International Journal for Housing Science and Its Applications
Publish August 3, 2025. Volume 46, Issue 3 Pages 953-963

https://doi.org/10.70517/ijhsa46372

Research on the Computational Path of How to Enhance Students' Ideological Qualities through Mathematical Modeling in the Great Ideological Education Model

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Abstract Finding a teaching path that can correctly and effectively improve students' ideological quality is the top priority of the current model of large ideological education. Based on the current content of the objectives of students' moral education and the characteristics of students' ideological quality performance within the school, this paper puts forward the evaluation system of students' ideological quality consisting of four first-level indexes: ideological and political quality, moral quality, legal and disciplinary quality, and physical and mental quality. The weight modeling method combining hierarchical analysis and Delphi method is used as the indicator assignment method of the evaluation system, and the structural equation modeling method is used as the evaluation and analysis method at the same time. In order to verify the structural validity of the proposed evaluation indicators of students' ideological quality, eight research hypotheses are proposed and a standardized path model is constructed by using structural equation modeling method based on the contents of each first-level and second-level indicator. The standardized path coefficients (F) of the influencing factors of students' ideological quality are basically above 0.5, which are supported by the structural equation model, indicating that ideology and politics, moral behavior, awareness of law and discipline as well as physical and mental health are the effective paths to assist in improving the ideological quality of students.

Index Terms ideological quality evaluation system, structural equation model, standardized path, hierarchical analysis, Delphi method

I. Introduction

Along with the deepening of reform and opening up, higher education is becoming more and more modernized and globalized, and various ideologies and values have brought great influence on the mode of Civic and Political Education in Chinese colleges and universities and the composition of students' values [1]-[3]. The previous model of ideological education in colleges and universities can no longer adapt to the development of the new era, and the innovation of the ideological education model and the establishment of “big ideology and politics” education model are the important trends of the innovation of the contemporary ideological education in colleges and universities [4], [5]. The “big ideology and politics” education model is committed to comprehensively improving students' ideological and political quality and comprehensive ability, and its core concept is to cultivate students' correct political concept, worldview, outlook on life and values, and improve their ideological awareness and moral level [6]-[9]. This model not only focuses on the transmission of theoretical knowledge, but also emphasizes the stimulation of students' thinking ability and innovative spirit through practical teaching [10], [11]. However, under this educational model, how to improve students' thinking quality has become a realistic problem that colleges and universities need to face, and with the wide application of artificial intelligence in education, mathematical models have not solved this problem by bringing new ideas [12]-[15].

Mathematical models, as an important tool for modern scientific research, play an important role in all areas of society [16], [17]. Through the learning and application of mathematical models, students can better understand and solve real problems [18], [19]. The application of mathematical modeling in the large ideology and political education mode will integrate mathematical modeling ideas and methods into the course of ideology and political education in a new mode, which emphasizes the combination of mathematical knowledge and practical application, cultivate students' innovative thinking, teamwork and problem-solving ability, and at the same time, it is also a kind of exploration and attempt to explore and try on the course of ideology and political education in colleges and universities, which can help to improve college students' comprehensive quality and sense of social responsibility [20]-[23].

This paper firstly combines the status quo of moral education in schools and the performance of students' ideological quality, and establishes the evaluation system of students' ideological quality with a structure of 4 first-level indexes, 8 second-level indexes and 24 third-level indexes. Then, it elaborates the process and steps of combining the Hierarchical Analysis Method and Delphi Method, and proposes the assignment method of the evaluation system indicators. At the same time, the structural equation modeling method is introduced as an analytical method for the evaluation of students' ideological quality. Subsequently, the assignment of the indicators of the evaluation system of students' ideological quality is completed in the form of questionnaire survey. L middle school is selected as the experimental object to carry out the practical application of the evaluation system. Finally, with reference to the structure and content of the evaluation system of students' ideological quality, eight research hypotheses of the path of improving students' ideological quality are put forward, and a standardized path model is constructed using the method of structural equation modeling. The test of the path model is carried out, and based on the results of the analysis, the path suggestions for improving students' ideological quality are given.

II. Construction of evaluation system and model of students' ideological quality

II. A. Design of the structure of the evaluation index system of students' ideological quality

Through the analysis of the objectives and specific requirements of moral education in China, combined with the current content of moral education in schools and the code of conduct for students, the framework of the evaluation index system of students' ideological and moral quality is constructed as shown in Table 1.There are four first-level indicators, and each of the first-level indicators has second-level indicators to support the connotation and extension of the second-level indicators, and the third-level indicators have been refined according to the content and standards of the second-level indicators, and the evaluation index system of students' ideological and moral quality is constructed by four first-level indicators, eight second-level indicators and 24 third-level indicators as follows. Finally, a student ideological quality evaluation index system consisting of 4 first-level indicators, 8 second-level indicators and 24 third-level indicators is constructed, and the index system is introduced as follows:

(1) Ideological and political quality: it contains two aspects, namely, political quality and ideological quality. Among them, political quality mainly examines students' ability to understand and master political theoretical knowledge, and whether they can clearly express the main political theories and political lines of China's ruling party. There is also the ability of political behavior in daily life as well as whether they have firm political ideals and beliefs and adhere to the correct political stance. Ideological quality mainly includes whether students have set up a correct outlook on life and values, and whether they can make value trade-offs and choices correctly. Whether the ideological work style is correct, whether the learning attitude is correct and whether the concept of labor is correct.

(2) Moral quality: It mainly contains two aspects of moral character and social morality. Among them, moral quality mainly examines whether students have basic moral quality, whether they have the spirit of patriotism and collectivism, how civilized they are in their daily life, and whether they have a certain degree of professional cultivation. Social morality mainly refers to whether students are honest and trustworthy, abide by the social order, consciously participate in the construction and propaganda of social morality, professional ethics and other moral education, have good moral morals, and whether they are able to strictly demand themselves. With their own practical actions to maintain and publicize the good moral consciousness.

(3) Legal and disciplinary quality: today's society is a society based on the rule of law, the overall legal beliefs of the student body are still in a state of deficiency, and the legal and disciplinary quality mainly consists of two parts: legal concepts and compliance with the law. The legal concept is mainly to monitor and assess the students' knowledge of legal theory, which is mainly divided into three aspects: knowledge of the law, the ability to exercise power correctly and active participation in management. Law-abiding mainly focuses on the legal behavior of students in their daily life, whether they can learn the law conscientiously, consciously abide by the law, and dare to fight against illegal phenomena while consciously fulfilling their legal obligations.

(4) Physical and mental quality: this includes two aspects, physical quality and psychological quality. Physical quality mainly refers to whether it has a good sense of exercise, whether it can not be afraid of setbacks, and whether it can actively learn the knowledge of sports and health care. Psychological quality mainly examines the state of mental health and mental ability, including self-perception, positive spirit, self-coordination and control, and whether one has a positive attitude towards life.

Table 1: Ideological and moral quality evaluation index system framework

Primary index	Secondary index	Three-level index
(A)Ideological and political quality	(A1) Political caliber	(A11) Political theory knowledge
		(A12) Political capacity
		(A13) Ideal and faith
	(A2) Ideological quality	(A21) Outlook on life and values
		(A22) Ideological work style
		(A23) learning attitude
		(A24) Attitude to labour
(B)Moral quality	(B1) Moral trait	(B11) Patriotism, collectivism
		(B12) Civilization and accomplishment
		(B13) Professional ethics
	(B2) Social moral	(B21) Honesty and trustworthiness
		(B22) Comply with the order
(C)Quality of law and discipline	(C1) Legal concept	(C11) Legal knowledge
		(C12) Proper exercise of power
		(C13) Active participation in management
	(C2) Observe law and discipline	(C21) Conscientiously study the law, consciously abide by the law
		(C22) Conscientiously perform one's obligations
		(C23) Dare to fight against illegal phenomena
(D)Physical and psychological qualities	(D1) Physical fitness	(D11) Active exercise, sports standards
		(D12) Sports health knowledge
	(D2) Psychological quality	(D21) Self-perception ability
		(D22) Enterprising spirit
		(D23) Self-coordination and control
		(D24) positive attitude towards life

II. B.Weighting model

The design of the weighting model mainly involves the determination of the weighting coefficients of the indicators. The weighting coefficient is a parameter that measures the importance of an assessment indicator and has a value between 0 and 1. Each assessment indicator corresponds to a weighting coefficient, and the weighting coefficient should be able to distinguish between the degree of importance and the degree of secondary importance of each indicator when it is set. It is necessary to ensure the focus according to the requirements of the goals of the assessment of students' ideological quality in teaching, but also to make the necessary adjustments from the actual assessment of students' ideological quality. Weighting model design methods include hierarchical analysis method, comparative determination method, judgment matrix method, expert assessment method and Delphi method, after a comparative study of the above methods, this paper adopts the combination of hierarchical analysis method and Delphi method to construct the weighting model. The specific process is as follows.

(1) Determine the scale of quantitative judgment of indicators. When two indicators are compared with each other, a quantitative scale is needed, and for the convenience of calculation, the least important (relatively speaking) indicator can be assigned a value of 1, the meaning of which is shown in Table 2.

Table 2: Pairwise index judgment quantitative scale representation

Scale	Meaning
1	Two factors are equally important
3	Two factors compared, one factor compared to the other one factor is slightly more important
5	Two factors compared, one factor compared to the other one factor is clearly important
7	Two factors compared, one factor compared to the other one factor is strongly important
9	Two factors compared, one factor compared to the other one factor is extremely important
2,4,6,8	The median of the above adjacency judgments

(2) Secondly, the Delphi method is used to allow multiple experts to determine the relative importance of two indicators at the same time, and the two-by-two comparison judgment matrix of the $m(m=1,2,\cdots,p)$ th expert is

constructed: $E=[e_{ij}^{m}]_{n\times n}$, p denotes the number of experts, n denotes the number of indicators, and e_{ij}^{m} denotes the degree of importance of indicator i relative to indicator j in the opinion of the m th expert.

(3) In order to overcome the problem of subjectivity carried by the same expert in determining the weights of indicators, the arithmetic mean is used to calculate the comprehensive scale value of each indicator relative to another indicator as in equation (1):

$$e_{ij}=\sum_{k=1}^{m}e_{ij}^{k}\Big/m \tag{1}$$

The judgment matrix is derived as in equation (2):

$$E=[e_{ij}]_{n\times n} \tag{2}$$

(4) Calculate the eigenvectors of the weighting model to derive the weighting coefficients of the assessment indicators. First, each column of the weight model is normalized as in equation (3):

$$\overline{e}_{ij}=\frac{e_{ij}}{\sum_{i=1}^{n}e_{ij}} \tag{3}$$

For the first level indicators i, $j=1,2,3,4$ and $m=4$, the normalized weight model is obtained as in equation (4):

$$\overline{E}=\left[\overline{e}_{ij}\right]=\begin{bmatrix}0.56 & 0.6 & 0.5 & 0.56\\ 0.19 & 0.2 & 0.25 & 0.22\\ 0.14 & 0.1 & 0.125 & 0.11\\ 0.11 & 0.1 & 0.125 & 0.11\end{bmatrix} \tag{4}$$

The normalized weight models are then summed by rows to obtain equation (5):

$$\overline{b}_{i}=\sum_{j=1}^{n}e_{ij} \tag{5}$$

Then $\overline{b}_1=2.22$, $\overline{b}_2=0.86$, $\overline{b}_3=0.475$, and $\overline{b}_4=0.445$. The vector $[\overline{b}_1,\overline{b}_2,\overline{b}_3,\overline{b}_4]^T$ is then normalized to obtain the desired eigenvector as in equation (6):

$$B=\left[0.555,0.215,0.119,0.111\right]^T \tag{6}$$

Corresponds to the relationship of the importance of the first level of assessment indicators.

(5) Calculate the maximum eigenvalue $\lambda_{\max}$ of the weighting model and perform model consistency test. First calculate the maximum eigenvalue $\lambda_{\max}$ of the model as in equation (7):

$$\lambda_{\max}=\sum_{i=1}^{n}\frac{(AB)_i}{nB_i} \tag{7}$$

where $(AB)_i$ denotes the i th component of the vector AB. AB is computed as in equation (8):

$$AB=\begin{bmatrix}1 & 3 & 4 & 5\\ 1/3 & 1 & 2 & 2\\ 1/4 & 1/2 & 1 & 1\\ 1/5 & 1/2 & 1 & 1\end{bmatrix}\begin{bmatrix}0.555\\ 0.215\\ 0.119\\ 0.111\end{bmatrix}=\begin{bmatrix}2.231\\ 0.86\\ 0.479\\ 0.451\end{bmatrix} \tag{8}$$

Then we have equation (9):

$$\lambda_{\max}=\frac{2.231}{4\times0.555}+\frac{0.86}{4\times0.215}+\frac{0.479}{4\times0.119}+\frac{0.451}{4\times0.111}=4 \tag{9}$$

Secondly, the consistency test metrics for the weighting model are calculated as in equation (10):

$$E\cdot I=\frac{\lambda_{\max}-n}{n-1}=\frac{4-4}{4-1}=0 \tag{10}$$

Check the table to determine the average consistency index $R\cdot I=0.89$.

Finally, the consistency ratio of the weighting model is calculated as in equation (11):

$$E\cdot R=E\cdot I/R\cdot I \tag{11}$$

When $E\cdot R<0.1$, the weighting model consistency is considered to be within acceptable limits. The $E\cdot R<0.1$ for the first-level indicator weighting model, so the weighting model has satisfactory consistency.

According to the above methodology, the second and third level indicator weighting models can be derived in the same way, and the consistency test of the weighting model can be conducted.

II. C.Research methodology

II. C. 1) Model setup

Structural equation modeling (SEM) is an effective tool that can deal with latent variables that are difficult to observe directly and incorporate errors into the analysis. Therefore, this paper uses SEM to analyze the main factors affecting students' ideological quality. Structural equation modeling (SEM) consists of a measurement model that reflects the relationship between latent variables and measurable variables and a structural model that reflects the relationship between latent variables. In this paper, students' ideological quality, as an endogenous latent variable, is influenced by four exogenous latent variables including ideological and political quality, moral quality, legal and disciplinary quality, and physical and mental quality. Each latent variable is represented by measurable variables and has a structural relationship with ideological quality. The parameters to be estimated in this paper include: the structural coefficients of exogenous latent variables and endogenous latent variables, the measurement coefficients of measurable variables and latent variables, the error terms of measurable variables, the covariance between the error terms, and the variance of exogenous latent variables.SEM is usually expressed by the following three matrix equations:

(1) The structural model equation expression is shown in equation (12):

$$\eta=B\cdot\eta+\Gamma\cdot\xi+\zeta \tag{12}$$

where η is the endogenous latent variable, ξ denotes the exogenous latent variable, B and Γ are the structural coefficient matrices respectively, and ζ is the error term.

(2) The measurement model equations are expressed as Eqs. (13)-(14):

$$Y=\Lambda_y\cdot\eta+\varepsilon \tag{13}$$

$$X=\Lambda_x\cdot\xi+\sigma \tag{14}$$

where Y is the endogenous latent variable measurable, X is the exogenous latent variable measurable, Λ_y and Λ_x are the respective matrices of observables, and ε and σ are the measurement error terms.

II. C. 2) Sample selection and its scientific validity test

In this paper, the data on the ideological performance of students in secondary school L in 2022 were selected and standardized for numerical variables. The paper firstly used Cronbach's α coefficient and folded half reliability coefficient to test the reliability of the data, and the results indicated that the indicators had high reliability. And then, its structural equation modeling was tested for validity through content validity and construct validity. That is, after interviewing industry experts to ensure the rationality and comprehensiveness of the research indicators, Pearson's correlation coefficient was used to test the construct validity. The convergent validity results indicate that most of the observed variables under the same latent variable are highly correlated. The results of differential validity showed low correlation between different latent variables.

III. Application and testing of the evaluation model of students' ideological quality

This chapter first uses the weight model method proposed above to carry out the calculation and assignment of the weights of the indicators of the designed student ideological quality evaluation system. At the same time, the students of L middle school are selected as the experimental objects to carry out the practical application and analysis of the evaluation system of students' ideological quality. Secondly, combined with the structure and content of the evaluation system of students' ideological quality, the research construction of the influence factors of students' ideological quality is proposed, and the standardized path model is constructed. Using the method of structural equation modeling, the standardized path test of the model is carried out. Finally, combined with the results of the research and analysis, it gives suggestions on the path of improving students' ideological quality.

III. A. Empowerment and application of evaluation systems

III. A. 1) Empowerment of indicators

In order to understand the use of evaluation indicators in the evaluation of students' ideological quality, this paper designed a questionnaire to conduct a questionnaire survey of groups related to student training. According to the previous student evaluation indicators, the questionnaire survey on the importance of the indicators in the comprehensive quality indicator system of students was conducted for L secondary school education experts, teachers, students and other personnel, 200 questionnaires were issued, 194 valid questionnaires were recovered, and the questionnaire validity rate was 97%. The fuzzy language in the questionnaire, such as “very important, important, general, not too important, very poor”, is expressed by the linguistic scale set S={s_0=poor, s_1=not too important, s_2=general, s_3=important, s_4=very important}, and the questionnaire is processed by the weighted average, to get the degree of importance of the indicators in the performance evaluation. See Table 3.

Table 3: Evaluate the importance of indicators

Primary index	Importance degree	Secondary index	Importance degree	Three-level index	Importance degree
A	(s_4,0.35)	A1	(s_4,0.47)	A11	(s_4,0.42)
				A12	(s_3,0.24)
				A13	(s_4,0.33)
		A2	(s_4,0.53)	A21	(s_3,0.35)
				A22	(s_4,0.21)
				A23	(s_2,0.19)
				A24	(s_1,0.25)
B	(s_3,0.26)	B1	(s_3,0.26)	B11	(s_4,0.31)
				B12	(s_3,0.32)
				B13	(s_2,0.37)
		B2	(s_4,0.74)	B21	(s_4,0.56)
				B22	(s_1,0.54)
C	(s_2,0.14)	C1	(s_4,0.54)	C11	(s_3,0.25)
				C12	(s_2,0.5)
				C13	(s_4,0.25)
		C2	(s_4,0.56)	C21	(s_3,0.68)
				C22	(s_2,0.32)
D	(s_3,0.25)	D1	(s_4,0.71)	C23	(s_4,0.21)
				D11	(s_3,0.46)
				D12	(s_4,0.33)
		D2	(s_3,0.29)	D21	(s_4,0.17)
				D22	(s_3,0.28)
				D23	(s_2,0.29)
				D24	(s_2,0.26)

According to the analysis of the survey results, the importance of most of the indicators in the quality evaluation index system proposed above is between important and very important, and a part of them is between average and important, so it is appropriate to apply the indicators in this index system to the evaluation of students' comprehensive quality.

Due to the uncertainty of the evaluation indicators of students' ideological quality itself, they cannot be measured using precise data. Therefore, the determination of the importance (weight) of the indicators of students' ideological

quality needs to be determined by the subjective assignment method. First of all, the judgment matrix of four first-level indicators is constructed, then the consistency of direct and indirect information of these four judgment matrices is calculated, the collection of evaluative opinions is carried out according to the strength of consistency of the elements, and then the row-weighted average method is used for calculating and obtaining the weights of each second-level indicator. Finally, the importance of the sub-nodes of the third-level indicators was compared, and the weights of each indicator were obtained after calculation as shown in Table 4.

Table 4: The weight of the ideological quality evaluation system of undergraduates

Primary index	Secondary index	Three-level index	Weight	Absolute value of indicator
A (0.1099)	A1 (0.5626)	A11	0.4055	0.0249
		A12	0.0066	0.0201
		A13	0.5879	0.0651
	A2 (0.4374)	A21	0.3846	0.0601
		A22	0.0241	0.0089
		A23	0.2996	0.0666
		A24	0.2917	0.0665
B (0.1757)	B1 (0.5823)	B11	0.342	0.0079
		B12	0.3724	0.069
		B13	0.2857	0.0576
	B2 (0.4177)	B21	0.5659	0.0627
		B22	0.4341	0.0481
C (0.2546)	C1 (0.4795)	C11	0.105	0.0674
		C12	0.4778	0.0128
		C13	0.4172	0.0483
	C2 (0.5215)	C21	0.3283	0.0114
		C22	0.6717	0.0518
D (0.4598)	D1 (0.5921)	C23	0.352	0.0452
		D11	0.2701	0.0347
		D12	0.3279	0.0618
	D2 (0.4179)	D21	0.3322	0.0171
		D22	0.266	0.035
		D23	0.2434	0.0187
		D24	0.2084	0.0383

III. A. 2) Application and analysis

Evaluating the ideological quality of students is a complex task that requires the establishment of a specialized evaluation team, which includes leaders of the relevant school departments, teacher representatives and so on. The evaluation is divided into five levels, scored according to a 10-point system, with 9 to 10 as level 1, 7 to 8 as level 2, and so on.The evaluation data of the ideological quality of students in secondary school L is shown in Table 5.According to the evaluation data and the weight of indicators in Table 5, the results of the comprehensive evaluation can be calculated by using the simple weighting method.

Of which, (A) Comprehensive evaluation score of ideological and political quality dimension: (0.0249,0.0201,0.0651, 0.0089,0.0666,0.0665)*(69.9,80.4,80.9, 76.2,73.2,72.9,76.7)=23.810

(B) Comprehensive evaluation score of moral quality dimension: = 0.0079,0.069,0.0576,0.0627,0.0481)*(73.2,76.4,70.4, 74,77.9)=18.292

(C)Comprehensive evaluation score of legal and disciplinary quality dimension: (0.0674,0.0128,0.0483,0.0114,0.0518, 0.0452)*(67.9,73.4,72.5,73.9,76,72.4)=17.069

(D) Comprehensive evaluation dimension of physical and mental quality dimensions:(0.0347,0.0618,0.0171,0.035,0.0187, 0.0383)*(74.1,80.6,66.7,73.4,73,74.5) =15.480

It can be found that the students of secondary school L are more outstanding in the dimension of ideological and political qualities, and the overall evaluation score obtained is the highest among the four dimensions, which is 23.810. And the other three dimensions obtained scores are not low, and all of them are 15.000 and above.

Table 5: Evaluation data of students' ideological quality

Index	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Mean
A11	79	80	76	92	59	60	88	56	56	53	69.9
A12	91	62	71	89	73	87	80	93	88	70	80.4
A13	60	84	99	92	64	83	73	99	58	97	80.9
A21	52	93	58	87	86	72	62	69	88	95	76.2
A22	78	73	72	81	86	88	79	50	74	51	73.2
A23	51	92	67	71	91	84	80	51	87	55	72.9
A24	97	95	98	58	52	77	87	54	76	73	76.7
B11	97	83	69	58	54	62	98	92	65	54	73.2
B12	53	72	74	64	87	92	97	95	75	55	76.4
B13	82	73	61	73	94	63	53	69	70	66	70.4
B21	69	77	60	87	95	71	76	59	81	65	74
B22	83	84	51	74	55	95	75	73	89	100	77.9
C11	95	62	52	52	52	58	58	97	78	75	67.9
C12	50	60	53	69	100	94	94	87	62	65	73.4
C13	62	65	54	52	93	54	93	92	67	93	72.5
C21	83	63	96	56	61	90	55	91	65	79	73.9
C22	77	77	95	53	80	78	71	52	85	92	76
C23	82	70	75	87	78	59	83	54	57	79	72.4
D11	68	94	63	56	98	58	98	88	62	56	74.1
D12	75	78	77	99	76	65	77	74	99	86	80.6
D21	53	58	69	54	74	53	85	64	96	61	66.7
D22	78	64	72	71	57	75	79	81	89	68	73.4
D23	58	57	72	76	90	80	59	64	85	89	73
D24	73	80	91	90	64	63	65	59	73	87	74.5

III. B. Research hypothesis and standardized path model

This section combines the existing literature research and the designed evaluation system of students' ideological quality, and proposes 8 research hypotheses on the influencing factors of students' ideological quality under 4 dimensions as follows:

(1) Ideological and political quality

Hypothesis H1: Students' political quality will have an impact on students' ideological and moral quality.

Hypothesis H2: Students' ideological quality will have an impact on students' ideological and moral quality.

(2) Moral quality

Hypothesis H3: Students' moral qualities will have an impact on students' intellectual and moral qualities.

Hypothesis H4: Students' social morality will have an effect on students' intellectual and moral quality.

(3) Legal and disciplinary qualities

Hypothesis H5: Students' legal concepts will have an impact on students' moral and ethical qualities.

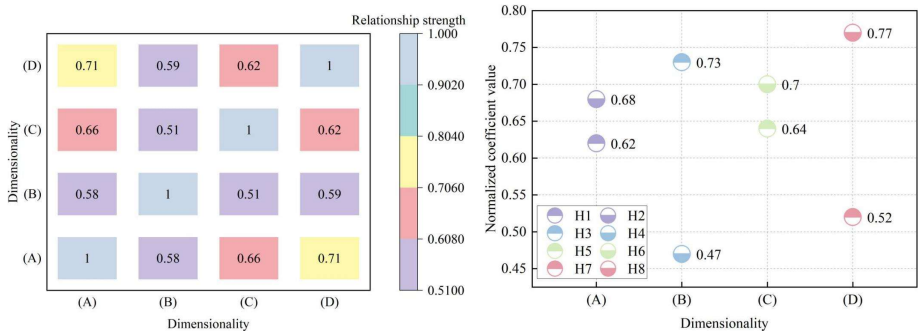
Hypothesis H6: Students' compliance with the law will have an impact on students' moral and ethical qualities.

(4) Physical and mental qualities

Hypothesis H7: Students' physical quality will have an effect on students' ideological and moral quality.

Hypothesis H8: Students' psychological quality will have an effect on students' ideological and moral quality.

The construction of the standardized path model based on the four dimensions is shown in Figure 1, and the overall predefined path model is adapted through Amos 25.0. The standardized path coefficients between the four dimensions are shown in Figure 1(a), and the standardized path coefficients between the research hypotheses and the superordinate dimensions are shown in Figure 1(b). Among the four dimensions, the standardized path coefficient between (A) Civic and Political Quality and (D) Physical and Mental Quality is the highest at 0.71, indicating the strongest strength of the relationship. And the standardized path coefficient of the research hypothesis H8 and (D) physical and mental qualities is the highest at 0.77, indicating that psychological quality not only has a more important influence on students' physical and mental qualities, but also plays a role in students' ideological and political qualities.



(a) The standardization coefficient between the four dimensions

(b) Study the standardized path coefficients of assumptions and dimensions

Figure 1: Standardized path model

The fitness of the standardized path model is examined, and the summary results of the fitness test of the proposed standardized path model are shown in Table 6. x2 of the absolute fitness index is 184.892, and the smaller the value is, the better it is. the values of GFI and AGFI are 0.961 and 0.926, respectively, which are more than the desirable level of 0.9, and the values of RMR and RMSEA are 0.014 and 0.086, which reach the fitness standard or close to it. Or close to the fitness standard. In the test results of value-added fitness index, the values of NFI, RFI, IFI, TLI, and CFI are 0.926, 0.884, 0.932, 0.894, and 0.932 in that order, which are greater than or close to 0.9, and close to the ideal level. In the parsimony fitness index, the chi-square degrees of freedom ratio (x^2/df) is 10.272 is slightly larger than 5. The main reason is that there are fewer variables in the model, so the total degrees of freedom of the model is smaller, which leads to a slightly larger parsimony fitness index, but the absolute fitness index x^2 = 184.892 is smaller, which indicates that the model is acceptable. Therefore, the fitness index of this model basically meets the standard, indicating that the actual data matches the established model and the corresponding path analysis results can be supported.

Table 6: Summary of standardized path model fit test

Index	Result	Standard
x^2	184.892	The smaller,the better
x^2/df	10.272	<5
GFI	0.961	>0.9
AGFI	0.926	<0.05
RMR	0.014	<0.08
RMSEA	0.086	>0.9
NFI	0.926	>0.9
RFI	0.884	>0.9
IFI	0.932	>0.9
TLI	0.894	>0.9
CFI	0.932	>0.9

Table 7: Model parameter estimation

Path	Estimation of model parameter coefficients				
H1	FL	UNFL	S.E.	C.R.	*P*
H2	0.762	2.059	0.142	14.591	***
H3	0.693	1.376	0.102	13.638	***
H4	0.561	1.000			
H5	0.719	1.738	0.122	14.355	***
H6	0.512	1.000			
H7	0.717	1.883	0.173	10.958	***
H8	0.765	1.540	0.111	13.967	***

The above fitness test of the standardized path model indicates that the validation analysis of several previous assumptions yielded better-fitting paths. Using structural equation modeling to validate the standardized path model analysis, the model parameter estimation results are shown in Table 7, the model unstandardized path coefficients (UNFL) are all significant at the 0.001 level. In structural equation modeling, the standardized path coefficients need to be greater than 0.5, and the standardized path coefficients (FL) of the models in this paper are all above 0.5, which indicates that they can be supported and meet the ideal criteria.

III. C. Suggestions for the Path to Enhancement of Students' Ideological Qualities

According to the previous analysis, it can be seen that there are four main factors affecting students' ideological quality in the mode of ideological and political education: ideological and political quality, moral quality, legal and disciplinary quality, and physical and mental quality, among which the ideological and political quality has a higher degree of influence. As one of the important guides on the way of students' growth, schools and teachers play an important role in the cultivation and improvement of students' ideological quality. Therefore, from the perspective of schools and teachers, this section gives the following suggestions for the construction of the path to improve students' ideological quality:

(1) Schools should pay attention to the cultivation of students' ideological quality, actively optimize and improve the existing working mode of ideological quality education, and ensure that students are fully exposed to and learn the relevant content by setting up a reasonable ideological quality-related curriculum and arranging school hours reasonably. At the same time should improve the quality of thought related content in the campus atmosphere of the construction, through the opening of ideological and political, moral, legal and psychological theme of the cultural corner, preaching activities, etc., a variety of dimensions to instill students with the correct quality of thought content.

(2) Teachers not only need to complete the ideological quality related courses with all their heart and soul, but also should pay attention to the students' performance in ideological and political, moral behavior, legal and disciplinary consciousness, mental health and physical quality in daily campus life, and correct and guide the students at the first time when they find inappropriate performance, so as to maintain the healthy development of the students' ideological quality in various aspects.

IV. Conclusion

In this paper, by designing a set of evaluation system of students' ideological quality with reasonable structure and content, two mathematical methods of hierarchical analysis and Delphi method are used to complete the assignment of indicators of this evaluation system. With the support of structural equation modeling method, the standardized path model of the influencing factors of students' ideological quality is constructed and passed the test. Combining the mathematical modeling method of the established evaluation system and the standardized path model of the calculation and analysis results, this paper suggests that schools and teachers should always maintain the healthy development of students in the four aspects of ideological and political, ethical behavior, awareness of law and discipline, as well as physical and mental health, so as to promote the enhancement of the ideological quality of students.

In the standardized path model of the influencing factors of students' ideological quality, the standardized path coefficient of (A) ideological and political quality and (D) physical and mental quality is the highest at 0.71, the standardized path coefficient of research hypothesis H8: students' psychological quality will have an impact on students' ideological and moral quality, and the standardized path coefficient of (D) physical and mental quality is the highest at 0.77 and the standardized path coefficients (FL) are all above 0.5.

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