

Original Paper

The Logical Ecology of the “Five Educations” in China’s Ethnic Preparatory Education from the Perspective of Singapore’s Pre-University Education

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Abstract

China’s ethnic preparatory education bears the important mission of consolidating the academic foundation of ethnic minority students and forging a strong sense of community for the Chinese nation. At the current stage, the practice of talent cultivation faces the difficult problem of structural imbalance among the “five educations,” the core manifestation of which is the excessive competition of intellectual education, which continuously squeezes the development space of moral education, physical education, aesthetic education, and labor and technical education, resulting in prominent structural tensions within the education system and insufficient synergy in cultivating students. This paper takes Singapore’s pre-university education as a reference perspective, introduces the theory of logical ecology, regards the five educations (moral, intellectual, physical, aesthetic, and labor) as interrelated yet independent structural entities, and analyzes the internal mechanisms of their mutual exclusion. Drawing on the mature paradigms of values-based moral education, practice-oriented labor education, and contextualized aesthetic education in Singapore’s pre-university education, it explores a reconstruction path for the five educations to move from competition to symbiosis. The study proposes building a complementary and symbiotic education system based on mutual empowerment between moral and intellectual education, the integration of labor and intellectual education through practice, the synergy between physical and intellectual education within and beyond the curriculum, and the infiltration of aesthetic and intellectual education across disciplines, so as to optimize the logical ecology of ethnic preparatory education and promote its high-quality development.

Keywords

ethnic preparatory education, integration of the five educations, logical ecology, Singapore's pre-university education, competition and symbiosis

1. Introduction

As a core member of ASEAN, Singapore has achieved remarkable economic growth and risen to become an Asian financial center and an international benchmark for education in just a few decades since its independence. Throughout its development process, a high-quality and balanced education system has been the core support for economic revitalization, social stability, and the emergence of numerous talents. Singapore has always prioritized education in its development strategy, adhering to the concept of adapting to the demands of the times and focusing on comprehensive education. It has continuously deepened educational reforms and established a comprehensive education system that combines basic, practical, and comprehensive elements, forming a virtuous cycle of “education empowering talents, talents driving the economy, and the economy benefiting education”. Among them, university preparatory education, as a crucial stage bridging the foundation of secondary education and the elite of higher education, has abandoned the monotonous exam-oriented model and deeply cultivated the concept of integrating moral, intellectual, physical, aesthetic, and labor education. It pays attention to the all-round cultivation of students' moral character, practical ability, aesthetic quality, and physical and mental health, forming a mature educational model, which provides important experience for the reform of ethnic preparatory education in our country.

Our ethnic preparatory education is a special component of the higher education system, and it bears the important mission of helping minority students lay a solid academic foundation, connect with university education, promote the balanced development of ethnic education, and strengthen the foundation of ethnic unity. Article 4 of the “Higher Education Law of the People's Republic of China” clearly stipulates that higher education must implement the national education policy and cultivate socialist builders and successors who are all-round in terms of morality, intelligence, physical fitness, aesthetics, and labor [1]; Article 5 of the revised “Education Law of the People's Republic of China” in 2021 further establishes the legal educational goal of “cultivating socialist builders and successors who are all-round in terms of morality, intelligence, physical fitness, aesthetics, and labor” [2]. However, at present, ethnic preparatory education still faces problems such as imbalance in the development of the five aspects of education, and insufficient coordination of the education system, which restricts the overall improvement of the quality of talent cultivation. Based on this, this paper takes the university preparatory education in Singapore as the reference perspective, systematically sorts out its educational characteristics and practical experiences of integrating the five aspects of education, introduces the theoretical perspective of logical ecology, deeply analyzes the imbalance problems and deep-seated causes of the development of the five aspects of education in our ethnic preparatory education, and then explores the five-dimensional collaborative paths that are in line with the actual situation of ethnic education and conform to the growth laws of minority students, so as to promote the transformation of

the five dimensions of education from being mutually exclusive and suppressing each other to being mutually suitable and collaborative, and helping ethnic preparatory education achieve quality improvement and high-quality development.

2. The Education Paradigm of Integrating the Five Educations in Singapore's Pre-University Education

The rise of Singapore has demonstrated that education plays a profound role in shaping the destiny of a country. This island nation, lacking in natural resources, has regarded education as the foundation of its nation-building. Through continuous educational reforms, it has established a comprehensive education system that combines basic, practical and comprehensive elements. Not only has it become an Asian teaching model center, but it has also driven its economy with talent and rapidly grown into an Asian financial center [3]. In this system, pre-university education plays a crucial role in bridging the gap between secondary education and higher-level elite education. The duration of various pre-university programs in Singapore is mainly two years, while some pre-university pathways have a three-year duration. After completing their studies, students must take the “Advanced Certificate in General Education Examination” to be admitted to universities. What is particularly noteworthy is that the pre-university stage in Singapore has completely abandoned the single-oriented exam-oriented approach and placed moral education, labor skills education and aesthetic education on an equal footing with intellectual education [4]. It is committed to cultivating well-rounded talents who are “virtuous, intelligent, physically fit, skilled in labor and have aesthetic abilities”, forming a mature education model that integrates all five aspects of development. The following will be discussed from three dimensions:

2.1 Moral Education Centered on Shared Values

Singapore is a typical multi-ethnic immigrant country where Chinese, Indians, Malays, and Eurasian mixed-race groups converge. Different cultures, religions, languages, and customs have shaped a society that is inclusive and diverse, while also presenting governance challenges such as ethnic divisions and value differences. To reach consensus and maintain long-term social stability, the Singaporean government places universal moral education at the core of its founding principles and uses “national supremacy, society first; family as the foundation, society as the base” and other common values as the guiding principles to build a unified and standardized moral education system [5]. The pre-university stage, which is a critical period for the formation of young people's values, also integrates the cultivation of common values throughout: The education department does not limit itself to offering separate moral education courses; instead, it integrates core value standards such as social morality, patriotism, and responsibility into the entire process of teaching in humanities, social sciences, and general education as well as campus management [6]. Beyond imparting knowledge, schools guide students to hone their moral character, establish positive personalities, and clarify their social responsibilities through regular campus activities. This immersive moral education centered on

common values effectively eliminates cultural biases and cognitive barriers among ethnic groups, cultivating students' core qualities of inclusiveness and mutual assistance, and national unity, laying a solid ideological foundation for the harmonious coexistence and sustainable development of a diverse society.

2.2 Application-Oriented Labor Skills and Practical Education

The pre-university education in Singapore adheres to a clear practical orientation, integrating the cultivation of labor skills seamlessly into the entire teaching process. It completely eliminates the drawbacks of emphasizing theory while neglecting practice, and overemphasizing problem-solving while underemphasizing application [6]. The core of the educational content is not the study of obscure questions, but the practical transformation of knowledge and the systematic training of practical skills. Main disciplines such as geography, mathematics, macroeconomics, and enterprise economic management generally establish a two-way educational model of "theoretical teaching + social practice": Teachers design practical topics closely related to improving people's livelihood, urban development, and market operation based on the course objectives, and lead students out of the classroom to enter real scenarios such as streets, enterprises, and communities for research visits, data collection, case analysis, and problem exploration [7]. During this process, students not only verify and consolidate the knowledge learned in class, but also exercise their research skills, innovative thinking, and practical skills in real practice, truly achieving the integration of learning and action. This educational approach that deeply integrates labor skills training with social practice provides a solid practical foundation for pre-university students to transition to higher education, adapt to future career requirements, and serve national economic construction [8].

2.3 Aesthetic Education Model Integrating Environmental Immersion and Contextual Integration

The fine arts education program at the Singapore University Preparatory School is driven by two aspects: environmental immersion and scene integration. It aims to create an immersive aesthetic education ecosystem. In terms of environmental immersion, the school takes the meticulous design of teaching spaces as the basic approach for aesthetic education, discarding the fixed layout pattern and flexibly adjusting the placement of desks based on the characteristics of the courses and interaction needs, forming various spatial forms such as array, center, and welcoming style, so that students can obtain continuous visual experiences during different classroom transitions, effectively alleviating the boredom and fatigue of learning. At the same time, the campus as a whole promotes greening, beautification, and the construction of humanistic landscapes, creating a clean, elegant, and vibrant educational environment where students can constantly be exposed to beauty in daily life, and subconsciously enhance their aesthetic literacy.

In terms of scene integration, the school actively breaks through the limitations of closed classrooms and vigorously promotes open outdoor teaching, extending the reach of aesthetic education to nature and society. Teachers flexibly select real scenes such as parks, coastal scenic spots, urban airports, rural settlements, and industrial parks for teaching, transforming beautiful natural scenery and vivid social

situations into vivid materials for aesthetic education. Students perceive the charm of knowledge, understand the beauty of life, and comprehend the operation of society in real scenes, integrating aesthetic perception, aesthetic understanding, and aesthetic creation into the entire learning process. The unified aesthetic education model of environmental immersion and scene integration not only optimizes the classroom atmosphere and stimulates learning interest, but also realizes the coordinated advancement of knowledge transmission, ability cultivation, and aesthetic shaping, fully demonstrating the educational advantages of empowering with beauty and integrating the five aspects of education [9].

The comprehensive emphasis on “morality, intelligence, physical fitness, aesthetics, and labor” in Singapore’s preparatory education has not only enhanced teaching quality and enabled Singapore to rank among the educational powerhouses of ASEAN, but also driven economic development through education, rapidly transforming it into an Asian financial center [10]. This successful experience reminds us that the integration of the five aspects of education is not a simple addition of each aspect, but a deep optimization of the internal structure of the education system. The “Decision on Deepening Education Reform and Promoting Comprehensive Quality Education” of our country clearly states: “We must organically integrate moral education, intellectual education, physical education, and aesthetic education in all aspects of educational activities. School education should not only focus on intellectual education, but also attach importance to moral education, strengthen physical education, aesthetic education, labor technology education, and social practice, so that all aspects of education can interpenetrate and develop in a coordinated manner, promoting the all-round development and healthy growth of students.” [11] The “Opinions on Comprehensively Strengthening Labor Education in the New Era for Primary, Secondary and Tertiary Schools” of the Central Committee of the Communist Party of China and the State Council further propose that labor education has the comprehensive educational value of cultivating virtue, enhancing intelligence, strengthening physical fitness, and developing aesthetics, and should promote the deep integration of labor education with moral education, intellectual education, physical education, aesthetic education, and labor technology education [12]. It can be seen that the implementation of the integration of the five aspects of education and the collaborative education are also the core orientation of China’s educational reform, and minority preparatory education is no exception.

However, the realization of the integration of the five aspects of education cannot merely remain at the level of ideological advocacy. It is necessary to delve into its internal logic and reveal the structural relationship between each aspect of education. It is particularly necessary to introduce the analytical perspective of “logical ecology”. The so-called logical ecology refers to “the organizational state, structural state and essential state of the ecosystem” [13]. From this perspective, moral education, intellectual education, physical education, labor technology education, and aesthetic education in ethnic preparatory education constitute a specific logical ecology, and the five aspects of education are the basic logical framework of this ecology. Each aspect of education is an independent “qualitative

structure”, and within each structure, countless “qualitative structures” are composed. The qualitative structures are interrelated and interact with each other. Countless qualitative lines combine to form qualitative structures, and the organic combination of these qualitative structures ultimately forms the “qualitative structure” of ethnic preparatory education. The repulsion between the large qualitative domains forms structural tension, while the cohesion leads to structural cohesion. If the tension within the large qualitative domain is excessive, the “morality, intelligence, physical fitness, labor, and aesthetics” five educational structures will be mutually contradictory and repelling each other, and the structure of this logical ecology of ethnic preparatory education will tend to be loose, and the development will be hindered. Therefore, by drawing on the educational model of Singapore’s integration of the five aspects of education, deeply analyzing the actual relationship between the qualitative structures of each aspect of education in our country’s ethnic preparatory education, and exploring the practical paths that make them compatible, suitable, and collaborative, is the top priority of the current reform of ethnic preparatory education.

3. The Ecological Imbalance of the Five Educations in China’s Ethnic Preparatory Education: Excessive Competition in Intellectual Education

From a logical ecological perspective, the core problem of China’s ethnic preparatory education lies in the structural imbalance of the five-element ecological system. The actual manifestation of this is the excessive competition among the five aspects of education. As mentioned earlier, morality, intelligence, physical education, labor technology education, and aesthetics, as five relatively independent elements, do not progress simultaneously in the development process. The elements interweave and interact with each other, forming a tension relationship of either opposition or cohesion. When one element breaks through the collaborative boundary and assumes the dominant position in the structure, it will squeeze out and exclude the survival space of other elements, resulting in a competitive situation. The term “competitive growth” means that the subject “no longer content with passively and limitedly freely realizing potential in the corresponding relationship of the dependent object, but rather wants to occupy the dominant and core position of the contradictory structure, and by opposing and struggling with the object to grasp and unify the object” [14]. Looking at the practice of China’s ethnic preparatory education, influenced by the long-term orientation of examinations, intelligence education has been continuously magnified, while morality, physical education, labor technology education, and aesthetics have been continuously weakened. The excessive competitive growth of intelligence education has become the primary factor undermining the balance of the five-element ecological system. The competitive growth phenomenon is concentrated in the following four aspects:

3.1 Competition between Intellectual Education and Moral Education

In the actual educational system of ethnic preparatory education in our country, there has long been a development imbalance and mutual competition among intellectual education and moral education, resulting in a conflicting situation where the two fail to form a collaborative educational force. Instead,

they have shown a trend of being stronger in some areas and weaker in others, becoming the core issue restricting the all-round development of pre-university students. For a long time, domestic education has been deeply influenced by the exam-oriented mindset, and ethnic preparatory education has also continued to follow the educational orientation of emphasizing grades and neglecting qualities. Most institutions have focused their core goals of the preparatory stage on strengthening students' cultural foundation and helping them smoothly transition to university undergraduate studies. They have overly emphasized the assessment value and educational status of intellectual education, using the enrollment rate and academic scores as the core evaluation criteria, significantly reducing the teaching hours and educational space for moral education, causing moral education to gradually become marginalized and formalized, and making it difficult to be implemented effectively. According to Article 6 of the "Education Law of the People's Republic of China", education should adhere to fostering virtue through education and strengthen patriotism and ethnic unity education [15]. However, this legal requirement has not been fully implemented in the practice of ethnic preparatory education. The ethnic preparatory student group has a special nature, mostly consisting of minority students who entered school after failing the college entrance examination. Compared to ordinary students, they are more sensitive and vulnerable psychologically, and often have negative mental states such as self-denial, inferiority complex, and lack of motivation for learning [16]. At the same time, the ethnic preparatory institutions gather students from multiple ethnic groups across the country. Each ethnic group has its unique language system, customs, religious culture, and lifestyle. When students enter a strange campus environment, far from their homeland and family, cross-ethnic communication barriers, life adaptation problems, and cultural cognition differences are prone to cause interpersonal estrangement, leading some students to fall into self-isolation and introverted personalities. The excessive expansion of intellectual education has squeezed the educational space for moral education, and the absence of moral education cannot timely address students' psychological problems and cultivate positive values, ultimately forming a competitive and mutually restrictive situation between intellectual education and moral education, seriously hindering the coordinated development of students' ideological qualities and physical and mental health [17].

3.2 Competition between Intellectual Education and Labor and Technical Education

The excessive competition between intellectual education and labor technology education is a concentrated manifestation of the rigidity and ambiguous positioning of the current ethnic preparatory education system in China. The core issue is that the exam-oriented intellectual education dominates excessively, while labor skills education and practical quality cultivation are seriously lacking. The development of the two is seriously disconnected and mutually restrictive [18]. The core positioning of ethnic preparatory education is to connect middle school basic education with university professional education, and to have multiple functions such as academic solidification, ability cultivation, and vocational enlightenment. It should, in addition to consolidating students' cultural foundation, carry out targeted preparatory education for majors and labor skills training, laying a foundation for students'

subsequent professional learning and career development. However, the teaching systems of most ethnic preparatory colleges and universities have not yet broken free from the framework of middle school exam-oriented education, overly emphasizing intellectual education teaching in cultural subjects, taking the scores of basic subjects such as Chinese, mathematics, and foreign languages as the core of education, and completely replicating the teaching content, curriculum system, and teaching mode of high school education, blindly pursuing the dissemination of theoretical knowledge and solving problems through practice. Institutions generally ignore the educational value of labor technology education and do not offer targeted skill training, vocational enlightenment, and labor practice courses based on students' selected major directions. They completely deviate from the connecting attribute of ethnic preparatory education. The national policy clearly requires that all levels of education should strengthen labor practice and promote the combination of theoretical learning and social practice [12]. This requirement has a significant gap in implementation at the ethnic preparatory stage. This educational model leads to the unlimited expansion of intellectual education, occupying the survival space of labor technology education, forming a distorted educational structure that emphasizes theory and neglects practice, emphasizes exams and neglects skills. It fails to cultivate students' practical abilities, professional qualities, and innovation capabilities in a targeted manner, and is unable to shape students' specialized strengths. As a result, ethnic preparatory students generally have a solid theoretical foundation but lack practical abilities, ultimately leading to the homogenization, simplification, and exam-oriented nature of ethnic preparatory education, and losing the unique educational value of ethnic preparatory education.

3.3 Competition between Intellectual Education and Physical Education

In the five-element development system of ethnic preparatory education, the contradiction between intellectual education and physical education is particularly prominent. The excessive expansion of exam-oriented intellectual education has continuously squeezed the educational space for physical education, causing the marginalization and fragmentation of physical education, and seriously damaging the comprehensive development of students' physical and mental qualities. The ethnic preparatory stage is a crucial period for shaping students' physical and psychological qualities. Physical education not only strengthens students' bodies but also alleviates academic pressure, nurtures willpower, and regulates psychological states. It is an important guarantee for the coordinated development of the five elements. The "Opinions on Comprehensively Strengthening and Improving School Physical Education in the New Era" issued by the Central Committee and the State Council proposed that all physical education courses should be offered in full, and students' physical exercise time should be guaranteed, and a student physical health monitoring mechanism should be established [19]. However, most ethnic preparatory institutions focus on students' subsequent undergraduate major studies as the core orientation, prioritizing cultural subject intellectual education, and setting a dense curriculum of cultural courses. The academic assessment pressure is huge, causing the status of physical education to be continuously weakened. Most institutions have significantly reduced the class

hours for physical education, and some even directly cancel physical education compulsory courses. Physical literacy is not included in the student's comprehensive evaluation system, and classroom physical education is severely lacking. At the same time, heavy academic tasks occupy most of students' after-school time, and schools rarely organize extracurricular sports events, fun sports, and physical fitness expansion activities, resulting in pre-college students lacking systematic and regular physical exercise for a long time. Prolonged sitting learning and lack of exercise have led to a general decline in the physical quality of ethnic pre-college students, decreased immunity, and an increased risk of myopia, spinal strain, physical weakness, and other physical health problems. More seriously, the high academic pressure cannot be effectively released. Students are constantly in a tense and anxious state and cannot relieve their emotions through physical exercise, which easily leads to negative psychological states such as depression, irritability, and rebellion, and triggers various psychological problems, ultimately causing a bilateral imbalance in physical and mental qualities of students, seriously deviating from the educational goal of comprehensive education.

3.4 Competition between Intellectual Education and Aesthetic Education

The imbalance and excessive competition in the development of intellectual education and aesthetic education are significant shortcomings in the education of ethnic preparatory programs in China. The traditional exam-oriented intellectual education model excludes the influence of aesthetic education, resulting in the separation and mutual restriction of knowledge transmission and aesthetic cultivation, making it difficult to achieve the coordinated effect of inspiring wisdom through aesthetics and educating through aesthetics. As an important component of the five-domain education system, aesthetic education plays a crucial role in cultivating sentiments, stimulating thinking, stimulating learning interest, and shaping a healthy personality. It can provide emotional support and motivational empowerment for the development of intellectual education and is a key link in improving the quality of education in ethnic preparatory programs. The "Opinions on Comprehensively Strengthening and Improving School Aesthetic Education in the New Era" issued by the Central Committee of the Communist Party of China and the State Council states that aesthetic education is an educational approach that encompasses aesthetic education, emotional education, and spiritual education, as well as enriching imagination and cultivating innovative consciousness. All kinds of schools should explore aesthetic resources in their disciplines and promote the integration of aesthetic education into the entire educational process[20]. However, at present, the teaching concepts of most ethnic preparatory teachers are relatively rigid, equating intellectual education with the transmission of theoretical knowledge. In cultural subject teaching, they simply adopt a single teaching mode of abstract logical reasoning, formula derivation, and knowledge indoctrination, focusing only on students' memory and mastery of theoretical knowledge, completely neglecting the infiltration and integration of aesthetic education. In the classroom teaching process, teachers fail to create a good aesthetic atmosphere through their own words, expressions, and demeanor, nor do they explore aesthetic elements in conjunction with subject knowledge, lacking aesthetic guidance and emotional cultivation for students. This de-aestheticized

approach to intellectual education makes classroom teaching dull and unappealing, lacking appeal, unable to motivate the initiative and creativity of ethnic preparatory students, and unable to inspire their diverse thinking. At the same time, the absence of aesthetic education prevents students from obtaining emotional resonance and aesthetic experience in their studies, making it difficult to cultivate noble sentiments and positive aesthetic values. This not only hinders the improvement of students' aesthetic literacy but also greatly reduces the actual effectiveness of intellectual education, creating a two-way contradiction of rigid and inefficient intellectual education and weak aesthetic education. Ultimately, it leads to the structural opposition between intellectual education and aesthetic education in the five-domain education ecosystem, hindering the comprehensive improvement of students' overall qualities.

Taking effective measures to regulate the relationships among moral education, intellectual education, physical education, labor technology education, and aesthetic education, addressing the issues of competition among them, eliminating the contradictions formed by the interweaving of various components, and promoting balanced development of each component is the primary task of current ethnic preparatory education. The dynamic balance and collaborative symbiosis of the five domains are the core kernel for maintaining the stability of the logical ecosystem of ethnic preparatory education and are also the fundamental path to resolving the imbalance and disorder in current education structures. Only by completely breaking the one-sided educational pattern of emphasizing intellectual education and neglecting the other four domains, and building an integrated educational system that integrates the five domains and empowers them through complementarity, can we fill the educational shortcomings of ethnic preparatory education, eliminate the ecological tension, and ultimately achieve a structural unity between intellectual education and aesthetic education in the five-domain education ecosystem, promoting the comprehensive improvement of students' overall qualities. Based on the characteristics of our ethnic education and the growth patterns of ethnic preparatory students, and drawing on the advanced educational experience of integrating the five domains in Singapore, optimizing the educational path, is a necessary measure to promote the improvement of ethnic preparatory education quality, achieve sustainable high-quality development, and eliminate the imbalance and disorder in current education structures.

4. The Ecological Reshaping of the Five Educations in China's Ethnic Preparatory Education: From Competition to Symbiosis

The above analysis indicates that the mutual exclusion and co-evolution among the five components of moral education, intellectual education, physical education, labor technology education, and aesthetic education have accumulated significant structural tensions within the national preparatory education. The unbalanced situation where intellectual education dominates while the other four domains continue to shrink severely has seriously constrained the overall effectiveness of the education system. However, the tension itself also contains opportunities for adjustment and reconfiguration - as educational

concepts are updated and educational practices deepen, each component will inevitably undergo multi-directional adjustment in the continuous competition, providing a realistic possibility for moving from competition to coexistence. Coexistence is not a conquerive unity where one side dominates the other, nor is it a passive subordination where one side depends on the other. Instead, it is “a harmonious and advanced form of beauty where the subject and object are mutually suitable and coexist, forming a symbiotic and collaborative relationship” [21]. This state is highly consistent with the optimization focus of the thesis title, “logical ecology”: To achieve a positive operation of the logical ecology of national preparatory education, the key lies in promoting the five educational components from the competitive and mutually exclusive co-evolution pattern to a mutually suitable and collaborative coexistence pattern. Based on this goal, by drawing on the educational experience of Singapore’s integration of five educational components and combining with the school-running characteristics and actual situation of our national preparatory education, efforts can be made in the following four aspects to reconstruct:

4.1 The Ecological Reshaping of the Five Educations in China’s Ethnic Preparatory Education: From Competition to Symbiosis

To effectively alleviate the structural tension caused by the overemphasis on intellectual education at the expense of moral education and to restore the balanced ecosystem of the five educations, China’s ethnic preparatory education must, on the basis of ensuring the quality of intellectual education and students’ academic advancement, systematically strengthen ideological and moral construction, and achieve dual empowerment of morality and intelligence and collaborative education. The ethnic preparatory campus in China gathers students from multiple ethnic groups, where diverse cultures, languages, customs, and value perceptions coexist. This is highly similar to the multicultural preparatory education scenarios in Singapore, and it is prone to interpersonal estrangement and ideological differences due to cultural differences. Therefore, systematic and regular moral education construction is the fundamental guarantee for consolidating campus consensus and maintaining the stability of education. First, institutions should regularly carry out education on the Chinese nation community and the concept of ethnic harmony, guiding students of all ethnic groups to respect customs, tolerate cultural differences, and help each other to progress, firmly establishing the awareness of ethnic unity. On the basis of respecting the excellent traditional cultures and ethnic beliefs of various ethnic minorities, it is necessary to eliminate the sense of ethnic estrangement and build a harmonious and symbiotic campus educational atmosphere [22]. Secondly, continuous and warm-hearted love education should be promoted. Precisely investigate the actual situations of the families of ethnic preparatory students, implement scholarship, student aid, and assistance for difficulties policies, effectively alleviate students’ economic pressure, help students relieve their burdens of life and focus on academic growth, and use humanistic care to boost students’ confidence in their studies. Finally, establish a regular psychological counseling and positive value guidance mechanism. For the common psychological problems of preparatory students, such as inferiority, loss, confusion, and inertia, through

conversations, psychological courses, and group counseling, guide students to open up their hearts, resolve psychological barriers, shape a positive attitude towards life and correct values, and truly achieve the all-round improvement of preparatory students' moral cultivation, psychological quality, and academic ability.

4.2 Integration of Labor and Intellectual Education: Drawing on Singapore's Practice-Based Education Philosophy to Bridge Skill Gaps

In response to the imbalance problem in current ethnic preparatory education, where intellectual education is overly emphasized and labor technology education is severely squeezed [18], we can deeply draw on the practical educational philosophy of Singapore's preparatory education, which emphasizes application and practice-oriented learning. We should break free from the constraints of high school-oriented education and reconstruct a learning system that integrates theoretical teaching and skill cultivation. This will effectively resolve the contradiction between the two. Currently, most preparatory schools still follow the high school teaching model, with highly middle schoolized textbook systems, course settings, and teaching methods. They focus on the indoctrination of basic theories and the practice of repetitive exercises for score improvement, lacking the necessary professional connection and practicality in the preparatory stage. As a result, labor education is absent and the education is highly homogeneous [23]. Therefore, first, we should promote the reform of the textbook system, completely abandon the single high school textbook, and combine the characteristics of ethnic preparatory education, regional development realities, and the requirements for selected professional training to independently compile characteristic textbooks that fit the transitional nature of the preparatory stage. They should balance the consolidation of basic academic knowledge, professional enlightenment, and the cultivation of labor skills, highlighting practicality and connection. Secondly, we should completely innovate the classroom teaching model, break away from the passive teaching mode of "filling the classroom with content", and widely adopt inquiry-based learning, group discussions, and topic discussions to fully mobilize students' ability to think independently and explore actively, cultivating innovative thinking and autonomous learning habits. Finally, we should improve the skill-based education system, while strengthening cultural courses, add practical courses such as computer application, oral English, and practical training, focus on the cultivation of students' vocational abilities and social adaptability, fill the gap in labor technology education, completely reverse the educational pattern that prioritizes intelligence over labor, and help preparatory students smoothly transition to university professional studies and future social development.

4.3 Synergy of Physical and Intellectual Education: Building an Integrated Curricular and Extracurricular Physical Education System for Talent Cultivation

Sports is an important supporting dimension in the integrated ecological system of the five educations, and it is also a key leverage to break the dominance of intellectual education, balance students' physical and mental development, and reduce the tension in the educational ecosystem structure. Currently, there is a prevalent utilitarian tendency in ethnic preparatory education, which focuses on cultural

courses and neglects physical fitness. Sports courses are marginalized, extracurricular sports activities are lacking, and physical health education is absent. This has led students to remain in a state of high-pressure learning, with prominent problems of imbalance in physical and mental development. To reshape the balanced pattern of the five educations, it is necessary to establish an integrated sports education system combining classroom teaching and extracurricular expansion, and formally incorporate sports education into the core system of preparatory education. On one hand, institutions need to improve the talent cultivation plan, standardize the regular offering of compulsory sports courses, and, based on the physical fitness, sports specialties, and interests of ethnic minority students, set up diversified, interesting, and scientific sports teaching content, changing the single and boring training mode, making sports teaching conform to the growth patterns of students, and effectively guarantee the quality of classroom sports education. On the other hand, actively enrich extracurricular sports education carriers, regularly organize class-level sports competitions, school-level sports events, outdoor quality expansion, and fun sports activities, and encourage all students to actively participate in sports exercises, enriching their after-school life and releasing academic pressure. Regular physical exercise can not only effectively enhance the physical fitness of preparatory students, improve the decline in physical fitness caused by prolonged sitting learning, but also relieve anxiety, depression, and rebelliousness, temper the willpower of striving and teamwork, help students shape a healthy body and a sound personality, and lay a solid physical foundation for the coordinated and all-round development of the five educations and students.

4.4 Symbiosis of Aesthetic and Intellectual Education: Drawing on Singapore's Aesthetic Education Model to Achieve Mutual Empowerment

To effectively reconcile the conflicting interests of intellectual education and aesthetic education and construct a favorable logical ecosystem where the five types of education are integrated and complementary, ethnic preparatory education needs to actively draw on the immersive and scenario-based aesthetic education experience from Singapore, adhering to the principle of educating through beauty and inspiring intelligence. It should fully integrate aesthetic cultivation, emotional nurturing, and cultural immersion into the entire process of education and teaching, breaking the educational predicament where intellectual education and aesthetic education are mutually disconnected and opposed. Firstly, promote the integration and penetration of subject-based aesthetic education, requiring teachers to change their single exam-oriented teaching mindset. In each subject of intellectual education teaching, they should deeply explore aesthetic elements and organically integrate ethnic customs, folk culture, traditional art, and other distinctive contents, allowing students to acquire theoretical knowledge while perceiving the beauty of ethnic culture. At the same time, teachers should conduct teaching with elegant behavior and speech, gentle teaching language, and good professional temperament, and use their own excellent qualities to subconsciously cultivate students, creating an atmosphere rich in aesthetic appeal, stimulating students' learning enthusiasm and innovative thinking, and achieving the empowerment of aesthetic education for intellectual education and the collaborative

improvement of dual education. Secondly, enrich the carriers of after-class aesthetic education, actively create second-class classroom aesthetic education platforms, and offer diversified cultural and entertainment courses such as vocal music, instrumental music, dance, ethnic handicrafts, and literary creation, providing students with platforms for cultivating interests, honing specialties, and showcasing themselves, allowing students to cultivate noble sentiments and shape a healthy personality through artistic practice. Finally, optimize the campus aesthetic education environment, drawing on the environmental education concept from Singapore, continuously promote campus greening, purification, and humanistic beautification construction, creating a clean, elegant, vibrant, and humanistic educational environment, allowing students to continuously enhance their aesthetic literacy in the immersive aesthetic education atmosphere, achieving the two-way symbiotic development of improving intellectual education and nourishing the heart through aesthetic education.

To effectively reconcile the conflicting nature of intellectual education and aesthetic education and construct a favorable logical ecosystem where all five types of education complement and reinforce each other, ethnic preparatory education needs to actively draw on the immersive and scenario-based aesthetic education experience from Singapore, adhering to the principle of educating through aesthetics and inspiring intelligence. It should integrate aesthetic cultivation, emotional development, and cultural immersion into the entire educational process, breaking the educational predicament where intellectual education and aesthetic education are mutually disconnected and opposed [24]. Firstly, promote the integration of subject-based aesthetic education, requiring teachers to change their single exam-oriented teaching mindset and deeply explore aesthetic elements in various subject intellectual education teaching, organically integrating ethnic customs, folk culture, traditional art, etc., so that students can perceive the beauty of ethnic culture while acquiring theoretical knowledge. At the same time, teachers should conduct teaching with elegant behavior, gentle teaching language, and good professional temperament, and use their own excellent qualities to subconsciously cultivate students, creating an atmosphere rich in aesthetic appeal, stimulating students' learning enthusiasm and innovative thinking, and achieving the empowerment of aesthetic education for intellectual education and the collaborative improvement of dual education. Secondly, enrich the carriers of after-school aesthetic education, actively create second-class classroom aesthetic education platforms, and offer diversified cultural and entertainment courses such as vocal music, instrumental music, dance, ethnic handicrafts, and literary creation, providing students with platforms to cultivate interests, hone specialties, and showcase themselves, allowing students to cultivate noble sentiments and shape a healthy personality through artistic practice. Finally, optimize the campus aesthetic education environment, drawing on the environmental education concept from Singapore, continuously promoting campus greening, purification, and humanistic beautification construction, creating a clean, elegant, vibrant, and humanistic educational environment, allowing students to continuously enhance their aesthetic literacy in the immersive aesthetic education atmosphere, and achieving the two-way symbiotic development of intellectual education improvement and aesthetic education nurturing the

heart.

In summary, we targeted the prominent problem of excessive competition between intellectual education and aesthetic education from four dimensions of moral education, labor education, physical education, and aesthetic education, based on the advanced educational experience from Singapore, combined with the educational characteristics and actual learning situations of ethnic preparatory education in China, and constructed a collaborative educational path of complementary five types of education and dual empowerment. A series of reform measures aim to weaken the opposition tension between the five educational structures, strengthen the cohesion of overall education, reverse the one-sided educational pattern that emphasizes intelligence but neglects morality and knowledge, and provides practical and feasible practical solutions for the benign operation, diverse coexistence, and high-quality development of the logic ecosystem of ethnic preparatory education.

5. Conclusion

National preparatory education, as a complete educational logical ecosystem, is composed of five components: moral education, intellectual education, physical education, labor technology education, and aesthetic education. These components are organically combined to form a holistic educational system. Each component contains numerous independent lines, maintaining distinct educational functions and development patterns while also interweaving and mutually restricting each other in the actual educational process. Currently, China's national preparatory education faces significant imbalance in the five-element educational ecology: intellectual education is overly competitive, continuously squeezing the development space of the other four educations. The components are mutually exclusive, inhibiting and opposing each other, forming a strong structural tension, resulting in a loose educational system, limited educational effectiveness, and sluggish development momentum [25]. At the same time, the five components inherently possess an inherent connection of integration, complementation, and empowerment - moral education nurtures the foundation of values, intellectual education consolidates the cognitive foundation, physical education develops physical and mental qualities, labor technology education cultivates practical abilities, and aesthetic education impregnates emotions and creativity - these five elements support and promote each other, forming a structural cohesion that drives the development of education towards high quality. Based on this ecological law, the reform of China's national preparatory education should, on the basis of adhering to its own school-running characteristics and respecting the growth laws of ethnic minority students, fully draw on the advanced experience of Singapore's university preparatory education in integrating the five educations, practicing practical education, and providing comprehensive empowerment. It should continuously promote systematic changes in education and teaching. With optimizing the educational system as the main focus, filling in the shortcomings of each education, reshaping the collaborative pattern, effectively reducing the opposition tension between the five components, and continuously strengthening the internal cohesion of coexistence and growth in all dimensions. The moderate

ecological tension and abundant structural cohesion should be organically integrated and dynamically balanced, promoting the continuous improvement of the five-element educational system in continuous adaptation, forming a multi-element symbiotic educational domain with a three-dimensional circular progression and a virtuous cycle, continuously optimizing the internal structure and operation status of the national preparatory education logical ecosystem, and ultimately promoting the development of China's ethnic preparatory education system towards greater maturity, perfection, and high-quality development.

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