Practical Research on Future Community Construction in the Digital Era: A Case Study of Education Scenarios

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Abstract: The community is the basic carrier that carries the people's yearning for a better life, and the future community development level is one of the important symbols of the development level of urban modernization. Focusing on the dimensions of humanism, ecology and digital value, the research will discuss the construction of future community education scenarios from the integrated system of coupling and linkage scene organisms, and propose an effective implementation path for the construction of future community education scenarios.

Keywords: Future community; Education scenario; Digitalization; Learning

China's education policy aims to "run an education that satisfies the people" and "accelerate the construction of a high-quality education system." The "14th Five-Year Plan" designates Zhejiang as a model for high-quality development and common prosperity. Future communities and villages play a crucial role in this modernization through digital and cultural empowerment, focusing on urban-rural integration. In 2019, Zhejiang introduced the future community concept, emphasizing a human-oriented, ecological, and digital approach to enhance quality of life. These communities aim to integrate neighborhoods, education, health, entrepreneurship, and transportation. The Ningbo Education Modernization 2035 Action Plan promotes lifelong learning and integrated learning systems, emphasizing continuing education and learning communities. In the digital era, constructing future community education scenarios is essential for improving lifelong education systems and providing ubiquitous learning opportunities.

Communities are fundamental to urban development, serving as the "cells" of common prosperity zones. The "Implementation Plan for High-Quality Development and Construction of Common Prosperity Demonstration Zone in Zhejiang (2021-2025)" emphasizes modern community building, child-friendly societies, and improved lifelong vocational skills training, setting higher standards for educational environments in future communities.

1. Research Definition and Theoretical Basis

Community education is central to lifelong learning systems, aiming to build a learning society by integrating daily practices and information channels to create cross-age learning opportunities. This aligns with the 14th Five-Year Plan for Education in Zhejiang Province, which targets a high-quality, comprehensive education system by 2025. Learning-centered communities are seen as essential for future education scenarios.

1.1 The Concept of Building a Learning Community Abroad

Hutchins emphasized that a learning society integrates diverse forces to provide adults with learning opportunities, fostering self-actualization and societal value exchange. Edgar Faure argued that community learning is fundamental to lifelong learning. Books and Moore highlighted that learning communities provide continuous and diverse learning opportunities, essential for their success. The

European Lifelong Learning Programme (1995) defined a learning community as one that uses laws and policies to facilitate learning, aiming to discover residents' potential and promote an active, culturally rich community.

1.2 The Concept of Building a Learning Community in China

Li Yixian described learning communities as shared spaces for close interaction and emotional exchange among residents. Ye Zhonghai emphasized the importance of learning communities in establishing a lifelong education system to meet residents' learning needs and promote communal progress. Huang Yunlong viewed learning communities as spaces fostering shared values and continuous learning, essential for synergistic community and resident growth. Modern communities thus become natural stages for educational activities, reflecting the evolution driven by the knowledge economy and urbanization.

1.3 Research Related to Digital Community Education

Community education embodies democratized and lifelong learning, requiring a deep understanding of residents' needs to establish effective digital education environments. Studies, such as those by Shen Jianyi and Yue Lina, revealed diverse learning needs among residents in terms of content, format, duration, and application. Resource construction is the first step, with research focusing on problems and solutions, models, and platforms. Issues identified include construction concepts, resource quality, sharing mechanisms, resident participation, and talent teams. Pang Aqian et al. suggested improvements in these areas, while Yang Yajie highlighted mismatches between digital learning resources and resident needs, regional imbalances, and service group discrepancies.

2. Research status and analysis

2.1 The digital construction of Ningbo's future community education scene

Following the Provincial Department of Education's "Implementation Opinions on High-quality Creation of Future Community Education Scenarios" and "Zhejiang Province Digital Society Future Education Key Scene Pilot Construction Unit," Ningbo has established several key pilot units for digital society future education. Through thorough theoretical discussions, practical investigations, and expert exchanges, three representative digital community education models in Ningbo were selected.

District-Level Coordination and Service Management. Ningbo has developed over 80 diverse "community schools" and more than 30 lifelong learning brands, including "tutor studios" and "neighborhood learning circles." These initiatives are integrated into a district-level comprehensive service management application system to promote future community education scenarios. The district aims to integrate community life with learning, offering 136 distinctive community education courses and completing over 500,000 social training sessions annually. This system supports 26 tutor studios, 357 community talents and folk artists, and 2640 regular volunteers. Common Prosperity Village Model:Leveraging school resources and unique environments, Ningbo has established a future community education scene featuring "one place, two halls, two books, two schools, and multiple points." This includes a national research base, community libraries, shared study rooms, and smart bookcases. The "everyone as a teacher" online learning platform meets educational resource needs. Since 2020, courses on traditional Chinese medicine, health, and nutrition have been offered, enhancing rural tourism and student social practice abilities. Tengtou Village integrates Chinese culture and smart farm education into its practice base. Third-Party Operating Company Model: Some community education scenarios rely on third-party operating companies. This model facilitates nationwide cooperation between communities and enterprises but faces challenges such as insufficient depth in construction concepts, data integration issues, and an overemphasis on digital methods over content. This approach sometimes neglects specific community needs and localization.

2.2 Analysis of the demand for digital construction of future community education scenarios in Ningbo

2.2.1 Need for Concept Innovation

Future community education scenarios require updating digital understanding and transforming traditional cognitive models. Differences in resource and platform integration highlight the need for evolving digital concepts, impacting traditional thinking and habits. The digital construction process involves transitioning from offline to online, applying tools for efficiency, reshaping data-driven models, and systematically reconstructing digital frameworks. Comprehensive and systematic thinking, along with convenient learning modes, are essential for building effective future community education.

2.2.2 Top-level design requirements

Future community education scenarios necessitate top-level design for resource integration and sharing. This involves strategic planning with clear goals, paths, and resource guarantees at provincial, municipal, and district levels. Sustained institutional and policy support, along with resource alignment, ensures goal achievement. Coordination and optimization across multiple departments are crucial for shared governance of social, human, and community resources. Addressing the lack of dynamic resources, including

professional strength and teaching staff, and meeting both existing and emerging resident needs, is essential for effective supply and demand matching.

2.2.3 Operational Mechanism Requirements

Community education lacks a sustainable operational guarantee mechanism. Without continuous support, community volunteers and learners struggle to become resource builders. Sustainable development and a robust operational model are essential, involving the participation of social institutions. The educational needs of urban and rural communities differ; for instance, Tengtou Village focuses on elderly education, while Hefeng Community caters to young and middle-aged white-collar workers, emphasizing life literacy over vocational skills.Key demands in community education include: Digital Concept Transformation: Adapting to digital platforms requires different resources and platform docking demands, alongside overcoming human factors and traditional habits. Resource Integration and Sharing: Coordination and optimization of community and surrounding resources by multiple departments are necessary for shared governance. Professional Strength and Teaching Staff: There is a dynamic increase in residents' needs, leading to a significant shortage of teachers to meet both existing and new demands. Operational Guarantee Mechanisms: Without a long-term guarantee mechanism, community volunteers and learners cannot sustain development through public welfare or non-profit operations. Social institutions must be integrated into the operational guarantee of future community education scenarios.

3. The strategic path for the digital construction of future community education scenarios

3.1 Strengthen top-level overall planning and design

3.1.1 Enhancing Lifelong Education to Empower Future Community Development

A robust lifelong education system supports the development of future community education scenarios. The four-tier system—comprising community colleges (open universities), county-level community colleges, township community schools, and village learning points—integrates education deeply into community construction. This approach extends educational resources and faculty into the community, forming a comprehensive education network. Through initiatives like the Ministry of Education's "Capable as Teachers" and lifelong education activity weeks, community talent is cultivated, and teacher quality is enhanced. This fosters the development of quality courses and lifelong learning projects, solidifying the practical outcomes of community education. Promoting the "Yongxuetong" system supports various lifelong learning applications, such as vocational skills training and quality of life improvements. The system also facilitates the visualization and recognition of residents' learning achievements, leveraging the role of credit banks.

3.1.2 Resource integration for the digital construction of future community education scenarios

(1) Strengthen Top-Level Design and Optimize Resource Integration

Integrate data on community students, teachers, and learning dynamics to create a data hub for Ningbo's community education. This hub will provide essential information for decision-makers and optimize physical hardware. By aggregating student, teacher, and learning data, we can build Ningbo's community education brain, accurately presenting real-time education scenarios. This supports decision-making with credit registration, course and student analysis, volunteer statistics, and teacher feedback, while optimizing hardware configuration. Establish a dynamic database of students, teachers, and schools, creating a municipal "digital cockpit" with comprehensive command, dynamic display, and application functions. Develop an evaluation system for students, teachers, and schools, forming "QR codes" and "digital portraits" for value-added assessment. Plan and implement network information security alongside the "digital brain" to ensure data resource security throughout the lifecycle.

(2) Construct a Comprehensive Digital Learning Method

Leverage big data to meet various learning needs of community learners by optimizing curriculum resources and improving lifelong learning informatization. Facilitate high-quality resource sharing and information exchange for lifelong learning services. Integrate community learning resources through a lifelong learning network and smart education platform, optimizing the digital resource library. Establish learning communities on the platform, enabling resource sharing, interaction, and activity. Develop a credit certification system with digital learning archives for residents, and implement "course exchange and credit mutual recognition" with educational institutions. Gradually establish a comprehensive digital learning certification system.

3.2 Improve the operational mechanism of the digital platform

Integrate the existing digital platform resources to effectively connect, break down information barriers, and form an efficient digital platform operation mechanism. Through the integration of various learning resources, we provide all-round and diversified

learning opportunities, provide convenient learning paths for citizens, and provide personalized services and recommendations to meet the needs of citizens in learning and life. Through the recognition and accumulation of learning results, the exchange and mutual recognition of credits are realized, and the co-construction and sharing of resources on various platforms are promoted.

3.2.1 Integration and Operation of the City's Lifelong Learning Platform

The city's lifelong learning platform is designed to meet citizens' lifelong learning needs by integrating courses, materials, and tools, offering convenient learning resources. Establishing uniform platform standards ensures seamless resource integration and consistent learning experiences. Collaboration with educational institutions and resource providers promotes resource sharing and avoids redundancy. Strengthening publicity increases public awareness and usage, ensuring broad support and effective platform operation.

3.2.2 Integration of Learning Platform and Community Smart Life Platform

Integrating the learning platform with the community smart life platform merges educational resources with community services, enhancing both education and daily living for residents. This integration enables the sharing of courses, teaching materials, and exercises from the learning platform, accessible via the smart life platform, thereby improving residents' knowledge and learning levels. Additionally, residents can share their learning outcomes, providing mutual support.This docking also offers convenient life services, such as community announcements, property management, and activity information, through the learning platform. Residents can register for and participate in community events online, fostering greater community engagement. Furthermore, the platform provides knowledge on topics like family health and environmental protection, improving residents' life skills and quality of life.

3.3 Educational support mechanisms embedded in digital applications

3.3.1 Informatization of education mode

In the wave of digitalization, the transformation of the education model is crucial. With the use of advanced digital tools, such as online teaching platforms and multi-functional educational software, the way education is delivered has been greatly enriched and expanded. Remote teaching and real-time interactive Q&A are possible, which greatly improves the flexibility and interactivity of teaching. The introduction of data analysis technology has made the tracking and evaluation of learning effects more accurate, allowing educators to customize personalized guidance plans according to learners' progress, so as to achieve the optimal allocation of educational resources.

3.3.2 Personalization of educational content

The deep integration of digital technology enables educational content to appear in a personalized way like never before. Based on the needs and interests of learners, educational institutions are able to provide tailor-made learning materials and curriculum design. Learners are able to navigate the e-learning platform autonomously and choose the appropriate learning materials according to their individual learning pace and ability. This personalized learning experience not only better meets the individual needs of learners, but also plays an important role in improving learning motivation and effectiveness.

3.3.3 Sharing of educational means

Digital technology has made the sharing of educational resources more convenient and efficient. Educational materials can be digitally stored, disseminated, and updated, and collaboration and resource sharing among teachers can become ubiquitous. Through the interconnection of online platforms, high-quality teaching content and innovative pedagogies have been widely disseminated, which has promoted the overall improvement of education quality. At the same time, learners can also access a wide range of learning resources through these platforms, fully broaden their learning horizons and deepen their knowledge understanding, and shared education methods bring infinite possibilities to learning.

4. Conclusion

In the digital age, education transformation is vital for urban modernization. Future community education should foster holistic human development, ecological harmony, and digital innovation. By integrating humanistic care, ecological wisdom, and digital technology, community education can meet residents' needs and promote sustainable development. An integrated system will offer diverse, personalized educational services, embedding education into all aspects of community life. This paper outlines a strategic implementation path to ensure residents access high-quality educational resources, enhancing both the education system and overall community quality of life. Prioritizing humanism, ecology, and digitalization is essential for advancing urban modernization and meeting residents' aspirations.

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