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Research on the Path for New-Type Undergraduate Universities to Serve Urban-Rural Integration in the Context of the Digital Economy

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Abstract: Against the background that digital technologies have fully penetrated all sectors of the economy and society, the digital economy has become the core engine driving urban-rural integrated development. As a key link connecting higher education resources and regional development needs, new-type undergraduate universities are playing an increasingly prominent role and value in serving urban-rural integration. Based on the internal logical connection between the digital economy and urban-rural integration, combined with the school-running orientation of new-type undergraduate universities, application-oriented, industry-oriented and local-oriented, this paper analyzes the opportunities and challenges brought by the digital economy to urban-rural integration, discusses the core advantages and practical dilemmas of new-type undergraduate universities in serving the flow of urban-rural factors, industrial upgrading and equalization of public services, and finally constructs a practical path for new-type undergraduate universities to serve urban-rural integration from four dimensions: talent training, scientific research innovation, social services and governance collaboration. It provides theoretical references and practical experience for promoting high-quality integrated development of urban and rural areas.

Keywords: Digital economy; New-type undergraduate universities; Urban-rural integration; Service path; Regional development

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1. Introduction

Urban-rural integration is the only way to break the urban-rural dual structure and achieve common prosperity. The report to the 20th National Congress of the Communist Party of China lists “striving to promote urban-rural integration” as one of the important contents of promoting high-quality development in China [1]. The Decision of the Communist Party of China Central Committee on Further Deepening Reform in an All-Round Way and Advancing Chinese-Style Modernization, adopted at the Third Plenary Session of the 20th Central Committee, points out that “urban-rural integrated development is an inevitable requirement of Chinese-style

modernization" [2]. With its characteristics of high innovativeness, strong permeability and wide coverage, the digital economy has broken urban-rural spatial barriers and offered new possibilities for the two-way flow of urban-rural factors, coordinated industrial development and inclusive public services.

New-type undergraduate universities are an important part of the higher education system, mostly upgraded or transformed from local colleges and universities. Their school-running orientation focuses on the needs of regional economic and social development, with the advantages of being rooted in local areas and serving the grassroots. They can build local application-oriented think tanks, and boost social transformation and upgrading by making use of the advantages of application-oriented talents, achievements and industrial leadership of universities, focusing on talent supply and demand, government policies and industrial layout [3]. Compared with traditional research universities, new-type undergraduate universities pay more attention to the cultivation of application-oriented talents, the transformation of technological achievements and the construction of grassroots service capabilities. Empowered by the digital economy to advance urban-rural integration, they shoulder the mission of cultivating digital-skilled talents and providing technical support, and also face the task of connecting urban-rural digital needs and optimizing service models. At present, most new-type undergraduate universities have explored practices to serve urban-rural integration, but there are problems such as disconnection between talent training and demand, weak integration of scientific research innovation and industries, and imperfect social service mechanisms. It is urgent to build a systematic and operable service path.

2. Internal logic of new-type undergraduate universities serving urban-rural integration in the context of digital economy

The "Global Digital Economy White Paper (2023)" by the China Academy of Information and Communications Technology defines the digital economy as a new economic form that takes digital knowledge and information as key production factors, digital technology as the core driver, and modern information networks as the carrier. It improves the digital level of the economy and society through integration with the real economy and reconstructs economic development and governance models [4]. The digital economy takes data resources as the key factor, promotes the allocation of production factors and upgrading of the economic structure through integration with the real economy, including digital industrialization and industrial digitalization. New-type undergraduate universities are ordinary undergraduate universities whose basic functions are to cultivate application-oriented talents, conduct applied research and serve local areas [5]. This paper defines urban-rural integrated development as promoting the two-way flow of urban-rural factors, optimizing the allocation of factor resources, and realizing "economic symbiosis, equal well-being and linked development" between urban and rural areas [6].

The digital economy is an accelerator for urban-rural integration. Digital technology breaks the spatial restrictions between urban and rural areas, reduces the cost of factor flow, and provides technical support for urban-rural industrial coordination. Urban-rural integration is an application field for the digital economy. The demand generated by it provides application scenarios for the digital economy and promotes the upgrading of digital technology and industrial development. New-type undergraduate universities act as a bridge for the digital economy to empower urban-rural integration. They can connect urban-rural digital needs and transform higher education resources into development momentum. Urban-rural integration practice also provides a direction for the school-running reform of universities, forming a virtuous circle: "the digital economy drives

urban-rural integration, urban-rural integration leads university development, and university services feed back urban-rural integration".

3. Practical dilemmas of new-type undergraduate universities serving urban-rural integration

3.1. Disconnection between talent training and urban-rural digital needs

Most new-type undergraduate universities still adopt traditional models for major setup with outdated content, only changing the corresponding major names. They lack content renewal for characteristic majors targeting the digital needs of urban-rural integration, and have insufficient major distribution in digital agriculture, rural e-commerce, rural digital governance and other fields, making it difficult to meet the demand for diversified digital talents for urban-rural integration. The curriculum system is imperfect, curriculum content is not closely integrated with urban-rural digital practice, digital skill courses account for a low proportion, and practical teaching is weak. As a result, students' digital application ability and grassroots service ability are insufficient, and it is difficult for them to quickly adapt to the job requirements of urban-rural digital positions. The faculty structure is unreasonable. There is a shortage of double-qualified teachers who have professional digital technology capabilities and understand the actual situation of the urban-rural grassroots. Some teachers' teaching content, methods and concepts lag behind the development trend of the digital economy, making it difficult to effectively cultivate students' digital practical ability [7].

3.2. Weak integration between scientific research innovation and industrial practice

Scientific research directions are divorced from actual needs. Some new-type undergraduate universities still focus on theoretical research, lacking attention to practical problems in the digital practice of urban-rural integration. Scientific research projects are disconnected from the technical needs of rural areas and the digital transformation needs of local industries, resulting in a low transformation rate of scientific research achievements and difficulty in truly serving urban-rural integration. Cooperation with local enterprises and rural collective economic organizations mostly remains superficial, lacking long-term and stable cooperation mechanisms. A virtuous circle of "demand orientation—joint R&D—achievement transformation—benefit feedback" has not been formed. The supporting role of scientific research innovation for urban-rural integration has not been fully exerted, and industry-university-research cooperation has not been truly implemented [8]. At the same time, there is a lack of professional scientific research platforms for urban-rural integration, such as digital agriculture research institutes and rural e-commerce technology centers. Without sufficient support of scientific research equipment and resources, it is difficult to carry out targeted technological R&D and achievement transformation.

3.3. Mismatch between social service capacity and urban-rural integration needs

Social services of new-type undergraduate universities are mostly concentrated in traditional fields such as education and training and technical consulting, with few services targeting the digital needs of urban-rural integration. For example, there is an insufficient supply of services such as guidance for rural digital infrastructure construction, digital skill training and e-commerce platform operation support. The service model is still "passive response", lacking a mechanism to take the initiative to connect with urban-rural integration needs. The services are not targeted and effective enough to adapt to the dynamic development

needs of urban-rural integration in the background of the digital economy. Various majors within new-type undergraduate universities lack cross-integration, service resources are not organically integrated, and coordination with external governments, enterprises and social organizations is insufficient, leading to waste of service resources and difficulty in forming a joint force to serve urban-rural integration.

3.4. Imperfect governance collaboration mechanism

New-type undergraduate universities lack a normalized communication and coordination mechanism with local governments, and have insufficient collaborative planning in talent training, scientific research innovation, social services and other aspects. As a result, university services are disconnected from the overall planning of urban-rural integration development, making it difficult to form a policy joint force. Meanwhile, there is insufficient sharing of digital, teaching and scientific research resources with other universities, research institutions and enterprises, resulting in "information islands". The scale effect of resources has not been brought into play, affecting the efficiency and quality of serving urban-rural integration, and the resource sharing mechanism is not perfect.

5. Practical paths for new-type undergraduate universities to serve urban-rural integration in the context of digital economy

5.1. Optimize the talent training system and build a digital talent echelon for urban-rural integration

Adjust the major structure around urban-rural digital needs. From core fields such as digital agriculture, rural e-commerce, rural digital governance and digitalization of urban-rural public services, add characteristic majors or major directions, such as digital agricultural technology, rural e-commerce operation and management, rural digital governance, forming a major layout matching the digital needs of urban-rural integration. At the same time, dynamically adjust the curriculum content of traditional majors, update the talent training program in a timely manner, and integrate knowledge points related to digital technology. For example, add precision agriculture technology courses in agronomy majors, and strengthen rural e-commerce operation courses in marketing majors [9].

Strengthen faculty development and build a double-qualified teaching team. New-type undergraduate universities should introduce industry experts with urban-rural digital practical experience as part-time teachers through a combination of introduction, training and employment; encourage in-service teachers to go deep into urban-rural grassroots for investigation and in-depth practice, participate in digital technology R&D and promotion projects, and improve practical ability; establish a two-way exchange mechanism between university teachers and industry-enterprise talents, send teachers to work in enterprises, invite industry experts to teach in universities, and optimize the faculty structure. Carry out national digital skill training: for rural laborers, rural cadres, new-type agricultural management entities and other groups, carry out digital skill training covering smartphone application, rural e-commerce operation, digital agricultural technology, network security and other contents. Combine online and offline methods to improve the digital literacy of urban and rural residents and narrow the urban-rural digital divide [10].

5.2. Focus on scientific research innovation and provide digital technical support for urban-rural integration

Clarify scientific research directions. Focus on the digital pain points of urban-rural integration and combine with grassroots actual needs to determine key scientific research fields. Innovate precision agricultural technology R&D, agricultural product traceability system development, rural e-commerce platform optimization, urban-rural public service digital platform construction, and rural digital governance technology. Carry out applied and targeted scientific research projects in line with reality. Encourage teachers to go deep into rural frontlines for investigation, explore actual needs, transform grassroots problems into scientific research topics, and improve the practicality of scientific research achievements.

Build scientific research platforms and strengthen collaborative innovation capabilities. Actively join hands with local governments, enterprises and research institutions to build professional scientific research platforms, such as joint digital agriculture research institutes, rural e-commerce technology innovation centers, and urban-rural public service digital laboratories, integrate scientific research resources, and carry out joint R&D. Cooperate with agricultural technology enterprises to build digital agriculture demonstration bases, carry out R&D and promotion of technologies such as precision irrigation and intelligent pest monitoring, and promote the digital transformation of agriculture.

Promote achievement transformation and improve technical service efficiency. Establish and improve the transformation mechanism of scientific research achievements, set up special funds for achievement transformation, and encourage teachers to transform scientific research achievements into technical products and services applicable to urban-rural grassroots. Through university-local cooperation, university-enterprise cooperation and other channels, build an achievement transformation platform to promote the application of digital technology achievements in rural areas. For example, promote agricultural product traceability technology to local agricultural cooperatives to help farmers increase the added value of agricultural products; apply urban-rural public service digital platform technology to local government government services to realize the sharing of urban-rural public service resources.

5.3. Expand social services and promote the digital equalization of urban-rural public services

Build a digital public service platform. Give play to the technical and talent advantages of new-type undergraduate universities, assist local governments in building an urban-rural integrated digital public service platform, integrate public service resources such as education, medical care, elderly care and social security, and provide online consultation, remote services, resource sharing and other functions. For example, build a telemedicine consultation platform to enable rural residents to enjoy high-quality urban medical resources; build an urban-rural education resource sharing platform to promote the radiation of urban elite courses to rural schools.

Carry out special digital services. In view of the weak digital infrastructure and low digital application level in rural areas, organize teacher and student teams to carry out special services, assist villages in improving the planning of digital infrastructure construction, guide rural e-commerce entities to carry out online operations, and help rural collective economic organizations build digital management platforms and other services. At the same time, provide local governments with consulting services on digital development planning and policy research for urban-rural integration to assist the government in scientific decision-making.

Promote the digital integration of urban-rural culture. Give play to the function of cultural inheritance and

innovation of universities, use digital technology to protect and inherit rural traditional culture, develop rural cultural tourism resources through VR/AR technology, and build a digital rural cultural brand; build a digital platform for urban-rural cultural exchange to promote the sharing and mutual learning of urban-rural cultural resources and enrich the spiritual and cultural life of urban and rural residents.

5.4. Improve the governance collaboration mechanism and form a joint force to serve urban-rural integration

Improve the university-local collaboration mechanism. Establish a normalized communication and coordination mechanism with local governments, set up a collaborative leading group for urban-rural integrated development, jointly formulate service plans, clarify cooperation priorities and implement work tasks. Incorporate the service work of new-type undergraduate universities into the overall local planning for urban-rural integrated development, strive for government support in policies, funds, projects and other aspects. At the same time, universities adjust their school-running direction and service content according to local development needs to realize university-local coordinated development.

Build a resource sharing mechanism. Strengthen cooperation with other universities, research institutions and enterprises, establish a sharing platform for digital resources, teaching resources and scientific research resources to realize complementary advantages. For example, share digital technology curriculum resources with neighboring universities, jointly carry out digital research on urban-rural integration with research institutions, and share scientific research equipment and practice bases with enterprises to improve resource utilization efficiency.

Optimize the evaluation and incentive mechanism. Reform the existing evaluation system, include practical achievements in serving urban-rural integration as important indicators in teacher assessment, professional title evaluation and merit evaluation. For example, focus on the benefits of digital technology achievement transformation, the effectiveness of rural digital skill training, and the contribution to the construction of urban-rural public service digital platforms. Set up a special reward fund for serving urban-rural integration to commend and reward outstanding collectives and individuals in service work and stimulate teachers' enthusiasm and initiative to participate in services.

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