaping of college students' thought-political concepts and the formation of value orientation. College thought-political make effective use of multimedia network platforms in their own learning; MOOCs and classrooms innovate thought-political models of learning, and use powerful case studies to spread correct values. At the same time, Internet technology can tell Chinese stories to students, show China to the world in a broader and three-dimensional way, and inspire the hearts of students who love China. The openness of multimedia networks is very high, which also leads to unethical and illegal behavior. At this time, it is necessary to carry out ideological and political education for students, thought-political teachers in colleges to do a good job of public moral obligations, enhance the consciousness of the rule of law among students, and form an intense sense of social liability and good moral and sober ability to accept knowledge.

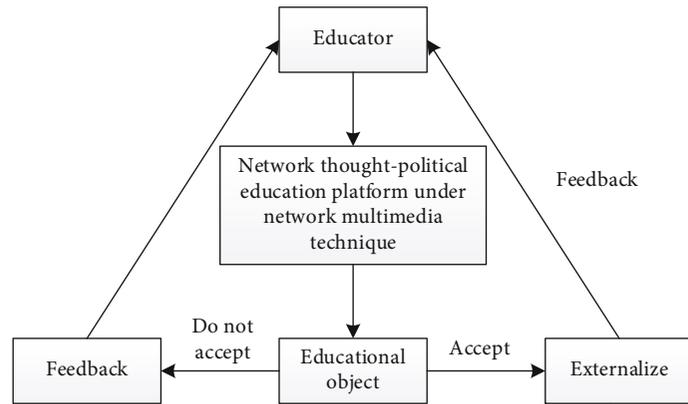


FIGURE 1: The realization process of thought-political education under the net multimedia technique.

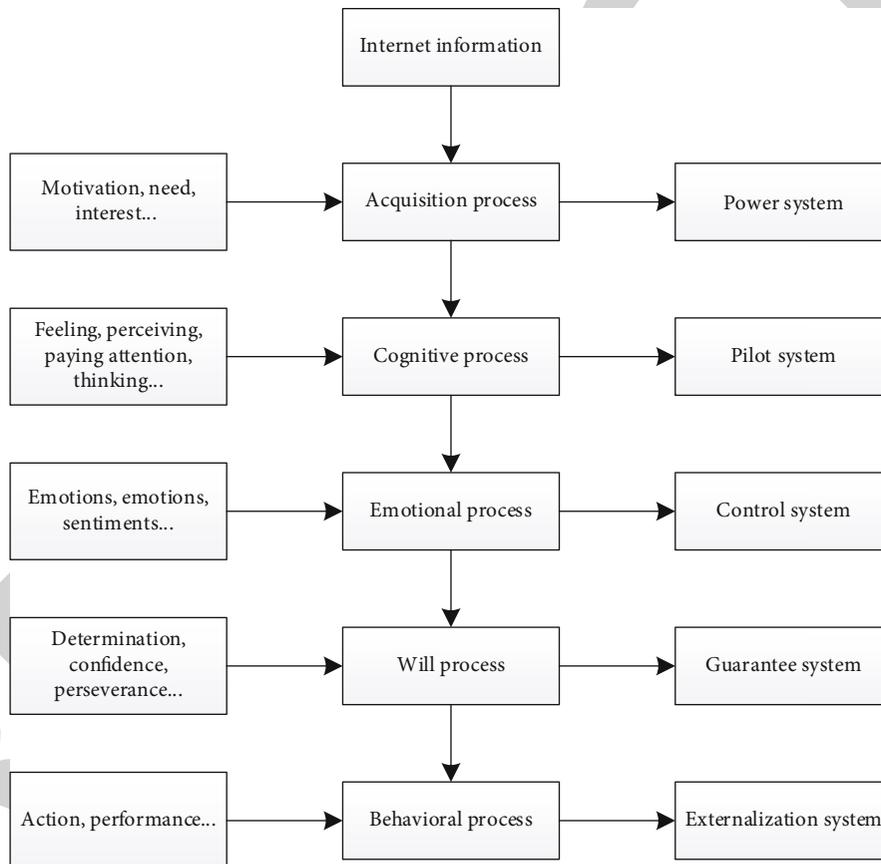


FIGURE 2: Educational object receiving system.

From the perspective of network multimedia, institutions should constantly change their concepts, improve and optimize teaching methods, fully use to the role of various network tools, and improve the effectiveness of thought-political teaching. Simultaneously, thought-political teachers in colleges should recognize their mission from the perspective of multimedia networks, and give fully use to the advantages of multimedia networks in disseminating political ideas at a single height and maintaining the thought-political effectiveness of colleges.

3. Experimental Models

3.1. *Principal Component Analysis.* Principal component analysis is a powerful multivariate statistical analysis method, which plays major part in the study of multi-index problems. Since a research problem often involves many variables, and there is a certain relationship between each variable, it is difficult to implement multidimensional analysis of the space while understanding the inherent laws of the problem. Principal component analysis is an

extension of the idea of measurement, that is, by extracting several principles from many variables, these principles can well reflect the information of the original topic, and these principles are not related. Maximum amount of information. The principal component analysis process is shown in Figure 3.

Standardize the original data, such as formula (1).

$$x'_{ik} = \frac{x_{ik} - \bar{x}_k}{s_k}. \quad (1)$$

In the formula, \bar{x}_k is the mean value and s_k is the standard deviation, such as formula (2) and formula (3).

$$\bar{x}_k = \frac{1}{n} \sum_{i=1}^n x_{ik}, \quad (2)$$

$$s_k^2 = \frac{1}{n-1} \sum_{i=1}^n (x_{ik} - \bar{x}_k)^2. \quad (3)$$

Calculate the correlation coefficient matrix R , as in formula (4).

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1p} \\ r_{21} & r_{22} & \cdots & r_{2p} \\ \cdots & \cdots & \ddots & \cdots \\ r_{p1} & r_{p2} & \cdots & r_{pp} \end{bmatrix}. \quad (4)$$

The expression of r_{ij} , such as formula (5).

$$r_{ij} = \frac{\sum_{k=1}^n x'_{ki} \bullet x'_{kj}}{n-1}. \quad (5)$$

Find the p nonnegative eigenvalues of the correlation coefficient matrix R , which are, respectively $\lambda_1 > \lambda_2 > \cdots > \lambda_p \geq 0$, and the eigenvectors corresponding to the eigenvalues are λ_i , as shown in formula (6).

$$C^i \bullet C^j = \begin{cases} 1 & i=j \\ 0 & i \neq j \end{cases}. \quad (6)$$

P new factors are composed of eigenvectors, such as formula (7).

$$y_1 = C_1^1 X_1 + C_2^1 X_2 + \cdots + C_p^1 X_p, \quad (7)$$

$$y_2 = C_1^2 X_1 + C_2^2 X_2 + \cdots + C_p^2 X_p, \quad (8)$$

...

$$y_p = C_1^p X_1 + C_2^p X_2 + \cdots + C_p^p X_p. \quad (9)$$

Define the proportion of the variance of the first m principal components y_1, y_2, \dots, y_m to the total variance as the

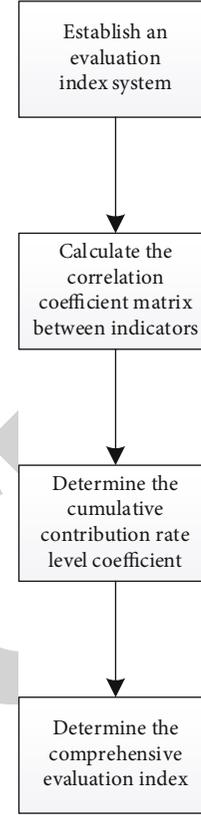


FIGURE 3: Flowchart of principal component analysis.

cumulative contribution rate α , as shown in formula (10).

$$a = \frac{\sum_{i=1}^m \lambda_i}{\sum_{i=1}^p \lambda_i}. \quad (10)$$

When the cumulative contribution is close to 1, the first m principal components y_1, y_2, \dots, y_m are selected. Using the principal component method can effectively remove the influence of the relationship between the original estimated indicators, and the higher the relative ratio between the original estimated indicators, the better the effect obtained when using the main analysis. Principal component analysis greatly reduces the load on index reads and stores most of the information in relatively few indexes.

When the cumulative contribution rate a is close to 1, the first m principal components are selected y_1, y_2, \dots, y_m most of the information plays the role of factor screening.

3.2. Inhomogeneous Hidden Markov Models. Considering the whole process of students learning ideological and political education courses online, divide the whole period from the beginning of the study to the end of the study into different stages, and observe the factors that affect the continuity. Students' learning behavior, and actual students of online literature. At any given time, students are in an ongoing state of online learning. In this study, since learners are free to choose a learning style, each learning style is taken as the observation object, and the learning of the learners

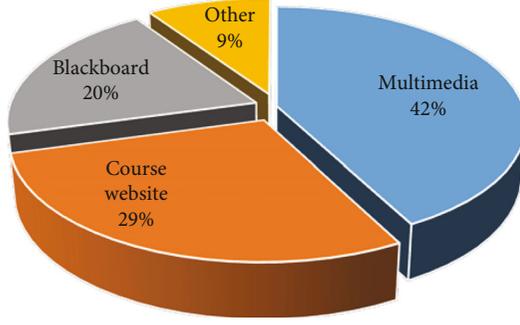


FIGURE 4: The main teaching methods adopted in thought-political courses.

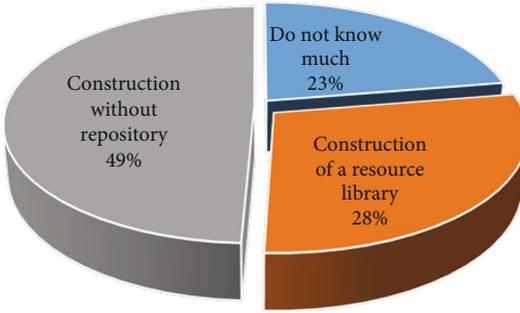


FIGURE 5: Respondents' comprehension of the structure of the school's thought-political resource database.

belonging to this learning style is taken as an argument for the dynamic of thinking.

Specifically, S_t represents the implicit learning behavior of the student at time t , and $y_{t,i}$ represents the observation behavior of the learner associated with the learning path at time i . For each learning path i , consider the following specific states;

$$S_i = S_{i1}S_{i2} \cdots S_{iT}, \quad (11)$$

where S_{i1} is the initial learning constant state of the i -th learning path, and $S_{it} \in \{1, 2, \dots, n\}$ is the observed sequence of events;

$$y_i = y_{i1}y_{i2} \cdots y_{iT}. \quad (12)$$

Given a sequence of states S_i and parameters λ , the probability that we observe sequence outcome y_i is;

$$P(y_i|\lambda, S_i) = \prod_{t=1}^T P(y_{it}|\lambda, S_{it}). \quad (13)$$

S_t represents the implicit learning behavior of the student at time t , and $y_{t,i}$ represents the observation behavior of the learner associated with the learning path at time i . S_{i1} is the initial learning constant state of the i -th learning path.

You can get:

$$P(y_i|\lambda, S_i) = a(y_{i1}|S_{i1}) \cdot a(y_{i2}|S_{i2}) \cdots a(y_{iT}|S_{iT}). \quad (14)$$

Among them, $a(y_{it}|S_{it})$ is the probability of obtaining the sequence result, y_{it} and the output element is the probability vector $A(i, t)$. The probability of learning the state of the sequence S_i of path i is:

$$q(S_i|\lambda) = \pi_i q(S_{i1}, S_{i2}) \cdots q(S_{it}, S_{it+1}) \cdots q(S_{iT-1}, S_{iT}), \quad (15)$$

where π_i is the initial probability that the student is in state S_{i1} in period $t = 1$. $q(S_{it}, S_{it+1})$ is the probability that the student is assumed to be in state S_{it+1} during $t + 1$, which is an element of the student's state transition matrix $Q_{i,t \rightarrow t+1}$. y_i and S_i appear at the same time.

The probability is:

$$P(y_i, S_i|\lambda) = P(y_i|\lambda, S_i)P(S_i|\lambda). \quad (16)$$

Given a set of model parameters, the probability of observing the following event is the probability of observing that sequence by adding equation (16) to all possible values of the states of sequence S_i :

$$L(y_i) = P(y_i|\lambda) = \sum_{\forall S_i} P(y_i|\lambda, S_i)P(S_i|\lambda). \quad (17)$$

Learners also have a variety of options for continuous online learning.

Transitions between states in NHMM are set up as a random process, and different transition states are only allowed to be observed between adjacent states. Therefore, in order to ensure that the continuous state of the online learner at time t cannot be transferred to other than adjacent states, the probability of nonadjacent states is set to 0, and the state of the transition matrix is defined as follows;

$$Q(t, t+1) = \begin{pmatrix} q(1,1) & q(1,2) & 0 & \cdots & 0 & 0 \\ q(2,1) & q(2,2) & q(2,3) & \cdots & 0 & 0 \\ \vdots & \vdots & \vdots & \cdots & \vdots & \vdots \\ 0 & 0 & 0 & \cdots & q(k,k-1) & q(k,k) \end{pmatrix}. \quad (18)$$

Among them, $q(j, k) = q(S_t = j, S_{t+1} = k) = P(S_{t+1} = k|S_t = j)$ is the conditional transition state probability, which means that the learner is in the continuous online learning state of learning path i at time j , and the probability that the learner transitions to state k at time $t + 1$.

$q(j, k) = q(S_t = j, S_{t+1} = k) = P(S_{t+1} = k|S_t = j)$ is the conditional probability of state transition, indicating that the online learning continuous state of the learner in the learning path i at time is j , and the probability that the learner transitions to state k at time $t + 1$.

The student's state transition matrix Q_t is affected by R_t , and the state transition matrix $Q_{S_{t-1} \rightarrow S_t}$ represents the possibility of the student transitioning from one state to another

TABLE 1: Which way respondents prefer to study.

Learning method	Number of people	Percentage
MOOC	101	34.83%
Ideological and political education mobile app	187	64.48%
Ideological and political education website	109	37.59%
Library ideological and political resource library	63	21.72%

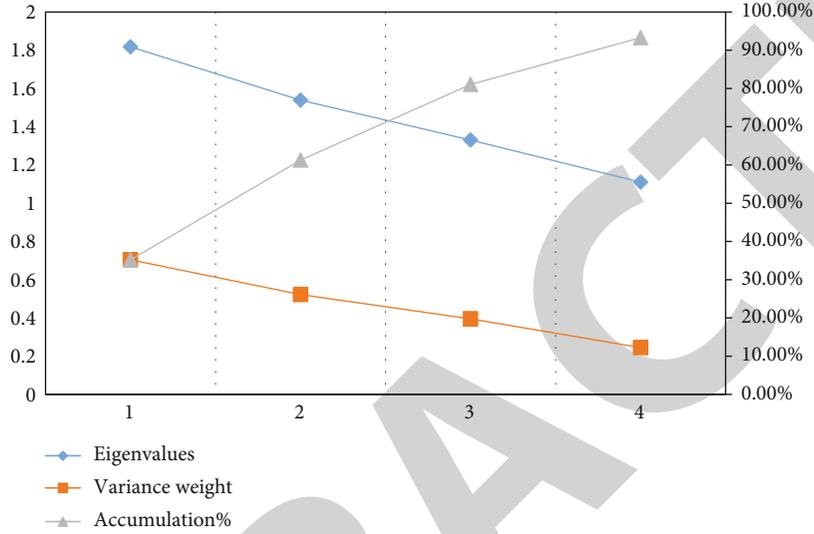


FIGURE 6: The proportion of variance in the thought and moral quality components of university students.

TABLE 2: The eigenvalues and variance proportions of the thought and moral qualities of university students.

Element	Initial eigenvalues			Extract sum of squares and load		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	1.82	35.18	35.18	1.82	35.18	35.18
2	1.54	26.092	61.27	1.54	26.092	61.27
3	1.33	19.77	81.04	1.33	19.77	81.04
4	1.11	12.238	93.28	1.11	12.238	93.28
5	0.626	2.291	95.67			
6	0.578	1.856	97.52			
7	0.453	1.048	98.57			
8	0.313	0.813	99.38			

state from time $t - 1$ to time t . The transition probability distribution in $S_{t+1} = k$ is as follows:

$$q_{k \rightarrow k-1} = \frac{\exp(u_{kl} - R_t \beta_k)}{1 + \exp(u_{kl} - R_t \beta_k)}, \quad (19)$$

$$q_{k \rightarrow k} = \frac{\exp(u_{kh} - R_t \beta_k)}{1 + \exp(u_{kh} - R_t \beta_k)} - \frac{\exp(u_{kl} - R_t \beta_k)}{1 + \exp(u_{kl} - R_t \beta_k)}, \quad (20)$$

$$q_{k \rightarrow k+1} = 1 - \frac{\exp(u_{kh} - R_t \beta_k)}{1 + \exp(u_{kh} - R_t \beta_k)}. \quad (21)$$

Among them, $\forall_k \in \{1, 2, \dots, K\}$ and u_{kl} are the lower critical points of state k , u_{kh} is the upper critical point of state k , and always $u_{kh} > u_{kl}$. The learner has three choices in state k : move one state, keep the same state, or move down one state. However, at the lowest stage 1, the learner's online learning continuum can move to a stage or remain the same. Similarly, at the top of state k , the learner's online learning continuum can move to a state or stay the same.

When the model is used for fitting, the study uses the estimated output parameters to "analyze" the state of the forecasting process and state the sample. In this study, all state information before time t and observation information

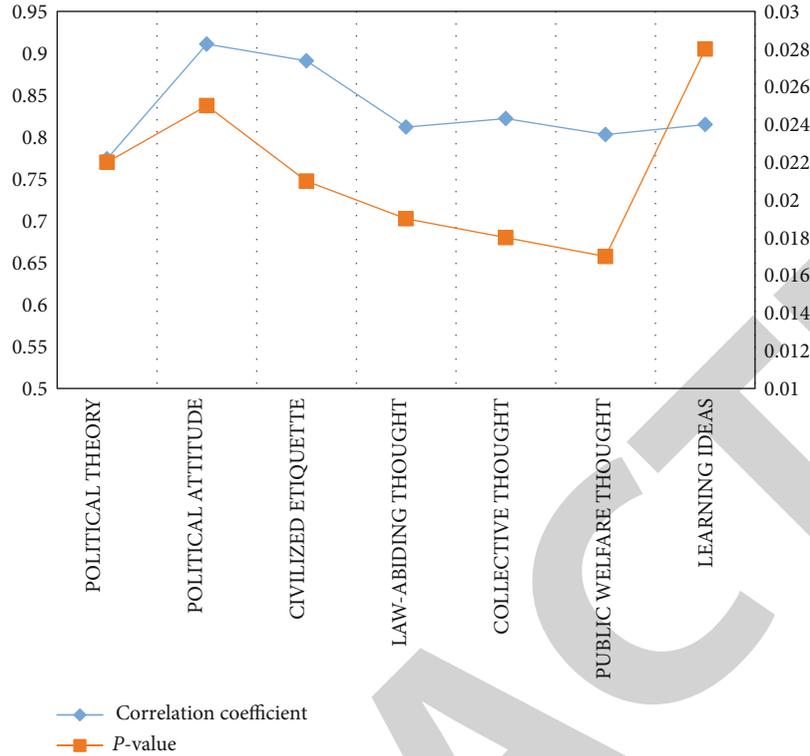


FIGURE 7: Correlation analysis between indicators and students' quality view.

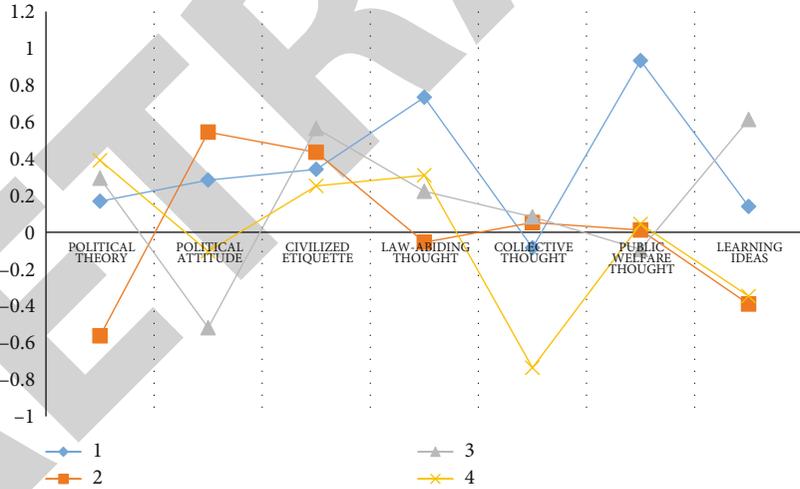


FIGURE 8: Principal component load of college students' ideological and moral quality.

at time t are used as the integral probability model to calculate the probability that the learner is in a certain online learning continuous state at time t , and the highest state. Probability is chosen as a state in the learning process. The state at time T , the state of the students restores order in turn. The probability that the learner in the learning path i is in the online learning continuous state k' at time t is:

Taking all the state information before time t and the observation information at time t as the integral probability model, calculate the probability that the learner is in a cer-

tain online learning continuous state at time t , and the highest state. Probability is chosen as a state in the learning process. The state at time T , the state of the students restores order in turn.

$$P(z_t = k' | y_1, \dots, y_t) = \pi A_1 \prod_{t=2}^t q s_{t-1 \rightarrow k'} A_t^k / L_t. \quad (22)$$

Among them, π refers to the state distribution of the

TABLE 3: Analysis results of state of mind.

State of mind	Training set log-likelihood	Validation set log-likelihood	DIC	WAIC
1	-4572.01	-2674.47	9012.83	8968.09
2	-4336.24	-2530.87	8700.95	8672.54
3	-4330.84	-2531.41	8866.36	8832.19
4	-4328.79	-2539.73	9007.13	8951.21

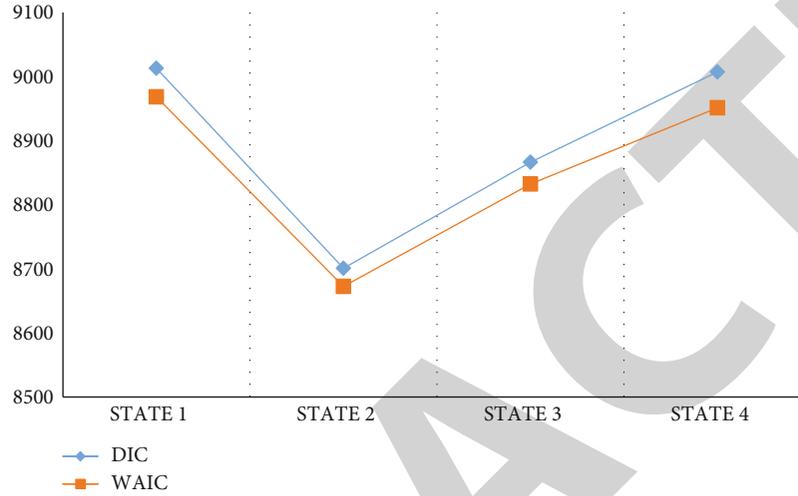


FIGURE 9: DIC and WAIC estimation results.

student at the starting time, which can be obtained by calculating the stable distribution of the student; $qs_{t-1 \rightarrow k'}$ represents the k' -th column of the student's state transition matrix at time t ; A_{it}^k represents the student's state in all states at time t . The probability distribution of online learning behaviors, which can be obtained through the corresponding parameter estimation results and observation data; L_t refers to the likelihood function of the student's performance observation Y_t .

4. Design and Dynamic Analysis of Thought-Political Education Platform under Network Multimedia Technique

4.1. The Construction and Learning Status of the Network Thought-Political Education Resource Platform. In thought-political education, the teaching way adopted by teachers is also a factor that affects whether students are willing to study in the course. In the context of the Internet, there are more and more means of information dissemination. Under the characteristics that mobile phones are not afraid to travel all over the world, 20% of the students in the survey of current ideological and political teaching methods said that their schools still use blackboard teaching. 42% of students said they used multimedia for teaching and 29% said they also used course websites for teaching. Figure 4.

In the period of network multimedia, resource sharing is the latest understanding and development trend, and the

thought-political education of the network should be implemented based on a common support platform. 23% of the students have little knowledge about the construction of thought-political online education resources in colleges, 49% of the students said that the school has not built a resource bank, and only 28% of the college students said that they have built a resource bank. As shown in Figure 5.

In resource construction, 34.83% of college students hope to choose MOOCs learning form, 64.48% of college students prefer to have a thought-political mobile app, 37.59% of college students are wishing to use thought-political education websites, and only 21.72% of college students choose to install ideas Political Library. It fully shows that network multimedia technology is the growth orientation and trend of thought-political education, and it also coincides with the studying attitude of today's university student. After analysis, it can be found that university students still have large expectations and expectations for the innovation of thought-political education courses. Among, "offset phone education" is the most popular among university students. For the offset phone has all the feature of the times, it is easy to carry, has a wide coverage, is not terminated by period and space, and has interoperability and integration. Last few years, colleges have made progress in building educational facilities and learning platforms, as well as in cooperation with schools and programs. Table 1.

4.2. Design of Thought-Political Education Platform under Network Multimedia Technology. Principal element analysis

TABLE 4: Description of the parameter estimation results of influencing factors.

	State	Posterior mean	Posterior standard value	<i>P</i> value
Information about nearby course resources	A1	-1.72	0.614	0.032
	A2	-1.571	0.533	0.022
	A3	2.136	0.455	0.012
Expand linked course resources	B1	1.345	0.459	0.031
	B2	1.375	0.459	0.035
	B3	-0.317	0.636	0.028
Type information for course resources	C1	-1.559	0.373	0.022
	C2	2.146	0.317	0.036
	C3	2.911	0.636	0.024

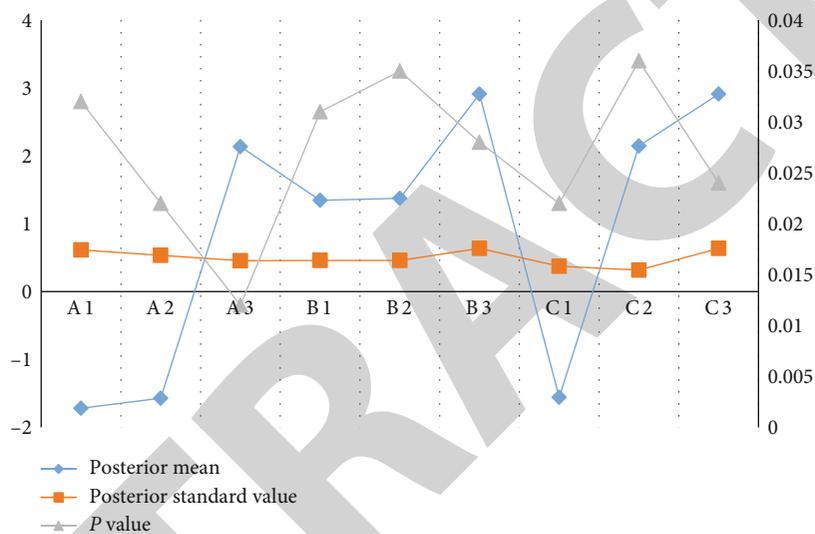


FIGURE 10: Factor parameter estimation results.

is used to analyze the students' political theory, political attitude, civilized etiquette, observance of thought, collective thought, public welfare thought, and learning thought, and the cumulative % of eigenvalues and variances are obtained. It can be found in Figure 6 that the cumulative rate of the variance of the first four main components is 90%. It can be found in Table 2 that the overall of the first principal components is 1.82, and the variance % is 35.18%; the total of the second principal components is 1.54, and the variance % is 26.092%; the total of the third principal components is 1.33, and the variance is 19.77%. The sum of the fourth principal component is all 1.11, and the % of variance is 12.238%.

Figure 7 shows the correlation analysis between the thought-political education indicators and the students' quality outlook. Political attitude has the greatest influence on students' quality outlook, and the correlation coefficient is 0.911, so it is indispensable to found a correct political attitude; the correlation with political theory is the lowest, with a correlation coefficient of 0.774, so it is not only necessary to learn theoretical knowledge, but also pays attention to practice and life.

From Figure 8, it can be seen that public welfare activities and the thought of obeying laws and regulations have a bigger influence on the first main component; collective thoughts have a bigger influence on the second main component; learning thoughts have a bigger influence on the third main component. Therefore, in the devise of the thought-political education terrace under the network multimedia technique, it is indispensable to notice to the propaganda of political theory, political attitude, civilized etiquette, abide by the thought, collective thought, public welfare thought, and learning thought. Instill in students the idea of actively participating in various public welfare activities, develop good etiquette for abiding by laws and regulations, and cultivate students' collective honor concept and hard work; so as to continuously enhance the thought and moral character of the college students.

As can be seen from Figure 8, the index factors of public welfare activities and the idea of abiding by laws and regulations have bigger influence on the first main component; the index factor is that collective thinking have a bigger influence on the second main component; the index factor is the impact of learning thinking on the third principal component bigger.

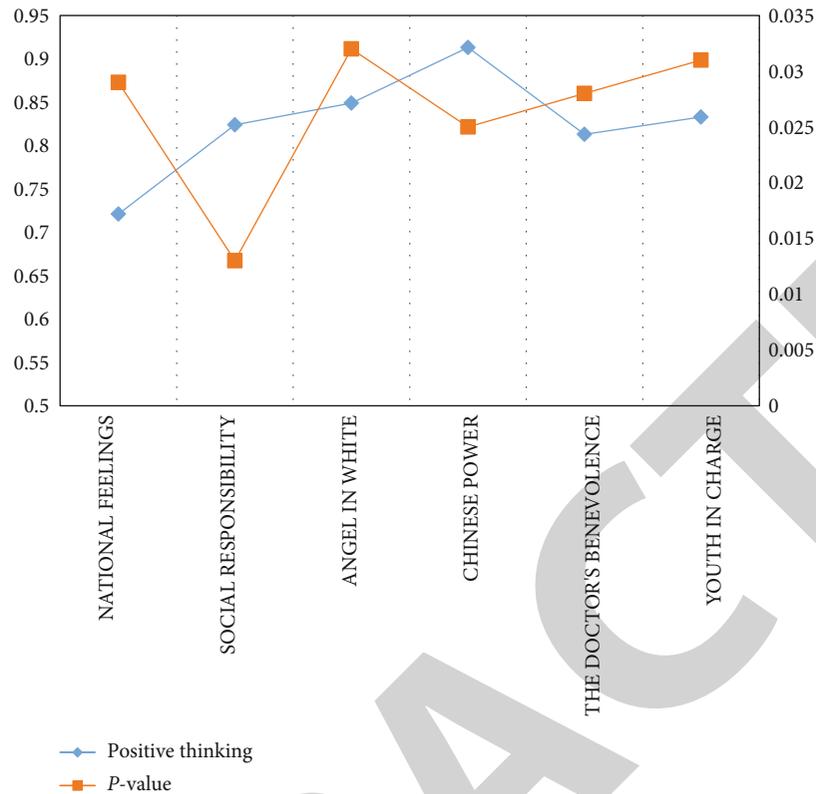


FIGURE 11: Analysis of the correlation between hot spots and ideological dynamics during the epidemic.

4.3. *Dynamic Analysis of Thought-Political Education Thought under Network Multimedia Technology.* From Table 3 and Figure 9, it can be found that state 2 has the lowest value in DIC and WAIC, that is, state 2 has the best performance, and states 1 and 4 have relatively high values in DIC and WAIC, so states 3 and 4 have the best performance. 3 and 4 performed relatively poorly. Among them, state 2 indicates a strong continuous learning desire, state 3 indicates a moderate continuous learning desire, and states 1 and 4 indicate a weak continuous learning desire.

From Table 3 and Figure 9, it can be found that state 2 has the lowest values on DIC and WAIC, that is, state 2 has the best performance, and states 1 and 4 have relatively high values on DIC and WAIC, so states 3 and 4 performed relatively poorly.

The learning experience process of the factor “course resources adjacent to information” has a positive influence on the online learning continuance of learners in state 1 and state 2, and students in state 2 are compared with students in state 1. It is more likely to be affected by the learning experience of “course resources adjacent to information” ($-1.72 < -1.571, p < 0.05$). However, this factor has a passive influence on the continuous learning state of students in state 3 ($2.136, p < 0.001$), indicating that for students in low learning persistence state, it is easy to learn from the “information adjacent course resources” negative learning emotions. However, for students who are in the state of continuous learning in middle and high school, compared with spending a lot of energy to find, organize, and integrate different resource information, the course resource learning

experience process of “course resources adjacent to information” can help learners pay less. Experience to keep online learning going. The learning experience process of the factor “course resource of keyed information” variable, for the online learning continuation status of students in state 1, was positively and significantly ($-1.559, p < 0.001$), but not the same as that of state 2 and state 3. For students, there was a larger negative effect, and for students in state 3, it was more likely to cause them to stop continuing their studies ($2.146 < 2.911, p < 0.05$). It shows that for students with low learning continuity, it is easier to generate negative learning emotions from the “course resources of keyed information”. The learning experience process of the variable “expanding linked course resources” has a passive influence on the online learning continuity of students in both state 1 and state 2, and it is significant ($1.345 < 1.375, p < 0.05$). This may be due to the existence of extended links, which will distract students in the continuous state of middle and high online learning, thus prompting them to drop out of class; but it has a positive effect on students in state 3, although it is not significant. This indicates that for students with low online learning persistence, the existence of extended links may increase their curiosity about unknown content, which has a positive impact on their online learning persistence ($-0.317, p < 0.05$). It is shown in Table 4.

In the face of the menacing epidemic, we have fully joined the war against the epidemic. The solidarity of the Chinese people has aroused the ideological empathy of students, such as “national feelings”, “social responsibility”, “angels in white”, “Chinese power”, and “medical doctors”.

Hot words such as “benevolence” and “youth’s responsibility” became the topics that students commented the most. Figures 10 and 11 are an analysis of the correlation between hotspots and ideological dynamics during the epidemic. The obtained p values are all less than 0.05. The correlation analysis between hotspots and ideological dynamics during the epidemic is significant, that is, “national sentiments”, “social responsibility”, “white angels”, “Chinese power”, “medical benevolence”, and “youth responsibility” hot words have an active influence on the students’ ideological state, and their correlations are all above 0.7, and the correlation is strong.

The analysis of the correlation between hotspots and ideological dynamics during the epidemic shows that the p values are all less than 0.05, and the correlation analysis between hotspots and ideological dynamics during the epidemic is significant, namely “national sentiments”, “social responsibility”, “angels in white”, “Chinese power”, “the doctor’s benevolence”, and “youth’s responsibility” hot words have an active influence on the ideological state of learners, and their correlations are all above 0.7, and the correlation is strong.

5. Conclusion

The widespread use of network multimedia in colleges has had a profound influence on all aspects of college students’ lives. First of all, from the opinion of society, the legal system including the multimedia network is imperfect; from the perspective of colleges, there is not enough understanding of the application effect of network multimedia in thought-political education; from the perspective of thought-political teachers. From the point of view, multimedia network thought-political education lacks professional teams, and lacks the contents and situation of thought-political innovation of network multimedia educators. In response to the existing problems, put forward corresponding measures: improve social policies, laws and regulations, improve the legal environment, enhance the administration and control system for workers, and join in self-governance; and educational institutions, reinforce the monitor and manage of bad information in new media, from the thought-political education work from the perspective of the students, it is necessary to cultivate a professional team, and from the opinion of university students themselves, they must learn to actively recognize and learn how to use new tools correctly.

Data Availability

The experimental data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The author declared that there has no conflicts of interest regarding this work.

References

- [1] Y. Du, “The development of ideological and political education information platform based on web technology,” *C e Ca*, vol. 42, no. 4, pp. 1530–1536, 2017.
- [2] H. Yu, “Application analysis of new internet multimedia technology in optimizing the ideological and political education system of college students,” *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 5557343, 2021.
- [3] H. Song, “Ideological and political education system based on the design of multimedia technology,” *Electronic Test*, vol. 47, no. 11, pp. 402–406, 2014.
- [4] Y. Fang, J. Dai, and P. Shao, “Network teaching based on multimedia technology: an example of ideological and,” *Political Theory Course*, vol. 30, no. 22, pp. 792–797, 2022.
- [5] J. Qiu, “A kind of ideological and political education management platform design based on web technology[C]/I,” *International Conference on Robots & Intelligent System. IEEE*, pp. 1–4, 2017.
- [6] W. Cai and H. I. Polytechnic, “Research on the construction and function of network ideological and political education platform in colleges and universities,” *Journal of Heilongjiang College of Education*, vol. 41, no. 30, pp. 1293–1296, 2019.
- [7] W. Jin, “Course analysis and management system design of ideological and political education based on decision tree algorithm,” in *International Conference on Frontier Computing*, vol. 28no. 1, pp. 1033–1038, Seoul, Korea, 2021.
- [8] X. Wu, “Theory and Practice of Multimedia Courseware Design for Ideological and Political Theory Courses in Colleges and Universities,” in *Proceedings of the 2020 International Conference on Computers, Information Processing and Advanced Education*, vol. 39no. 3, pp. 629–633, Ottawa, ON, Canada, 2020.
- [9] L. Shuang and D. Lei, “Analysis of university network ideological and political education innovation,” *Computer Knowledge and Technology*, no. 27, pp. 6301–6302, 2014.
- [10] L. Zhu, “Research on the design and application of ideological and political education platform in colleges and universities based on Moodle,” *Journal of Intelligent and Fuzzy Systems*, vol. 3, pp. 1–8, 2021.
- [11] M. Mu and Z. Jing, “Research on the interactive platform of network ideological and political education in colleges and universities,” vol. 28, no. 2, pp. 59–63, 2016.
- [12] Q. G. Guo, X. L. Liu, and Y. Wang, “Network education platform of ideological and political theories and university student ideological and political education innovation,” *Journal of Nanchang University (Humanities and Social Sciences)*, vol. 56, no. 22, pp. 529–536, 2008.
- [13] X. Wang, “Design and implementation of ideological and political education information platform,” *Microcomputer Applications*, vol. 11, no. 5, pp. 733–736, 2019.
- [14] L. Qiu, “Network evaluation system analysis and design of colleges and universities ideological and political lesson,” *Computer CD Software and Applications*, vol. 81, no. 31, pp. 355–359, 2012.
- [15] C. Feng, “Research on courseware design of contemporary ideological and political education based on multimedia,” vol. 76, no. 24, pp. 405–413, 2016.