

Design and Optimization of a Weighted Comprehensive Evaluation Model for Civics Teachers' "Six Essentials" Literacy in the Digital Era

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Abstract: The digital age has placed new demands on the qualifications of ideological and political education teachers. In order to explore the level of the "Six Essential Qualities" of ideological and political education teachers, this paper first proposes the use of the Delphi method to determine the evaluation index system for this study based on the theoretical support of relevant definitions and principles. First, based on relevant definitions and principles, the Delphi method was proposed to determine the evaluation indicator system for this study. Subsequently, the Analytic Hierarchy Process (AHP) was used to assign weights to each evaluation indicator. Finally, the additive concept was introduced to optimize the traditional weighted evaluation model, making the assessment results more aligned with actual circumstances, thereby achieving the design and optimization of the weighted comprehensive evaluation model. With the help of the model in this paper, the "Six Essential Qualities" of ideological and political teachers in the digital age were evaluated and analyzed. Through the corresponding formula calculation, the overall evaluation score of the evaluation indicators was 4.3013, which can be summarized as the "Six Essential Qualities" of ideological and political teachers in the digital age being rated as excellent, which not only verifies the optimization effect of the model, but also demonstrates the level of the "Six Essential Qualities" of ideological and political teachers.

Keywords: ideological and political teachers; Delphi method; hierarchical analysis method; evaluation model

1. Introduction

With the development of new technologies such as artificial intelligence, big data, and blockchain, digital-driven change and development has become a worldwide theme [1-3]. The development of digital economy has exacerbated the contradiction between talent demand and education reform, and the digital education ecosystem is gradually formed [4-5]. The wide application of intelligent teaching equipment in teaching activities and the establishment of intelligent teaching systems such as AI classroom have broken the inherent perception of traditional teaching by the teacher community [6-7]. The digital construction of education has realized the sharing of educational resources through the establishment of subject education information base [8] and the creation of cloud knowledge space [9] by the teaching system software, and subsequently a series of digital changes will occur in the teaching of teachers and the learning of students.

The "Six Essential Qualities" of teachers are an important factor influencing the digital transformation of education. As educators who nurture students, the development of these qualities is not only crucial to teachers' own professional development, but also directly affects students' learning experiences and growth. In recent years, comprehensive evaluation methods have been systematically researched and explored in the field of education, and a series of research results have been achieved [10-12]. However, there has been little research on the evaluation of the "Six Essential Qualities" of ideological and political teachers, the evaluation indicators are imperfect, and the evaluation indicator



system has not kept pace with the times, making it impossible to conduct a more comprehensive, objective, and scientific evaluation of the current development status of the “Six Essential Qualities” of ideological and political teachers in the digital age.

This paper analyzes the theoretical implications of the “Six Essential Qualities” of teachers, determines the basic principles for constructing an evaluation index system, and, under the constraints of these principles, proposes the use of the Delphi method to revise and improve the preliminary draft of the evaluation index system, ultimately completing the construction of the evaluation index system. In the model design process, the hierarchical analysis method is first used to assign weights to each indicator. It is found that the traditional weighted evaluation method has certain limitations, so the concept of additivity is introduced to optimize the design of the traditional weighted evaluation model, and finally the mathematical modeling design goal of the evaluation model is achieved. This paper uses the model and questionnaire to conduct a comprehensive evaluation and analysis of the “Six Essential Qualities” of ideological and political teachers in the digital age, with the aim of demonstrating the level of the “Six Essential Qualities” of ideological and political teachers in colleges and universities.

2. Design and Optimization of Civics Teacher Literacy Assessment Model

2.1. The Value Implications of the “Six Essential Qualities” for Teachers

2.1.1. Political Strength

"Strong politics" is the embodiment of the most essential attribute of the comprehensive qualities of teachers of Civics courses, and the value of such political qualities lies in the fact that it can help students to establish a correct worldview, outlook on life and values, and cultivate a sense of social responsibility and a sense of historical mission among young college students.

2.1.2. Sentiments Should Be Deep

The value of "deep feelings" is the value orientation of the comprehensive quality of teachers of Civics and Political Science courses, and the value of this kind of thinking quality lies in the fact that it can cultivate the innovative spirit and practical ability of the students, improve the comprehensive quality and competitiveness of the students, and observe and cognize the world rationally and scientifically with a critical eye.

2.1.3. Have a Wide Field of Vision

"Wide vision" is the basis of the comprehensive quality requirements for teachers of Civics and Political Science courses, and the value of this vision quality lies in the fact that it can help students broaden their horizons, enhance their ability to communicate and dialog across cultures, and consciously contribute to the building of a community of human destiny, so as to improve their international communication power and influence. Teachers of Civics and Political Science in higher vocational colleges and universities should have broad knowledge and international vision, and be able to guide young college students to pay attention to global issues, understand and promote exchanges and mutual understanding of different civilizations, and enhance their international exchange ability.

2.1.4. Strict Self-Discipline

Teachers of ideological and political courses in higher vocational colleges should have a high degree of self-discipline and self-restraint ability, be able to abide by professional ethics and laws and regulations, be consistent with words and deeds, and become the unifier of "economic teachers" and "human teachers", set a good example for students, and let students "kiss their teachers and believe in their ways". The value of this kind of self-discipline is that it can cultivate students' concept of law and discipline and self-discipline awareness, and improve students' moral quality and moral criticism ability.

2.1.5. Positive Personality

"Personality should be correct" is the fundamental source of the comprehensive quality of teachers of Civics and Political Science, and the value of this personality quality lies in the fact that it can cultivate students' moral feelings and moral behaviors, and improve students' quality and charisma. Teachers of Civics and Political Science in higher vocational colleges and universities should not only have academic charisma, but also have the qualities of honesty, integrity, kindness, respect for others and noble charisma, and be able to set a good example by themselves, and be the intimate friends and guides of young college students.

2.1.6. Think New

"Thinking new" is a reflection of the comprehensive quality of the teachers of the Civics course required by the times. Facing the complex and changing situation of the great change that has not been seen in a century, the teachers of the Civics course in higher vocational colleges and universities must have innovative thinking and profound critical thinking ability, and be able to use new teaching concepts and methods to guide the students to face the prominent contradictions and social phenomena that have emerged in the construction of socialist modernization actively, actively explore, independently think and criticize prominent contradictions and social phenomena in the construction of socialist modernization, actively explore, independently think and criticize. The value of this kind of thinking quality lies in the fact that it can cultivate students' innovative spirit and practical ability, improve their comprehensive quality and competitiveness, and observe and cognize the world rationally and scientifically with a critical eye.

2.2. *Assessment of the Indicator System*

2.2.1. Basic Principles

Before implementing the questionnaire survey as well as constructing the evaluation indexes for college teachers, the following three basic constructive principles should be clarified first:

(1) Professionalism

College teachers are professionals who are responsible for educating vocational students. The "Six Essential Qualities" for teachers are a further refinement and improvement of professional qualities, and their specific connotations must clearly reflect the professionalism of the teaching profession.

(2) Core qualities

The "Six Essential Qualities" for teachers must be the most important, core, and irreplaceable qualities in professional qualities, and should be both important and fundamental. It should be made clear that the "Six Essential Qualities" of teachers are not unique to teachers and are not qualities that other professions do not possess.

(3) Timeliness

The "Six Essential Qualities" of teachers should be the core requirements for guiding the professional development of teachers. They should not only take into account the current needs of the development of social vocational education, but also fully consider the future direction of teacher professional development.

2.2.2. Questionnaire Design

This thesis firstly organizes the related literature on core literacy, teachers' core literacy and college teachers' core literacy in the literature review section. Then, combined with the professional policies related to college teachers and the professional standards of college teachers introduced, it fully considers drawing on the professional standards of college teachers in various countries and organizes and analyzes them. The questionnaire consists of two parts: basic personal information and selection and ranking of core literacy keywords. The questionnaire adopts a subjective self-reporting method, in which college teachers select the most important and core literacy for college teachers from the selected high-frequency literacy. A brief presentation of the first part of the questionnaire will be presented later, focusing on the analysis of the second part.

2.2.3. Survey Respondents and Data Collection

In order to ensure the comprehensiveness of the evaluation index system, this questionnaire was distributed to not only college teachers, but also college administrators. In view of the operability of data collection, the sampling of this study is mainly centered on five colleges and universities in Province A. The questionnaires were mainly distributed through the Internet, and the first-line educators and administrators in the seven colleges and universities were selected; 400 questionnaires were sent out, with 388 valid questionnaires and a recovery rate of 97.00%. By analyzing relevant literature and professional policy standards, the researcher compiled a total of 60 high-frequency words of teacher literacy, and asked higher education teachers to select the most important and core literacy from them, and statistically analyzed the recovered data.

2.2.4. Preliminary Draft Evaluation Indicator System

Based on the special characteristics of the senior teacher team, the researcher, according to the literature combing related to the quality of senior teachers, combined with relevant policies and

international comparative research, initially drafted the evaluation index system, which contains 3 first-level indexes and 36 second-level indexes, and the preliminary draft of the evaluation index system is shown in Table 1, and based on which he prepared the "Expert Consultation Questionnaire on the Quality of Higher Vocational Teachers (the first round)". Accordingly, the "Expert Consultation Questionnaire for Higher Vocational Teachers' Literacy (First Round)" was prepared, and 10 experts in the field of education were invited to review the content of the questionnaire so as to make it more scientific.

Table 1. Preliminary draft of the indicator system for evaluating core literacy.

| First-level indicator | Symbol | Secondary indicators | Symbol |
|-----------------------|--------|---|--------|
| Attitude and Behavior | A | One's own professional development | A1 |
| | | Professional ideals and dedication | A2 |
| | | Teamwork spirit | A3 |
| | | Care for college students | A4 |
| | | Legitimate rights and interests | A5 |
| | | Individual differences | A6 |
| | | Pay attention to the all-round development of vocational college students | A7 |
| | | Open to all vocational college students | A8 |
| | | Teach students in accordance with their aptitudes | A9 |
| | | Self-regulation of emotions | A10 |
| | | Full of love, responsibility and patience | A11 |
| | | Be diligent in learning and keep making progress | A12 |
| | | The teaching concept based on action orientation | A13 |
| | | Occupational attribute | A14 |
| Knowledge | B | Knowledge of pedagogy | B1 |
| | | Knowledge of psychology | B2 |
| | | Basic theories of education and teaching | B3 |
| | | Curriculum standards of the subjects taught | B4 |
| | | The basic knowledge, principles and skills of the subjects taught | B5 |
| | | Basic knowledge of interdisciplinary studies | B6 |
| | | The connection between interdisciplinary studies and the disciplines taught | B7 |
| | | Knowledge of natural sciences and humanities and social sciences | B8 |
| | | The basic situation of education in China | B9 |
| | | Modern information technology knowledge | B10 |
| Ability | C | Curriculum development and optimization | C1 |
| | | Improve the curriculum system | C2 |
| | | Manage students' abilities | C3 |
| | | The ability to manage the classroom | C4 |
| | | The ability to transform educational achievements | C5 |
| | | The ability to conduct research and lead projects | C6 |
| | | Industry connection ability | C7 |
| | | Industry working experience | C8 |
| | | Guide practical operation ability | C9 |
| | | Employment guidance ability | C10 |
| | | Collaboration and communication | C11 |
| | | Serve the local economy | C12 |

2.2.5. Modification of the Evaluation Indicator System Based on the Delphi Method

The Delphi method is to determine the final evaluation index system through several rounds of anonymously soliciting the opinions of the expert group, so the selection of the expert group is particularly important for the overall study [13-14]. The specific number and selection criteria of the expert group should be based on the scale and specific situation of the study, and the general number of experts should not exceed 20. In this study, 12 experts were proposed to be selected, and 10 experts responded after the exchange. In order to ensure the scientific nature of the selection of expert group

members, two types of experts were invited; one type is experts in the field of pedagogy from various universities, who have more in-depth research on teacher literacy as well as evaluation methods. The other category is college teachers. Teachers from higher vocational colleges who participated in this study have profound experience in teacher evaluation research and have rich insights and judgments, and as frontline evaluation users, they better understand what to look out for in the practical application of this evaluation index system. In view of the above considerations, the expert group finally consisted of 10 experts, with the Delphi method indicator screening criteria, and the coefficient of variation less than 0.25 (if the conditions are met, the indicator will be retained; otherwise, it will be excluded). The coefficient of variation is equal to the standard deviation divided by the mean, and the following will be an example analysis of the Delphi method-based evaluation index system amendment to finalize the evaluation index system in this paper.

2.3. Assessment Model Design and Optimization

2.3.1. Posing Questions

In order to solve the problems of unclear rewards and penalties and easy bias in the emphasis of indicators arising from the traditional evaluation model, the traditional evaluation model can be transformed. On the basis of pointing out the shortcomings of the traditional weighted evaluation model, the additive weighted evaluation model is proposed, and the computational principle of the additive weighted evaluation model will be described and interpreted in detail in the following.

2.3.2. Additively Weighted Evaluation Models

The additive weighting method, which takes the program-level indicators in the decision scheme as the attributes of each program and describes them all quantitatively in terms of bases, compares the programs, eliminates the poor solutions and unifies the positivity and negativity of the indicators (normalizing the cost-type indicators to the benefit-type). Then the normalization results of the attribute values of the unified indicators (normalized to values within [0, 1]) are linearly weighted with their weights, and the final results are obtained as the basis for evaluation and decision-making on programme selection. The specific steps of constructing the additive weighted evaluation model of the teacher literacy indicator system:

(1) Define the decision problem, take each indicator G_j ($j = 1, 2, \dots, n$) of the program level as an attribute, and construct it into a decision matrix corresponding to each program X_i ($i = 1, 2, \dots, m$) to exclude the inferior solutions in the set of programs according to the definition of non-inferior solutions. The determination of its attribute values y_{ij} can be done using the Delphi method of anonymous correspondence with relevant experts. Different experts are not well informed about all the issues consulted, so when organizing the survey, they can be divided into different groups of experts and consulted separately. For the survey data finally obtained, different expert weights f_k are assigned according to the actual situation, so as to calculate the attribute value of each program:

$$y_{ij} = \sum_{k=1}^n y_{ijk} f_k / \sum_{k=1}^n f_k \quad (k = 1, \dots, s; s \text{ is the number of experts}) \quad (1)$$

(2) Normalize the decision matrix according to the attribute types separately:

$$Z_{ij} = (y_j^{\max} - y_{ij}) / (y_j^{\max} - y_j^{\min}) \quad (2)$$

where $y_j^{\max} = \max_i y_{ij}$; and $y_j^{\min} = \min_i y_{ij}$, and finally a new matrix:

$$Z = (Z_{ij})_{\max} \quad (3)$$

(3) Assign weights to each attribute using hierarchical analysis (AHP) to determine the weight vector [15-16].

(a) Construct two-by-two comparison judgment matrix. For the evaluation indexes of Civics teachers in the digital era listed in Table 1, the 1~9 scale method is used to synthesize the consultation opinions of expert groups, and the meta-family of each level judgment matrix is constructed after weighted average of each scoring result.

(b) Hierarchical single sorting and its consistency test. The weight vector $W_g = (W_{g_1}, W_{g_2}, \dots, W_{g_n})$

under the single criterion and its score vector:

$$W_{gi} = \overline{Wgi} / \sum_{j=1}^n \overline{Wgi}; \text{ Which } \overline{Wgi} = \left(\prod_{j=1}^n a_{ij} \right)^{1/n} \quad (4)$$

Due to the subjective nature of the judgment, it is necessary to perform a consistency test on the judgment matrix A and calculate the consistency indicator CI and the ratio CR :

$$CI = (\lambda_{\max} - n) / (n - 1); CR = CI / RI \quad (5)$$

$CR \leq 0.1$ is considered to have satisfactory consistency.

RI Check the random consistency indicator. Maximum characteristic root:

$$\lambda_{\max} = \frac{1}{n} \sum_{i=1}^n \frac{(AW)_i}{W_i} \quad (6)$$

Similarly, the weight vector $W_f = (W_{f1}, W_{f2}, \dots, W_{fn})$ is computed under a single target level.

(c) Hierarchical total ordering and its consistency test. Based on the results of the hierarchical single-ordering calculation, the synthetic weights of the scenario layer on the target layer are deduced layer by layer from the highest to the lowest level of the hierarchical model,

$W = (w_1, w_2, \dots, w_j, \dots, w_n)$. where the synthetic weight vector elements:

$$W_j = W_{gi} \cdot W_g \quad (7)$$

(d) Calculation of the value of the evaluation indicator Vi for each program. The research subjects can make decisions on the evaluation of Civics teachers in the digital era based on the order of the size of Vi :

$$V_i = \sum_{i=1}^n w_j z_{ij} \quad (8)$$

3. Empirical Research Analysis

3.1. Empirical Analysis of Evaluation Indicator System

3.1.1. First round Screening of Evaluation Indicators

(1) First-level indicators

The Delphi method was used to screen the three primary indicators in the evaluation indicator system. The results of the first round of screening for the primary indicators are shown in Figure 1. The results indicate that experts evaluated the primary indicators, with an average importance score ranging from 4.59 to 4.66, a coefficient of variation ranging from 0.09471 to 0.1086, and a full score rate between 0.8982 and 0.8999. In this round of consultation, no experts raised objections to the first-level indicators. Based on the analysis of the first-level indicator results, it is evident that experts reached a consensus on the importance and differences of the first-level indicators, indicating that the selection of research indicators is reasonable and accurate, and meets the inclusion criteria for research indicators. Therefore, no modifications were made to the first-level indicators.

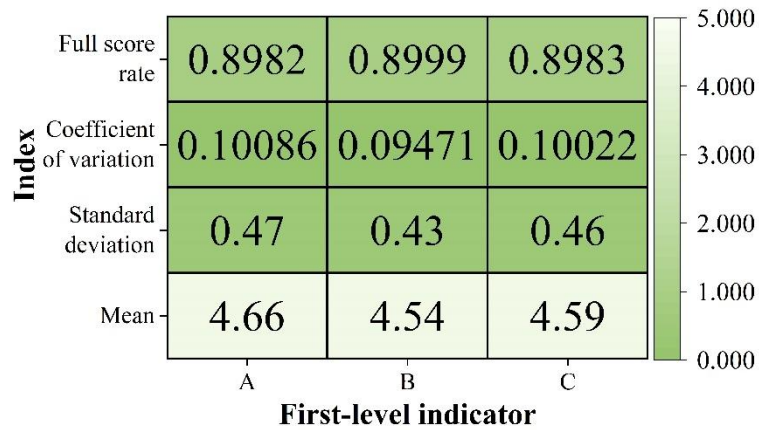


Figure 1. The first-round screening results of the first-level indicators.

(2) Secondary indicators

Using the same method as above, 36 secondary indicators were screened and analyzed, with the results shown in Figure 2. The results show that experts evaluated the secondary indicators, with an average importance score ranging from 4.51 to 4.76, a coefficient of variation ranging from 0.08 to 0.31, and a full score rate ranging from 0.80 to 0.90. Additionally, it can be observed that the coefficients of variation for A12, A13, A14, B9, B10, C10, C11, and C12 exceed 0.25, so these were excluded, while the remaining indicators were retained.

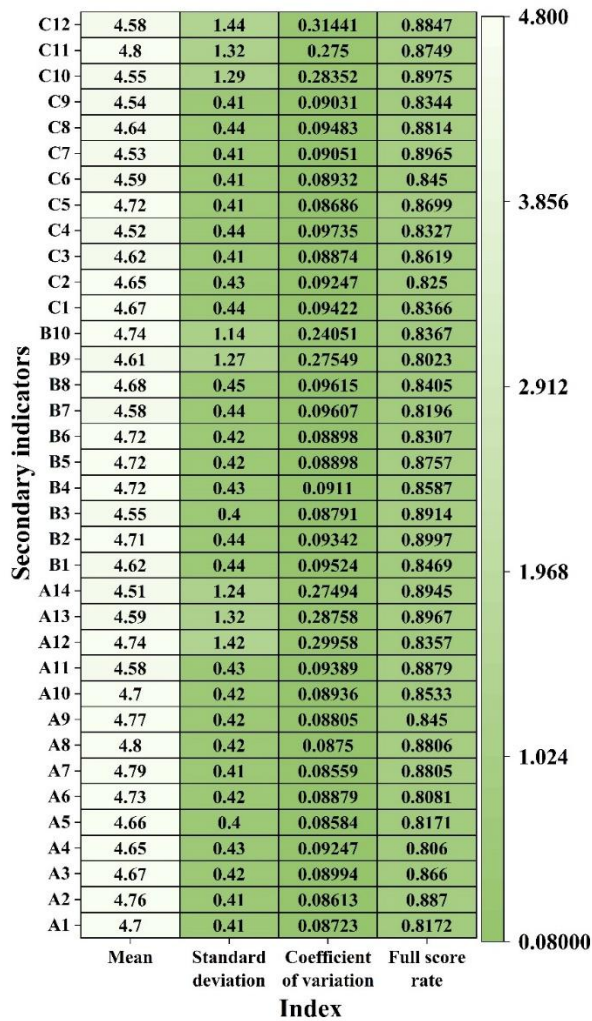


Figure 2. Screening and analysis results.

3.1.2. Second Round of Evaluation Indicator Screening

(1) First-level indicators

Using the same method, further screening analysis was conducted on the first-level indicators. The results of the first-level indicator screening analysis are shown in Figure 3. The data show that experts evaluated the second round of first-level indicators, with the average importance scores ranging from 4.55 to 4.77, the coefficient of variation ranging from 0.09224 to 0.10722, and the full score rate ranging from 0.8459 to 0.8981. The experts did not propose any modifications during the evaluation process, indicating that the evaluation results of the first-level indicators align with the experts' expectations and do not require modification. Therefore, no modifications were made to the first-level indicators in this round of evaluation.

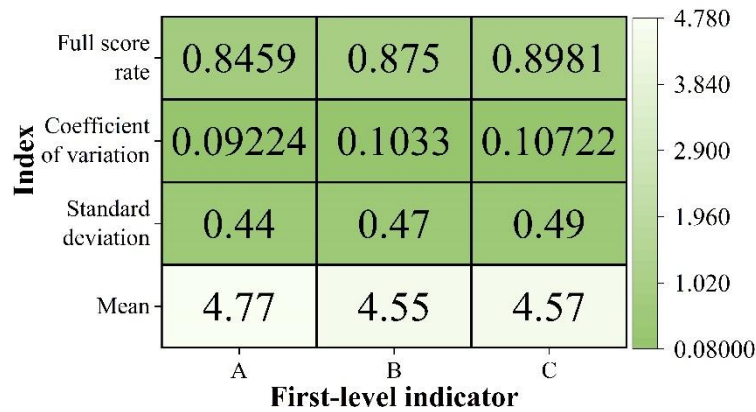


Figure 3. Screening and analysis results of first-level indicators.

(2) Secondary indicators

Experts evaluated the secondary indicators in the second round, and the results of the secondary indicator screening are shown in Figure 4. The average importance scores for the indicators ranged from 4.5 to 4.8, the coefficient of variation ranged from 0.08 to 0.3167, and the full score rate ranged from 0.8 to 0.9. Additionally, the coefficients of variation for A9, A10, A11, B6, B7, B8, C7, C8, and C9 did not meet the research requirements, so they were excluded. The remaining indicators were retained to make the digital-age ideological and political education teacher competency evaluation indicator system constructed in this paper more aligned with actual conditions.

3.1.3. Determining the Evaluation Indicator System

Through two rounds of Delphi expert consultations, the experts reached a consensus, eliminating the need for a third round of consultations. The evaluation indicators for the literacy of ideological and political education teachers in the digital age were finally determined, and an evaluation indicator system was constructed. This system consists of three first-level indicators and 19 second-level indicators. The evaluation indicator system for the literacy of ideological and political education teachers in the digital age is shown in Table 2.

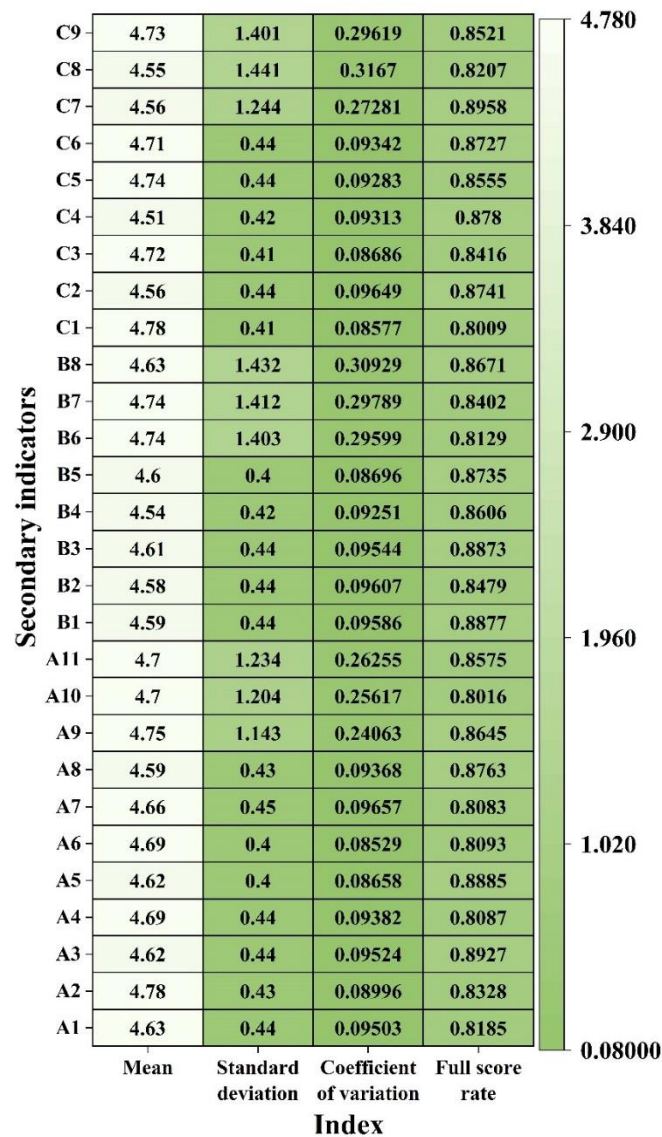


Figure 4. Screening results of secondary indicators.

Table 2. Evaluation index system.

| First-level indicator | Symbol | Secondary indicators | Symbol |
|-----------------------|--------|---|--------|
| Attitude and Behavior | A | One's own professional development | A1 |
| | | Professional ideals and dedication | A2 |
| | | Teamwork spirit | A3 |
| | | Care for college students | A4 |
| | | Legitimate rights and interests | A5 |
| | | Individual differences | A6 |
| | | Pay attention to the all-round development of vocational college students | A7 |
| | | Open to all vocational college students | A8 |
| Knowledge | B | Knowledge of pedagogy | B1 |
| | | Knowledge of psychology | B2 |
| | | Basic theories of education and teaching | B3 |
| | | Curriculum standards of the subjects taught | B4 |
| | | The basic knowledge, principles and skills of the subjects taught | B5 |
| Ability | C | Curriculum development and optimization | C1 |
| | | Improve the curriculum system | C2 |

| | | | |
|--|--|---|----|
| | | Manage students' abilities | C3 |
| | | The ability to manage the classroom | C4 |
| | | The ability to transform educational achievements | C5 |
| | | The ability to conduct research and lead projects | C6 |

3.2. Teacher Competency Assessment Analysis

3.2.1. Hierarchical Analysis Method Weighting Analysis

To determine the relative weights of each element (including standards and sub-standards) within their respective hierarchical levels, the Analytic Hierarchy Process (AHP) is employed. The core of this method involves constructing a pairwise comparison matrix, where all elements within the same hierarchical level are compared pairwise with their superior elements. Through this comparison, the elements in the matrix are analyzed and evaluated based on the scale meanings, as illustrated in Figures 5–8. Based on the judgment matrix, comprehensive weight calculations and consistency tests for the indicators must be conducted. This step is executed using the principle of hierarchical combination, aiming to calculate the total weight of each alternative. Specifically, the local weight of each element within its own level is multiplied by the local weight of the corresponding upper-level element, and these products are summed to obtain the total weight of each alternative. Based on the scoring data from the 10 experts during the survey phase, the final weight calculation results are obtained. The AHP weighting results are shown in Table 3. It can be concluded that $A (0.151) < B (0.2186) < C (0.6304)$, $A1 (0.0063) < A2 (0.0075) < B1 (0.0141) < A8 (0.0166) < A7 (0.0177) < A5 (0.0195) < B2 (0.0242) < A4 (0.0247) < A3 (0.0292) < A6 (0.0295) < B5 (0.0423) < B3 (0.0583) < B4 (0.0798) < C5 (0.0883) < C1 (0.0892) < C3 (0.0924) < C2 (0.1111) < C6 (0.1166) < C4 (0.1328)$.

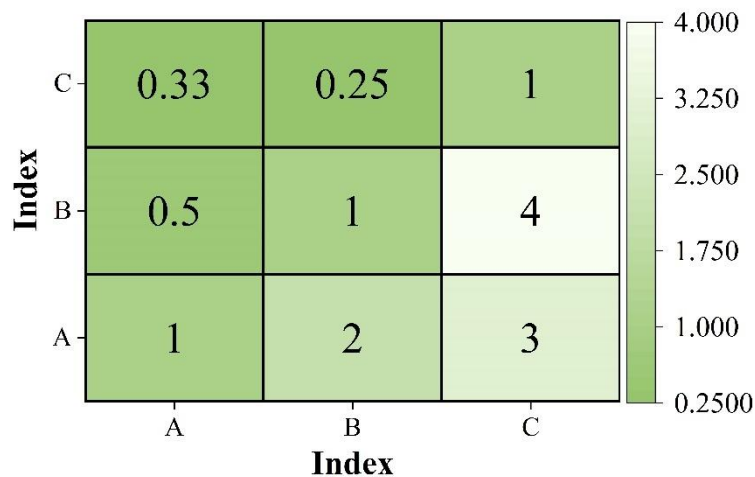


Figure 5. Judgment matrix(A,B,C).

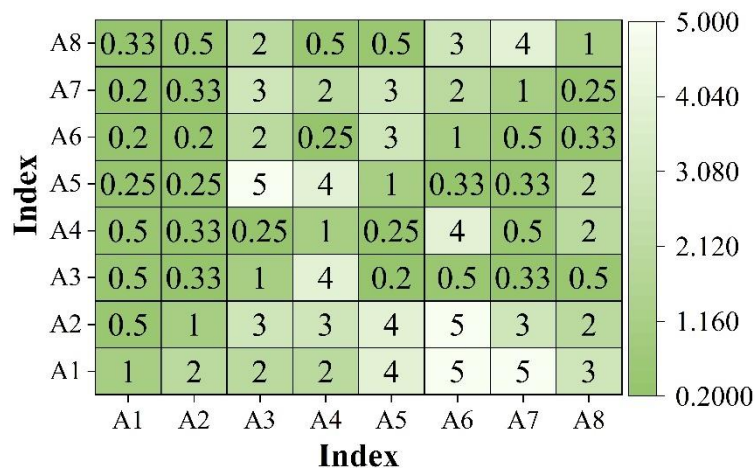


Figure 6. Judgment matrix(A).

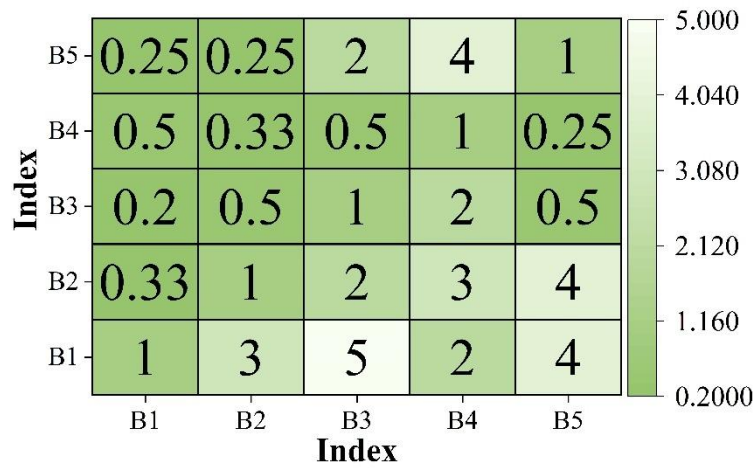


Figure 7. Judgment matrix(B).

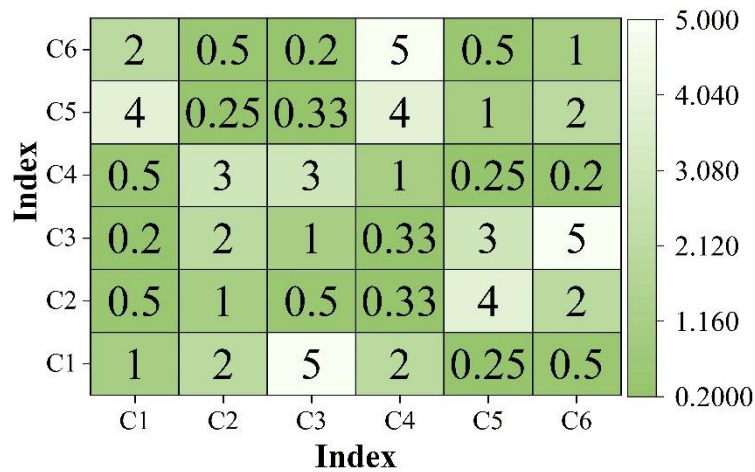


Figure 8. Judgment matrix(C).

Table 3. The weighting results of the Analytic Hierarchy Process.

| First-level indicator | Weight | Secondary indicators | Weight | Comprehensive weight |
|-----------------------|--------|----------------------|--------|----------------------|
| A | 0.1510 | A1 | 0.0415 | 0.0063 |
| | | A2 | 0.0499 | 0.0075 |
| | | A3 | 0.1932 | 0.0292 |
| | | A4 | 0.1637 | 0.0247 |
| | | A5 | 0.1292 | 0.0195 |
| | | A6 | 0.1955 | 0.0295 |
| | | A7 | 0.1170 | 0.0177 |
| | | A8 | 0.1100 | 0.0166 |
| B | 0.2186 | B1 | 0.0644 | 0.0141 |
| | | B2 | 0.1108 | 0.0242 |
| | | B3 | 0.2666 | 0.0583 |
| | | B4 | 0.3649 | 0.0798 |
| | | B5 | 0.1933 | 0.0423 |
| C | 0.6304 | C1 | 0.1415 | 0.0892 |
| | | C2 | 0.1763 | 0.1111 |
| | | C3 | 0.1466 | 0.0924 |
| | | C4 | 0.2106 | 0.1328 |
| | | C5 | 0.1400 | 0.0883 |
| | | C6 | 0.1850 | 0.1166 |

3.2.2. Analysis of Assessment Results

Referring to relevant research results and data, we set the assessment levels for the “Six Essential Qualities” of ideological and political teachers in the digital age, which are V1 Excellent: 4-5, V2 Good: 3-4, V3 Average: 2-3, V4 Poor: 1-2, and V5 Very Poor: 0-1. We obtained statistical data for 19 indicators through a questionnaire survey and calculated the final evaluation analysis results. The evaluation results are shown in Table 4. The weighted comprehensive evaluation result of the “Six Essential Qualities” of ideological and political teachers in the digital age was 4.3013, which is in the range of 4 to 5. This shows that under the optimized weighted comprehensive evaluation model, the assessment level of the “Six Essential Qualities” of ideological and political teachers in the digital age is excellent, demonstrating the excellent qualities of ideological and political teachers in colleges and universities, which is of great significance for improving the quality of talent cultivation. At the same time, it also verifies the application effectiveness of the additive weighted evaluation model.

Table 4. Analysis of Evaluation Results.

| Secondary indicators | Comprehensive weight | Statistical data | Result |
|----------------------|----------------------|------------------|--------|
| A1 | 0.0063 | 1 | 4.3013 |
| A2 | 0.0075 | 2 | |
| A3 | 0.0292 | 3 | |
| A4 | 0.0247 | 4 | |
| A5 | 0.0195 | 4 | |
| A6 | 0.0295 | 4 | |
| A7 | 0.0177 | 1 | |
| A8 | 0.0166 | 2 | |
| B1 | 0.0141 | 2 | |
| B2 | 0.0242 | 5 | |
| B3 | 0.0583 | 4 | |
| B4 | 0.0798 | 5 | |
| B5 | 0.0423 | 5 | |
| C1 | 0.0892 | 4 | |
| C2 | 0.1111 | 5 | |
| C3 | 0.0924 | 4 | |
| C4 | 0.1328 | 5 | |
| C5 | 0.0883 | 5 | |
| C6 | 0.1166 | 4 | |

4. Conclusion

In this paper, under the constraints of the “Six Essential Qualities” of ideological and political teachers in the digital age, the Delphi method was used to determine the evaluation index system for this study. Subsequently, the hierarchical analysis method was used to weight the evaluation indicators. Through reviewing relevant materials, it was found that the traditional weighted evaluation model had certain deficiencies. Therefore, the concept of additivity was introduced to optimize the traditional weighted evaluation model, and ultimately, an additive weighted evaluation model was constructed. Guided by the model in this paper, an empirical evaluation and analysis of the “Six Essential Qualities” of ideological and political teachers in the digital age was conducted. After calculating the formula, the overall evaluation score was 4.3013, which means that the “Six Essential Qualities” of ideological and political teachers in the digital age were rated as excellent. This not only confirmed the effectiveness of the model optimization, but also revealed the level of the “Six Essential Qualities” of ideological and political teachers in the digital age.

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