

Research on the Practical Path of Strengthening and Improving College Students' National Security Education

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Abstract: With the advent of globalization and the information age, the connotation and extension of national security continue to expand, and the cultivation of national security awareness among college students is particularly important. However, there are currently problems such as weak national security awareness among teachers and students, incomplete education system, and single educational methods. This paper uses SPSS software to analyze the main factors that affect college students' awareness of national security education. Based on the analysis results, this paper explores practical paths to strengthen and improve national security education for college students. The effectiveness of the practical path is evaluated through data analysis and compared with traditional methods to demonstrate the advantages and innovations of the new path. Research has found that the improved method has a significant effect on enhancing students' national security knowledge level, participation, and behavior change. Compared with traditional methods, students' average scores in national security knowledge tests have increased by 14.5738 points, and their average scores in behavior change have increased by 25.069%. The richness of educational content, diversity of teaching methods, and availability of educational resources have a significant impact on the effectiveness of national security education. The practical path of this paper includes updating educational content, adopting diversified teaching methods, improving the availability of educational resources, and perfecting the education system, aiming to comprehensively enhance the national security awareness and educational effectiveness of college students.

1. Introduction

In the wave of globalization and informatization, the concept of national security has expanded from traditional military security to multiple fields such as economy, culture, and the internet. As the backbone of the country's future, college students' understanding and sense of responsibility towards national security are crucial for maintaining the long-term stability of the country. National security is not only an important component of national interests, but also the cornerstone of maintaining social stability and people's well-being. However, the current national security education in universities has not yet formed a comprehensive and systematic teaching system, which urgently needs to be strengthened and improved. The research background of this paper is to

explore how to enhance the national security awareness of college students through educational practice, and cultivate them into new era youth with a global perspective and a sense of national security responsibility. This study will focus on analyzing the shortcomings in current educational practices and proposing practical and feasible improvement measures, in order to enhance educational effectiveness through educational innovation and contribute new ideas and methods to the field of national security education.

This paper explores a national security education practice path that combines data analysis to solve prominent problems in educational practice. SPSS software is used to quantitatively analyze the educational effects, ensuring that the proposed practice path is scientific and effective. The focus of the technical solution is to identify key factors that affect the effectiveness of national security education through data analysis, and design educational strategies based on this. The paper first outlines the research background and current situation, then clarifies the main contributions and organizational structure of the research, then elaborates in detail on the proposal and evaluation of the practical path, and finally summarizes the research results and proposes future research directions.

2. Related Works

Scholars at home and abroad have conducted extensive research on the practical path of strengthening and improving national security education for college students. György B. Z. studied the challenges, risks, and threats between national security and higher education, emphasizing the crucial role of higher education in national security education[1]. Miklós R K. demonstrated a good practice approach through the application of scenario-based training in civilian national security education [2]. Dobrovolska and Rozhkova explored the development of a national sustainable cyberspace strategy to ensure national cybersecurity [3]. Hu and Zhou analyzed the current status of safety education, training and awareness programs through a literature review[4]. Ning et al. constructed a safety education system for college students[5]. Guo discussed how colleges and universities can carry out national security education[6]. Ke and Qian conducted a preliminary study on strengthening the management of safety education for college students[7]. Tian explored ideological and political education in courses through case studies and practice[8]. Cheng et al. studied ideological and political education in material science courses under the background of the Internet[9]. Finally, Qi et al. explored the ideological and political education system of colleges and universities that combines online and offline learning based on deep learning[10].

These studies provide us with valuable insights and methods, but they are still insufficient in exploring the practical path of national security education. For example, some studies lack long-term follow-up analysis of education effects, while other studies fail to fully consider the differences in education in different regions and cultural backgrounds. In addition, existing research lacks in-depth discussion on how to closely integrate national security education with students' daily life and career development. This paper aims to fill these research gaps and explore the practical path of national security education suitable for current college students through comprehensive analysis and empirical research, in order to improve the effectiveness and pertinence of education.

3. Methods

3.1 Exploration of Traditional Paths

Since the founding of New China, national security education has gone through three major development periods, each of which responded to the national strategic needs and social changes at that time. During the national defense education period (1949-1977), national security education

was mainly centered on national defense education. The educational goal was to enhance citizens' national defense awareness. The content involved resisting the armed aggression of foreign imperialism, exposing imperialist war conspiracies and sabotage activities of spies. The main educational channels are to promote security awareness and knowledge through media such as radio, newspapers, and periodicals, as well as school education. With the deepening of reform and opening up, national security education began to shift to confidentiality and counter-espionage education. During the confidentiality and counter-espionage education period (1978-2011), national security education incorporated content in non-traditional security fields such as culture, information, and ecology. The goal of this period was to protect state secrets and counter-espionage in order to deal with the hidden threats of hostile forces. The content of education has been expanded to include confidentiality laws, counter-espionage knowledge, etc., and the method focuses more on practical operation and skills training. In the period of overall national security, national security education is based on the overall national security concept and is a comprehensive national security education. The goal of education has changed to enhancing the national security awareness of the entire population, and the content covers multiple areas such as political security, economic security, cultural security, social security, and information security. The teaching methods have also become more diverse, including classroom teaching, simulation exercises, case analysis, etc., emphasizing the combination of theory and practice, as well as the integration of national security education and professional courses[11].

3.2 Data Collection

The data collection for this paper will be conducted through two methods: questionnaire survey and semi-structured interview. The questionnaire survey will cover the basic information of students, including gender, grade and major, to ensure the diversity and representativeness of the sample. In terms of awareness of national security education, the questionnaire will assess students' understanding of the basic knowledge of national security education, including whether they know about the "National Security Education Day" and their understanding of laws and regulations related to national security. In addition, the questionnaire will explore students' attitudes toward national security education, including their support for such education in schools and their views on the importance of national security education. In terms of participation, the questionnaire will investigate the frequency and enthusiasm of students in participating in national security education activities, as well as their evaluation of their schools' performance in national security education.

The questionnaire results will be analyzed using SPSS software, where the quantitative data will be summarized through descriptive statistics to summarize the basic situation of the respondents, factor analysis will be used to identify the key factors affecting the effectiveness of national security education, and regression analysis will be used to evaluate the impact of different factors on the education effect. Qualitative data, including responses to open-ended questions, will be content analyzed to extract themes and patterns to further deepen the understanding of the survey results. This approach will enable a comprehensive understanding of college students' cognition, attitudes, and engagement with national security education and provide empirical support for improving educational practices [12].

3.3 Factors Affecting the Effectiveness of National Security Education

This paper will set up multiple variables to evaluate the effectiveness of national security education. The main variables include students' national security knowledge level, participation, and attitude changes as dependent variables. The national security knowledge level will be assessed through objective questions in the questionnaire, including multiple-choice questions and true-false

questions, covering the basic concepts of national security, laws and regulations, and the current security situation [13]. Participation will be measured using scale items in the questionnaire, and attitude change will use a Likert scale to assess the change in students' attitudes toward the importance of national security before and after receiving national security education. The independent variables include the richness of educational content (X1), the diversity of teaching methods (X2), the availability of educational resources (X3), and the perfection of the education system (X4). This paper analyzes a series of factors that may affect students' acceptance of national security education and learning outcomes, including students' willingness to accept national security education (X5), students' sensitivity and awareness of the overall national security concept (X6), campus culture and atmosphere (X7), social and political environment (X8), media and network influence (X9), personal values and beliefs (X10), family background (X11), school location (X12), and the relevance of courses to majors (X13). This paper will also consider control variables, including students' grade (X14), divided into freshman, sophomore, junior, senior and graduate students, and professional background (X15), divided into science and engineering, liberal arts, business, etc., to reduce potential biases. This study not only focuses on the traditional paths and implementation effects of national security education, but also conducts in-depth comprehensive analysis of these multi-dimensional factors. It aims to fully understand the external and internal factors that affect the effectiveness of national security education and provide scientific basis and practical guidance for improving education effectiveness [14-15].

Based on the above variables, this paper constructs a multiple linear regression model to evaluate the impact of different factors on the effectiveness of national security education:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon \quad (1)$$

Among them, β_0 is the intercept term, which represents the expected value of the dependent variable when all independent variables are zero. X_1, X_2, \dots, X_k is the independent variable, and $\beta_1, \beta_2, \dots, \beta_k$ is the regression coefficient, which represents the average change in the dependent variable when each independent variable changes by one unit. ε is the error term. This paper will use SPSS software to conduct stepwise regression analysis to determine which independent variables have a significant impact on the dependent variable. The model will be based on the overall national security view, combined with descriptive statistical analysis and expert opinions to determine the weight and influence of each variable. Through SPSS software, stepwise regression analysis was performed to screen out variables that have a significant impact on the effectiveness of national security education. The obtained regression analysis results are shown in Table 1:

From the data in Table 1, it can be seen that X1 (richness of educational content), X2 (diversity of teaching methods), X3 (availability of educational resources), X4 (completeness of educational system), X5 (students' willingness to accept national security education), X7 (campus culture and atmosphere), X8 (social and political environment), X10 (personal values and beliefs), and X11 (family background) all significantly affect the effectiveness of national security education at the 1% or 5% significance level. In particular, the significance and larger Exp (B) values (i.e., odds ratios) of X1, X3, X5, X7, X8, and X11 indicate that improvements in these factors may have a significant positive impact on the effectiveness of national security education.

Table 1: Regression analysis results

Variable	Coefficient	Significance	Exp(B)
X1	1.256	0.026*	3.756
X2	0.453	0.042*	3.339
X3	1.265	0.011*	4.294
X4	0.734	0.049*	1.159
X5	0.318	0.008**	3.421
X6	0.083	0.209	3.718
X7	1.196	0.016*	1.111
X8	1.265	0.012*	1.837
X9	0.881	0.492	1.805
X10	0.869	0.035*	3.845
X11	0.649	0.033*	3.939
X12	0.032	0.154	2.019
X13	0.492	0.649	2.595
X14	0.021	0.587	0.592
X15	0.419	0.094	1.436

Note: ** and * indicate 1% and 5% significance levels respectively.

3.4 Strengthening and Improving the Practice Path of National Security Education

Based on the regression analysis results, this paper proposes corresponding reinforcement and improvement methods. Firstly, it is recommended to update and enrich educational content, covering the latest national security laws and regulations as well as international situations, while integrating interdisciplinary knowledge to provide a comprehensive perspective. Secondly, it is advocated to adopt diverse teaching methods, such as interactive learning and technology integration, to enhance students' participation and interactivity. In addition, improving the availability of educational resources, including developing standardized textbooks and strengthening teacher training, to enhance teaching quality. At the same time, it is recommended to improve the education system, establish and perfect the curriculum system and scientific evaluation system, to ensure the systematicity and coherence of education. In order to enhance students' willingness to accept, it is recommended to have a deep understanding of students' needs, design educational content that meets their expectations, and establish incentive mechanisms to increase students' participation. It is recommended to create a positive campus culture and atmosphere by organizing relevant cultural activities and supporting students' spontaneous organization, enhancing students' autonomy and sense of participation, utilizing the social and political environment, aligning with national security and education policies, encouraging students to participate in social practice and volunteer service, and enhancing their practical abilities. It is recommended to respect and guide students' personal values and beliefs, provide personalized educational programs, and form correct national security concepts. Finally, it is recommended to strengthen cooperation between families and schools, work together with parents to cultivate students' awareness of national security, and extend education to the community, encouraging students to participate in community safety education activities. Through these comprehensive measures, it is possible to effectively enhance the national security awareness and educational effectiveness of college students, and cultivate more young talents with a sense of responsibility and mission.

4. Results and Discussion

4.1 Experimental Design

This paper will verify the effectiveness of the designed path to strengthen and improve national security education for college students through comparative evaluation, and compare its advantages and disadvantages with traditional paths. Among them, the traditional path mainly involves classroom lectures, military theory courses, campus cultural activities, and other methods. The experiment selected C9 Alliance universities in China, including Peking University, Tsinghua University, Fudan University, Zhejiang University, Shanghai Jiao Tong University, University of Science and Technology of China, Nanjing University, Harbin Institute of Technology, and Xi'an Jiaotong University, as experimental subjects. Students were randomly divided into an experimental group and a control group. The experimental group will adopt the new practical path studied in this paper, including measures such as enriching educational content, diversifying teaching methods, and improving the availability of educational resources. The control group continued to use the traditional national security education path. In the implementation process, it is necessary to ensure that, in addition to the educational path, other conditions such as student background and educational resources are consistent to ensure the fairness of the experiment. The evaluation is mainly based on students' performance in key variables such as national security knowledge level, participation, and attitude changes.

4.2 Student Reactions

Student feedback is one of the important indicators for evaluating the effectiveness of national security education, which involves students' satisfaction and feedback on educational content, teaching methods, teacher performance, curriculum organization, and resources. This paper collected data on students' reactions to national security education courses through a questionnaire survey, including the attractiveness of course content, the effectiveness of teaching methods, teachers' professional abilities, the quality of course materials, and overall satisfaction with course organization. The obtained data is shown in Table 2:

Table 2: Student reactions

Index	Improvement methods	Classroom lectures	Military theory courses	Campus cultural activities
Attractiveness of course content	4.6	4.07	3.55	4.18
Effectiveness of teaching methods	4.79	4.08	3.31	3.97
Teachers' professional competence	4.54	4.41	4.48	4.01
Adequacy of course materials	4.73	3.42	3.7	3.83
Rationality of course organization	4.9	3.8	3.76	3.85
Course interaction and discussion opportunities	4.4	3.86	3.72	3.76
Overall satisfaction	4.66	3.94	3.75	3.93

According to the data in Table 2, the national security education curriculum using the improved method receives high satisfaction ratings from students on multiple key indicators. In terms of the attractiveness of course content, the average score of the improvement method is 4.6, which is higher than 4.07 for classroom lectures, 3.55 for military theory courses, and 4.18 for campus cultural activities. The improvement method has a significant effect on enhancing the attractiveness of course content and can better stimulate students' interest in learning. In terms of the effectiveness

of teaching methods, the improved method is significantly higher than the other three traditional methods. In terms of teachers' professional competence, the average score for the improvement method is 4.54 points, and the professional competence of teachers in military theory courses can also reach 4.48 points. In addition, there are obvious advantages in course materials, course organization, and interactive discussions. From the overall satisfaction data of students, the improvement method proposed in this paper is the most satisfactory, followed by campus cultural activities. The improvement method has shown excellent performance in enhancing students' response to national security education courses.

4.3 Learning Outcomes

The learning effect directly reflects the impact of educational activities on students' knowledge acquisition, skill improvement, and attitude changes. This paper collects data on students' knowledge of national security through exam scores to evaluate the learning effectiveness of different educational methods. Figure 1 shows the learning outcomes of students under different educational methods:

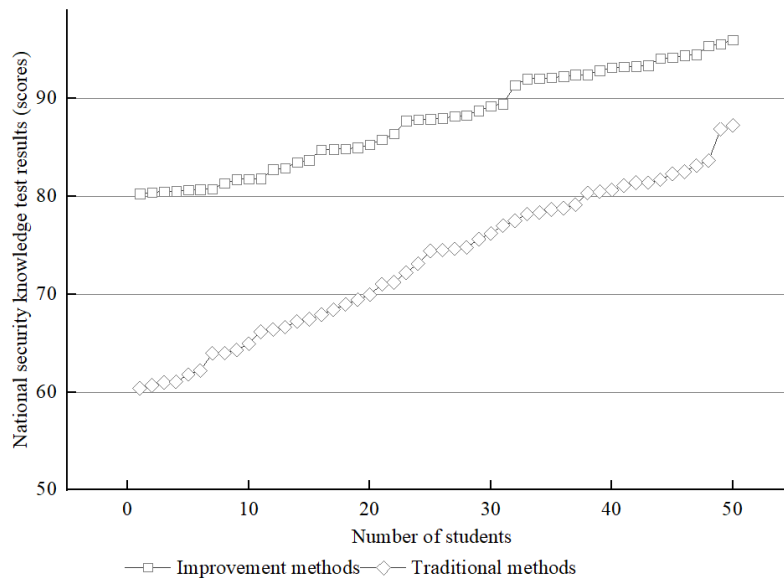


Figure 1: National security knowledge test results

From the perspective of minimum and maximum values, the performance distribution of the improved method is more concentrated, and the overall score is higher, indicating that this method can more effectively promote students' understanding and memory of national security knowledge. In addition, the improved methods have shown a steady improvement in student performance, which may mean that as teaching deepens, students are better able to absorb and apply the knowledge they have learned. The average score of students under the improved method in the national security knowledge test is 87.7838 points, while the average score of students under the traditional method is 73.21 points. The improved method has significant advantages in enhancing students' mastery of national security knowledge.

4.4 Behavioral Transformation

Behavioral transformation involves actual changes in students' knowledge, skills, and attitudes. This paper collects data by observing students' behavioral responses in simulated situations,

self-reported behavioral changes, and long-term follow-up surveys to evaluate the impact of different educational methods on students' behavioral transformation. Figure 2 shows the behavioral transformation results of students under different educational methods:

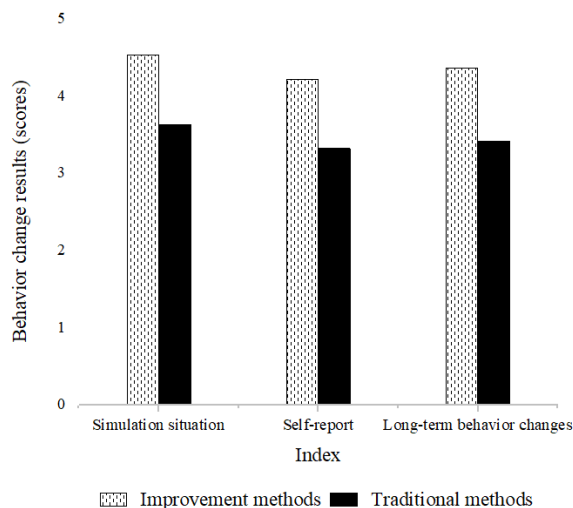


Figure 2: Results of behavior transformation

In terms of behavioral responses in simulated scenarios, the average score of the improved method is 4.54 points, while the average score of the traditional method is 3.63 points. Students who adopt improved methods demonstrate higher national security awareness and more effective response behaviors in simulated scenarios. The improved method has increased by 25.069% compared to traditional methods. Secondly, in terms of self-reported behavioral changes, the average score of the improved method is 4.22 points, higher than the traditional method's 3.32 points. Students who adopt the improved method are more likely to report positive changes in their national security related behaviors. The improved method has increased by 27.108% compared to traditional methods. Finally, in terms of the sustainability of long-term behavior change, the average score of improvement methods is also higher. The improvement method has shown significant advantages in promoting student behavior change in all three key dimensions.

4.5 Output of Achievements

The output of results covers specific achievements of students in knowledge acquisition, skill improvement, and attitude change. This paper evaluates students' practical abilities and innovative thinking through their participation in national security related projects, in order to assess the output effectiveness of different educational methods. The output data of the collected results is shown in Figure 3.

Under the improvement method, the number of projects in which students participate is generally high. Under the guidance of improvement methods, most students are able to actively participate in national security related projects and demonstrate strong practical abilities. In contrast, the number of students participating in projects under traditional methods is relatively small, indicating the limitations of traditional methods in stimulating students' participation in national security projects. By comparing the difference in the number of students participating in projects under two methods, the improvement value can be calculated. The improvement column displays the number of projects in which each student participated more under the improved method compared to the traditional method. Overall, the improvement method has shown significant advantages in promoting student output. Students have participated in more projects under the improved methods, which not only

reflects their growth in knowledge acquisition and skill improvement, but also demonstrates the effectiveness of the improved methods in stimulating students' innovative thinking and practical abilities.

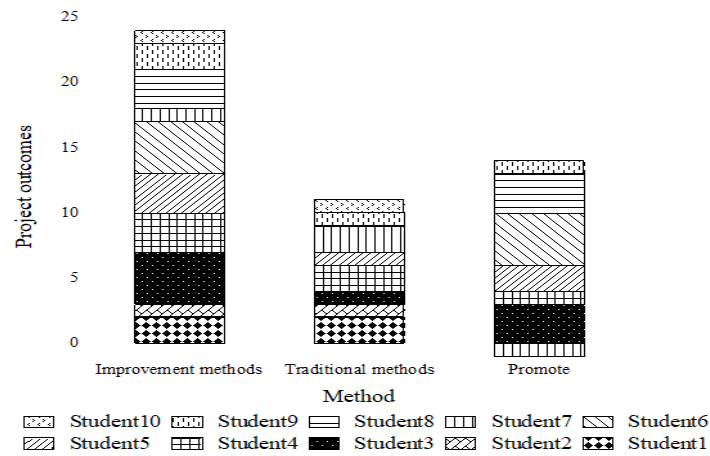


Figure 3: Output of results

5. Conclusion

This paper has achieved significant results through in-depth research on the practical path of national security education for college students. Research has found that by enriching educational content, diversifying teaching methods, improving the availability of educational resources, and perfecting the education system, improvement methods can significantly enhance students' national security knowledge, participation, and behavioral changes. Compared with traditional methods, improvement methods have significant advantages in improving educational effectiveness. The research contribution lies in proposing a practical path for national security education that combines data analysis, providing practical guidance and theoretical reference for national security education in universities. However, there are also limitations to the research, such as the sample being limited to specific universities, which may affect the generalizability of the results. Future research can expand the sample size, delve into educational differences in different regions and cultural backgrounds, and explore how national security education can be more closely integrated with students' daily lives and career development. In addition, with the constantly changing national security situation, educational content and methods also need to be continuously updated and optimized to adapt to new challenges.

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