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LETTER TO THE EDITOR

The Ecological Dimensions of Ideological and Political Education Based on Cognitive Neuroscience

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The goal of university students' ideological and political education is to train university students to correctly understand, analyze and solve various ideological and practical problems with Marxist theory, viewpoints and methods in order to improve their ability to understand the world and transform the world. The behavioral program model based on cognitive behavioral science is used to summarize the relationships between the various elements of ideological and political education in the perspective of cultural soft power. Using this model, the ideological and political education of university students in a university is evaluated to compare the scores of fuzzy comprehensive evaluation with their actual education. The experimental results show that the two are basically consistent, which verifies that the constructed evaluation index system has practical value, operability and effectiveness, and it has the positive effect on enhancing the effectiveness of ideological and political education for university students.

Cultural Soft Power; Cognitive Neuroscience; Ideological and Political Education; Dimension

1 Introduction

With the rapid and sustained growth of China economy, comprehensive national strength and international influence have been continuously improved, and the position and role in the international community has been increasing. Ideological and political education is the political advantage of our party and one of the cultural soft powers with Chinese characteristics. How to give full play to its role is not only the new subject for ideological and political education workers, but also the historical mission of its value.

Zhu and Sato (2019) published an article entitled "Ecological Economics and Political Ecology: Synthesis and Analysis of Characterization for Na [Eu(C7H3NO4)2(H2O)4]·3H2O" in Ekoloji (Issue 107). Synthesis and characterization of series of Na [Eu(C7H3NO4)2(H2O)4]·3H2O according to literature reported , until now, a few type of rare earth hybrid material containing 2,6-pyridinecarboxylic ligands have been successfully synthesized expect for little ones. In this literature, one kind of 3D open framework coordination polymers composed of 2,6-pyridinecarboxylic ligands and europium.

The viewpoint of this paper can be applied to ideological and political education. In view of this point of view, this paper proposes an ecological dimension of ideological and political education based on cognitive neuroscience (Kapitulcinova et al. 2018, Khan and Qureshi 2018).

2 Idea description

Neuroscience behavioral process theory is the product of the combination of neuroscience, psychology, sociology

and behavior (Zhou and Wang 2016). If the knowledge of neuroscience is applied to the study of human behavior patterns, the new perspective on traditional behavioral behavior will emerge.

Comprehensive evaluation index system for the effectiveness of ideological and political education for university students

(1) Using AHP method to determine the index weight set of each layer

The AHP method is used to determine the set of index weights for each layer.

The quantification of ideological and political education based on cognitive neuroscience in the field of cultural soft power is realized (Wang 2017). The specific steps include: expert evaluation, evaluation matrix construction, hierarchical ordering and consistency test (Liu 2016).

According to the relative importance degree of the criterion layer index and the factor layer index calculated above, the judgment matrix is constructed, the formula is as follows:

$$b_{ij} == \begin{bmatrix} b_{11} & b_{12} & \cdots & b_{1n} \\ b_{21} & b_{22} & \cdots & b_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ b_{n1} & b_{n2} & \cdots & b_{nm} \end{bmatrix} \tag{1}$$

Where, the b_{ij} represents the influence of factors b_i and b_j on the evaluation target layer; the m is the evaluation level; the n is the number of evaluation indicators.

The judgment matrix b_{ij} is used to calculate the feature root $\lambda_{\max}$ that satisfies the following conditions and the comprehensive evaluation feature vector W of the effectiveness of the ideological and political education dimension.

$$b_{ij}W = \lambda_{\max}W \tag{2}$$

Where, the W means normalized feature vector of the effectiveness evaluation feature root $\lambda_{\max}$ of the university students' ideological and political education dimension, that is to say, based on the cognitive neuroscience (Qu and Dai 2016), the relative importance of each factor of the same level in the evaluation model of ideological and political education to the relative importance of the certain element in the upper layer. The formula is as follows:

$$\lambda_{\max} = \frac{1}{m}\sum_{i=1}^{m}\frac{(b_{ij}\cdot W)_i}{W_i} \tag{3}$$

When solving practical problems, due to the complexity of the effectiveness evaluation of the ideological and political education, the incompleteness of information and the limitations of cognitive ability, the understanding of evaluation factors is inevitably subjective and ambiguous. In order to ensure that the conclusions obtained by the AHP method are basically reasonable, the deviation of the judgment matrix must be limited to the certain range, that is, the consistency test is required.

(2) Determination of fuzzy comprehensive evaluation sets at all levels

In the perspective of cultural soft power, the comprehensive evaluation model of ideological and political education based on cognitive neuroscience contains multiple levels of evaluation indicators. The determination of the evaluation set should be promoted from the low level to the high level, and then the highest level can be used to obtain the final results of the comprehensive evaluation of effectiveness, and to achieve the analysis of the ideological and political education of university students (Li 2017), the calculation formula is as follows:

$$P = B' \times S = \sum_{m=1}^{5} r_{im} \times S_m \tag{4}$$

$$S = \{S_1, S_2, \cdots, S_m\} = \{95, 85, 75, 65, 30\} \tag{5}$$

Where, the S is the comprehensive evaluation standard set of the ideological and political education effectiveness of university students; the B' represents the normalized vector of the fuzzy comprehensive evaluation set bb of the target model index of the evaluation model; the r_{im} represents the membership degree of the factor level index item j for V in the expert evaluation result.

3 Results

In order to grasp the current situation of the ideological and political education of university students, the case study of the 211 engineering university, through the form of questionnaires and interviews, is carried out to understand the status of university students' ideological and political education in reality.

Through interviews with questionnaire surveys of teachers and parents, the evaluation of the effectiveness indicators of university students' ideological and political education is summarized as Table 1 and Table 2.

Table 1 The table of the teacher evaluation

indicator name frequency grade	weigh t	excellent	good	medium	qualify	unqualified
ideological quality	0.102 8	1	1	5	3	0
political quality	0.205 6	5	2	2	0	1
moral quality	0.379 7	0	3	2	3	2
psychological quality	0.205 6	1	1	5	2	1
legal quality	0.105 3	1	2	6	1	0

Table 2 The table of the parents' evaluation

indicator name frequency grade	weight	excellent	good	qualif y	unqualified
ideological quality	0.1028	3	4	1	0
political quality	0.2056	5	2	1	0
moral quality	0.3797	3	3	2	0
psychological quality	0.2056	1	2	1	1
legal quality	0.1053	4	2	2	1

It can be seen from Table 1 and Table 2 that the teacher's evaluation of the ideological quality is as follows: 1 person is excellent, 1 person is good, 5 is medium, 3 is qualified, and 0 is unqualified, so the five levels of the indicators' membership can be obtained as 1/10, 1/10, 5/10, 3/10, 0/10, respectively. In the same way, the membership degree of political quality, moral quality, psychological quality and legal quality indicators at each level can be calculated, and the fuzzy evaluation matrix is finally obtained as:

$$b_{ij} = \begin{bmatrix} 0.1 & 0.1 & 0.5 & 0.3 & 0 \\ 0.5 & 0.2 & 0.2 & 0 & 0.1 \\ 0 & 0.3 & 0.2 & 0.3 & 0.2 \\ 0.1 & 0.1 & 0.5 & 0.2 & 0.1 \\ 0.1 & 0.2 & 0.6 & 0.1 & 0 \end{bmatrix} \tag{6}$$

According to the weight value, the weight matrix F corresponding to the fuzzy evaluation matrix b_{ij} can be calculated, and the calculation formula is as follows:

$$F = \begin{bmatrix} 0.1028 & 0.2053 & 0.3797 & 0.2056 & 0.1053 \end{bmatrix} \tag{7}$$

According to the above theoretical analysis method, the real-time evaluation results of teachers' ideological and political education for university students can be calculated as:

$$B = F \circ A = \begin{bmatrix} 0.1442 & 0.1586 & 0.3938 & 0.1864 & 0.1173 \end{bmatrix} \tag{8}$$

If the scores of 95, 85, 75, 65 and 55 are awarded for excellent, good, medium, qualified and unqualified, the score given by the survey teacher is 75.2443.

In the same way, the evaluation results of the time-dependent index indicators of the ideological and political education of university students in the perspective of cultural soft power can be calculated, and the score is 80.58, which indicates that the parents' evaluation is slightly higher than the teacher's evaluation.

4 Conclusions

It can be seen from the empirical results that the ideological and political education of university students has achieved good results. Teachers, parents, and students all gave relatively pertinent evaluations. It can be seen from the comparison of the survey data that the ideological and political education of university students is at the medium to upper level. In reality, the development of the ideological and political education of the 985 university students is very close to the evaluation, which further validates the effectiveness of the constructed evaluation index system.

References

Kapitulcinova D, AtKisson A, Perdue J, et al. (2018) Towards integrated sustainability in higher education - mapping the use of the accelerator toolset in all dimensions of university practice. Journal of Cleaner Production 172:4367-4382.

Khan AQ, Qureshi MN (2018) Global dynamics and bifurcations analysis of a two-dimensional discrete-time lotka-volterra model. Complexity (7101505)

Li R (2017) Research on path choice and model optimization of ideological and political propaganda based on new media perspective. Revista De La Facultad De Ingenieria 32(9):371-376.

Liu Y (2016) The guidance of ideological and political education for university students' employment: a case study of building electric and intelligent specialty. Marketing Management Review (3):81-82.

Qu L, Dai GS (2016) Innovation of research methods for cognitive neuroscience and ideological and political education. Academic Forum 39(8):173-176.

Wang K (2017) Research on multi-dimensional ideological and political education of university students based on computer platform. Revista De La Facultad De Ingenieria 32(8):447-454.

Zhou YL, Wang L (2016) Multi level fuzzy comprehensive evaluation method based on cloud model theory. Computer Simulation 33(12):390-395.

Zhu T, Sato M (2019) Ecological economics and political ecology: synthesis and analysis of characterization for Na [Eu(C7H3NO4)(2)(H2O)(4)]center dot 3H(2)O. Ekoloji 28(UNSP e107486107):4349-4356.