Research on FCE-based Optimization of College Ideological and Political Education Mode

Ying Zhou

Department of Social Sciences, Beijing Youth Politics College, Beijing 100102, China

Abstract

By far, the discipline of ideology and politics has been established for more than 30 years and great achievements have been made in college ideological and political education (“IPE”). However, with advancement of the times, the disadvantages of college IPE have become increasingly prominent. Therefore, this paper first analyzes main problems with existing college IPE based on Marxism, and then by using the fuzzy comprehensive evaluation (“FCE”) method, builds an evaluation index system and determines the weight per index. Finally, according to the calculation results, the paper puts forward suggestions on how to optimize the mode of college IPE. The FCE model established in the paper can help colleges enhance their IPE quality and achieve leap-forward development of the IPE Dept.

Keywords: FCE, Colleges, IPE, Mode Optimization.

1. RESEARCH BACKGROUND

1.1 Literature review

China’s higher education is aimed to train undertakers and successors of the socialist cause. Therefore, it is an important mission of higher education to explore the law of ideological and political education (“IPE”) and continuously improve the effectiveness of IPE. In recent years, many researchers have conducted research on college IPE. Liang and Yuan believed that in the era of big data, IPE teachers in colleges should provide students with IPE-related information and resources through media, like websites, Microblog, e-mails, WeChat, etc., which makes possible flat-structure knowledge transfer and is more conducive to improving the learning outcomes of college students (Liang and Yuan, 2013). Zheng and Zeng held that IPE shall be implemented by starting with topics concerned by college students or hot topics, significantly enhancing students’ interest in learning, enriching the content of IPE, and achieving multi-form knowledge infiltration, with an aim to effectively enhance the effectiveness of college IPE (Zheng and Zeng, 2010). Xu and Xie had the idea that college IPE teachers shall pay special attention to the independence and autonomy of IPE, so as to strengthen students’ self-education, self-service, and self-development ability (Xu and Xie, 2015). Ji Haiju proposed that during curriculum design of IPE, new media should be integrated into the teaching through lectures, electives, academic reports and social practices etc., with a view to enhance the awareness and application of WeMedia among college students, and help them develop a correct outlook on WeMedia and enhance their media accomplishment and media criticism ability (Ji, 2015). Besides, Shi and Chen proposed that traditional IPE media are rather simple, without communication and service function. As a result, the IPE platform is used to release news and notices, while students only log onto the platform to read notices and scores, having little interest in the platform. Therefore, reform is urgently needed (Shi and Chen, 2010).

1.2 Research purpose

Since the discipline of ideology and politics was established in 1984, the Communist Party and the Central Government of China have attached great importance to development of IPE. Over the past 30 years or more, college IPE has made great achievements. However, there are still some problems with it with advancement of the times, such as strange phenomena in IPE courses, disorders among students, and conflicts in management. The paper aims to set some indexes and their respective weight based on the fuzzy comprehensive evaluation (“FCE”) method, and then put forward targeted suggestions on how to optimize the IPE mode. In general, as the implementator of IPE, college teachers should set a good example for students and provide them with learning...
instructions, while students, as the information receiver, shall adjust their mentality, correct the attitude towards IPE courses, and have their own principles and bottom line rather than blindly believe bad information.

2. MAIN PROBLEMS WITH EXISTING IPE IN COLLEGES

2.1 Unreasonable curriculum design of IPE

Now, college IPE has unreasonable curriculum design. Some colleges have paid little attention to the effect of IPE. In other words, implementation of IPE has ignored practical education of IPE courses. Moreover, it is common among colleges that IPE courses aren’t subject to strict assessment (Lin and Deng, 2015). Many colleges have adopted single evaluation mode for IPE courses, and the test content has maintained unchanged for a long period of time, so that the examination questions have been spread among students before the test.

2.2 Non-innovative teaching methods

IPE teachers still employ traditional teaching methods to implement IPE, with simple teaching means and boring content, which makes students less active in learning (Chen and Zhang, 2011). Moreover, some IPE teachers are not professional enough. With implementation of college expansion plan, the number of IPE teachers now accounts for a smaller proportion, which, combined with non-obvious effect of IPE courses, makes teachers attach little importance to IPE courses. In addition, with development of our society and economy, fewer students believe in Marxism, which makes it difficult to promote the core values of Marxism and socialism among students (Zhang et al., 2014).

3. FCE-BASED ANALYSIS OF COLLEGE IPE

3.1 To build an evaluation index system

Evaluation of the effectiveness of college IPE focuses on the ideological and political quality of students. Therefore, the primary index shall be the effectiveness of ideological and political quality of college students, which is represented by “P”. There are four secondary indexes, namely, ideological quality, political quality, moral quality and psychological quality, which are represented by B1-B4 respectively.

<table>
<thead>
<tr>
<th>Effectiveness of Ideological and Political Quality of College Students (A)</th>
<th>Secondary index</th>
<th>Tertiary index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideological quality (B1)</td>
<td>Dreams and Beliefs (C11)</td>
<td>Goals and Beliefs (C11)</td>
</tr>
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<td></td>
<td>Outlook on Life and Values (C12)</td>
<td>Value Orientation (C12)</td>
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<tr>
<td></td>
<td>Patriotism and National Spirit (C13)</td>
<td>National Pride (C13)</td>
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<td></td>
<td>Learning Attitude (C14)</td>
<td>Learning Attitude (C14)</td>
</tr>
<tr>
<td>Political quality (B2)</td>
<td>Grasp of Marxist Theory (C21)</td>
<td>Marxist Theory (C21)</td>
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<td></td>
<td>Political Behaviors (C22)</td>
<td>Political Behaviors (C22)</td>
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<td></td>
<td>Political Practice Skills (C23)</td>
<td>Political Practice Skills (C23)</td>
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<tr>
<td>Moral quality (B3)</td>
<td>Collectivism (C31)</td>
<td>Collectivism (C31)</td>
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<tr>
<td></td>
<td>Social Morality (C32)</td>
<td>Social Morality (C32)</td>
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<tr>
<td></td>
<td>Family Mortality (C33)</td>
<td>Family Mortality (C33)</td>
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<tr>
<td>Psychological quality (B4)</td>
<td>Self-cognition (C41)</td>
<td>Self-cognition (C41)</td>
</tr>
<tr>
<td></td>
<td>Mental Health (C42)</td>
<td>Mental Health (C42)</td>
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<td></td>
<td>Mental Outlook (C43)</td>
<td>Mental Outlook (C43)</td>
</tr>
</tbody>
</table>

Based on the above indexes, evaluation is conducted by experts and students.

3.1.1 Evaluation by experts

To achieve more accurate evaluation results, experts are employed to assess college IPE. The indexes shall follow the principles of overall integrity and relative independence, namely, with Formula (1) complied with:
\[
\sum_{i=1}^{s} C_i = B_i \cap C \cap B_j (i \neq j) = \emptyset
\]

3.1.2 Evaluation by students

It shall also follow the above-mentioned principles, namely, with Formula (2) complied with:

\[
\sum_{i=1}^{s} C_i = B_i \cap C \cap B_j (i \neq j) = \emptyset
\]

3.2 To establish a comprehensive evaluation set

After the evaluation index system is built, the evaluation grade shall be set up to quantify the evaluation indexes. According to the varying influence on the evaluation grade exerted by each index \( u_i \) (\( i=1, 2, ..., m \)), the weight fuzzy subset \( A \) is determined, and \( A=\{a_1, a_2, a_3, ..., a_m\} \), where, \( u_i \) refers to the weight of \( u_i \) in the factor set.

Then, it is assumed that the evaluation index factor \( u_i \) includes \( s \) secondary indexes, with the evaluation index set being \( u_i = \{u_{i1}, u_{i2}, ..., u_{is}\} \) and the corresponding weight being \( A=\{a_{i1}, a_{i2}, a_{i3}, ..., a_{is}\} \), where, \( a_{io} \) refers to the weight of \( u_{io} \) in \( u_i \); and that \( a_{io} \geq 0 \) and \( \sum a_{io} = 1 \).

This paper sets five evaluation grades, namely, excellent, good, average, pass and fail. Then, based on FCE method, the evaluation grade can be expressed as \( V=\{V_1, V_2, V_3, V_4, V_5\} \). According to the hundred-mark system, the section of the five evaluation grades is \([90, 100], [80, 90], [70, 80], [60, 70] \) and \([0, 60] \) respectively.

3.3 To Determine the weight of each evaluation index

In this paper, analytic hierarchy process is adopted to construct the judgment matrix and quantify the qualitative problems. In the judgment matrix, the factors of the same level have relatively opposite judgment compared with factors in pair. The value assignment basis is provided by experts familiar with evaluation of classroom teaching quality. If 1 is assigned to any index, then the numerical values on the main diagonal are 1, namely, \( a_{ij} = 1 \). Two values distributed at both sides of the diagonal are each other’s reciprocal, namely, \( a_{ij} = 1/a_{ji} \). The judgment matrix is as follows:

\[
\begin{array}{cccccc}
C & C_1 & C_2 & C_3 & \ldots & C_s \\
C_1 & 1 & a_{12} & a_{13} & \ldots & a_{1s} \\
C_2 & 1/a_{12} & 1 & a_{23} & \ldots & a_{2s} \\
C_3 & 1/a_{13} & 1/a_{23} & 1 & \ldots & a_{3s} \\
\vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\
C_s & 1/a_{1s} & 1/a_{2s} & 1/a_{3s} & \ldots & 1 \\
\end{array}
\]

(3)

After calculation, the weight of the above four secondary indexes is 0.367, 0.367, 0.042 and 0.124 respectively, and the weight set of tertiary indexes is as follows: \( C_{11}-C_{14} \) of ideological quality are 0.119, 0.225 and 0.524 respectively; \( C_{21}-C_{23} \) of political quality are 0.116, 0.594 and 0.312 respectively; \( C_{31}-C_{33} \) of moral quality are 0.587, 0.312 and 0.068 respectively; and \( C_{41}-C_{43} \) of psychological quality are 0.112, 0.285 and 0.531 respectively.

Taking the secondary index “ideological quality” as an example to calculate the results of consistency test on tertiary indexes and the primary index. It is concluded that according to the consistency test results of the evaluation matrix of indexes at different levels, the value of \( CR \) is within 0.10. Therefore, the weight set can meet the standards for consistency.

3.4 To determine the FCE set of indexes at all levels

In the FCE model for assessing the effect of college IPE, the evaluation index system shall have multiple levels. When determining the FCE set, the evaluation shall be conducted from the bottom to the higher level, with the specific process as follows:
First, a subset of tertiary indexes is constructed for each secondary index. Assuming that the secondary index is "i" and the tertiary index is "k", then the evaluation subset can be worked out as \( R_{BC} = \{ T_{BC1}, T_{BC2}, \ldots, T_{BCo} \} \), where, \( n \) is the number of indexes and is equal to 3 or 4; besides, \( \sum_{m} T_{BCm} = 1 \), where, B is one of the 4 secondary indexes, C is one of the tertiary index under B, n is the evaluation grade, and \( T_{BCn} \) is the membership degree of Index C and Grade n (i.e. the evaluation grade).

Second, based on the above principles, a single-factor evaluation subset can be established for each tertiary index under Secondary Index B. Then, all such evaluation subsets \( R_{n} \) are arranged to figure out the fuzzy evaluation matrix of Secondary Index B.

### 3.5 To determine the membership degree of the indexes

Expert evaluation method is adopted in determining the membership degree of each index. The evaluation grade of every tertiary index shall be assessed. Assuming there are N experts in total, the formula for calculating membership degree is as follows: Number of \( \bar{V}_{C} = \bar{A}_{C} \in \bar{V}_{i}/N \), where \( \bar{V}_{C} \) refers to the membership degree of Tertiary Index C to \( \bar{V}_{i} \), \( N \) refers to the number of valid evaluation samples, and \( \bar{A}_{C} \) represents the evaluation grade of Tertiary Index C suggested by experts.

### 3.6 To determine accuracy of FCE model results

To verify the accuracy of the evaluation results of FCE model, the above evaluation set \( V \) is used as the basis. The median of each evaluation grade section is taken (i.e. 30, 65, 75 and 85) and set as the boundary for value assignment of each grade, which can help work out the standard evaluation set \( \{ S \} \). Then, according to the formula \( P = B' * S = \sum_{m} r_{m} * s_{m} \), where, \( B' \) refers to the normalized vector of primary index’s FCE set \( (B) \), it is possible to work out the distribution of \( P \) in \( V \) and in turn to determine the accuracy of the results of the FCE model.

### 3.7 Result analysis

According to the weight of each index, it can be concluded that under “ideological quality”, patriotism and national spirit are more important; under political quality, political behaviors are more important; under moral quality, collectivism is more important; and under psychological quality, mental outlook is more important. Besides, based on calculation results, it is found that the results of the FCE model built in the paper is highly accurate.

### 4. SUGGESTIONS ON FCE-BASED OPTIMIZATION OF COLLEGE IPE MODE

#### 4.1 To apply big data technology to enhance the teaching effect

In the era of big data, new teaching modes have emerged. In this case, college IPE shall make full use of big data technology to build an early warning platform and to guide students’ thinking and behaviors. For example, colleges can use big data technology to collect students’ social networking information, and in turn to understand their learning and psychological status (Wang and Zhang, 2010). In addition, big data technology can be employed to analyze students’ preferences for many courses, with an aim to design a personalized growth plan for students and help them plan their career life in a scientific manner. Moreover, the technology can be used to build an IPE information exchange platform, which can help colleges become early adopters of new media, spread positive and healthy mainstream thoughts and cultures, and optimize the working environment for IPE. Furthermore, a teaching and research service platform shall be established as per the needs of teachers and students, so as to promote exchange and cooperation between the two parties in teaching, scientific research, data transmission, information sharing, etc.

#### 4.2 To innovate teaching methods and incorporate core values into teaching by teachers

Under the new normal, traditional teaching methods like “cramming” can no longer meet the needs of social development. Therefore, IPE teachers shall actively innovate their teaching methods, and do a better job in incorporating core values into IPE (Chen and Zhou, 2014). First, IPE teachers shall employ such new media as WeChat and Microblog to publicize the socialist core values among students. Second, teachers shall pay attention...
to practical teaching, regularly organize students to receive off-campus practical education, collect practical teaching cases and stimulate students’ interest in IPE.

4.3 To enhance the political quality and professionalism of IPE teachers

IPE teachers are the main body of IPE, so their political quality and professionalism are the key factors that will affect the educational result. Therefore, they shall keep learning and improving themselves. First, IPE teachers shall acquire information on the latest political theory, strive to improve their political accomplishment, and guide students to develop correct attitude towards life and develop good values (Jiang and Hu, 2011). Second, they shall make every effort to improve their professional skills. In the Internet era, college students can acquire knowledge and information through more and more channels, thus having acquired profound knowledge. In this case, IPE teachers shall enhance their teaching level to catch up with rapid social development and do a better job at work (Lv and Xu, 2013).

4.4 To attach importance to students’ mental health and healthy personality

At present, college IPE teachers should intensify efforts to mental health education for college students, which shall be defined as a compulsory course and given priority. Besides, colleges shall regularly organize lectures on psychology and improve students’ ability to prevent psychological disorders. In addition, colleges should establish a mechanism to combine psychological counseling and club activities, which can enrich club activities, promote mental health education for college students, and enhance their mental health.

5. CONCLUSION

To sum up, with continuous development of China’s higher education, college IPE has become increasingly important. By establishing a FCE model, the paper concludes that during implementation of IPE, patriotism and national spirit, political behaviors, collectivism and spiritual outlook are the 4 most important indexes for IPE. The FCE model established in the paper is highly reliable. Therefore, if it is used to evaluate the effect of IPE, colleges can have an objective and accurate understanding on students’ ideological, political, moral and psychological qualities, and lay a solid foundation for implementing IPE.

REFERENCES