



The Role Mechanism of Civic and Political Education in Assisting the Development of College Students' Mental Health

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SUMMARY: *Using six colleges and universities in City A as the research sample, this paper constructs an index system for examining the coupling effect between Civic and Political Education and Mental Health Education, so as to quantify their coordinated development. Grey correlation analysis is employed to reveal the degree of association between the two and to confirm the existence of a synergistic relationship. The fsQCA method is further introduced to identify the key paths through which Civic and Political Education can be integrated into mental health teaching and to uncover the driving mechanism of the curriculum-based Civic and Political model. The findings indicate that the average value of the coupling degree between Civic and Political Education and Mental Health Education in colleges and universities at all levels is 0.5293, showing that the overall coordination remains at a barely coordinated stage. “Practicing socialist core values” is identified as a necessary condition for policy-oriented value leadership. A configuration characterized by background embeddedness as the core condition, combined with teacher-led philosophy and theoretical teaching as marginal conditions, while student-led philosophy is absent as a core condition, can generate a high level of effectiveness in the civic-political model of mental health education programs.*

KEYWORDS: *civic education; mental health education; coupling effect; fsQCA; gray correlation*

1 Introduction

In 2023, China's Ministry of Education released the *Special Action Plan for Comprehensively Strengthening and Improving Student Mental Health Work in the New Era (2023–2025)*, which highlighted the direction for implementing mental health education in the new era. At the same time, the document stressed that mental health education should be placed in a more prominent position, advanced in an all-round manner, integrated into every aspect of education, teaching, management services, and student development, and incorporated into the “three-pronged approach to educating people,” thereby promoting both students' physical well-being and holistic development. Ideological education and mental health education complement one another and mutually reinforce each other. The guidance function of ideological education in supporting the mental health of college students plays an important role in improving the effectiveness of ideological education and safeguarding students' healthy development [1, 2].

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Mental health problems have become a significant societal concern due to the quick changes in the economy and society, and their tendency toward younger age groups has progressively expanded from adults and professionals to college students. As a result, mental health education for youth has grown in importance in today's college and university curricula [3-5]. Society is currently going through a significant period of upgrading and transformation. Students reared in such an atmosphere are more susceptible to influences from individuals, families, schools, and society, which in turn causes variable degrees of psychological discomfort [6-9]. Additionally, there is a noticeable increase in instability and the intertwining of different interests. Additionally, a wide range of ideas and values have proliferated online due to the quick development of network information technology, which has a significant impact on college students' value cognition. As a result, students may progressively lose their feeling of independence and become ensnared in the worldview that the virtual network environment has created [10-13]. Based on this, ideological education in colleges and universities should actively contribute to value guidance by assisting students in developing sound cognitive concepts and scientific thought patterns through psychological counseling, thus fostering the healthy growth of students' physical and mental wellbeing.

This study measures the coordinated development level of college civic politics and college students' mental health using the coupling coordination model, gray correlation technique, and QCA method. It examines how ideological education might support college students' mental health development and evaluates the viability of combining ideological politics with mental health education in higher education. The degree of coupling and the degree of coupling coordination at various college and university levels are measured using a coupling effect index system. We investigate how to include politics and civics into college and university mental health education based on the QCA study. We investigate the elements that influence the efficacy of the ideology and politics model of high-level mental health education programs and identify the group states that drive this model's effectiveness.

2 Study on the development of the coupling of ideology and mental health education in higher educational institutions

2.1 Research methodology

There is a certain relationship of coordinated development between college ideology and college students' mental health. This paper calculates the coupling coordination degree between college ideology and college students' mental health by using the coupled coordination model, and employs it to evaluate the extent of coordinated development between the two.

2.1.1 Coupled coordination modeling and evaluation

The coupling coordination degree model is a quantitative method designed to examine the intensity of interaction and reciprocal influence among multiple systems or factors, and it is suitable for evaluating both the coupling degree and the coordination degree across systems of different types and levels. This model requires the calculation of three key indicators, namely the coupling degree C , the coordination index T , and the coupling coordination degree D . These values are obtained through their respective formulas and can then be matched with the coordination-level classification table for interpretation. In this study, attention is directed to two systems, namely college ideology and the mental health of college students. By establishing a coupling model for these two dimensions, the research seeks to further reveal the level of

coordination between them and the underlying mechanism of their synergistic relationship. The formula is shown below:

$$C = 2\sqrt{\mu_1 \cdot \mu_2 / (\mu_1 + \mu_2)^2} \tag{1}$$

C represents the degree of coupling and takes a value within $[0,1]$. A larger value of C indicates a higher level of interconnection between college ideology and college students' mental health. The formula used to calculate the coordination indicator T is as follows:

$$T = \beta_1\mu_1 + \beta_2\mu_2 + \beta_3\mu_3 + \dots \tag{2}$$

where $\beta_1, \beta_2, \beta_3$ and so forth denote the weights. In this paper β_1 and β_2 are both set to 0.5. The coordination degree indicator D is calculated as follows:

$$D = \sqrt{C \times T} \tag{3}$$

where D denotes the degree of coupling coordination, C refers to the coupling degree between college ideology and college students' mental health, and T represents the comprehensive coordination index of the two.

Table 1 reports the detailed categories of coupling coordination degree. This classification scheme is primarily applied to assess how strongly different systems are interrelated and how well they develop in a coordinated manner. Through the use of distinct grading criteria, the current condition of a system can be identified more clearly. According to the value intervals, the coupling coordination degree is classified into ten levels, of which the highest corresponds to high-quality coordination, whereas the lowest indicates severe dysfunction.

Table 1: Degree of coupling coordination

D value range	Coordination level	Degree of coupling and coordination
[0.0~0.1)	1	Extremely disordered
[0.1~0.2)	2	Serious imbalance
[0.2~0.3)	3	Moderate imbalance
[0.3~0.4]	4	Mild imbalance
[0.4~0.5]	5	On the verge of imbalance
[0.5~0.6]	6	Subtle imbalance
[0.6~0.7]	7	Primary coordination
[0.7~0.8]	8	Intermediate coordination
[0.8~0.9]	9	Good coordination
[0.9~1.0]	10	High-quality coordination

2.1.2 Gray correlation

Gray correlation analysis is a statistical method to analyze the closeness of the relationship between elements within a system, which can be used to find out the major and minor factors that cause changes in the system. Gray correlation can be used to measure the degree of association between a variable and other factors, given that there are various factors affecting a variable, which need to be further explored, this paper adopts gray correlation analysis to study the key factors affecting the coupled and coordinated development of college civics and college students' mental health. The specific calculation steps are as follows:

(1) Determine the reference sequence and comparison sequence. The coupling and coordination degree of the two systems of college ideological politics and college students' mental health is taken as the reference sequence, and the indicators of the two systems are taken as the comparison sequence.

$$\chi_o = \{x_o(1), x_o(2), \dots, x_o(k)\} (k = 1, 2, 3 \dots m) \quad (4)$$

$$\chi_i = \{x_i(1), x_i(2), \dots, x_i(k)\} (k = 1, 2, 3 \dots n) \quad (5)$$

where χ_o in Equation (4) represents each variable of the reference sequence, k is the time, and m is the maximum value; χ_i in Equation (5) represents each variable of the comparison sequence, i represents the number of individuals, and n represents the total number.

(2) To ensure the unity of the units of the original sequence, the dimensionless processing is carried out.

$$x'_o(k) = x_o(k) / x_o \quad (6)$$

$$x'_i(k) = x_i(k) / x_i \quad (7)$$

$$\chi'_o = \{x'_o(1), x'_o(2), \dots, x'_o(k)\} (k = 1, 2, 3 \dots m) \quad (8)$$

$$\chi'_i = \{x'_i(1), x'_i(2), \dots, x'_i(k)\} (k = 1, 2, 3 \dots n) \quad (9)$$

where $x'_o(k)$ and $x'_i(k)$ are the reference and comparison sequences after the variables have been dimensionless processed, respectively; χ'_o and χ'_i are the reference and comparison sequences after χ_o and χ_i are dimensionless processed, respectively.

(3) Calculate the absolute value sequence of the reference and comparison sequences.

$$\Delta_i(k) = |x'_i(k) - x'_o(k)| (i = 1, 2, \dots, n) \quad (10)$$

$$\Delta_i = \{\Delta_i(1), \Delta_i(2), \dots, \Delta_i(k)\} \quad (11)$$

(4) Find the maximum value Δ_{\max} and the minimum value Δ_{\min} , respectively.

$$\Delta_{\max} = \max_i \max_k \Delta_i(k) \quad (12)$$

$$\Delta_{\min} = \min_i \min_k \Delta_i(k) \quad (13)$$

(5) Calculate the correlation coefficient.

$$\varepsilon_i = (\Delta_{\min} + \rho \Delta_{\max}) / (\Delta_i(k) + \rho \Delta_{\max}) \quad (14)$$

where ρ is the resolution coefficient, $0 < \rho < 1$, usually $\rho = 0.5$.

(6) Calculate the degree of association.

$$r_i = \frac{1}{k} \sum \varepsilon_i \tag{15}$$

(7) Sorting of correlation level.

The greater the correlation degree, the greater the correlation between the two indicators, with reference to related research, the classification criteria for the gray correlation level is shown in Table 2.

Table 2: Division criteria for grey correlation levels

Grey correlation degree	(0,0.25]	(0.25,0.5]	(0.5,0.75]	(0.75,1]
Association level	Weak correlation	Medium-level connection	Strong correlation	Very strong correlation

2.1.3 QCA methodology

Fuzzy set qualitative comparative analysis (fsQCA), as a research paradigm integrating in-depth case analysis and variable grouping analysis, is rooted in the synergistic application of set theory and Boolean algebra, and is committed to analyzing the grouping effect of multiple conditional variables on the target outcome. The methodology breaks through the linear thinking framework of traditional quantitative research and constructs the analysis system from the three-dimensional perspectives of mathematical set, group association and path dependence. In the mathematical set dimension, the Boolean minimization algorithm is used to deconstruct the logical implication relationship between multidimensional variables; in the group analysis dimension, the combination of conditional variables is emphasized rather than the independent effect of a single variable. In the path dependence perspective, we focus on exploring the multiple concurrent mechanisms of different groupings that lead to equivalent results.

Compared with traditional regression methods that focus on the analytic logic of the net effect of variables, fsQCA presents a significant difference in methodology. The method adopts a holistic analytical perspective, which not only focuses on the substitution and complementary relationships among condition variables, but also endeavors to reveal the asymmetric causal mechanism. This kind of group thinking effectively overcomes the limitations of traditional methods in explaining the interaction effects of variables, especially when dealing with small-sample heterogeneous cases, and captures the “same way” effect in social phenomena through case-oriented comparative analysis. In addition, its fuzzy set theoretical framework extends variable affiliation to [0,1] continuous intervals, which is effectively compatible with the needs of analyzing qualitative and quantitative data, and provides a more ecologically valid research path for the explanation of complex social phenomena.

In terms of the applicability of the QCA methodology, the study needs to consider the characteristics of data types and the needs of theoretical construction. csQCA is designed to deal with qualitative variables with discrete attributes, and transforms the variables through binary affiliation functions; mvQCA is suitable for group analysis of multivalued categorical variables, and can deal with multidimensional data with ordinal or nominal scales; and fsQCA is particularly suitable for analyzing quantitative data with degree of difference, by virtue of the advantages of its continuous affiliation fsQCA is especially suitable for analyzing quantitative data with degree differences by virtue of its continuous affiliation assignment advantage. In this paper, the multidimensional conditional variable data are collected by using a 5-level scale, and the observed indicators show continuous distribution characteristics in the [0,5] interval. Based on this, the fsQCA method is chosen to accurately capture the gradient change

characteristics of the condition variables and also deal with the uncertainty in the measurements through the fuzzy set calibration technique, and finally construct the condition grouping model with theoretical explanatory power.

2.2 Feasibility analysis

(1) There is consistency between the teaching objectives of the two. The advancement of Civics teaching and mental health education is not only highly significant but also strongly feasible, because it plays an important role in improving the level of Civics education and mental health education in colleges and universities. Their teaching objectives are aligned. Whether in Civics teaching or in mental health education, the core purpose is to promote the overall healthy development of college students. For social development as a whole, the coordinated advancement of the two has important significance. In actual teaching, Civics teaching places greater emphasis on helping students form correct value concepts, strengthening their ideological education, and guiding them to properly understand their own social value. Mental health education, by contrast, mainly helps students build healthy psychological cognition, emphasizes personal psychological education, and guides them to understand their own individual value in an objective and accurate way. Although the focus of Civics teaching and mental health teaching differs, both ultimately serve the healthy growth of students.

(2) The teaching functions of the two are complementary. Although differences exist between the functions of Civics teaching and those of mental health education, they can still complement one another, and their integration can promote students' overall development. Civic and political teaching mainly performs a social education function. Through civic and political teaching, students can be guided to understand society objectively, to correctly recognize social moral norms and social norms, and then to form sound social consciousness and social behavior, which can better meet the needs of social development while also supporting their individual growth. In addition, Civics and Political Science teaching conveys many noble qualities and values to students, which plays an important role in strengthening ideological and moral cultivation and is conducive to students' personal development. Mental health education, by contrast, is mainly presented as a form of personal education. It provides psychological services and comprehensive psychological knowledge, promotes the healthy development of students' mental health, helps them explore their own potential, and improves personality development. The sound development of psychology also helps create good interpersonal relationships and supports the harmonious development of society. Therefore, although the teaching functions of Civics education and mental health education differ, there remains a clear degree of complementarity between them, and coupling the two in teaching is conducive to the overall healthy growth of students.

(3) The teaching content of the two is integrated. Civics teaching and mental health teaching the two teaching content there is integration, for the two coupled teaching laid an important teaching foundation. Although civics and mental health belong to separate disciplines, but the teaching philosophy and teaching content of the two have certain similarities, and have good integration significance. With the reform and development of the teaching of political thinking in colleges and universities, the teaching content system has been further improved, and teachers should integrate mental health education into the teaching system, correctly recognizing that the level of students' psychological quality will affect the level of students' political thinking, and the level of students' political thinking will also affect the level of students' mental health. Civics teaching, pay more attention to the students' belief teaching and emotional teaching, pay attention to guide students to establish ambitious life goals, form a good resistance to setbacks, set up a positive attitude towards life and firm ideals, for shaping the students' personality, guiding students to form good behavioral habits plays an important

role in promoting. Mental health teaching, on the other hand, pays more attention to the teaching of psychological quality, guides students to correctly look at their own emotional changes, form a good psychological tolerance, and positively face all the problems. Therefore, the teaching content between Civics teaching and mental health education has certain similarity and has good integration significance.

3 Analysis of the mechanisms by which higher education institutions' Civics and Politics contribute to the development of students' mental health

3.1 Construction of the index system of the coupling effect of ideology and mental health education in colleges and universities

3.1.1 Indicator system setup

According to the realization path of the coupling mechanism of ideological education and mental health education, the coupling effect index system of this paper is constructed from two independent systems of ideological education and mental health education respectively, and the specific index system is shown in Table 3. The order parameter of the ideological and political education subsystem includes four aspects of mental health awareness, value orientation, mental health planning, and mental health practice, while the order parameter of the mental health education subsystem includes three aspects of target carrier, content relevance, and education timeliness.

Table 3: Coupling effect index system

System order parameter	Subsystem order parameter	Order parameter	Character	Measurement item question
Ideological and Political Education	Mental health awareness	Level of understanding	X1	The level of understanding of mental health in the ideological and political education class
		Motivation	X2	The extent to which ideological and political courses shape mental health
	Value orientation	Moral norms	X3	The situation of moral norms contained in ideological and political classes
		Risk aversion	X4	The influence of ideological and political course content on the ability to avoid risks
	Mental health planning	Self awareness	X5	The extent to which ideological and political courses influence an individual's understanding of their ideals
		Coordination ability	X6	The ability to formulate mental health improvement plans acquired through ideological and political courses
	Mental health practice	Practical awareness	X7	The influence of ideological and political courses on the awareness of the importance of mental health
		Application ability	X8	The impact of ideological and political courses on the practice of enhancing personal mental health
Mental health education	Target medium	Consistency of ideological and political goals	X9	The extent of ideological and political content reflected in the mental health courses
		Ideological and political quality	X10	The degree of thoughts and moral qualities demonstrated in the mental health course
	Content relevance	Ideological education	X11	The extent to which the mental health course incorporates ideological and political education
		Labor education	X12	The extent to which the mental health course embodies the spirit and qualities of labor
	Educational timeliness	The novelty of practical activities	X13	The quality and novelty of the content of the mental health course practical activities
		The timeliness of teaching content	X14	The degree of correlation between the teaching content of mental health courses and national policies

3.1.2 Calculation and evaluation of the degree of coupling

The questionnaire designed in this study contains three major sections. The first section covers respondents' basic information, including three items: gender, grade in school (or year of graduation), and major. The second section measures the role of Civic Education in Mental Health Education by using the Indicator System for Civic Education, which includes a total of eight items. The third section measures the role of Mental Health Education in Civic Education by using the Indicator System for Mental Health Education, which contains six questions. Each item was rated on a five-point Likert scale. Respondents scored each question according to their actual experience of ideological education and mental health education through the WenJuanXing platform, with scores ranging from 1 to 5, and higher scores indicating that respondents perceived a more obvious effect of ideological education and mental health education. To allow participants enough time for reflection, the items were answered without time pressure. In this study, 200 college students who were either currently enrolled or had graduated within one year were selected from each of the six colleges and universities in City A for the questionnaire survey. In total, 1,200 questionnaires were distributed, and 1,104 valid questionnaires were collected, yielding an effective response rate of 92%.

The entropy value weighting method was adopted to determine the weights of the sub-systems of ideological education and mental health education, that is, the ordinal parametric weights, together with the weights of each index, namely the sub-ordinal parametric weights. The contribution value of each sub-system ordinal parameter was then calculated, and, based on the weighted data, each ordinal parameter was obtained. On this basis, the coupling degree and the coupling coordination degree between civic and political education and mental health education were further derived, as presented in Table 4. It can be observed that the ordinal covariate values of Civic and Political Education in all types of colleges and universities are generally higher than those of Mental Health Education, although the gap is relatively small, with the maximum value reaching 0.6682 (U6). This indicates that colleges and universities of different types generally place greater emphasis on Civic and Political Education under the macro-policy framework and have achieved comparatively better results in this area. By contrast, the ordinal parameter values of Mental Health Education vary significantly across different types of colleges and universities. Among them, institutions with the right to confer bachelor's degrees show values markedly higher than those of other types of institutions, and these values are also above the ordinal parameter values of Civic and Political Education. This suggests that colleges and universities authorized to grant bachelor's degrees have achieved relatively better outcomes in mental health education, whereas other types of colleges and universities perform comparatively less well. The average coupling degree between Civic and Political Education and Mental Health Education across colleges and universities at all levels is 0.5293, and the coordination grade of the two remains at the barely coordinated stage, indicating that a benign coupling mechanism for interaction between them has not yet been formed. In addition, although the coupling degree among colleges and universities at different levels does not vary greatly, there is still a tendency for the coupling degree between civic and political education and mental health education to rise as the level of the college or university increases.

Table 4: System coupling degree and coupling coordination degree

Level	University	Pedagogical educational parameters	Sequence parameters of mental health education	Coupling degree	Coupling coordination degree
Higher vocational colleges and universities	U1	0.4257	0.3826	0.4086	0.3177
	U2	0.5018	0.3992	0.4613	0.3426
Colleges and universities with the right to grant bachelor's degrees	U3	0.5137	0.5366	0.5662	0.6071
	U4	0.5286	0.5927	0.5526	0.5917
Universities with the right to confer master's or doctor's degrees	U5	0.5275	0.5678	0.5187	0.5413
	U6	0.6164	0.5415	0.6682	0.5571

3.2 QCA Analysis of Civics Helping College Students' Mental Health Development in Colleges and Universities

3.2.1 The realization path of integrating Civics into mental health teaching in colleges and universities

This paper begins from the perspective of architecture, reviews the relevant literature, integrates related theories, and analyzes in depth the realization path for integrating Civics into mental health teaching in colleges and universities. By comprehensively combining multiple antecedent variables that belong to policy orientation, civic resources, cultivation programs, subject synergy, and perfect mechanisms, the study identifies 15 influencing factors as conditional variables, including consolidating the foundation of ideals, beliefs, and purposes, national strategies, and practicing socialist core values, which are coded as A1-A15. At the same time, five outcome variables are proposed for implementing the results, namely policy-oriented value leadership, development of mental health ideological resources, formulation of professional training programs, multiple-subject collaborative cultivation, and improvement of mechanisms for implementation, which are coded as B1-B5 respectively.

Online and offline questionnaires were distributed to mental health teachers, including associate professors and above, as well as mental health-related administrators in six universities in City A. To prevent indiscriminate participation in practice, the researchers, together with members of the research group, conducted telephone interviews and e-mail communication with all survey participants, and 574 valid questionnaires were ultimately obtained. To enhance the validity of the study, and following the basic principle of “triangulation,” the data were further screened and cleaned, after which 14 highly representative cases were finally selected for QCA analysis. Using the fsQCA software and a five-point Likert scale descriptive statistical analysis module, the variables were examined in terms of respondents’ degree of agreement. A higher score on a conditional variable indicates a higher degree of respondent agreement and stronger influence, and the analysis results are shown in Table 5. The distribution of each conditional variable in the data of this paper is relatively uniform, in which the standard deviation of A1 and A6 conditional variables is relatively small, respectively 0.626 and 0.739, indicating that the ideal belief and purpose of the foundation, the development of mental health course ideology standards and lesson plans are the conditional

variables that play a more stable role, which is also in line with the cognition that the policy orientation and the development of training programs play a stable role in the construction of ideology and politics in colleges and universities.

Table 5: Descriptive statistical analysis of the study variables

Variable	Mean value	SD	Minimum value	Maximum value	Variable	Mean value	SD	Minimum value	Maximum value
B1	4.175	0.838	3	5	A6	4.186	0.739	3	5
B2	4.028	0.792	2	5	A7	4.028	1.047	2	5
B3	3.997	0.947	1	5	A8	4.114	0.835	2	5
B4	4.386	0.836	2	5	A9	3.973	1.128	1	5
B5	4.286	0.893	1	5	A10	3.826	0.934	1	5
A1	4.018	0.626	2	5	A11	4.038	1.003	1	5
A2	3.862	0.884	2	5	A12	4.119	0.992	3	5
A3	3.727	0.901	2	5	A13	3.957	1.075	2	5
A4	3.927	0.895	1	5	A14	4.275	0.838	2	5
A5	3.725	0.926	2	5	A15	3.966	0.942	1	5

With the help of fsQCA software, the grouping of policy-oriented value leadership, development of mental health ideological resources, development of professional training programs, collaborative education of multiple subjects, and improvement of mechanisms to focus on the implementation of the results variables were tested for necessary conditions, and the results are shown in Table 6. The reference value for consistency is 0.8; if a variable's consistency is greater than 0.8, it means that it is a prerequisite for directly explaining the outcomes. The findings demonstrate that "B1 policy-oriented value leadership" requires "A3 practicing socialist core values".

Table 6: Results of the necessary conditions test

Condition variable	Consistency	Coverage rate	Condition variable	Consistency	Coverage rate
A1	0.46	0.41	A9	0.51	0.62
A2	0.51	0.39	A10	0.49	0.41
A3	0.89	0.83	A11	0.64	0.57
A4	0.67	0.61	A12	0.71	0.66
A5	0.52	0.45	A13	0.65	0.62
A6	0.56	0.51	A14	0.58	0.43
A7	0.48	0.37	A15	0.54	0.48
A8	0.72	0.66			

3.2.2 Mechanisms of the effect of the ideological model of the mental health education program

The effectiveness of the mental health education program's civic model was set as the outcome variable D. Context-embedded, structure-embedded, concept-embedded, teacher-led concept, student-led concept, theory professor, and case study teaching were proposed as the conditional variables C1~C7, respectively, and the variables need to be calibrated, i.e., to assign the data with the pooled affiliation, before analyzing them using the fsQCA software. In this paper, three critical values are designed for data calibration: complete affiliation, intersection, and complete non-affiliation, and the transformed set affiliation is between 0 and 1. The three anchor points for the 10 conditional variables and the three outcome variables are set to be 80%, 50%, and 20% of the distribution of the sample data, respectively, which in turn distinguishes between the three affiliation sets of complete affiliation, intersection, and complete non-affiliation, and

finally calculates the calibration of each variable. The anchor points are shown in Table 7. Mental Health Education Program Civic Model Effectiveness Fully affiliated, cross-point, and fully unaffiliated values are 4.322, 3.862, and 3.451, respectively.

Table 7: Calibration anchors for each variable

	Variable	Anchor point		
		Total affiliation	Intersection point	Complete non-affiliation
Condition variable	C1	4.286	3.706	3.411
	C2	4.011	3.595	3.296
	C3	3.927	3.478	3.153
	C4	4.018	3.617	3.364
	C5	3.931	3.426	3.182
	C6	4.357	3.837	3.516
	C7	4.264	3.775	3.428
Result variable	D	4.322	3.862	3.451

The groups that influence the Civics model's efficacy in mental health education programs were examined and identified using the fsQCA software. The frequency threshold was set at 1, while the consistency level for the solution was set at 0.8. Table 8 displays the necessity test findings, with "~" denoting logical negation. Every single conditional variable influencing the ideological model's efficacy in mental health education courses has a consistency value of less than 0.8, indicating that no single circumstance meets the requirements. This implies that many categories created by various conditional factors must be examined because the impact of a single element on the efficacy of the ideological model in mental health education courses is not significant on its own.

Table 8: Results of the necessary conditions test

Condition variable	Result variable	
	D	
	Consistency	Coverage rate
C1	0.64	0.61
~C1	0.36	0.58
C2	0.78	0.62
~C2	0.31	0.61
C3	0.59	0.71
~C3	0.28	0.57
C4	0.38	0.72
~C4	0.61	0.70
C5	0.79	0.68
~C5	0.31	0.59
C6	0.36	0.65
~C6	0.46	0.62
C7	0.79	0.71
~C7	0.25	0.58

The fsQCA procedure yields three forms of solutions: complex, parsimonious, and intermediate. A complex solution excludes “logical remainders,” whereas a parsimonious solution makes use of them without judging whether their inclusion is substantively justified. By contrast, an intermediate solution retains only those “logical remainders” that accord with both theoretical expectations and practical understanding. In most cases, the intermediate

solution is regarded as more appropriate than the other two because necessary conditions are not casually removed. For this reason, the present study centers its configurational analysis on the intermediate solution. By jointly comparing the parsimonious and intermediate results, the core and peripheral conditions within each configuration can be identified. When an antecedent condition is present in both solutions, it is defined as a core condition, indicating that it exerts a leading and decisive influence. If it appears only in the intermediate solution, it is classified as a peripheral, or supporting, condition, meaning that its role is supplementary rather than dominant.

The results concerning the factors affecting the effectiveness of the Civics model in high-level mental health education courses are shown in Table 9, where “●” indicates the presence of a core condition, “⊗” indicates the absence of a core condition, “▲” indicates the presence of a marginal condition, “▽” indicates the absence of a marginal condition, and a blank space indicates that the variable is optional. Four groups of influencing factors are identified, and the consistency values of the four solutions all reach 0.9285, which is higher than the standard value of 0.7 and shows that the solutions are meaningful. The coverage of the model solution is 0.8468, indicating that the four group-state explanations account for about 85% of the effectiveness of the high-level mental health education program’s Civic Model. The conclusions of the qualitative comparative analysis indicate that the group state H1, where contextual embeddedness (core condition) is matched with teacher-driven philosophy (edge condition) and theory teaching (edge condition), along with the absence of student-driven philosophy (core condition), is able to produce high-level mental health education course civic model effectiveness; and the group state H2 indicates that the model can produce high levels of mental health education course civic model effectiveness when structural embeddedness (core condition), student-driven philosophy (core condition)) and case teaching (core condition) are matched, the teacher-led teaching philosophy (marginal condition) does not exist, and can produce high-level mental health education program civic model effectiveness; group state H3 shows that having the three core conditions of conceptual embeddedness, the student-led philosophy and case teaching, and at the same time, the teacher-led philosophy (marginal condition) does not exist, and can produce high-level mental health education program civic model effectiveness Grouping H4 shows that the presence of structural embeddedness (core condition) and the three marginal conditions of contextual embeddedness, teacher-driven philosophy and theory teaching can also lead to high levels of mental health education program civic model effectiveness.

Table 9: Analysis results of influencing factors

Condition variable	D			
	H1	H2	H3	H4
C1	●			▲
C2		●		●
C3			●	
C4	▲	▽	▽	▲
C5	○	●	●	
C6	▲			▲
C7		●	●	
Consistency	0.9186	0.8442	0.8136	0.8678
Coverage rate	0.6344	0.6175	0.6759	0.7005
The only coverage rate	0.1375	0.1264	0.1182	0.0982
Consistency of the solution	0.9285			
Coverage of the solution	0.8468			

4 Conclusion

Based on coupling theory and the QCA method, this paper investigates the mechanism through which Civic and Political Education contributes to the development of college students' mental health, and the main findings are as follows.

In various colleges and institutions, the ordinal covariate values of Civic and Political Education are slightly higher than those of Mental Health Education (the maximum value being 0.6682, U6). However, given that their values are significantly higher than those of civic and political education, it appears that there is a substantial variation in the ordinal covariate values of mental health education across various colleges and universities. It should be mentioned that the ordinal covariate values of colleges and universities having the authority to grant bachelor's degrees are much greater than those of other kinds of establishments. In various colleges and universities, the average coupling degree between Mental Health Education and Civic and Political Education is 0.5293, and its coordination degree is still at the barely coordinated level.

In the realization path of the integration of ideology and politics into mental health teaching in colleges and universities, "practicing socialist core values" is a necessary condition for "policy-oriented value leadership". In group H1, background embeddedness (core condition) matches with teacher-led philosophy (edge condition) and theory teaching (edge condition), while student-led philosophy does not exist (core condition), which can produce high level of effectiveness of the Civic-Government model of the mental health education program; and group H2 shows that when structural embeddedness (core condition), student-led philosophy (core condition), and case study (core condition) match, the teacher-led teaching (core condition) can produce high level of effectiveness of the Civic-Government model of the mental health education program.) are matched, the teacher-led teaching philosophy (marginal condition) does not exist, and can produce high-level mental health education program civic model effectiveness; histogram H3 shows that having the three core conditions of conceptual embeddedness, student-led philosophy and case-based teaching, and at the same time, the teacher-led philosophy (marginal condition) does not exist, can produce high-level mental health education program civic model effectiveness; histogram H4 shows that having the structural embeddedness (core condition) and the three marginal conditions of contextual embeddedness, teacher-led philosophy and theory teaching can also lead to the production of high-level mental health education program civic model effectiveness.

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