THE OPTIMAL SELECTION OF IDEOLOGICAL AND POLITICAL ISSUES IN BUSINESS COURSES BASED ON SWARM INTELLIGENCE ALGORITHM

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Abstract. The current optimal selection matrix for ideological and political issues of business courses is mostly set as a single objective form, and the topic selection is limited in scope, increasing the mutation rate of the optimal selection of topics. Therefore, the design and analysis of the optimal selection method for ideological and political issues of business courses based on the swarm intelligence algorithm is proposed. According to the actual measurement needs and standards, extract the optimal characteristics of ideological and political issues selection of the curriculum, use a multi-level approach to break the limits of issues selection, establish a multi-level swarm intelligence selection matrix, build an optimal selection model for ideological and political issues of business and trade courses based on swarm intelligence accounting, and achieve the optimal selection of issues through group fixed-point optimization. The novelty of this work lies in the design and analysis of the optimal selection method for ideological and political issues in business courses using a swarm intelligence algorithm. This approach introduces a new way of selecting topics by harnessing the power of collective intelligence inspired by the behavior of insects or animals. The final test results show that the mutation rate of the optimal selection of the three topics finally screened using the swarm intelligence algorithm is better controlled below 0.2 through the measurement of five classes, indicating that the topic is more practical, more targeted, and has better discussion value.

Key words: Swarm intelligence algorithm; Commerce and trade; Professional courses; Curriculum ideological and political; Ideological and political issues; Optimal solution;

1. Introduction. The selection of ideological and political issues for business courses is relatively complex and complicated, and many factors need to be considered in the design process, such as market price changes, product quality, quantity, and business trends [21]. Therefore, only by integrating the professional knowledge and practice of business courses with ideological and political issues, can we further understand the discipline and teaching characteristics of the issues, use special carriers and channels to improve and optimize the issues, adjust and modify the problems of the process of ideological and political teaching, and gradually refine the content of ideological and political teaching. Give play to the most significant teaching function and learning value of the topic [18]. The traditional optimal selection method of ideological and political issues in business courses is mostly a targeted form of processing. Although it can achieve the expected teaching tasks, due to the variability and transformation of business courses, the teaching objectives of ideological and political issues in the courses are often unstable, resulting in students being restricted by various factors and environments when learning. Finally, the optimal solution [5] could not be determined. Therefore, this paper proposes the design, verification, and analysis of the optimal selection method of ideological and political issues for business professional courses based on swarm intelligence algorithm. The so-called swarm intelligence algorithm mainly refers to a dynamic computing method [6] that uses the simulation of insects or animals, takes the population as the main environment for measurement, filters and eliminates problems one by one in the form of cooperation, and finally obtains the optimal solution. Integrating this algorithm with the optimal selection of ideological and political issues of business professional courses can further expand the optimal selection range of actual ideological and political course issues to a certain extent, and accurately obtain the optimal value [22] of each issue selection stage through the algorithm. The setting of issues also needs to take students as the main body, follow the personalized requirements, and gradually build a more diversified and flexible issue selection structure in combination with multi module and multi-objective business professional knowledge, so as to ensure that the ideological and political curriculum itself is comprehensive and integrated, and solve the existing teaching problems faster and better in the complex issue environment, form multi-level ideological and political teaching

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objectives [7]. Take business professional courses as the basis of teaching, and slowly implement the students' own core literacy. At the same time, with the help and support of swarm intelligence algorithm, it is also necessary to further optimize and improve the initial optimal selection mode of ideological and political issues of the curriculum [23]. We screened and approved professional topics from various aspects, and integrated business professional knowledge related to business courses, catering to the development trend of multi-source education, and providing reference and reference for innovation and research in the selection of ideological and political topics in subsequent courses [1].

Political issues that can be incorporated into business courses:

1. Analyzing the impact of government policies and regulations on business operations, such as taxation policies, trade agreements, environmental regulations, and labor laws. This includes understanding how businesses navigate the political landscape and adapt their strategies accordingly.

2. Examining businesses' ethical and social responsibilities towards stakeholders and society at large. This includes exploring sustainability, corporate governance, diversity and inclusion, and philanthropy.

3. Investigating the political implications of globalization on business activities, including international trade, foreign investment, and cultural integration. This involves understanding the role of international organizations, regional blocs, and geopolitical factors in shaping global business environments.

4. Exploring ethical dilemmas and issues related to corruption in business practices. This includes studying cases of corporate misconduct, bribery, conflicts of interest, and ethical decision-making frameworks.

5. Analyzing the role of economic policies in influencing business cycles, economic growth, and market dynamics. This includes studying fiscal and monetary policies, inflation, unemployment, and the role of central banks.

6. Investigating the influence of corporations on the political process, including lobbying, campaign financing, and corporate involvement in policymaking. This involves examining the potential conflicts of interest and their implications for democratic governance.

7. Exploring issues related to social justice, inequality, and business practices. This includes examining topics such as fair trade, income distribution, resource access, and social entrepreneurship.

8. Examining the political dimensions of emerging technologies, such as data privacy, cybersecurity, artificial intelligence, and surveillance. This involves understanding the role of governments in regulating technology and balancing innovation with social concerns.

The research work addresses optimal selection by contributing,

1. The use of a swarm intelligence algorithm in selecting ideological and political issues for business courses is a novel approach. By emulating a population's collective behavior and cooperation, the algorithm enables the identification of optimal solutions that may not be achievable through traditional single-objective selection methods.

2. The work proposes a multi-level approach to break the limitations of topic selection in business courses. By establishing a multi-level swarm intelligence selection matrix, the scope of topic selection is expanded, allowing for a more comprehensive and diverse range of issues to be considered.

3. The development of an optimal selection model tailored explicitly for ideological and political issues in business courses enhances the precision and effectiveness of the selection process. By integrating swarm intelligence accounting and employing group fixed-point optimization, the model ensures that the selected topics have practicality, relevance, and valuable discussion potential.

4. The work addresses the issue of high mutation rates in topic selection by utilizing the swarm intelligence algorithm. Through extensive testing and measurement, the study demonstrates that the algorithm effectively controls the mutation rate of the selected topics, resulting in more targeted and valuable topics for discussion.

2. Optimal selection method of group intelligent accounting for ideological and political issues in designing professional courses of commerce and trade.

2.1. Extract the optimal characteristics of curriculum ideological and political issues selection.

The combination of business professional teaching and curriculum ideological and political education can be designed from a wide range of perspectives, and usually will not be subject to greater restrictions [2]. However, to ensure the accuracy and reliability of the final topic selection, we can first integrate the swarm intelligence

algorithm according to the actual topic direction and the ideological and political teaching content of the curriculum to extract the optimal feature of the ideological and political topic selection of the curriculum [15]. The ideological and political issues of the curriculum established this time need not only comprehensive ideological and political knowledge [19]. We should also carry out targeted integration of business expertise [11]. Therefore, first calculate the proportion of business courses and ideological and political courses in the topic, as shown in Formula 2.1:

$$H = \frac{\Re \times \frac{1}{\kappa}}{W + \kappa(\Re - 0.2\alpha)^2} - \omega\alpha \tag{2.1}$$

In Formula 2.1, H indicate the proportion of topics, W indicates the preset coverage selection range, κ indicates the deviation in the selection of targeted topics, $\Re$ represents the convertible ratio of the topic, α indicates the repeating range, ω indicates the standard value of topic selection. According to the above measurement, calculate the proportion of commercial and trade courses and ideological and political courses in the topics. When extracting the optimal selection criteria for topics, make a biased selection of materials and issues to ensure the integrity and particularity of the ideological and political topics of the curriculum [20]. Combined with the above measurement, the optimal characteristics of selecting ideological and political issues in the curriculum are extracted [24].

The first is the leading role of the curriculum's ideological and political issues [12]. In the process of learning and discussion between teachers and students, the objectives created by this topic must be highly instructive, which can include the basic teaching content, teaching activities, and teaching behavior of business and ideological and political courses, and is the most basic topic objective [4]. The second is openness. This topic must be able to ensure that students can talk freely in the learning process. The topic itself has high discussion value, wide-coverage, and strong inclusiveness, and can deepen the teaching level of the topic and sublimate the teaching content. The third is the need for mobility [13]. This part refers to the need to properly integrate some practical activities into the agenda design process, expand the optimal selection range of the agenda, increase their own research highlights, combine activities with the agenda, and improve teaching quality and effectiveness [17]. The fourth is activity, which mainly requires students and teachers to carry out effective research and exchange on the existing problems and the setting of the ideological and political direction trend of commerce, trade and curriculum in the process of topic design, so as to further deepen the topic and highlight the value of choice [14].

2.2. Establishing a Multi level Swarm Intelligence Selection Matrix. After completing the extraction of the optimal features for the selection of curriculum ideological and political issues, the next step is to integrate the swarm intelligence algorithm and establish a multi-level swarm intelligence selection matrix. First, set a basic discussion goal based on the actual topic selection direction, integrate the professional knowledge of business courses with the ideological and political content of the course, and first draw up the overall coverage of the topic, forming a stable and complete discussion area [16]. Then, based on this, teachers need to create a discussion environment in the classroom for the related questions. Students set the corresponding discussion level and small stage topic design goals according to the difficulty of the questions, and finally give a basic answer [9]. The whole process is actually equivalent to a matrix framework of continuous outcome problems. According to the small goals formed by the issues, the corresponding hierarchy of the matrix [3] is established. See Figure 2.1 for details.

According to Figure 2.1, complete the design and adjustment of the structure of the multi-level swarm intelligence selection matrix. At the same time, it is also necessary to establish the corresponding optimal selection criteria for topics in the matrix. Teachers should combine the professional knowledge and practical content of business courses to create a discussion situation. The topics should be closely linked with small goals, so as to further ensure that students are in discussions. In the process of analysis, further, deepen the connotation of the topic and help students gradually understand and master the deeper content of the topic [10].

However, in this part, it should be noted that when designing the matrix, students can establish corresponding selection criteria based on their own judgment and can conduct the second stage of research and discussion [8] when selecting follow-up issues. Generally, topics will not be set with a single fixed answer. They can be
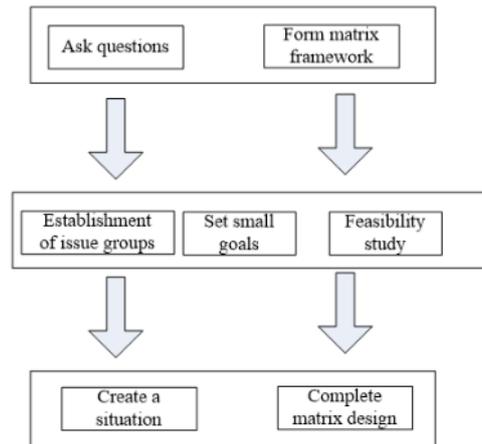
Fig. 2.1: Structure of Multi level Swarm Intelligence Selection Matrix

integrated, divergent and dialectical from multiple directions to reflect their value. Use the matrix to expand the scope of thinking and discussion of topics and deepen the theme [5].

2.3. Building the Optimal Selection Model of Ideological and Political Issues for Group Intelligent Accounting Business Courses. After establishing the multi-level swarm intelligence selection matrix, the next step is to integrate the algorithm to construct the optimal selection model for business courses' ideological and political issues. In fact, different from the single goal issue selection model, the two-way issue of business courses and ideological and political courses pays more attention to the choice of the issue's content and the direction of the discussion. Therefore, in establishing the model, we can first use the matrix to divide the research direction and theme of the issue, forming a structurally strong issue selection framework. Students or teachers can build a group and determine the optimal value of the issue at this time according to their own judgment and standard setting, and by integrating the swarm intelligence algorithm, as shown in Formula 2.2:

$$Y = \sqrt{\varepsilon + \sum_{v=1} \theta v - 1} \times \varepsilon \chi \tag{2.2}$$

In Equation 2.2, Y indicates the optimal value of the issue, ε indicates the dialectical scope of the topic, θ indicates the small goal of topic selection, θ indicates the optional quantity, χ indicates controllable issue deviation. According to the above settings, complete the calculation of the optimal value of the issue. In this community, the optimal value is used as the limiting selection standard to determine the mutation situation of the population. If the mutation ratio exceeds 2%, it indicates that the feasibility of this issue is not high and needs to be reset; On the contrary, if the mutation ratio does not exceed 2%, it indicates that the feasibility of this issue is high. You can set the model for comparison and selection to obtain the final optimal selection result.

2.4. Group fixed-point optimization to achieve optimal choice of issues. Use the above constructed optimal selection model of ideological and political issues for business and trade courses of group intelligent accounting to make basic selection of ideological and political issues for courses. Next, use group fixed-point optimization to achieve optimal selection of issues. You can first establish the corresponding screening process in the model matrix, set group selection points a, b, c, d. n, each group point is equivalent to an issue, and design specific selection principles, as shown in Figure 2.2.

According to Figure 2.2, complete the design and adjustment of the group fixed-point optimization principle. Next, according to the specific issue standards and contents of the group fixed-point, follow the initially set standards, carry out comparison and optimization, and achieve the optimal selection of issues. Matrix filtering
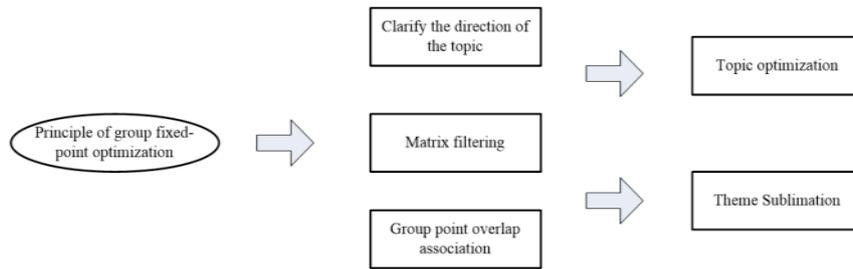
Fig. 2.2: Schematic diagram of group fixed-point optimization principle

is a digital image processing technique used to enhance or modify an image by applying a filter to its pixel values. It involves convolving a filter matrix or kernel with the image matrix, which performs a local operation on each pixel and its neighboring pixels. The filter matrix contains numerical coefficients that determine the nature of the filtering operation.

Matrix filtering works by performing a weighted average of the pixel values within a defined neighborhood around each pixel in the image. This neighborhood is determined by the size and shape of the filter matrix. The filter matrix is usually a square matrix with odd dimensions, such as 3x3, 5x5, or 7x7.

During the filtering process, the filter matrix is overlaid on the image matrix, and the corresponding elements of the two matrices are multiplied together. The resulting products are then summed to obtain a new value for the central pixel. This process is repeated for each pixel in the image, resulting in a filtered output image.

The coefficients in the filter matrix determine the influence of each neighboring pixel on the central pixel. They can be designed to achieve different filtering effects, such as blurring, sharpening, edge detection, noise reduction, and image enhancement. For example, a Gaussian filter uses a weighted average to blur the image, while a Laplacian filter enhances edges by highlighting intensity variations.

3. Experiment. This time is mainly to analyze and verify the practical application effect of the optimal selection method for ideological and political issues of business professional courses based on the swarm intelligence algorithm. Considering the authenticity and reliability of the final test results, the analysis is carried out by comparison, and the ideological and political issues of business professional courses at R University are selected as the actual measurement target. According to the actual selection needs and changes in the standards of the topics, the final measured results are compared and studied. Next, the relevant test environment is built by integrating the swarm intelligence algorithm.

3.1. Experiment preparation. Integrate swarm intelligence algorithm to build a measurement environment for the optimal selection of ideological and political issues in business professional courses of R university. Five classes are selected as the test objects in R University. The three classes are all learning classes for business majors, and the number of students in each class is about 65. Situational teaching method, discussion method, practice method, and question and answer method are mostly used in the daily teaching of ideological and political courses, and most of the courses are lectured, students' participation is not high, and their understanding and learning of knowledge points of ideological and political courses are not deep, leading to the learning effect cannot reach the expected standard. Under such a background, the best choice of ideological and political issues of the curriculum is needed. First of all, according to the actual teaching situation, the optimal selection of topics is divided into four stages, which are the determination of primary topic direction, feasibility analysis and topic selection, practical demonstration of topics, and optimal selection of topics. The specific topic definition and selection structure design are shown in Table 3.1.

According to Table 3.1, complete the structural design and research of topic definition and selection. The learning level of the selected five classes of business courses is basically the same, the student's ability is almost the same standard, and there is basically no big gap between the average scores of professional disciplines. The

Table 3.1: Structure setting table of topic definition selection

Topic selection stage	Topic definition	Execution form	Replenish
Determination of basic topic direction	According to the professional knowledge and practice of business courses, determine the specific research direction of curriculum ideological and political	Group demonstration	Multiple topics can be determined for comparison and selection
Determination of basic topic direction	Determine whether the selected topics have real meeting and sub-research value, and conduct equivalent screening	Group demonstration	Unify feasibility and screening criteria
Practical demonstration of issues	Conduct practical demonstration and analysis on the selected topics	Personal argument	Build practical solutions
Optimal choice of issues	Select the best topic	Group demonstration	Calculate the optimal solution

cycle of the topic selection test is set as one week, and every day is a test summary stage. The processing data and information of topic selection need to be recorded for future use. On this basis, 10 initial curriculum ideological and political issues are selected as the objectives of the measurement. At this time, combined with the needs of teaching, a practical issue selection standard is formulated to gradually form a complete optimal selection structure of curriculum ideological and political issues, so as to achieve the establishment of a basic testing environment. Next, specific tests and analyses are conducted by integrating swarm intelligence algorithms.

3.2. Experimental process and result analysis. In the above-built test environment, the swarm intelligence algorithm is integrated, and then specific verification and analysis are carried out. Let the three selected classes discuss together to determine the research direction of one or more business courses' ideological and political issues, and choose the one that is most interesting to students and has the highest teaching value. After clarifying the direction of the topic, students from five classes need to build multiple alternative topic plans for that direction. It should be noted that each topic is independent and has its own research and discussion value. On this basis, the corresponding structure is established based on the selection criteria of ideological and political issues of the curriculum, as shown in Figure 3.1.

According to Figure 3.1, complete the design and research on the topic selection of ideological and political courses. At this time, in this stage, the ideological and political issues of business courses have been screened to some extent. Next, we need to combine the swarm intelligence algorithm to select the optimal issues and formulate corresponding dynamic selection criteria, as shown in Table 3.2.

According to Table 3.2, complete the formulation and adjustment of the optimal selection criteria for curriculum ideological and political issues. On this basis, the topics finally selected are analyzed. At this time, the group intelligence algorithm is used to set the coverage of the topics as a controllable group. Once the ideological and political issues of the curriculum are different from the group of business courses, the mutation rate will increase. Select the three topics finally selected for measurement and comparison, synthesize the data obtained and the information of related topics, and comprehensively evaluate to calculate the mutation rate of topic selection, as shown in Formula 3.1:

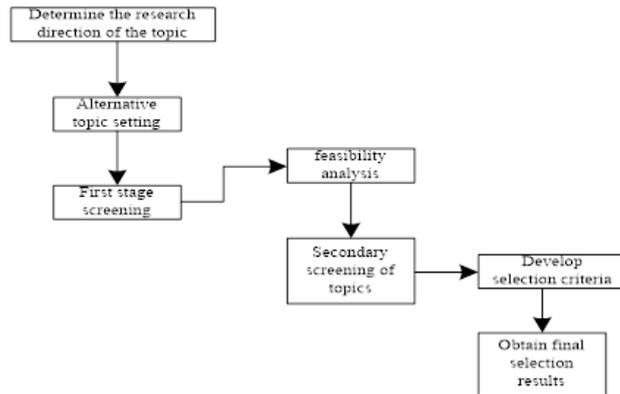$$G = \sum_{y=1} \Im y \times \alpha^2 + (1 - \Im) \tag{3.1}$$

Fig. 3.1: Structure diagram of topic selection of ideological and political courses

Table 3.2: Formulation of optimal selection criteria for ideological and political issues of curriculum

Division of topic selection direction	Proportion of topics	Evaluation and selection criteria
Business courses	Discipline literacy accounts for 0.6	Issue setting
		Topic selection
Curriculum ideological and political	Ideological and political core literacy accounts for 0.4	Scenario setting and arrangement
		Optimal selection activity design

In Formula 3.1, G indicates the mutation rate of the population selected for the topic, $\Im$ indicates the scope of discussion, y indicates the number of optional topics, α indicates the population transition area. According to the above determination, the analysis of the test results can finally be completed, as shown in Figure 3.2.

The results of the analysis and verification of the test demonstrate the effectiveness of the swarm intelligence algorithm in achieving an optimal selection of ideological and political issues for business courses. Figure 3.2 illustrates the outcomes of the test and provides valuable insights. The measurement of five classes was conducted to evaluate the mutation rate of the optimal selection for the three topics that were finally chosen. The mutation rate refers to the degree of change or deviation from the original selection. In this context, a lower mutation rate indicates that the selected topics have a higher level of practicality, relevance, and discussion value.

Based on the results shown in Figure 3.2, it can be observed that the swarm intelligence algorithm successfully controlled the mutation rate of the optimal topic selection below 0.2. This indicates that the selected topics remained stable and consistent throughout the measurement process, with minimal deviation or variation from the initial selection. The controlled mutation rate suggests that the selected topics are more practical and targeted. The algorithm was able to identify topics that align closely with the learning objectives and requirements of the business courses. These topics are expected to provide meaningful and valuable discussions for students, enhancing their understanding and engagement with the course material.

Furthermore, the results indicate that the selected topics have better discussion value. This implies that the topics are not only relevant and practical but also stimulate productive and insightful discussions among students. The inclusion of these topics in the curriculum can foster critical thinking, promote interdisciplinary perspectives, and encourage active participation and exchange of ideas among students.

4. Conclusion. To sum up, the above is the design, verification and analysis of the optimal selection method for ideological and political issues of business professional courses based on swarm intelligence algorithm.
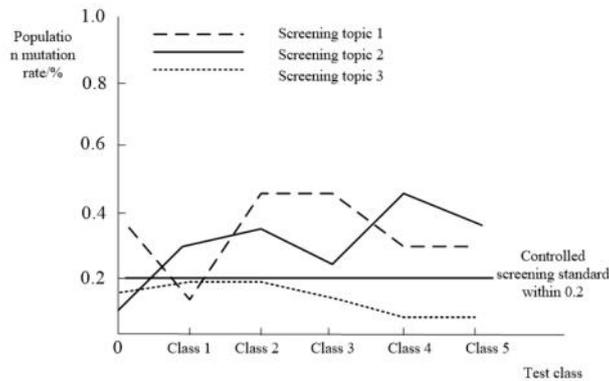
Fig. 3.2: Comparison and Analysis of Test Results

Compared with the initial issue selection form, this time, with the help of swarm intelligence algorithm, the actual issue selection form constructed is relatively more stable, diversified, and targeted, which can ensure the accuracy and reliability of the issue results. With this colleague, the process of the topic is also more complete, which makes it easy to form an optimal knowledge framework, gradually combining the teaching background materials and content, and relying on situational materials in the ideological and political curriculum, further expanding the discussion and teaching of the ideological and political topic of the curriculum, simplifying the selection process within a reasonable range, strengthening the depth of the topic, and giving better play to the teaching value.

However, it is important to acknowledge certain limitations of this study. Firstly, the research focused on the application of the swarm intelligence algorithm in the selection of ideological and political issues in business courses, without considering the potential challenges or drawbacks of this approach. Additionally, the study did not explicitly address the perspectives and preferences of students, which could have an impact on the effectiveness of the selected topics. Future research should consider these limitations and further investigate the potential limitations and benefits of the swarm intelligence algorithm in selecting ideological and political issues. Moreover, incorporating student feedback and engagement in the selection process can provide valuable insights for improving the overall effectiveness of the curriculum.

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