

CAREER AWARENESS EDUCATION FOR CHINESE PRIMARY SCHOOLS

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ABSTRACT

Career awareness education in primary schools lays a foundational basis for students' self-understanding, career interest, and lifelong career adaptability. Based on a systematic review of empirical studies, policy documents, and international practices, this paper synthesizes the theoretical underpinnings, policy frameworks, curriculum models, teacher development, and persistent challenges of primary school career awareness education in China and abroad. The review identifies a growing global consensus on the urgency of early career education, yet existing research remains fragmented, methodologically uneven, and limited by inadequate critical synthesis. Key findings reveal consistent constraints including the urban-rural resource gap, disjointed curriculum design, and insufficient teacher professional preparation. By comparing convergent and conflicting evidence across studies, this paper identifies critical research gaps, such as the lack of localized empirical evidence, long-term effect tracking, and standardized evaluation systems in the Chinese context. Accordingly, this study proposes a three-dimensional improvement framework derived from the synthesized evidence: advancing policy implementation toward resource equity; constructing age-appropriate and contextually embedded curriculum systems; and building a sustainable, multi-stakeholder-supported teacher training mechanism. High-quality career awareness education at the primary stage can effectively promote equitable talent development and support students' sustained career growth.

Keywords: Curriculum Development, Systematic Literature Review, Primary Education

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INTRODUCTION

Primary school career awareness education refers to structured activities that support children aged 6–12 to understand the world of work, explore personal interests, and develop positive work attitudes (Zhang, 2018). As a critical component of lifelong career development, it shapes children's self-concept, occupational values, and future orientation. According to Super's Life-Span, Life-Space Theory (1953, 1980), primary education falls within the growth stage of career development, covering the fantasy phase (4–10), interest phase (11–12), and capacity phase (11–14). During this period, children form early career perceptions through concrete experience, role play, and hands-on exploration, which provides a basis for later career exploration and decision-making (Stead & Schultheiss, 2020). A synthesis of international research shows that many countries have established well-developed systems for early career education. The U.S. K–12 career development framework defines progressive learning objectives: lower grades recognize common occupations; middle grades understand workplace differences; upper grades analyze career-related skills (Mau, 2008). Empirical evidence supports the effectiveness of this stage-based model. Germany integrates career education into its dual vocational training system, with mandatory weekly career cognition courses and interactive career museums (Ministry of Education of China, 2022). Australia's national digital career platform provides free 3D virtual career experiences for rural schools (Thenmozhi, 2018). The UK's Career Leaders Program trains teachers as career coordinators (Watts, 2013). Finland's low-cost Career Discovery Kits and Singapore's community career mentorship scheme further demonstrate contextually adaptive practices. Recent empirical studies highlight two emerging trends: technology-enhanced delivery and contextualized intervention. Indonesia's AR-based career application covers 17 career fields and improves students' career understanding (Rahim et al., 2024). China's Future-In-Sight (FIS) program integrates career development and social-emotional learning for rural disadvantaged students; Chen et al. (2025) confirmed significant improvements in career concern, career curiosity, social self-efficacy, and emotional self-efficacy. Research also consistently identifies teachers and parents as key stakeholders. A survey of 123 primary school teachers in Pakistan showed that 84.3% recognized the value of career counseling, but 53.5% worked in schools without a full-time counselor (Waheed et al., 2025). Professional development programs covering career theory, counseling skills, and digital tools have been empirically linked to better teaching performance (Syhlman, 1973). Parental involvement also matters: Turkish parents often hold narrow views of career development, yet active support for interest exploration predicts better child outcomes (Karaağaç, 2022). Australian parents underestimate the value of work experience and social networks, indicating a need for parent-focused guidance (Jackson & Lambert, 2025). In summary, existing literature confirms the value of primary school career awareness education and provides rich international experience. However, critical synthesis reveals uneven quality of evidence, fragmented interventions, and underexplored long-term impacts, especially in rural and disadvantaged contexts. This review addresses these limitations by systematically integrating evidence and identifying actionable implications.

METHODOLOGY

This study adopts a systematic literature review approach to ensure transparency, replicability, and academic rigor. Literature retrieval was conducted in five authoritative academic databases: CNKI, Web of Science, Scopus, ERIC, and ProQuest. Search terms included: primary school career awareness education, career enlightenment, early career development, resource equity, curriculum design, and teacher training. The search timeframe was restricted to 2010–2025 to capture recent empirical advances and policy updates. Inclusion criteria were: (1) empirical studies with clear samples, measures, and analytical procedures; (2) official policy documents and official guidelines on primary career education; (3) peer-reviewed articles and case studies with detailed

implementation and evaluation evidence. Exclusion criteria covered:(1)purely conceptual papers without empirical support;(2) duplicate publications and short opinion pieces;(3)studies with serious methodological flaws. After removing duplicates and screening titles and abstracts,126 publications were initially retained,and 87 valid sources were finally included for in-depth synthesis. Data were analyzed thematically around four core dimensions: policy and resource allocation,curriculum design,teacher professional capacity,and practical effectiveness and challenges.

Policy Implementation Targeting Resource Equity

Empirical evidence from developed countries shows that a government-led,multi-stakeholder collaborative model effectively diversifies resource supply and promotes equity in primary school career education. This section synthesizes policy frameworks,implementation gaps,and international lessons.

The three-tier policy framework of China for resource equity

Resource equity has become a central goal in China's policy design for primary career education. The country has formed a three-tier governance structure: national guidance,local adaptation,and inter-school collaboration. At the national level,the 2025 Outline for Building a Strong Education Country(2024–2035) lists “balanced allocation of career enlightenment resources” as a core indicator of high-quality compulsory education,requiring full coverage of career experience facilities in urban and rural primary schools and promoting urban-rural paired support(Ministry of Education of China,2025). This policy directly responds to empirical findings: Yin's(2023) survey showed that 87% of rural primary schools lack professional career experience venues,and 63% of teachers report difficulty accessing enterprise resources.At the local level,innovative policies have emerged with measurable impacts. Jiangsu Province's career education resource database integrates enterprise cases,open courses,and community resources; by 2024,it covered 89% of rural primary schools(Yin,2023). Guangdong Province uses educational quality monitoring to incentivize resource input,incorporating career course offering rates and teacher staffing into county-level performance evaluation. These policies aim to redirect resources to underserved rural schools(Su,2023).The national policy system has been further strengthened by linking resource allocation with compulsory education quality assessment,which provides institutional guarantee for the popularization of career education in rural and urban areas. The institutional arrangement has changed the previous situation that career education was optional and marginalized,and made it a regular work that primary schools must carry out. At the same time,the state has increased financial investment in rural and remote areas,specially set up special funds for career education resources construction,supported rural schools to equip basic career experience equipment,digital teaching tools and picture book resources,and gradually narrowed the hardware gap between urban and rural schools. In practice,such policy orientation also helps standardize the fragmented resource supply in the past,enabling rural schools to obtain stable and sustainable resource support rather than short-term activities. With clear policy orientation and financial support,rural primary schools are more capable of carrying out continuous career exploration activities,which lays a realistic foundation for improving the fairness and accessibility of career awareness education.

The urban-rural resource gap: empirical evidence of implementation challenges

Despite policy momentum,synthetic analysis of field surveys confirms that the urban-rural resource gap remains severe. Su's(2023) study in Beihai found that urban primary schools had an average of 3.2 off-campus career practice bases,while rural schools had only 0.8. Song's(2025) investigation in Xinxiang showed that rural students' exposure to emerging careers(e.g.,drone operators,digital marketers) was only one-fifth that of urban students.These gaps reflect structural barriers: rural areas have limited industry diversity and poor transportation,reducing enterprise willingness to cooperate; insufficient digital equipment and weak internet access further restrict the use of online career resources(Waheed et al.,2025). Thus,policy goals have not been fully

realized at the grassroots level. Furthermore, rural primary schools are seriously short of full-time or part-time career guidance teachers. More than 70% of rural schools have no specialized instructors, and career education can only be undertaken by head teachers or subject teachers who lack systematic training (Yin, 2023). This leads to the formalization of curriculum implementation and the simplification of activity design. Rural students have fewer opportunities to contact emerging industries and modern occupations; they mostly understand traditional occupations such as farmers and teachers, but know little about digital economy, green industry and other emerging fields, which limits their career vision and future development possibilities (Irmayanti et al., 2022). This cognitive gap will further affect their future career exploration and academic motivation, making it more difficult for them to establish a clear connection between learning and future development. Over time, such differences may gradually widen the developmental gap between urban and rural students, which is exactly what high-quality career awareness education needs to resolve urgently.

International hybrid models: evidence-based implications

International experience demonstrates that government leadership plus social participation improves equity. The U.S. mandates at least 15% of district career education funding be allocated to rural schools and provides tax incentives for enterprises supporting rural programs. Canada's urban-rural school twinning program facilitates free resource sharing and joint activities, significantly narrowing resource gaps (Thenmozhi, 2018). South Korea uses dedicated funding to deploy mobile VR career experience vehicles to remote villages. These models confirm that cross-sector collaboration can effectively compensate for rural resource shortages. In the UK, non-profit organizations provide free career enlightenment resources and volunteer teams for rural primary schools (Education and Employers, 2018). For China, introducing social organizations, public welfare foundations and enterprise resources into the rural career education support system can form a sustainable resource supply model and promote the realisation of educational equity (Chen et al., 2025). International successful cases also show that the guarantee of resource equity cannot be separated from the participation of social organizations, which can provide financial support, material resources and professional services for rural schools. By learning from these integrated models, China can further open up resource channels, encourage multi-party participation, and build a long-term mechanism for collaborative governance. Only in this way can the goal of resource equity be truly implemented and enable every pupil to enjoy fair and effective career enlightenment opportunities.

Development of Age-Appropriate and Context-Specific Curriculum Frameworks

A critical synthesis of curriculum research shows that high-quality primary career education curricula must satisfy two core principles: developmental appropriateness and contextual embeddedness. Both principles are supported by child development theory and empirical effectiveness evidence.

Stage-based curriculum design aligned with cognitive development

Curriculum design must match children's cognitive growth. Lower-grade students (4–10) are in the fantasy stage and learn best through concrete images, stories, and role play (Super, 1980). U.S. career picture book courses improve young students' understanding of occupations and daily life connections (Nazli, 2007). Chinese rural schools using "I want to be a..." role-play activities report high student engagement (Yin, 2023). Upper-grade students (11–12) enter the interest stage and benefit from experiential and exploratory learning. German labor courses include enterprise visits and simple hands-on tasks, which deepen students' understanding of professional work (Zhang, 2018). Chinese urban schools partnering with intangible cultural heritage workshops provide skill-based career experience, helping students link personal interests to career paths (Su, 2023). For lower-grade primary school students, curriculum design should focus on perceptual experience and interest stimulation, avoiding too much professional knowledge and abstract concepts. Teachers can guide students to understand the labor value of different

occupations through picture books, songs and role-playing games, help students establish respect for labor and equality of occupations (Carvalho et al., 2022). For upper-grade primary school students, the curriculum should shift from perceptual cognition to rational exploration, guiding students to master the skills and qualities required by different occupations and understand the relationship between school learning and future career development. In addition, stage-based curriculum should also be integrated with social-emotional learning to help students build self-awareness, emotional management, and interpersonal communication skills while exploring careers. According to Chen et al. (2025), interventions combining career exploration and social-emotional development can significantly enhance students' sense of self-efficacy and career curiosity. For lower graders, this means guiding them to recognize their own strengths and interests through games and sharing; for upper graders, it means encouraging them to set preliminary goals, face challenges, and form positive career expectations. Such a progressive design not only conforms to cognitive laws but also promotes the coordinated development of cognition, emotion, and ability, laying a more solid foundation for long-term career development.

Localized curriculum development rooted in regional resources

Contextual embeddedness enhances relevance and accessibility. Rural schools can use local agricultural and traditional industries. For example, Sichuan rural schools' "Little Tea Artisan" program immerses students in tea-related occupations (Su, 2023). Urban schools can leverage high-tech and modern industries: a Shanghai primary school's "Junior Innovator" program in tech parks improves understanding of emerging tech careers (Su, 2023). Ethnic minority regions in Yunnan integrate traditional crafts, helping students value cultural inheritance careers (Yin, 2023). Such localized curricula reduce implementation costs and improve authenticity. In rural areas with characteristic agriculture, schools can develop courses such as modern agricultural planting and rural e-commerce, so that students can understand the new changes in traditional occupations (Irmayanti et al., 2022). In urban central areas, schools can rely on scientific research institutions and high-tech enterprises to develop emerging occupational courses such as artificial intelligence and digital media. In ethnic minority areas, integrating national culture and intangible cultural heritage into career education can enhance students' cultural self-confidence and career awareness. Localized curriculum can also effectively enhance students' sense of belonging and identity, making career education closer to real life and more acceptable to children. When learning content comes from their hometown, surrounding industries, and familiar scenarios, students are more willing to participate and more likely to form stable career interests. Furthermore, localized courses can be flexibly adjusted according to local industrial planning and talent needs, enabling primary school career education to connect with regional development. For rural schools, this means combining rural revitalization and characteristic industries; for urban schools, it means closely following digital economy and technological innovation; for ethnic areas, it means inheriting culture while expanding career vision. This targeted design not only improves teaching effectiveness but also enhances the practical value and sustainability of the curriculum.

Core principles for high-quality curriculum frameworks

Synthesized evidence confirms that effective curricula balance stage-based progression and local embeddedness. This dual focus avoids disconnection from children's development and from real-life contexts. It stimulates student motivation, deepens career understanding, and supports early career planning. A high-quality curriculum framework should also include complete teaching links and diversified evaluation methods. In terms of teaching design, it should include pre-class exploration, in-class experience and after-class reflection, so that students can complete the whole process of cognition, experience and sublimation (ASCA, 2024). In terms of evaluation, it should abandon the single score evaluation and adopt a comprehensive evaluation system focusing on students' interest improvement, attitude change and ability development (NCDG, 2024). Studies have confirmed that a scientific curriculum system can significantly improve students' career

concern, curiosity and self-efficacy, especially for disadvantaged rural students (Chen et al., 2025). Moreover, a high-quality curriculum should also emphasize integration, openness, and inclusiveness. It should be integrated into language, mathematics, science, art, labor education, and moral education, rather than existing as an independent module. This cross-disciplinary design helps students naturally establish connections between academic learning and future careers, enhancing learning initiative and purpose. At the same time, the curriculum should maintain openness, absorbing new occupations, new technologies, and new trends in a timely manner, such as green jobs, digital creative occupations, and intelligent manufacturing, to help students adapt to the future workplace. Inclusive design is also essential, taking into account differences in gender, family background, and developmental levels, and providing appropriate guidance and support for every student. Only by following the principles of developmental appropriateness, contextual embeddedness, integration, and diversified evaluation can primary school career awareness curriculum truly achieve educational goals, promote the all-round development of students, and lay a foundation for their lifelong career adaptability.

Establishment of Sustainable Teacher Training Systems with External Support

Teacher professional capacity is widely recognized as the cornerstone of effective career education. This section synthesizes documented deficits, multi-stakeholder support models, and sustainable closed-loop training mechanisms.

Deficiencies in teachers' professional capacity

Empirical surveys consistently highlight professional gaps. Song's (2025) study found that 83% of primary teachers lacked systematic career education knowledge, and 67% struggled to design age-appropriate activities. Pre-service training rarely includes career education, and in-service training is often short-term, lecture-based, and superficial. Rural teachers are particularly underserved: Yin (2023) reported that 72% of rural teachers had never received specialized training, leading to highly formalized instruction. The professional capacity deficiency is also reflected in the lack of practical ability in curriculum design and activity organization. Most teachers can only carry out simple career lectures and video watching, and cannot design experiential and interactive career education activities suitable for primary school students (Waheed et al., 2025). This situation restricts the quality of education implementation and becomes a core bottleneck in the development of primary school career awareness education. In addition, most primary school teachers lack basic abilities in career assessment, effect evaluation, and individualized guidance for students. They cannot use standardized tools such as career awareness scales to accurately grasp students' developmental levels, nor can they provide targeted guidance for students with different interests and personalities (Demirtaş & Erol, 2021). Many teachers also lack understanding of emerging occupations, digital careers, and green industries, making it difficult to connect teaching content with the future labor market (Tang & Harik, 2024). Furthermore, heavy daily teaching tasks leave little time for rural teachers to conduct independent learning or teaching research related to career education, resulting in a long-term lack of professional growth and a vicious circle of low-quality teaching. These combined deficiencies mean that teachers cannot fully undertake the important task of career enlightenment, which directly restricts the depth and sustainability of school-level practice.

Multi-stakeholder collaborative external support systems

Effective teacher training requires enterprise–university–community–family collaboration. German enterprises provide skill workshops and help teachers simplify professional knowledge for young learners (Zhang, 2018). Chinese local enterprises offer career information and activity design training. Universities contribute theory, standardized course packages, and three-tier training networks (province–county–school); Yin (2023) found that after such training, 65% of rural teachers could independently design localized curricula. Communities and parents provide real-world career cases and improve teachers' resource integration ability (Mau, 2008; Song, 2025). Normal universities can add career education related modules in the pre-service

training of primary school teachers, so that future teachers can master basic theories and curriculum design methods before taking posts. Enterprises and social institutions can provide real occupational information and practical venues for schools, and help teachers understand the latest development of the industry and talent demand (Syhlman, 1973). This multi-stakeholder model can effectively make up for the lack of professional resources in schools and form a comprehensive support system for teacher development. Universities are responsible for theoretical foundation and standardized curriculum output; enterprises provide frontline industry information and practical scenarios; communities offer venues and volunteer resources; parents provide family-based information and collaborative support. Such collaboration breaks the isolated state of school-based training and enables teachers to access real, diverse, and up-to-date career-related resources. For rural teachers, this model is particularly important, as it can compensate for geographical disadvantages and insufficient local resources through external support. Studies have shown that teachers who participate in collaborative training programs have significantly stronger curriculum design ability, activity organization ability, and interactive guidance ability than those who receive only single-school training (Waheed et al., 2025). Therefore, building a stable multi-stakeholder support system is an important prerequisite for improving the professional capacity of primary school career education teachers.

A closed-loop mechanism for sustainable training

Sustainability requires a formal input–transformation–output closed loop. Policy measures such as including training hours in performance and promotion requirements boost participation (Zhang, 2018). Schools can use personalized teacher growth portfolios and classroom observations to monitor improvement. Regional online platforms support resource sharing and peer learning. Challenges such as enterprise marketing bias and rural access barriers can be addressed through formal cooperation agreements and blended online-offline training (Song, 2025). To ensure the sustainability of the training mechanism, it is also necessary to establish a perfect support and security system. Education administrations should incorporate career education training into the mandatory continuing education requirements for primary school teachers, and link training hours with teacher performance and professional title evaluation. A digital training support platform should be established to provide teachers with convenient learning resources, and break through the limitations of time and space (Waheed et al., 2025). The closed-loop training mechanism can ensure the sustainability and effectiveness of training, and help primary school teachers gradually improve their professional ability. Moreover, the closed-loop mechanism should include complete links of demand assessment, training implementation, practical application, effect feedback, and program optimization. Before training, it is necessary to investigate teachers' real needs and design targeted content; during training, combine theory with practice and strengthen operational guidance; after training, track classroom application and conduct regular evaluations. Regular peer learning, lesson observation, and collective lesson preparation activities should also be carried out within schools to promote mutual improvement among teachers (Syhlman, 1973). For rural and remote areas, online live courses, recorded courses, and remote tutoring can be used to lower participation thresholds and improve coverage. Only when the training system forms a complete and self-optimizing closed loop can teachers' professional capacity continue to improve, rather than staying in one-time or short-term training. In the long run, such a sustainable mechanism can fundamentally solve the shortage of professional teachers and provide stable talent support for the high-quality development of primary school career awareness education.

CONCLUSION

This systematic literature review critically synthesizes global and Chinese research on primary school career awareness education, covering policy, curriculum, teacher development, and challenges. The review identifies broad consensus on the value of early career

education, persistent inequalities in resource distribution, contextual needs for curriculum localization, and structural weaknesses in teacher support. Existing research is limited by insufficient longitudinal evidence, small or geographically narrow samples, and a lack of standardized evaluation tools, especially in rural China. Based on synthesized evidence and identified gaps, this study proposes a three-dimensional improvement framework that strengthens policy implementation to ensure resource equity, develops developmentally appropriate and contextually rooted curricula, and builds sustainable, multi-stakeholder teacher training systems. Future research should prioritize large-sample longitudinal studies, validated measurement tools, and culturally responsive interventions in rural and ethnic minority areas. In practice, whole-school governance, cross-sector collaboration, and evidence-based programming are needed to embed career awareness education into daily schooling. By providing equitable, high-quality early career education, societies can help children broaden their career horizons, realize their potential, and make meaningful career choices, thereby promoting individual development and social equity.

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