

# Research on Enrollment Difficulties and Breakthrough Paths of Open Education from the Perspective of Learning City: Based on the Practical Exploration of Ningbo Open University

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**Abstract:** With the accelerating iteration of knowledge, lifelong learning has been integrated into the daily rhythm of urban development. Since Ningbo included “Learning City” in its planning, adult education has become a cornerstone rather than a supplement. As part of Ningbo’s higher education system, Ningbo Open University has undertaken a large number of “cornerstone” projects in promoting adult education and lifelong learning. However, Ningbo Open University is also facing enrollment difficulties in the process of learning city construction. The investigation shows that the enrollment dilemmas of Ningbo Open University are mainly reflected in the disconnection between market demand and enrollment supply, insufficient publicity, mismatched curriculum provision with social needs, and low social recognition. In response to these problems, this paper puts forward a series of strategies such as strengthening social publicity, optimizing curriculum provision, building school-enterprise cooperation platforms, and expanding enrollment channels, so as to provide effective solutions to Ningbo Open University’s enrollment difficulties.

**Keywords:** Learning city; Open education; Enrollment dilemma; Solution strategies

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## 1. Introduction

As an important strategy to promote national lifelong learning and urban sustainable development, learning city construction has become a key direction of China’s education reform. In this process, the Open University system shoulders the core mission of providing flexible and inclusive education services, and the effectiveness of its enrollment work is directly related to the breadth and depth of learning city construction. However, open education is currently facing significant enrollment pressure with common dilemmas: on the one hand, there are deviations in social cognition, the student source structure tends to be solidified, and the effectiveness of traditional enrollment models has declined, which has been confirmed in Qu Shimeng’s research on Beijing

open education <sup>[1]</sup>. On the other hand, grass-roots education institutions are faced with practical challenges such as limited publicity channels and insufficient connection with regional needs in enrollment, as pointed out by Zhang Wei et al. <sup>[2]</sup>. In addition, Bai Xue et al. further revealed the systematic influence mechanism of complex external factors such as economic environment, policy adjustment and technological change on enrollment scale <sup>[3]</sup>. These studies show that breaking through the enrollment bottleneck requires systematic path innovation beyond partial adjustment.

As a pioneering area of learning city construction, Ningbo Open University has carried out a series of forward-looking practical explorations in responding to the above common dilemmas, forming characteristic experiences based on the region and radiating to the surrounding areas. Therefore, taking it as a case for analysis can provide an operable reference paradigm and theoretical enlightenment for similar institutions to solve enrollment problems and achieve transformation development in serving learning city construction.

## **2. Theoretical basis of learning city construction and open education**

A learning city takes the systematic promotion of citizens' lifelong education as the core, commits to improving the comprehensive quality of all people, and drives the city towards sustainable development <sup>[4]</sup>. Its core feature is to take citizens' lifelong education as a main line running through all stages of life: early childhood with game enlightenment, the elderly with silver-aged classes, with no barriers of age, household registration or occupation. In terms of implementation mechanism, it emphasizes the collaboration of multiple subjects such as the government, enterprises, universities and community organizations. The government sets the direction, enterprises turn workshops into training bases, universities move classes online, and communities turn activity rooms into night schools, forming a "learning map" accessible to everyone.

Supported by technology, digital platforms integrate books, lectures, MOOCs and experimental equipment into a network to build an open and convenient ubiquitous learning environment. In addition, learning cities focus on cultivating an innovative culture of exploration and trial and error, supporting innovation and cross-border cooperation to realize continuous urban upgrading through knowledge renewal. The concept of learning city sprouted in Europe at the end of the 20th century, when European countries took the lead in practice to cope with the challenges of the knowledge economy and enhance urban competitiveness. With the development of globalization, the concept of learning city construction has spread rapidly and has become an important strategic choice for global cities to enhance soft power and cope with social changes.

### **2.1. Concept and development of open education**

Open education breaks the limitations of traditional education in time, space and objects, allowing social members of different ages, occupations, regions and educational backgrounds to access educational resources in the most convenient way <sup>[5]</sup>. Guided by lifelong learning, it regards education as a continuous process throughout an individual's life, meeting people's needs for self-improvement and social adaptation at different life stages. It emphasizes universality to eliminate educational barriers, making education no longer a privilege of a few; inclusivity is reflected in respecting the diversity of learners, whether professionals eager to improve skills or retirees hoping to enrich life can find a suitable learning path in the open education system.

As an important practice carrier of open education, the Open University plays a key role. Relying on Internet technology, it integrates online and offline teaching resources and offers a wide range of courses from vocational skills training to humanistic quality improvement to meet the differentiated learning needs of

various groups. Through the teaching mode combining online live courses, offline face-to-face teaching and remote independent learning, it creates flexible and convenient learning opportunities for adults and various social groups, truly realizing universal education coverage.

## **2.2. Role of open education in learning city construction**

In the process of learning city construction, open education acts as a key engine, undertaking diverse and far-reaching social functions <sup>[6]</sup>. For individual citizens, open education breaks the restrictions of age, occupation and region, providing rich curriculum resources for people eager to improve themselves. Whether professionals are improving professional skills or retirees are cultivating hobbies, open education can update knowledge and improve quality through open education. In promoting social equity, open education breaks the distribution barriers of traditional educational resources.

Through online course sharing and community education services, educational resources cover every corner of the city, enabling disadvantaged groups to enjoy equal learning opportunities and narrowing the educational gap caused by economic and regional differences. From the perspective of urban development, open education injects strong impetus into economic transformation and upgrading. Through customized vocational training in cooperation with enterprises, it cultivates high-quality talents meeting industrial needs, providing intellectual support for scientific and technological innovation and industrial optimization. With the popularization of open education and the increasing learning atmosphere, the overall innovative vitality of the city is stimulated. The integration of knowledge, technology and creativity will continuously enhance the city's core competitiveness in the global competition pattern and promote the construction of a learning city to a higher level.

## **3. Analysis of enrollment status of Ningbo Open University**

### **3.1. Enrollment status**

In the past three years, Ningbo Open University has been under continuous pressure in enrollment. Although the university has made progress in curriculum construction, faculty improvement and service quality, the enrollment scale and social influence have not reached the expected level. Although the majority of students are still aged 19–39, the proportion of this group dropped by nearly 4 percentage points in 2025. The decline of young students reflects the structural pressure and challenges faced by the university in continuously attracting and stabilizing young students.

The direct reason for this status comes from the diversion effect of higher education popularization and market-oriented online education platforms, while the root cause lies in the university itself: slow professional renewal, low certificate value, weak brand influence, and publicity still staying on “academic compensation”, failing to meet the “short, frequent and fast” career promotion needs of young people. Enrollment mainly relies on county-level colleges and the old-student-referral mode, lacking digital delivery and short-video communication, so that educational advantages cannot be effectively promoted, and social cognition remains on the old label of “Radio and TV University”. Only by developing a project-based curriculum system in line with young people and rebuilding the brand positioning of “career accelerator” can the downward trend of enrollment be reversed.

## **3.2. Specific manifestations of enrollment dilemmas**

### **3.2.1. Disconnection between market demand and enrollment supply**

Ningbo Open University's long-term enrollment supply model, oriented to the traditional adult education market, is facing a significant structural mismatch with the current diversified social education needs. Its traditional strategy relying on offline channels and existing community networks, although effectively serving groups such as on-the-job promotion and post-transfer re-employment, has shown limitations in the background of emerging technology-driven and rapid iteration of market demand. On the one hand, new formats represented by short-video platforms and vertical online education institutions have quickly attracted a large number of young learners with flexible learning forms and precise content promotion; on the other hand, the learning needs of potential students with higher educational backgrounds have shifted to advanced directions such as professional master's degrees and international certifications, while open education is still highly associated with basic academic compensation in public cognition, further increasing the difficulty of student source structure optimization.

This disconnection reflects the systematic problems of the university in curriculum content update, teaching model innovation and digital enrollment services. On the supply side, the synchronization mechanism between the curriculum system and emerging industrial skill needs is not agile, and teaching methods still focus on one-way imparting, which is difficult to meet the comprehensive expectations of young learners for interactivity, practicality and social attributes; meanwhile, courses for highly educated people have not formed differentiated competitiveness in academic depth and international connection. The imbalance between supply and demand has become a deep crux restricting the sustainable growth of enrollment and the optimization of student source structure.

### **3.2.2. Insufficient brand publicity**

Insufficient brand publicity of Ningbo Open University has become a significant bottleneck restricting the improvement of social cognition and enrollment promotion. In the environment of increasingly fragmented information transmission and diversified channels, the university's core educational philosophy of "openness, flexibility and lifelong learning" has not been effectively communicated to the public, resulting in some people still classifying it as a traditional adult education institution and lacking a full understanding of its differentiated advantages in the curriculum system, teaching mode and faculty construction.

In specific communication practices, the university's publicity still relies on traditional methods such as offline posters and enterprise presentations, with relatively lagging digital communication capacity building. The operational activity of social media platforms is insufficient, and the application of emerging media forms such as short videos and live broadcasts is limited, resulting in narrow overall communication coverage and difficulty in effectively reaching young groups and high-potential students. At the same time, although the university has established a multi-type curriculum system covering vocational skills and academic continuing education, due to the lack of systematic and normalized curriculum promotion and enrollment policy interpretation mechanism, there is an obvious information asymmetry between a large number of high-quality curriculum resources and the actual learning needs of citizens, and many potential students give up enrollment because they cannot clearly understand key information such as curriculum setting, learning methods and graduation requirements. The mismatch between brand communication effectiveness and the development trend of the contemporary education market has further weakened its attractiveness in the competitive environment.

### **3.2.3. Mismatched curriculum provision with social needs**

Although Ningbo Open University's curriculum system covers many disciplines, it still fails to keep pace with the rapidly changing market demand. With the rise of emerging industries such as the digital economy and artificial intelligence, the social demand for applied and interdisciplinary talents has increased significantly, but some university courses have not kept up with the frontier trend of industrial development. For example, in popular fields such as artificial intelligence and new energy technology, teaching still stays at the level of concept explanation and classic models, lacking training scenarios connecting real product processes, making it difficult for students to form transferable engineering capabilities.

More importantly, the knowledge update mechanism is absent: the revision cycle of traditional syllabi is generally three to five years, textbook iteration depends on teachers' personal willingness, and there is no institutionalized dynamic evaluation channel. Taking computer majors as an example, the curriculum covers only a limited set of key technologies widely used in the current industry, such as machine learning and blockchain, resulting in a gap between students' knowledge and post-requirements. In addition, school-enterprise cooperation remains at the level of internships and lectures, modular courses for post competence have not been developed together, and enterprise engineers have not substantially participated in the training program design, resulting in a persistent mismatch between talent specifications and re-employment requirements. This not only affects students' employment competitiveness but also weakens the university's attractiveness in the enrollment market to a certain extent.

### **3.2.4. Low social recognition and insufficient self-attractiveness**

In Ningbo Open University's enrollment dilemma, low social recognition and insufficient self-attractiveness form dual constraints. For a long time, influenced by traditional educational concepts, some social groups simply equate the Open University with "academic quick institution", mistakenly believing that its teaching quality is inferior to ordinary colleges and universities, and thus doubt the value of graduation diplomas. This cognitive misunderstanding makes many students eager to improve their academic qualifications, especially those with academic needs in career promotion and professional title evaluation, more inclined to choose continuing education programs of traditional colleges and universities despite the limitations of learning time and energy, directly impacting Ningbo Open University's enrollment work.

Among high-income and highly educated groups, the demand for continuing education shows a "prudent wait-and-see" characteristic. This group has high information literacy and payment ability, with multi-dimensional thresholds for university brand, curriculum quality and network resources. Ningbo Open University has not yet built an academic-industrial collaboration platform matching their expectations: on the one hand, high-end training modules are absent, case databases, enterprise tutors and industry data update lag, making it difficult to meet the immediate needs of middle and senior managers for cutting-edge technologies and management scenarios; on the other hand, the lack of international certification and university endorsement makes undergraduate students regard it as a secondary choice under the "signal-screening" mechanism. Resource bottlenecks lead to insufficient importation of high-quality students, further inhibiting curriculum system upgrading and brand premium improvement, forming a "low-level equilibrium" trap and hindering the simultaneous optimization of enrollment scale and structure.

## **4. Breakthrough paths for Ningbo Open University’s enrollment dilemmas**

### **4.1. Strengthen publicity to improve social recognition**

To effectively improve social recognition, Ningbo Open University should construct a systematic brand communication strategy to change the public’s inherent cognition of open education. Firstly, consolidate the communication foundation of traditional media. Through in-depth cooperation with local mainstream media to jointly build a “lifelong education” column, continuously present the university’s practical achievements in the field of lifelong education in the form of special reports and education documentaries, and strengthen its credibility in the regional education system. Secondly, build a digital communication matrix. Relying on WeChat, Douyin and other platforms, plan content around the theme of “learning empowerment”, and enhance content interactivity and emotional resonance through visual curriculum interpretation and student case interviews to accurately cover young and middle-aged potential learners. Thirdly, promote community-integrated communication.

Jointly with sub-districts and communities to carry out grassroots education services, organize offline experience courses and policy consultations, and carry out “famous teacher open classes” online Q&A through live broadcast technology to directly respond to public needs and lower cognitive thresholds. Through the long-term implementation of the above integrated communication strategy, continuously output high-quality and differentiated brand content, systematically display the university’s advantages in curriculum, faculty and industry-education integration, help gradually change the single impression of society as an “academic compensation institution”, shape the professional image of the core support institution of regional lifelong learning, to improve social identity and enrollment attractiveness.

### **4.2. Optimize curriculum provision to keep pace with social needs**

Ningbo Open University must take Ningbo’s “246” trillion-level industrial clusters as the anchor, construct a three-layer mapping model of “industrial map-capability matrix-curriculum module”, and systematically adjust the professional layout. Take the initiative to connect industrial needs, join hands with leading industrial enterprises and scientific research institutions to jointly develop modular courses focusing on ability output. For example, in the cultivation of digital skills, add courses such as big data analysis and artificial intelligence application, introduce real enterprise project cases, and improve students’ ability to solve practical problems through project-based teaching; to meet the needs of intelligent manufacturing upgrading, develop training courses such as industrial robot operation and maintenance and intelligent production line integration, and use virtual simulation technology to assist teaching, helping students master the application of cutting-edge technologies such as digital twin and industrial Internet of Things.

At the same time, a dynamic update mechanism of curriculum content should be established, regular industrial talent demand research should be carried out, new industrial technologies and specifications should be integrated into teaching on time, and outdated curriculum content should be eliminated. For rapidly growing industries such as cross-border e-commerce and new energy vehicles, an integrated training path of “theoretical learning-skill training-qualification certification” can be constructed, and enterprise technical experts are invited to participate in teaching, and students are guided to obtain industry-recognized vocational qualification certificates, significantly enhancing their employment competitiveness. Through the above measures, the university can establish a quantifiable, traceable and reusable transformation channel between academic continuing education and vocational ability improvement, and strengthen the immediate support function of open education for regional high-quality development.

### **4.3. Expand enrollment channels to improve enrollment coverage**

In the process of deepening the development of adult education, Ningbo Open University needs to break through the limitations of the traditional enrollment mode and build a diversified and three-dimensional enrollment system. This system needs to actively respond to the practical dilemmas in the implementation of vocational education enrollment policies and explore localized implementation paths<sup>[7]</sup>. On the one hand, actively expand offline cooperation channels, build “talent training bases” with enterprises, carry out customized academic promotion projects for enterprise employees, deeply integrate curriculum setting with post needs, which not only meets enterprises’ talent reserve needs, but also provides convenient learning paths for employees; jointly with communities to build “lifelong learning stations”, set up practical courses such as health management and family education according to community residents’ interests and career development needs, and expand enrollment influence through community grid publicity and open day activities; establish a cooperation alliance with vocational schools, integrate the advantages of both parties, provide academic connection channels for vocational skill training students, and realize “double improvement” of skills and academic qualifications.

On the other hand, give full play to the advantages of Internet communication and build an online enrollment matrix. Use new media such as WeChat official accounts and short-video platforms to produce vivid and interesting course promotion videos and graphic materials to accurately push enrollment information; develop an online consultation platform, arrange professional teachers to answer application questions in real time to improve service experience; hold online enrollment seminars and live open classes to enhance interaction with potential students, break regional and time restrictions, comprehensively improve enrollment coverage, and benefit more social groups from Ningbo Open University’s high-quality educational resources.

### **4.4. Promote academic and vocational tracks simultaneously to empower collaborative education**

To realize the in-depth integration of academic education and vocational ability improvement, Ningbo Open University should focus on building an education system of “academic + vocational qualification” in parallel, and take this as the core to strengthen school-enterprise collaboration, which conforms to the due direction of the current vocational education enrollment system reform for applied talent training<sup>[8]</sup>. In curriculum design, it is necessary to systematically refer to the vocational standards and qualification requirements of relevant industries, and organically integrate the certification examination knowledge modules into the professional teaching plan. For example, the accounting major can embed the core content and practical skills of the accountant vocational qualification examination, and invite senior industry professionals to participate in teaching; for emerging interdisciplinary fields such as health management, vocational-oriented courses in line with the latest industry norms and integrating practical training should be developed, so that students can obtain academic certificates and post-access capacity upon graduation.

Furthermore, it is necessary to deepen the school-enterprise collaborative education model and establish a closed-loop mechanism of “curriculum customization-oriented training-employment docking”<sup>[9]</sup>. Through strategic cooperation with key enterprises in the region, jointly develop customized curriculum modules meeting post needs, cooperatively build practical teaching bases, and carry out order-based talent training to ensure that the teaching process is closely connected with the actual projects and technological evolution of enterprises. The construction of this system aims to effectively enhance graduates’ professional competitiveness and post-

adaptability through curriculum integration and mechanism innovation, to gradually change the traditional social cognition of open education functions and shape the new image of the university as an important platform for regional applied talent training<sup>[10]</sup>.

## 5. Conclusion

Against the background of the rapid development of digital technology and the profound reshaping of the education ecosystem, the essence of the Open University transformation is the systematic upgrading of the school-running mode and service capacity. The key lies in transcending traditional path dependence, adhering to the learner-centered development needs, actively connecting with regional industrial development trends, deeply integrating and efficiently allocating various resources in the school-running system, and focusing on building characteristic professional clusters with market competitiveness.

At the same time, it is necessary to establish a flexible enrollment-training linkage and a dynamic incentive mechanism responding to market changes to continuously stimulate the endogenous impetus of the Ningbo Open University. This is not only related to the sustainable development of the Open University itself under the new competitive pattern, but also a basic project for it to support individuals' lifelong growth and provide systematic support for the construction of a learning society.

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## Disclosure statement

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## References

- [1] Qu S, 2025, Research on Enrollment Dilemmas and School-running System Optimization Strategies of Beijing Open Education under the Background of Learning Society. *Society and Public Welfare*, 2025(06): 365–368.
- [2] Zhang W, Liu H, 2021, Research on Dilemmas and Countermeasures of Grass-roots Open Education Enrollment. *Journal of Liaoning Higher Vocational Colleges*, 23(04): 1–3 + 40.
- [3] Bai X, Zhang X, Cui N, 2022, Research on External Influence Mechanism of Open Education Enrollment Scale. *Distance Education in China*, 2022(10): 40–47 + 75.
- [4] Li M, Kang W, Gao X, 2023, Learning City Construction: Era Implication, Case Reference and Practical Path. *Journal of Vocational Education*, 38(08): 91–99.
- [5] Tang W, Tian Y, 2024, The Era Implication, Theoretical Structure and Practical Approach of High-quality Development of Open Education. *Adult Education*, 44(11): 49–60.
- [6] Dong J, 2012, Research on the Function of Open University in the Construction of Learning City. *China Adult Education*, 2012(22): 40–43.

- [7] Xia X, Shi Y, Yu X, 2024, Research on the Evolution, Implementation Dilemmas and Countermeasures of Higher Vocational Classification Enrollment Policy—Taking Jiangsu Province as an Example. *Education and Vocation*, 2024(15): 46–53.
- [8] Dong Z, 2021, Ideal State, Practical Dilemmas and Realization Path of Vocational Higher Education Enrollment System Reform. *Education and Vocation*, 2021(17): 12–18.
- [9] Xiao M, 2020, Analysis on Enrollment Problems and Strategies of County-level Open University. *The Science of Educating and Cultivating*, 2020(16): 124–125.
- [10] Cai J, 2017, Strategy Innovation of Open University Enrollment under the Background of Open University. *Journal of Taiyuan City Vocational and Technical College*, 2017(04): 186–187.

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