

**APPLICATION PATHS OF DIGITAL EDUCATIONAL
TECHNOLOGIES FOR ENHANCING EDUCATION QUALITY
IN BELT AND ROAD COUNTRIES:
A CASE STUDY OF SELECTED COOPERATION PROJECTS**

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This article explores the effects of the Belt and Road Initiative (BRI) on the education systems of China and the countries involved in the Initiative's geographic scope. It offers an analysis of the growth in educational collaboration with partner nations, categorized by regional divisions. The study focuses on key indicators such as the number of students originating from BRI countries and the establishment of Confucius Institutes and Classrooms, evaluating these factors in relation to China's efforts to expand its soft power internationally. Furthermore, the research outlines future opportunities for harmonizing educational policies and examines the relevant regulatory and legal frameworks that guide the BRI's development across various levels of the education sector.

Keywords: BRI; digital educational technologies; international cooperation; teacher professional development; distance learning, vocational training; transnational education; educational ecosystems.

**ПУТИ ПРИМЕНЕНИЯ ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ
ТЕХНОЛОГИЙ ДЛЯ ПОВЫШЕНИЯ КАЧЕСТВА ОБРАЗОВАНИЯ
В СТРАНАХ, УЧАСТВУЮЩИХ В ИНИЦИАТИВЕ «ОДИН ПОЯС,
ОДИН ПУТЬ»: ПРИМЕР ИЗ ИЗБРАННЫХ ПРОЕКТОВ
СОТРУДНИЧЕСТВА**

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В статье исследуется влияние инициативы «Один пояс, один путь» (ИОП) на системы образования Китая и стран, входящих в географическую зону действия инициативы. Предлагается анализ роста образовательного сотрудничества со странами-партнерами, классифицированный по регионам. Исследование фокусируется на ключевых показателях, таких как количество учащихся из стран ИОП и создание Институтов и Классов Конфуция, оценивая эти факторы в контексте усилий Китая по расширению «мягкого влияния» на международной арене. Кроме того, в исследовании обозначены будущие возможности для гармонизации образовательной политики и рассмотрены соответствующие нормативно-правовые рамки, определяющие развитие инициативы «Один пояс, один путь» на различных уровнях образования.

Ключевые слова: инициатива «Один пояс, один путь»; цифровые образовательные технологии; международное сотрудничество; профессиональное развитие учителей; дистанционное обучение; профессиональная подготовка; транснациональное образование; образовательные экосистемы.

The swift growth of cross-border educational cooperation driven by the Belt and Road Initiative has opened new avenues for utilizing digital technologies to overcome persistent challenges such as limited access, insufficient teacher training, and mismatches between skills and industry needs. In this environment, the integration of digital platforms, massive open online courses (MOOCs), blended learning models, and specialized scholarship programs creates interconnected strategies that enhance teaching quality, provide training aligned with professional demands, and foster collaboration between institutions.

Dialogues and technical cooperation led by UNESCO have highlighted teacher professional development as a key area where digital methods can be expanded through collaborative platforms and the sharing of resources. This approach aims to enhance teaching practices across participating countries while promoting the alignment of common curricular objectives [1].

Education represents a central pillar of China's national strategy. With the goal of creating an education system on par with the world's best by the middle of the twenty-first century, China has not only focused on strengthening its domestic education infrastructure but also on projecting a favorable national image, promoting its cultural values and worldview internationally. At the same time, the country has significantly increased the enrollment of foreign students in its higher education institutions.

A key approach involves the use of open online resources and MOOCs offered by higher education institutions aimed at delivering sector-specific skills. Chinese universities have created MOOCs focused on infrastructure and technical fields related to Belt and Road projects, attracting a diverse group of learners from numerous partner countries. These courses exemplify how specialized knowledge can be transformed into modular digital curricula that support both skill development for infrastructure initiatives and ongoing professional growth for practitioners in participating nations. By compiling these courses into shared repositories across institutions, accessibility is improved, and partner countries gain the ability to adapt content through subtitling, localized case studies, and real-time tutorial assistance [2].

In the twenty-first century, the maritime dimension of the Belt and Road Initiative includes thirty-two countries, which are the subject of the 2020 Report on Higher Education Cooperation between China and the Countries along the Maritime Silk Road. This report offers a detailed structural analysis of educational collaboration with these nations, categorizing them by region into

Southeast Asia (ten countries), South Asia (four countries), West Asia (ten countries), and Africa (eight countries). The analysis is based on such indicators as the number of students from participating countries and the number of Confucius Institutes and Classrooms, examined within the context of the advancement of China's soft power abroad.

By mid-2023, the Belt and Road Initiative had achieved significant progress beyond the Maritime Silk Road framework. China had entered into mutual recognition agreements on higher education diplomas with forty-five participating countries and introduced the «Silk Road» programme as part of the Chinese Government Scholarship scheme. Additionally, various Chinese provinces, along with Hong Kong and Macao, collaborated with universities and research institutions to create scholarship opportunities specifically for students from BRI partner countries. By 2023, Chinese universities and colleges had opened 313 Confucius Institutes and 315 Confucius Classrooms in 132 BRI partner countries. Within the framework of the “Chinese Bridge” summer camp, nearly 50,000 young people from over one hundred partner countries were invited to China for study visits, while more than 100,000 Chinese language enthusiasts from 143 partner countries received online support in language learning and cultural familiarisation. Chinese universities and colleges collaborated with over twenty counterparts in partner countries across Asia, Africa, and Europe to establish «Luban Workshops», vocational training programmes dedicated to experience exchange among Chinese professional education institutions. According to forecasts, by 2030 the Belt and Road Initiative is expected to generate approximately 420,000 jobs in countries located along its routes [2].

Another important avenue consists of scholarship programs and structured exchange initiatives that integrate physical mobility with digital preparatory and follow-up education. Government-sponsored scholarships for Belt and Road countries increasingly incorporate online pre-departure training, remote language courses, and virtual academic bridging programs. These digital components help minimize dropout rates and facilitate a smoother transition for students entering host institutions. When coordinated with institutional articulation agreements, these measures contribute to increased graduation rates and enable the transfer of acquired skills to home-country institutions through digital repositories and collaborative supervision frameworks. The Chinese government scholarship programs and inter-university exchange networks illustrate this approach, providing structured pathways for student mobility supported by robust digital resources [3].

A third approach involves targeted digital vocational training integrated into corridor and industrial projects. Within the framework of the China–Pakistan Economic Corridor and related partnerships, capacity-building

initiatives have featured vocational scholarships alongside digitally delivered curricula focused on sectors such as railways, ports, and construction. These efforts demonstrate how digital education can be tailored to meet occupational standards and the specific timelines of project implementation, effectively responding to local labor market needs while incorporating international quality assurance measures. The use of remote supervision, competency-based evaluations, and micro-credentials further supports the transferability of skills across the various countries involved in corridor development.

A fourth avenue for improving quality draws on the digital transformation of institutions located within special economic zones and industrial parks that accommodate transnational investments. The Great Stone China–Belarus Industrial Park exemplifies this model, where the spread of technology and collaborative efforts extend to educational and training facilities. This includes joint vocational centers and partnerships between industry and academia, all supported by digital technologies that facilitate training delivery, simulations, and remote mentoring. Integrating digital training hubs within these zones fosters localized ecosystems where educational innovation, industry feedback, and accreditation systems develop together. This synergy enhances the practical relevance of curricula and reinforces the connection between training programs and employment opportunities.

Several key principles underpin the successful implementation of these approaches. Foremost, ensuring interoperability and the use of open standards for both content and credentialing is crucial to facilitate recognition across different regions. Equally important is the parallel investment in teacher professional development, which enables the effective translation of technological tools into enhanced teaching practices. Additionally, adapting digital resources to local linguistic, cultural, and occupational contexts is vital to maintain their pedagogical effectiveness in diverse settings. Fourth, monitoring systems using disaggregated learning analytics are required to evaluate outcomes and to guide iterative improvement. These principles are evident in successful projects that combine institutional commitment, funding for capacity-building and mechanisms for quality assurance anchored in partnerships between universities, employers and development agencies [4].

While many researchers emphasize that China's involvement in educational cooperation with Belt and Road countries is largely motivated by practical goals-especially the promotion of its vocational training standards-this perspective often neglects the aims pursued by the partner countries themselves. Many of these nations have education systems that lag behind China's in terms of development and face challenges in meeting varied educational needs or maintaining high instructional quality. In the past, it was widely believed that international students came to China mainly to experience its rich and unique cultural heritage, with their academic focus centered largely on studying the

Chinese language and culture. The situation, however, has undergone a fundamental transformation. Chinese universities, now achieving increasingly high positions in global rankings, are able to offer foreign students a wide range of new, cutting-edge disciplines and fields of study essential for the socio-economic and technological development of their home countries. Educational collaboration among Belt and Road countries plays a vital role in establishing a framework for multilateral engagement. This system promotes regional and international trust and encourages openness in tackling challenges that affect both individual nations and the global community [5].

Several challenges limit the effectiveness of these initiatives, including disparities in digital infrastructure, varying levels of language readiness among learners, differences in regulations that complicate the recognition of credentials across borders, and possible imbalances in how priorities are established between partner countries [6]. To address these challenges, mitigation strategies include adopting blended delivery approaches that integrate low-bandwidth content with local support to overcome language and teaching barriers. Additionally, establishing negotiated agreements for mutual credential recognition and providing capacity-building funding focused on instructional design and quality assurance—rather than solely on hardware acquisition—are essential components of these efforts [7]. Recent evidence from cooperative dialogues and institutional consortia suggests that initiatives emphasizing capacity-building and mutual governance achieve more sustainable improvements in quality compared to those based solely on one-sided content delivery [8].

In summary, digital educational technologies present diverse opportunities to improve education quality within the framework of Belt and Road cooperation. These opportunities encompass open online learning platforms, digitally supported scholarship programs, vocational training aligned with corridor development projects, and the creation of localized digital ecosystems within investment zones. The overall success of these approaches relies on their integration with local education systems, sustained investment in teacher development, and governance structures that promote joint responsibility. Moving forward, collaboration efforts should prioritize interoperable credentialing, consistent funding dedicated to pedagogy-centered capacity-building, and comprehensive monitoring mechanisms to validate improvements in quality.

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