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PATHWAYS AND STRATEGIES FOR PROMOTING THE SHARING OF HIGH-QUALITY EDUCATIONAL RESOURCES IN SMALL RURAL SCHOOLS IN WESTERN REGIONS THROUGH THE "INTERNET PLUS" INITIATIVE

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Abstract: Against the backdrop of the "Internet Plus" era, small-scale rural schools in western regions face numerous developmental challenges that constrain progress in educational equity and quality. This paper explores pathways for promoting the sharing of high-quality educational resources among these schools through internet technology. Considering the current state of rural small-scale schools, a collaborative advancement pathway is proposed. This framework centres on an internet-based educational platform as the hub, with digital and intellectual educational resources as the primary providers. It utilises the "Three Classrooms" initiative and AI platform tools as delivery vehicles to achieve cross-regional sharing of high-quality resources. Feasible strategies are outlined across policy funding guarantees, teacher training, home-school collaboration, and exemplary leadership. These measures aim to promote the balanced allocation of urban-rural educational resources, thereby supporting small-scale rural schools in the west to achieve high-quality development characterised by being "small yet excellent".
Keyword: Internet plus; Rural small-scale schools; Digital educational resources; Intellectual educational resources; Resource sharing

1 INTRODUCTION

Education is a matter of national importance and a priority for the Party. In the grand journey towards the great rejuvenation of the Chinese nation, educational modernisation carries the hopes for national revitalisation and shoulders the vital mission of cultivating talent. It serves as the foundational project and strategic vanguard for national modernisation, with the modernisation of rural education being an indispensable key component. Due to geographical, economic and other factors, the development of education in rural areas has been constrained, becoming a significant shortfall in achieving educational modernisation. Modernising rural education is both an imperative for educational equity and justice, and a cornerstone for advancing the rural revitalisation strategy. The essence of educational modernisation extends beyond the renewal of physical infrastructure, teaching methods, and curriculum content; it fundamentally involves reconstructing a people-centred educational philosophy and substantially expanding equitable access to learning opportunities. For vast rural areas, educational modernisation signifies bridging the urban-rural knowledge divide, granting rural children equal developmental starting points and capacity reserves, and breaking the intergenerational transmission of poverty. This empowers them to become genuine builders and beneficiaries of rural revitalisation. Advancing rural educational modernisation is the essential pathway to resolving urban-rural development imbalances and promoting social equity.

Small-scale schools (village primary schools and teaching points with fewer than 100 pupils) serve as the nerve endings of the rural education system. They play a unique and irreplaceable role in safeguarding equitable access to education, preserving rural cultural heritage, and serving rural communities. These institutions bear the crucial responsibility of providing foundational education as a safety net for the most remote and disadvantaged populations. Effectively managing small-scale schools is a vital task in implementing the strategy of revitalising the nation through science and education and accelerating educational modernisation. It is a fundamental requirement for executing the rural revitalisation strategy and advancing the equalisation of basic public services between urban and rural areas. Furthermore, it constitutes a powerful measure for winning the battle against educational poverty and comprehensively building a moderately prosperous society[1]. The healthy development of rural small-scale schools is an essential requirement for modernising rural education by "establishing a safety net, addressing shortcomings, and promoting equity." It constitutes the institutional safeguard for fulfilling the educational commitment that "no child shall be left behind." Without the modernisation of rural small-scale schools, there can be no genuine modernisation of rural education. Neglecting the development of small-scale schools would leave the edifice of educational modernisation without a solid foundation. Successfully managing small-scale schools in western rural areas can collectively sustain the "root system" ecology of China's rural education[2].

However, the stark reality cannot be overlooked: small-scale schools are mired in multiple developmental challenges on their journey towards modernisation, facing the severe predicaments of being "small and weak" and "small and substandard". The persistent shortage of high-quality teaching staff constitutes the primary bottleneck, with small schools enduring the long-standing dilemma of teachers being "unwilling to take up posts, unable to be retained, and

incapable of delivering effective teaching". Structural staffing shortages are particularly acute, while the singularity and low quality of curriculum resources further undermine teaching standards. Although educational informatisation initiatives have been rolled out, they commonly suffer from the awkward predicament of "prioritising hardware over application," "abundant resources but low efficiency," and "network connectivity without integration." Many schools possess basic digital equipment, yet lack corresponding high-quality digital educational resources. Teachers' IT application skills remain inadequate, and the deep integration of information technology with subject teaching is virtually non-existent. These intertwined issues make the modernisation journey of rural small-scale schools exceedingly arduous.

Breaking through resource constraints and achieving the sharing of high-quality educational resources has become the path to modernisation for small-scale schools. Sharing high-quality educational resources refers to utilising information technology to overcome temporal and spatial limitations and resource barriers, thereby precisely delivering resources such as teaching staff, curricula, teaching methodologies, and management expertise from high-quality urban schools and educational institutions to rural small-scale schools. This facilitates the optimal allocation and efficient utilisation of resources. Its significance manifests across three dimensions: firstly, addressing resource deficits to achieve balanced educational provision; secondly, empowering teacher development to stimulate intrinsic teaching motivation; thirdly, driving pedagogical innovation to foster holistic student development. Sharing high-quality resources represents a crucial pathway to resolving the developmental challenges faced by small-scale schools. It is also an imperative of our era for promoting educational equity, enhancing educational quality, and serving rural revitalisation. This approach enables such schools to deliver quality education with a human touch despite resource constraints, thereby achieving the developmental goals of being "small yet excellent" and "small yet beautiful".

Sharing signifies breaking down barriers of time and space. Today, the rapid advancement of information technology and the deepening implementation of the "Internet Plus" strategy provide robust support for sharing high-quality educational resources. The rise of "Internet Plus" has become a significant force in promoting balanced educational development. To achieve genuine equilibrium in education, effective pathways and strategies must be established to fully leverage the advantages of "Internet Plus". This will facilitate equitable access to educational resources, enhance the quality of education in small-scale rural schools in western regions, and create a favourable educational environment for the growth and development of rural students. The ultimate aim is to ensure every child enjoys equitable and high-quality education. How to leverage "Internet Plus" to overcome temporal and spatial barriers and construct effective pathways for sharing high-quality educational resources has become the pivotal challenge in addressing the imbalance in rural education development in western China.

2 THE CURRENT STATE OF EDUCATION IN SMALL RURAL SCHOOLS IN WESTERN REGIONS

The lagging state of education in small-scale rural schools in western regions not only impedes the future development of rural students but also constrains the comprehensive progress of rural society, representing a critical shortfall in the modernisation of education. Addressing this shortfall to ensure every rural child enjoys equitable and quality education has become a critical challenge that the education sector must confront and resolve. It also represents an urgent issue on the path towards educational equity and balanced development. Though small in scale, these schools bear the hopes of rural education and serve as vital strongholds in breaking the cycle of intergenerational poverty. Consequently, the educational development of small-scale rural schools in western regions demands high priority. The current state of education in these rural small-scale schools is detailed in Table 1.

Table 1 The Current State of Education in Small Rural Schools

Summary of Educational Issues	Specific manifestations
Infrastructure is lagging behind[3]	Teaching facilities are outdated, lacking modern equipment, with insufficient functional spaces and inadequate conditions for multimedia and laboratories; living facilities are substandard, with poor canteen and dormitory conditions; sports facilities are inadequate, with insufficient playing fields and equipment; network infrastructure is lagging.
Insufficient teaching staff[4]	There is a shortage of teaching staff, with an imbalanced structure and varying levels of professional competence. There is a significant exodus of outstanding teachers, difficulties in recruiting new teachers, and instability within the teaching workforce. Opportunities for teacher training are scarce, knowledge updates are slow, and teachers' information literacy remains low.
Student intake is of poor quality[5]	Due to family circumstances and economic constraints, the dropout rate remains high; Many pupils hail from disadvantaged backgrounds with weak foundational learning skills; Students exhibit insufficient motivation and lack clear objectives; Poor study habits and attitudes prevail, accompanied by a general aversion to learning.
Shortage of teaching resources[6]	Textbooks and supplementary teaching materials are scarce and not updated promptly; library resources are insufficient, affecting reading opportunities; resources for social practice are limited, making it difficult to organise practical activities; online course resources are challenging to utilise effectively.
Inadequate educational management[7]	Management team capabilities are limited, and management systems are inadequate; teaching supervision and evaluation mechanisms are lacking; home-school collaboration and community involvement are insufficient; and levels of information management are low.

2.1 Infrastructure is Lagging Behind

Rural small-scale schools commonly suffer from inadequate infrastructure, which directly impedes the normal conduct of teaching activities and represents a systemic shortfall in their operational conditions. This infrastructure deficit not only exacerbates the educational disparity between urban and rural areas but also places pupils at a disadvantage from the outset due to resource scarcity, thereby widening the persistent digital divide between urban and rural communities.

2.2 Insufficient Teaching Staff

The shortage of qualified teachers remains a persistent challenge that fundamentally constrains the development of rural education. Small school sizes, remote locations, and harsh living conditions make it difficult to attract sufficient teachers to these areas. It is imperative to establish a comprehensive professional development support system tailored to the realities of rural education. This system must be designed with a systematic and holistic approach to professional growth, spanning the entire career trajectory of teachers, thereby providing robust support for the professional advancement of educators in small rural schools.

2.3 Student Intake is of Poor Quality

The quality of student enrollment in small rural schools is influenced by multiple factors, exhibiting distinct weaknesses. The low quality of students not only increases teaching challenges for educators but also leads to persistently low overall graduation rates, creating a vicious cycle.

2.4 Shortage of Teaching Resources

The shortage of teaching resources has a direct and significant impact on students' learning experiences and skill development, limiting their comprehensive growth.

2.5 Inadequate Educational Management

The inefficiency of school management has hindered the standardized development of schools and the improvement of educational quality. It not only affects daily operations but also leaves schools ill-equipped to handle emergencies, thereby impeding their modernization efforts.

3 PATHWAYS FOR RURAL SMALL-SCALE SCHOOLS TO SHARE HIGH-QUALITY EDUCATIONAL RESOURCES BASED ON "INTERNET PLUS"

The development of internet technology has brought profound changes to the field of education, with its impact being particularly significant in small rural schools where educational resources are relatively scarce. Through the internet, these schools can directly access high-quality teaching expertise and abundant educational resources, thereby mitigating to some extent the imbalances inherent in traditional resource allocation. However, despite the internet's immense advantages in information transmission and resource sharing, it cannot directly improve a school's infrastructure, student quality, or educational management systems. Therefore, internet-based educational resource sharing primarily focuses on two aspects: teaching resources and instructional resources. This has formed a "1+2+3+N" resource-sharing pathway, namely "one platform, two types of resources, three types of classrooms, and N tools." The specific pathway model is shown in Figure 1.

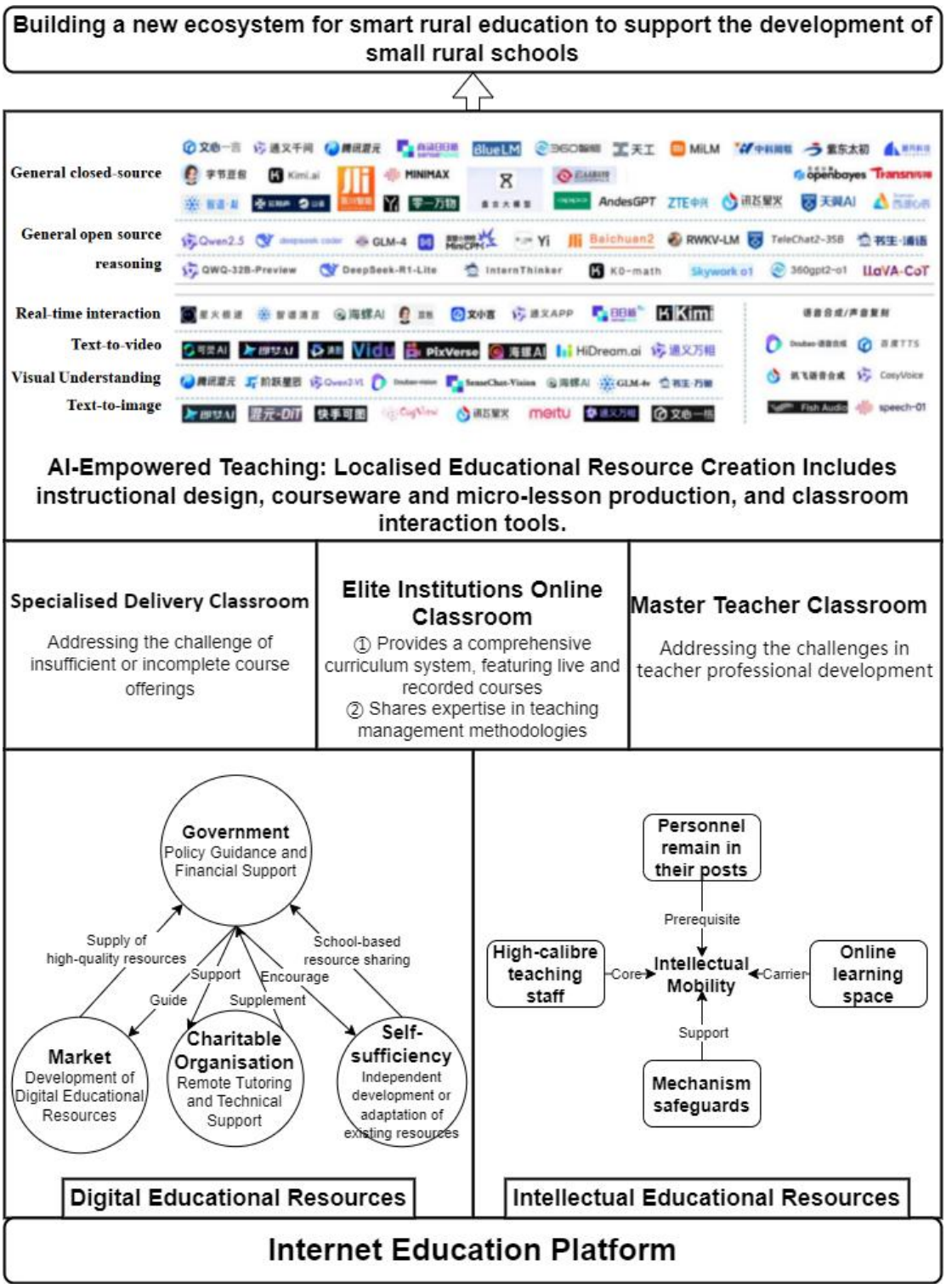

Figure 1 Pathways for Small Rural Schools in Western Regions to Share Educational Resources Through the Internet

3.1 One Platform (Internet Education Platform): A Hub for Providing High-Quality Educational Resources

Internet education platforms are reshaping the educational ecosystem through digital technology, enabling high-quality educational resources to bridge geographical divides and reach broader audiences. They have become a key force driving educational modernization and universal access. The Outline of the National Education Development Plan (2024–2035) explicitly calls for strengthening and effectively utilizing the National Smart Education Public Service Platform[8]. Taking the National Smart Education Platform for Primary and Secondary Schools as an example, it serves as the core vehicle for the education digitization strategy. By integrating high-quality platform resources at all levels and providing systematic resource supply with precise service matching, it offers crucial support for addressing the resource gap in rural small-scale schools. The platform consolidates high-quality course resources across all subjects and grade levels in basic education, encompassing multimodal content such as classroom recordings, micro-lecture videos, interactive exercises, and virtual experiments. It features resources across 12 sections including moral

education, curriculum instruction, physical education, aesthetic education, and labor education. Its core value lies in transforming the teaching excellence of urban schools into accessible learning materials for rural students. Particularly valuable are the platform's extensive resources of audio-visual teaching videos and courseware for physical education, music, and art, enabling these subjects to re-enter rural classrooms. Additionally, the Teacher Professional Development section of the National Smart Education Platform for Primary and Secondary Schools provides rural educators with abundant learning resources. This section encompasses various training content, including ideological and political education, teacher ethics, general knowledge development, and subject-specific training, allowing teachers to pursue self-directed learning based on their individual needs. Furthermore, the platform facilitates online communication and collaboration among teachers. Rural educators can engage with peers from other regions to discuss teaching challenges, share pedagogical insights, and continuously enhance their professional competence through these exchanges.

Centered on the National Smart Education Platform for Primary and Secondary Schools, supplemented by other high-quality platforms at various levels, a comprehensive digital educational resource repository covering all subjects and grade levels has been established. This initiative effectively alleviates long-standing structural challenges in rural areas, such as resource scarcity, teacher shortages, and incomplete curriculum offerings. Each platform also features robust interactive capabilities, supporting teacher collaboration and discussion as well as interactive classroom instruction, thereby providing strong foundational support for future resource-sharing models.

3.2 Two Types of Resources: Digital Educational Resources and Intellectual Educational Resources

3.2.1 Digital educational resource sharing

Digital educational resources refer to a collection of resources specifically designed and developed to achieve educational objectives, digitally processed, and capable of operating within an information-based environment to serve teaching and learning activities[9]. The provision of digital educational resources encompasses four dimensions: government supply, market supply, public welfare supply, and self-supply[10]. By integrating these four supply models, a comprehensive, efficient, and sustainable pathway can be established for rural small-scale schools to share high-quality educational resources.

First, the government should take the lead by establishing a foundational framework for digital educational resources in rural small-scale schools through policy guidance and financial support. This includes investing in high-speed, stable network infrastructure to ensure every school has internet access, thereby providing the hardware foundation for transmitting digital educational resources. Simultaneously, the government should develop or procure a set of fundamental, widely applicable digital educational resources and provide them free of charge to rural small-scale schools, ensuring their basic educational resource needs are met. Second, market mechanisms should be introduced to encourage enterprises and social forces to participate in building rural digital educational resources. Incentives such as tax breaks and financial subsidies should attract education technology companies and publishers to develop digital educational resources tailored to the characteristics of rural small-scale schools, meeting the diverse learning needs of students. Simultaneously, introducing market competition mechanisms will enhance the effective circulation and sharing of resources, driving continuous improvements in resource quality. The public welfare supply model also plays a vital role in promoting the sharing of high-quality educational resources among rural small-scale schools. Non-profit organizations and individuals can develop targeted digital educational resources addressing the unique needs of rural education and make them freely accessible to the public. Public welfare organizations can also regularly organize volunteer teams to provide remote teaching guidance and technical support to rural small-scale schools, helping teachers and students better utilize digital educational resources. Finally, rural small-scale schools should be encouraged to engage in self-supply, enhancing their capacity for school-based resource development. Schools can independently develop or adapt existing resources based on their actual conditions and the needs of teachers and students, forming distinctive school-based digital educational resource repositories. This not only meets the personalized teaching needs of schools but also stimulates the creativity and enthusiasm of teachers and students. Schools can also establish resource-sharing mechanisms among themselves, utilizing technological means such as cloud platforms to achieve mutual exchange of resources and collective improvement.

The sharing of digital educational resources, through the synergistic effects of four supply models, has brought positive impacts to small-scale rural schools in western China in terms of resource access, teaching quality improvement, and teacher-student development. It effectively promotes the educational advancement of these schools. Not only does it address the shortage of educational resources in these institutions, but it also enhances teaching quality, narrows the urban-rural educational gap, and makes significant contributions to achieving educational equity and modernization. Digital educational resources will serve as a fulcrum for revitalizing education in rural western regions, propelling urban-rural educational development toward greater balance and quality while advancing the realization of educational equity.

3.2.2 Intellectual educational resource sharing

Intellectual educational resources refer to individuals, groups, or organizations within and outside the education sector possessing strong information literacy and knowledge creation capabilities, engaged in high-intellectual activities such as knowledge creation and problem-solving. However, only those that tangibly generate social and educational benefits through intellectual activities can be termed intellectual resources[11]. The sharing of intellectual educational resources entails the shared utilization of their educational, economic, and social value. The sharing of intellectual educational resources can be advanced through intellectual mobility. This approach involves leveraging mobile internet, big data,

cloud platforms, and other information technologies alongside sound policy mechanisms to overcome the constraints of teachers being tied to specific schools. It aggregates the intellectual services of high-quality educators within a networked space, making them accessible to teachers and students in under-resourced schools. This model comprises four core elements: maintaining the teacher-position relationship, utilizing high-quality faculty, establishing networked learning spaces, and implementing institutional safeguards[12]. Intellectual mobility, as a novel form of teacher mobility, offers fresh perspectives and pathways to address the scarcity of quality educational resources in small rural schools in China's western regions. By sharing the intellectual services of high-quality teachers with underprivileged schools through information technology while maintaining their original positions, this approach can effectively alleviate regional imbalances in educational development.

The "intellectual mobility without physical relocation" is the defining characteristic that distinguishes intellectual mobility from traditional teacher rotation. This approach avoids disrupting the teaching order at the original institution caused by the physical movement of high-quality teaching staff, while simultaneously enabling the cross-regional transfer of intellectual resources through institutional design. Establishing an "Intellectual Mobility Teacher Talent Pool" will recruit key teachers and subject leaders from high-quality schools in developed eastern regions and western cities. These educators will regularly provide online teaching research and curriculum guidance services to rural schools while retaining their personnel status, professional title evaluations, and performance-based wages with their original institutions. This approach alleviates their concerns, safeguards career stability, and enables flexible intellectual resource deployment. The core of intellectual mobility lies in sharing high-quality teaching talent. High-quality intellectual resources are a critical prerequisite for advancing the development of small-scale rural schools in western regions. Through intellectual mobility, outstanding teachers—including core educators and subject leaders from urban elite schools—can transmit their pedagogical philosophies, methodologies, and experiences to rural teachers and students in western areas via online learning spaces. This guidance helps rural educators refine teaching approaches and assists students in overcoming learning challenges. This model not only elevates student academic performance but also provides professional development opportunities for local teachers, driving comprehensive improvements in educational quality. The core vehicle for intellectual mobility is the online learning space, which is essential for achieving cross-regional sharing of high-quality educational resources. For small-scale schools in rural western regions, establishing a unified online learning platform enables high-quality teachers to participate in rural school teaching processes in real-time or asynchronously. This "virtual presence" approach not only overcomes the limitations imposed by physical distance but also enhances teaching effectiveness and the learning experience for students. The effective implementation of intellectual mobility relies on robust institutional safeguards. Coordination mechanisms, constraint mechanisms, and incentive mechanisms form the three essential components of this safeguard. Coordination mechanisms ensure the normal, continuous, and stable operation of online learning spaces. Educational administrative departments, schools, technology providers, and other stakeholders must collaborate closely, clarify respective responsibilities, and jointly resolve issues encountered during the construction and operation of online learning spaces. Constraint mechanisms ensure the orderly operation of intellectual mobility and maximize its intended impact. During this process, teachers' sharing behaviors require regulation and oversight—for instance, establishing task lists and time requirements for teacher participation to ensure they complete teaching resource sharing, online tutoring, and other duties as stipulated. Simultaneously, establishing corresponding supervision and evaluation mechanisms allows for assessing and providing feedback on the effectiveness of teachers' sharing activities. This enables timely identification and correction of issues, ensuring the quality and impact of intellectual flow. Reward mechanisms serve as a crucial means to stimulate the enthusiasm of teachers, schools, and educational administrators in participating in intellectual flow. By establishing reasonable reward systems that provide both material and non-material incentives to teachers engaged in intellectual flow, the initiative for sharing can be enhanced. This fosters a positive incentive environment, driving the sustainable development of intellectual flow.

The flow of intellectual educational resources has broken through the traditional temporal and spatial boundaries of educational resource allocation by reconfiguring the logic of teacher resource allocation and institutional innovation. This has created the possibility for small-scale rural schools in western regions to "access quality education without leaving their hometowns." This represents not only a substantive advancement in educational equity but also a significant practice in modernizing the educational governance system in the digital economy era. It can effectively contribute to achieving the goals of rural revitalization and educational modernization.

3.3 "Three Classrooms": Pathways to Promote the Sharing of High-Quality Educational Resources

In 2020, the Ministry of Education issued the "Guiding Opinions on Strengthening the Application of the ‘Three Classrooms’," emphasizing the need to actively advance the development of "Internet Plus Education," promote the deep integration of information technology with educational practices, systematically implement the "Three Classrooms" initiative, and drive the realization of high-quality and balanced educational development[13]. The "Three Classrooms" initiative represents a key measure by the Ministry of Education to advance educational informatization and the sharing of high-quality educational resources. Its core objective is to bridge regional, urban-rural, and inter-school educational disparities through internet technology, thereby providing sustainable access to excellent teaching resources for small-scale schools in rural western regions.

3.3.1 Specialised delivery classroom: establishing a channel for course resource delivery to resolve the structural shortage of teaching staff

The "Specialised Delivery Classroom" initiative primarily addresses the challenges faced by under-resourced rural schools and teaching points in delivering the full range of state-mandated courses due to teacher shortages. It employs methods such as online specialised courses or synchronous teaching, alongside the internet to deliver appropriate, high-quality educational resources aligned with teaching schedules. This approach assists these institutions in fully implementing the required curriculum, thereby promoting educational equity and balanced development.

By leveraging internet technology, collaborative lesson planning between lead and receiving-end teachers enables the precise delivery of teaching resources, providing rural schools with high-quality curriculum materials. This creates synchronous classroom scenarios where urban elite schools and rural small-scale institutions conduct lessons concurrently. During these synchronous sessions, teachers and pupils from both locations engage in real-time interaction, jointly participating in classroom discussions and activities. Outstanding teachers from urban schools can deliver lessons to rural pupils via live video streaming, while also gaining insights into their learning progress and requirements to promptly adjust teaching methods and content. Teachers at rural schools assume a supporting role during synchronous sessions, aiding pupils in better understanding and mastering knowledge. This synchronous classroom model not only enables rural pupils to access high-quality teaching resources but also fosters exchange and collaboration between urban and rural educators, collectively elevating teaching standards.

3.3.2 Master teacher classroom: fostering professional development communities to enhance teachers' professional competence

The "Master Teacher Classroom" initiative primarily addresses the challenges of inadequate teaching capabilities and insufficient professional development among educators. By establishing online professional learning communities and leveraging the exemplary impact of distinguished teachers and their courses, it explores novel forms of teaching and research activities within digital environments. This approach enables outstanding educators to elevate the standards of their peers, facilitates broader sharing of master teacher resources, and ultimately fosters professional growth among teaching staff.

The core objective of the Master Teacher Classroom initiative is to foster the professional development of rural educators by sharing the teaching expertise of distinguished educators. This is achieved through establishing online professional learning communities to advance the professional growth of rural teachers. The Master Teacher Classroom must transcend mere participation in or observation of teaching research and instruction. Under the guidance and mentorship of master teachers, it should facilitate practical engagement in research projects, with particular emphasis on enhancing rural teachers' capacity for developing local curricula. This approach will ultimately strengthen the cultural confidence of rural educators. Leveraging internet platforms, we organise joint online professional development activities for urban and rural teachers, enabling rural educators to directly access master teachers' experience sharing and learn advanced pedagogical concepts and methodologies. Through regular online exchanges and collaboration, we implement a "strengthening the weaker" approach to teacher development, fostering a positive atmosphere of mutual learning and collective progress among educators. This gradually narrows the professional capability gap between urban and rural teaching staff.

3.3.3 Elite institutions online classroom: fostering a resource-sharing ecosystem to drive systematic quality enhancement

The Elite Schools Online Classroom initiative addresses the pressing need to effectively narrow educational disparities across regions, urban-rural areas, and schools. Centred on high-performing institutions, it systematically and comprehensively facilitates the sharing of premium educational resources regionally or nationwide through online schools and courses. This approach meets students' demands for personalised development and high-quality education.

Promote in-depth collaboration between small rural schools and prestigious institutions to achieve customized sharing of educational resources. Tailored to the unique teaching environments and student needs of rural schools, leading institutions can dispatch core faculty to deliver remote instruction or conduct online training. Through cross-regional lesson observation, discussion, and collaborative seminars, this approach facilitates shared access to teaching expertise, accelerating professional growth among educators while providing personalized learning guidance for rural students. Simultaneously, rural schools can submit specific educational requests to prestigious institutions based on their unique circumstances. Through the "Elite School Online Classroom" platform, they gain access to customized educational resources, ensuring precise alignment and effective utilization of educational assets.

The "Three Classrooms" initiative establishes a multi-dimensional support system for revitalizing rural education in western China through functional complementarity, technological empowerment, and institutional innovation. By synergistically advancing these three classroom models, it not only effectively alleviates challenges faced by small-scale rural schools in western regions—such as teacher shortages, low teaching quality, and resource scarcity—but also provides a practical pathway to achieve educational equity and elevate overall educational standards.

3.4 "N Tools (AI Tools)": Engines for Localized Creation and Transformation of Educational Resources

The introduction of artificial intelligence technology has provided rural teachers with a new pathway to "Create—Adapt—Optimize" educational resources. AI tools not only lower the threshold for resource development but also help rural educators transform standardized platform resources into localized teaching content tailored to local students' cognitive characteristics, cultural backgrounds, and life experiences through intelligent adaptation, personalized generation, and data analysis. Rural areas possess unique cultural, geographical, and social environments. Rural teachers can leverage AI platform tools to create educational resources tailored to local realities. These

personalized resources not only foster students' identification with local culture but also make teaching content more relevant to students' lives, sparking their interest in learning and enhancing learning outcomes. Simultaneously, as rural teachers utilize AI platform tools to create and adapt educational resources, their own capabilities are significantly enhanced, thereby promoting professional development and improving their information technology literacy.

The deployment of AI technology is not intended to replace teachers, but rather to provide supplementary tools for teaching and learning within small rural schools. The ultimate significance of empowering these institutions through AI platforms lies not in emulating urban educational standards, but in forging a path towards rural educational modernisation that remains rooted in its heritage—connecting to global knowledge systems while deeply embedding local cultural gene.

4 STRATEGIES TO FACILITATE SMALL-SCALE RURAL COMMUNITIES IN WESTERN REGIONS TO SHARE QUALITY EDUCATIONAL RESOURCES

4.1 Policy Funding Support—Prioritising the Development and Construction of Small-Scale Rural Schools in Western Regions

Policies and regulations serve as crucial safeguards for implementing the "Internet Plus" initiative in small rural schools in western regions, thereby facilitating the sharing of high-quality educational resources. Further clarify the importance of small rural schools within the broader education development framework, establishing their priority status in the allocation of educational resources. Implement differentiated policy support mechanisms tailored to the characteristics of small schools, providing special policy preferences in funding, resource development, teacher allocation, and assessment systems. This will provide a robust institutional foundation for school development, promote the balanced distribution of educational resources, and advance educational equity. Concurrently, a dedicated oversight mechanism should be established to strengthen policy monitoring and implementation, ensuring that all measures take root effectively. This will tangibly improve the operating conditions of small-scale schools, invigorate rural educational institutions, and enable rural children to access equitable, high-quality education.

In the process of enabling small-scale rural schools in western regions to share high-quality educational resources through the "Internet Plus" initiative, funding security stands as a pivotal factor and a prerequisite for the entire endeavour. Only with robust financial backing can subsequent resource development and application proceed smoothly. Local governments must increase financial investment in the educational informatisation of small-scale rural schools in western regions. This funding should support rural institutions in procuring information technology equipment, developing network infrastructure, and establishing platforms for high-quality educational resources. Strengthening foundational infrastructure will provide robust material support for these schools to access premium educational resources. The implementation and application of the "Three Classrooms" initiative and "Teacher Intellectual Mobility" programmes in rural small-scale schools will facilitate the seamless integration of high-quality educational resources into the classroom. This will inject vitality into the teaching and learning activities of small-scale schools, ensuring that rural children have access to the same learning resources and opportunities as their urban counterparts.

4.2 Teacher Training—Establishing a Training Framework to Enhance Teachers' Digital Literacy

A highly qualified teaching workforce constitutes the core driving force for the development of small-scale rural schools. Only through continuous enhancement of teachers' capabilities can superior educational services be provided to rural pupils. Tailored to the characteristics and needs of teachers in small-scale rural schools within western regions, multi-tiered and diverse training initiatives shall be implemented. Organise centralised training sessions, inviting specialists and experienced teachers to deliver digital-focused lectures and training courses for rural educators. This enables teachers to acquire fundamental digital teaching skills, better adapt to the demands of information-based instruction, and fully leverage high-quality educational resources to enhance classroom teaching quality.

4.3 Home-School Collaboration—Fostering a Synergistic Educational Approach to Stimulate Students' Intrinsic Motivation for Learning

The recipients of educational resources are pupils, and establishing home-school collaboration is a crucial element in enabling small-scale rural schools in western regions to share high-quality educational resources. Parental support and involvement can provide pupils with a conducive learning environment, stimulate their intrinsic motivation to learn, and promote the effective utilisation of educational resources. In rural western regions, family education concepts remain relatively outdated, with parents demonstrating lower levels of commitment and involvement in their children's education. Schools should proactively assume responsibility for guiding and instructing parents, disseminating scientific educational concepts and methodologies to enhance parental awareness and participation. Furthermore, parents should be encouraged to engage in school educational activities, enabling them to experience the educational process firsthand and thereby strengthening their sense of identification with and responsibility for education. Fostering a positive home-school collaboration fosters an uplifting learning environment for pupils, igniting their academic interest and initiative. This enables pupils to more fully utilise high-quality educational resources, enhances learning outcomes, and promotes their holistic physical and mental development.

4.4 Exemplary Leadership—Establishing a Benchmark Radiation System

Demonstration and leadership serve as the pivotal approach to resolving the predicament of underutilised and inefficient educational resources in rural areas. Its core lies in creating replicable and scalable exemplary cases, thereby catalysing the intrinsic momentum for regional resource sharing through targeted initiatives. Demonstration leadership transcends mere showcase displays; it involves systematically establishing a closed-loop mechanism of "pilot exploration – experience refinement – radiating dissemination". Through pioneering trials at exemplary institutions, it furnishes peer schools with comprehensible, learnable, and actionable practical paradigms. Its value lies not only in providing models for technological application but also in leveraging the successful practices of benchmark schools to elevate regional educational standards holistically, thereby forging a new educational ecosystem.

Adhering to the working principle of piloting first and exemplary leadership, we consistently pursue dual objectives of problem-solving and goal-achievement, striving to establish pilot demonstration schools with comprehensive coverage. Specifically, demonstration leadership must focus on three dimensions. Firstly, creating "Internet Plus Resource Sharing" demonstration schools. Selecting rural small-scale schools within the region that possess relatively well-developed infrastructure and teachers with higher levels of digital literacy as pilot sites, we will establish a standardised process of "resource input–localised adaptation–feedback on outcomes", providing tangible reference points for neighbouring schools. Secondly, distilling replicable localised practices. Demonstration schools must address the practical challenges faced by small rural schools in western regions – such as limited student numbers, insufficient teaching resources, and low educational standards – by summarising low-cost, easily implementable technical solutions, streamlined resource integration strategies, and pathways for enhancing teacher capabilities. These insights can be shared through case compilations, on-site observations, and short instructional videos to lower the learning threshold for other institutions. Thirdly, establishing a radiating influence system. The success of a single demonstration site is not the end goal; the key lies in stimulating regional-wide improvement. On one hand, establish demonstration and paired assistance mechanisms. Encourage demonstration schools to proactively "reach out" and form close-knit assistance communities with multiple underperforming village schools. Through online master teacher studios, cross-school mentor-apprentice pairings, regular teaching support (online/offline seminars), and shared school-based resource libraries, achieve precise and sustained knowledge transfer and experience dissemination. Secondly, strengthen regional coordination and policy safeguards. Local education authorities should act as organisers and facilitators, incorporating demonstration impact into school evaluations and headteacher assessments while establishing dedicated incentive funds. They should strategically plan the distribution of demonstration schools to prevent resource concentration and ensure balanced coverage. Concurrently, authorities must provide sustained technical support and professional development opportunities to maintain the demonstration schools' leading edge.

5 CONCLUSION

The "Internet Plus" initiative has opened up entirely new avenues for small rural schools in western regions to overcome constraints on educational resources. Its core value lies not merely in the technical delivery of resources, but in fundamentally reshaping the logic through which educational equity is achieved. It serves not only as an effective tool for bridging the urban-rural education divide, but also as a powerful engine driving the renewal of educational philosophies, the transformation of pedagogical models, and the restructuring of educational systems. From cloud-based classrooms breaking geographical barriers, to smart platforms integrating high-calibre teaching resources, and digital resource libraries bridging curriculum gaps, the educational divide is gradually being narrowed by digital technology. We must maintain a clear understanding that technology is a means, while nurturing talent remains the ultimate goal. Seizing this historic opportunity, we should deepen the integrated application of "Internet Plus Education" with greater resolve and more concrete measures. Continuously refining the ecosystem for resource sharing will enable every small rural school to set sail amidst the waves of the information age, ensuring every rural child accesses equitable, high-quality education. This will lay a solid foundation of talent for rural revitalisation and the nation's future development.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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