

# Supply-side Reform of Preschool Education Major Courses in the Era of Negative Population Growth: A Paradigm Shift from "Discipline-based" to "Competency-based"

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**Abstract:** The trend of negative population growth continues to solidify, driving a deep transformation in China's preschool education industry from "scale expansion" to "quality improvement." Integrated childcare and digitalization have become mainstream development directions, imposing higher demands on the comprehensive professional competencies of preschool education specialists. Currently, China's preschool education curricula remain centered on "disciplinary orientation," facing challenges such as disconnect from industry needs, insufficient practical focus, and content homogenization, making it difficult to meet contemporary requirements. This study employs literature review, questionnaire surveys, and interviews to analyze the current state and challenges of preschool education curricula in the era of negative population growth. It explores the connotation, necessity, internal logic, and supporting conditions for transitioning from "disciplinary orientation" to "competency orientation" in curriculum supply, proposing reform pathways across five dimensions: curriculum objectives, content, teaching, evaluation, and support. The research demonstrates that paradigm transformation in curriculum supply is an inevitable choice to address structural mismatches between talent supply and demand and to promote the connotative development of preschool education. It provides theoretical and practical references for related curriculum reforms.

**Keywords:** negative population growth; preschool education major; supply-side reform of curriculum

## 1. Introduction

Since China first experienced negative population growth in 2022, the trend of low fertility rates has continued to solidify, with the total fertility rate remaining below the replacement level for an extended period. The demographic transition has exerted profound and lasting impacts on the education sector. As the cornerstone of the national education system, preschool education directly serves the 3-6 age group and is highly correlated with population size changes. Against the backdrop of negative population growth, the preschool education industry is undergoing a deep transformation from "scale expansion" to "quality improvement." Integrated childcare and education, universal accessibility, and digitalization have become mainstream development trends, placing higher demands on the comprehensive professional competencies of preschool educators.

Currently, the curriculum system for preschool education in China's higher education institutions remains primarily oriented toward "subject-centered" principles, emphasizing the systematic and comprehensive nature of disciplinary knowledge[1]. However, it faces practical challenges such as a disconnect between course design and industry demands, insufficient practical teaching components, and severe content homogenization. These issues make it difficult to meet the growing need for interdisciplinary and applied preschool education professionals in an era of negative population growth, leading to increasingly pronounced structural mismatches between talent supply and industry demands.

The Outline Plan for Building an Education Power (2024–2035) and other relevant policies explicitly propose advancing the connotative development of preschool education majors, strengthening practical teaching and competency cultivation, thereby providing clear policy guidance for curriculum supply-side reform. Based on this, this paper, grounded in the demographic negative growth era, focuses on the core proposition of curriculum supply-side reform in preschool education majors, exploring the paradigm shift from "discipline-oriented" to "competency-oriented," reviewing relevant domestic and international

research findings, and employing methods such as literature review, questionnaire surveys, and interviews to analyze the current state and challenges of curriculum supply, clarifying the intrinsic logic and core direction of the transformation. The aim is to enrich the theoretical system of education supply-side reform under demographic negative growth, provide practical references for preschool education major curriculum reform, and contribute to the high-quality development of the industry.

## **2. The status quo and challenges of preschool education course supply under negative population growth**

### ***2.1 Core characteristics of curriculum supply for preschool education majors in the era of negative population growth***

Under the background of negative population growth, the supply of professional courses in preschool education in China still continues the traditional "subject based" orientation, showing distinct characteristics of solidification and homogenization. The curriculum is centered around the integrity of the subject knowledge system, with priority given to theoretical courses such as early childhood education and child developmental psychology[2]. These courses account for over 60% of the curriculum, and practical courses are often used as auxiliary links to theoretical courses, lacking independent curriculum support. The course content shows a clear tendency towards homogenization, with most university course modules converging and focusing on the systematic transmission of classic theories, while ignoring regional differences in early childhood education development and emerging needs such as integration and digitization of preschool and early childhood education. The teaching implementation is mainly based on classroom theoretical lectures, with limited application of intelligent teaching methods such as VR/AR, and practical training scenarios mostly limited to simulating kindergartens on campus, which is disconnected from the actual job scenarios in the industry. The evaluation system focuses on theoretical written tests as the core, emphasizing the assessment of knowledge memory. There is a lack of evaluation of students' practical ability and job adaptation ability, which makes it difficult to reflect the actual effect of talent cultivation.

### ***2.2 The real challenge of negative population growth on the supply of preschool education professional courses***

The decline in the total school-age population and structural adjustment caused by negative population growth pose multiple practical challenges to the supply of professional courses in preschool education. Firstly, there has been a profound transformation in the structure of talent demand, with the preschool education industry shifting from scale expansion to quality improvement. There has been a surge in demand for composite talents with the ability to integrate education, childcare, and digital applications. However, traditional courses are unable to cultivate talents that meet this demand, resulting in a disconnect between talent supply and industry demand. Secondly, the promotion of integrated childcare policies is accelerating, and 0-3 year old childcare services have become a key focus of industry development. However, the existing curriculum mostly focuses on 3-6 year old kindergarten education, lacking 0-3 year old childcare and care related content, and the scope of curriculum coverage does not match the direction of industry development. Thirdly, digital transformation is accelerating, and the application of AI technology in early childhood education is becoming increasingly widespread. However, existing courses lack relevant content such as intelligent device operation and digital ethics, and there are obvious shortcomings in cultivating students' digital application abilities. The fourth is the diversified structure of student sources. Under the background of expanding enrollment, students majoring in secondary vocational education and childcare have joined, and their learning needs tend to focus on skill improvement. Traditional standardized courses are difficult to meet the needs of hierarchical training.

### ***2.3 The inherent flaws of the "discipline based" curriculum paradigm***

The inherent flaw of the "discipline based" curriculum paradigm is the core root cause of the disconnect between curriculum supply and contemporary demand[3]. Firstly, there is a deviation in value orientation, overemphasizing the systematicity and completeness of subject knowledge, making knowledge transmission the core goal, neglecting the core characteristics of "practicality and applicability" in preschool education majors, and weakening the cultivation of students' professional abilities and qualities. Secondly, the curriculum structure is rigid, with strict barriers between disciplines.

The content of courses such as preschool education and child developmental psychology is repetitive and intersecting, lacking modular design that corresponds to job abilities, making it difficult to effectively transform knowledge into skills. Thirdly, there is a serious lack of practical orientation, with practical courses relying on theoretical courses and lacking an independent practical course system. The practical training content is disconnected from the actual job requirements in the industry, and the effectiveness of cultivating students' practical operation abilities is not good. Fourthly, there is a lack of curriculum adjustment mechanism, making it difficult to update course content in a timely manner according to industry changes and policy adjustments caused by negative population growth. The timeliness of courses is insufficient, making it difficult to adapt to the dynamic development needs of the preschool education industry.

### **3. Under the background of negative population growth, the supply-side transformation of preschool education professional courses: from disciplines to competency**

#### ***3.1 Core connotation of transformation***

Under the background of negative population growth, the transformation of the supply-side of preschool education courses from subject based to ability based is essentially a systematic reconstruction of the curriculum paradigm, with the core being the precise adaptation of talent cultivation to industry demand. Its core connotation is reflected in four dimensions: value orientation, realizing the transformation from "knowledge imparting" to "ability cultivation", abandoning the orientation of subject knowledge first, establishing a curriculum value orientation centered on professional abilities, and focusing on the comprehensive literacy and job skills necessary for preschool education practitioners; At the level of course objectives, we will transform from "mastering subject theories" to "possessing job competence", clarify that the curriculum is designed around the needs of industry positions, and highlight the cultivation of core competencies such as the integration of childcare and education, early childhood care, and digital applications; At the level of curriculum structure, breaking down traditional disciplinary barriers, constructing a curriculum system centered on competency modules, and achieving the organic integration of theoretical courses and practical courses, basic courses and characteristic courses; At the level of evaluation system, we will transform from "knowledge assessment" to "ability evaluation", establish a diversified and process based evaluation mechanism, highlight the comprehensive consideration of students' practical and innovative abilities, and demonstrate the practical characteristics of preschool education majors.

#### ***3.2 The necessity of transformation***

The transformation of curriculum supply-side is an inevitable choice to cope with negative population growth and promote high-quality development of preschool education majors. Firstly, to meet the needs of industry transformation, the negative population growth is driving the transformation of the preschool education industry from scale expansion to quality improvement. The integration of preschool and early childhood education and digitalization have become the mainstream of development. Traditional subject based courses are difficult to cultivate compound talents with diverse abilities. Transformation is the key to solving the structural contradiction between talent supply and industry demand; Secondly, to solve the dilemma of talent cultivation, the current preschool education major has problems such as curriculum and job disconnection, weak practical teaching, etc. The ability based transformation can effectively compensate for the shortcomings of the discipline based paradigm and enhance the employment competitiveness and job adaptability of graduates; Thirdly, to implement policy guidance requirements, the "Outline of the Plan for Building an Education Strong Country (2024-2035)" clearly proposes to strengthen the cultivation of practical abilities in preschool education majors. Curriculum transformation is a specific practice to implement policy requirements and promote the development of professional connotation; Fourthly, adapting to changes in the structure of student sources, under the background of expanding enrollment, diversified student sources, and ability based transformation can achieve hierarchical training, meeting the learning needs and career development positioning of different student sources.

#### ***3.3 Core logic of transformation***

The core logic of curriculum supply-side transformation revolves around four dimensions: demand orientation, capability progression, integrated development, and dynamic adaptation. The demand-

oriented logic is the starting point of transformation, with the demand for job capabilities in the preschool education industry in the era of negative population growth as the core, reverse designing the curriculum system to ensure accurate matching between curriculum supply and industry demand; The progressive logic of ability is the core path of transformation, constructing a progressive training system of "basic ability core ability expansion ability", realizing the gradual advancement from theoretical knowledge accumulation to practical ability improvement, and from single ability to comprehensive ability; The integration of development logic is a key method for transformation, promoting the deep integration of subject knowledge and job skills, theoretical teaching and practical teaching, traditional teaching and digital technology, and on campus training and industry practice, and enhancing the practicality of courses; The dynamic adaptation logic is the guarantee of transformation. This study establishes a dynamic course adjustment mechanism to timely update course content and structure in response to population changes, industrial development, and policy revisions, thereby ensuring the timeliness and adaptability of courses.

### ***3.4 Core supporting conditions for transformation***

The transformation of curriculum supply-side needs to rely on diverse supporting conditions to ensure orderly progress and effective implementation. Policy support is a prerequisite, and it is necessary to improve the relevant policies of curriculum reform in preschool education majors, clarify the ability based training objectives, refine the reform requirements, and provide policy guidance and institutional guarantees for transformation; Teacher support is the core, and it is necessary to strengthen the construction of a "dual teacher" teaching team. Through school enterprise cooperation, special training, and other methods, teachers' practical teaching abilities and industry frontline experience can be enhanced, and the transformation of teaching concepts and methods can be promoted; Practical support is crucial, and it is necessary to deepen cooperation between schools and enterprises, as well as between schools and localities. A diversified training platform that combines on campus simulation training with off campus practice should be established, intelligent training equipment should be introduced, and training scenarios should be expanded to provide students with immersive practical experiences; Resource support is the foundation, and it is necessary to integrate high-quality course resources, develop competency based textbooks and digital teaching resources, establish a resource sharing mechanism, provide material and resource guarantees for curriculum transformation, and ensure that the transformation takes root.

## **4. The path of supply-side reform of preschool education courses in the era of negative population growth**

### ***4.1 Establish a "competency based" curriculum objective system***

The reconstruction of the curriculum objective system is the primary prerequisite for reform, which needs to be based on the industry demand in the era of negative population growth and establish the core orientation of "capability based". Based on the job competency requirements of the preschool education industry, a three-level goal system of "basic ability+core ability+expansion ability" is constructed. The basic ability focuses on general literacy and professional foundation, while the core ability highlights core competencies such as the integration of education and care, preschool care, and digital applications. The expansion ability takes into account the extended needs of integrated education for special children and home school co education. Meanwhile, this study refines the hierarchical design of curriculum goals to accommodate the learning needs and career positioning of diverse students. By incorporating industrial standards including the Guidelines for Childcare Institutions into the goal system, it achieves precise alignment between curriculum objectives and occupational requirements, breaks the limitations of knowledge-oriented goal setting, and highlights the core value of competency cultivation.

### ***4.2 Refactoring the curriculum content system of "ability oriented"***

The optimization of course content is the core carrier of reform, which requires breaking down traditional disciplinary barriers and building a modular and diversified content system. This study optimizes course module configuration by integrating basic, core, and extended modules. Redundant theoretical content inconsistent with industrial demands is eliminated, while emerging content including integrated childcare, AI technology applications, and digital ethics is incorporated to enhance the practicality and timeliness of curriculum content. Furthermore, disciplinary knowledge integration is

promoted to realize organic linkage between preschool education, child developmental psychology and other related subjects, avoid repetitive and overlapping content, and strengthen the connection between theoretical knowledge and practical skills through embedding vocational practice content into curriculum teaching. In collaboration with industry experts and frontline practitioners, competency-based teaching materials with prominent practical attributes and industrial pertinence are developed to ensure that curriculum content keeps pace with industrial development.

#### ***4.3 Innovative "practice oriented" teaching implementation mode***

The innovation of teaching implementation mode is the key path to ability cultivation, and it is necessary to abandon the single theoretical teaching mode and build a practice oriented teaching system. Diversified teaching approaches including case teaching, scenario simulation, and project-based teaching are adopted. Combined with intelligent technologies such as VR/AR, immersive training scenarios are constructed to improve students' practical application capabilities. The practical teaching process is strengthened by increasing the proportion of practical courses. A three-level practical training system consisting of on-campus training, off-campus internship, and on-the-job practice is established to expand practical training scenarios covering family childcare and community early education, thereby resolving the disconnection between practical training and vocational posts. In addition, school-enterprise collaborative education is deepened. Training bases are jointly built with kindergartens and childcare institutions, and industry experts are invited to participate in curriculum teaching. These measures realize the seamless integration of campus training and industrial practice and facilitate the effective transformation of students' theoretical knowledge into practical competencies.

#### ***4.4 Establish a diversified evaluation system for "core competencies"***

The reform of the evaluation system is an important guarantee for ability cultivation. It is necessary to break the single mode of "knowledge assessment" and establish a diversified and procedural evaluation mechanism. This study diversifies evaluation subjects by establishing a multi-dimensional evaluation team composed of university instructors, industry experts, and frontline practitioners to guarantee the objectivity and professionalism of evaluation outcomes. In terms of evaluation content optimization, this study focuses on assessing students' practical operational capabilities, vocational adaptability, innovative competence, and professional ethics while reducing the assessment weight assigned to purely theoretical knowledge. Innovative evaluation methods are adopted, combining process evaluation with summative evaluation, quantitative evaluation with qualitative evaluation, and introducing AI intelligent evaluation systems to achieve scientific and data-driven evaluation. At the same time, feedback and application of evaluation results are strengthened, forming a closed-loop mechanism of "evaluation feedback improvement".

#### ***4.5 Improve the guarantee system of "dynamic adaptation"***

The improvement of the security system is an important support for the implementation of reforms, and it is necessary to establish a comprehensive and dynamic security mechanism. The teaching staff construction is strengthened by improving the training and introduction mechanism for dual-qualified teachers. Teachers are regularly organized to participate in professional training covering integrated childcare and digital technologies to enhance their practical teaching competencies. Resource investment is intensified to upgrade on-campus training facilities and introduce advanced intelligent teaching equipment. Meanwhile, a digital curriculum resource library is constructed to provide solid material support for curriculum reform. A dynamic curriculum adjustment mechanism is established to conduct regular investigations on industrial demands and policy changes. The establishment of a curriculum development alliance enables the timely optimization of curriculum content and structure. Furthermore, to guarantee the orderly advancement and effective implementation of curriculum reform, quality monitoring is strengthened via the formulation of a curriculum reform quality supervision mechanism, which supports the regular inspection of curriculum implementation and systematic evaluation of teaching effectiveness.

### **5. Conclusion**

This article is based on the background of negative population growth and focuses on the core proposition of the supply-side reform of preschool education courses. It systematically explores the

paradigm transformation logic and practical path from "subject based" to "ability based". By reviewing relevant literature, analyzing the current situation and difficulties of the industry, the following core conclusions are drawn. The negative population growth has triggered a deep transformation of the preschool education industry from scale expansion to quality improvement. The integration of childcare and digitization has become the mainstream of development. The traditional "subject based" curriculum system, due to its deviation from value orientation and insufficient practical orientation, is no longer suitable for the industry's talent demand and professional development positioning. The paradigm shift of curriculum supply-side has become an inevitable choice.

Research has shown that the transformation of the supply-side of preschool education professional courses from "subject based" to "ability based" is centered on the systematic reconstruction of value orientation, curriculum objectives, content system, teaching implementation, and evaluation methods. Its internal logic revolves around demand orientation, ability progression, integrated development, and dynamic adaptation, relying on the four core support conditions of policy, faculty, practice, and resources to ensure the effective implementation of the transformation. Based on this, this article constructs a targeted and operable reform path from five dimensions: course objectives, content, teaching, evaluation, and guarantee, providing practical guidance for solving the dilemma of talent supply being disconnected from industry demand.

The research inspiration of this article lies in the fact that in the era of negative population growth, the reform of preschool education curriculum needs to be based on industry demand, break down traditional disciplinary barriers, strengthen the orientation of ability cultivation, and promote the deep integration of industry and education; Universities, industries, and policy levels need to work together to form a joint force for education and support the development of professional connotation. Due to limitations in research scope and methods, the reform path constructed in this article still needs to be further validated and improved through empirical research. In the future, differentiated reform strategies can be focused on different regions and types of universities, combined with the deep application of digital technology, to continuously optimize the "competency based" curriculum system and provide more targeted theoretical and practical support for the high-quality development of preschool education majors.

### **Acknowledgement**

This work was supported by the project titled "Curriculum Reform and Innovation of the Preschool Education Major under the Background of a Sharp Decline in Birth Rate" (Project supported by the Education Department of Hainan Province, project number: Hnjg2024-236), and by the Institutional Research Project of Hainan Technology and Business College titled "A Preliminary Exploration of the Professional Cluster of Preschool Education in Higher Vocational Colleges: A Case Study of Hainan Technology and Business College" (project number: hngs2024-zd03).

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