

THE INFLUENCE OF STRATEGIC EDUCATIONAL PLANNING IN HENAN PROVINCE IN ENHANCING CHINESE-INTERNATIONAL HIGHER EDUCATION COOPERATION

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Abstract

Under the current background of globalization, the cooperation between China and foreign countries in running schools has become more and more frequent, in which strategic educational planning is regarded as one of the core elements affecting the effectiveness of such cooperation. This study discusses the role of strategic educational planning in foreign cooperative education in colleges and universities from four aspects, namely, clarifying objectives, planning resources, optimizing structure and improving quality, and how to give full play to their advantages in order to achieve the effective operation of Chinese-international cooperative education in colleges and universities and to promote the healthy development of China's higher education. In the study, the theoretical understanding of scholars at home and abroad on the relationship between strategic educational planning and Chinese-international cooperative schools is analysed and summarized; the questionnaire survey method is used to conduct an empirical test in Henan Province of China as an example; and the relationship between strategic educational planning and the effectiveness of Chinese-international cooperation is elaborated on the basis of the test results. The results of the study show that strategic educational planning is one of the effective ways to improve student satisfaction and enhance the international competitiveness of schools, and that strategic educational planning provides comprehensive guidance for Chinese-international cooperation and promotes the orderly development of the cooperation at the strategic level. In the context of globalization, strategic educational planning is crucial to the success and sustainable development of Chinese-international cooperative schools.

Keywords: *Strategic Educational Planning, Henan Province, Enhancing Chinese-International Higher Education Cooperation*

Introduction

Chinese-international cooperative education refers to the cooperation between educational institutions of two countries or regions in China and foreign countries to jointly offer a certain educational programme or course, and students can obtain academic qualifications or degrees recognized by both sides upon completion of their studies (Lin, 2019). Such cooperation usually involves cooperation in terms of curriculum, teaching plan, teaching staff and so on, aiming at making full use of the resources and advantages of both sides, improving the quality of education and promoting international exchanges and cooperation (Xi, 2020). Collaboration between China and international entities in education spans across various levels, including higher education (undergraduate and postgraduate), vocational training, and other educational tiers. This mode of cooperation helps to promote cross-cultural exchanges and to cultivate talents with an international outlook (Lin et al, 2022).

Strategic education planning encompasses defined objectives, guidelines, and methodologies established by a country, region, or educational institution to steer and advance its education system over an extended duration (Zeng, 2020). This planning involves delineating short-term,

medium-term, and long-term strategies, which operate at global, disciplinary, and phased levels, addressing themes like quality enhancement, internationalization, innovation, and technology (Li, 2021). Furthermore, it operates at both local and national levels. These divisions are not isolated and usually intersect with each other to form a comprehensive strategic education plan (Bantilan et al, 2023). Such a plan should be dynamic and able to be adjusted and updated according to changes in social, economic, scientific and technological factors. The strategic planning of education mentioned in this study is a "holistic" concept, that is, it includes a complete and systematic education strategic objectives, policy recommendations and action programmes. It is a holistic layout with the characteristics of continuity and systematicity. As a whole, it is a top-down plan that guides schools in formulating various actions. It includes four aspects, namely, clarifying objectives, planning resources, optimising structure and improving quality.

Clarifying goals involves defining the developmental direction and objectives of Chinese-international cooperative education, guiding the collaborating entities to align their efforts more purposefully in their educational pursuits by formulating distinct strategic goals and plans. This approach aims to ensure that the effectiveness of cooperation meets the anticipated outcomes (Tham et al., 2017; Pambreni et al., 2019; Zhang & Yang, 2021; Herath et al., 2023). Planning resources encompasses the allocation and utilization of both social and educational resources (Ochieng & Gyasi, 2021). The sharing and integration of these resources are customary within Chinese-international cooperative education, and strategic educational planning facilitates their more efficient utilization, benefiting both parties involved (Xi & Zhu, 2023).

Optimizing structure pertains to refining the organizational framework of Chinese-international cooperative education, elucidating roles and interrelationships while establishing a systematic, rational, and standardized management system. Enhancing quality involves elevating the standards of Chinese-international cooperative education. By setting educational benchmarks and refining teaching methodologies, educational institutions can effectively supervise and enhance the educational experience, offering superior services to students engaged in Chinese-international cooperative education (Li, 2019; Udriyah et al., 2019; Horani et al., 2023). The effectiveness of Chinese-international cooperative education refers to the extent to which an educational programme or course carried out in cooperation between educational institutions in two countries or regions, Chinese and foreign, meets the desired objectives and achieves good results (Ding, 2019). The effectiveness of Chinese-international cooperatively run schools is usually evaluated from six aspects: academic quality, student achievement, internationalization level, inter-institutional cooperation relationship, resource utilization efficiency and social impact. Academic quality is mainly reflected in the quality of teachers, teaching quality and scientific research capacity (Yu, 2023). Student outcomes are mainly reflected in students adapting to future work needs after graduation; The internationalization level is mainly reflected in students' understanding and cognition of the development of higher education abroad (Oren, 2020). The relationship between cooperating institutions is characterized by the responsibilities and obligations of both partners, namely, how they work together, such as the establishment of a well-developed talent development system (James, 2018). Resource efficiency is achieved through the rational use of educational resources, usually including teachers, facilities and scientific research funding. The social impact is reflected in the school's visibility, influence, and contribution to the region's economic and cultural development (Wang, 2020).

The Current Development and Strategic Educational Planning of Sino-Foreign Cooperative Education in Higher Institutions in Henan Province, China

Since the late 1980s and early 1990s, coinciding with the onset of China's policy of opening to the world, Chinese higher education underwent substantial transformation. This period signified China's initial foray into international educational collaborations, spurred by governmental initiatives aimed at fostering global integration (Lin, 2019). Universities throughout China were prompted to establish international partnerships, aiming to leverage a diverse array of foreign educational resources and cutting-edge technologies. This initiative aimed to uplift the quality of China's own higher education system. Early on, these collaborative efforts were primarily in areas like engineering, technology, and economic management (Wang, 2019). With the continued development of China's open-door policy, more and more Chinese universities started to establish connections with overseas institutions, leading to joint ventures including dual degree programs and collaborative training initiatives. Alongside this, the Chinese government put in place various laws and regulations to promote high-level international collaborations, all with the goal of improving the quality of talents produced through these Chinese-international partnerships. This led to a rapid and widespread growth in Sino-foreign cooperative education, spreading across different academic disciplines and levels, ranging from undergraduate to doctoral studies (Lin, 2021).

In Henan Province, the growth of Chinese-international cooperative education in higher education institutes mirrored this national trend and has remained robust. Today, Henan stands as a key player in China's international higher education scene. Universities in Henan have forged connections with institutions in Asia, Europe, North America, among other regions, spanning diverse fields like engineering, medicine, and economic management (Ding, 2020). This surge in international educational cooperation has brought a host of high-end foreign educational resources to Henan, including distinguished faculty members, cutting-edge teaching infrastructure, and comprehensive curriculums. Additionally, some of these cooperative programs have closely integrated with Henan's local industries, creating a synergy between education, research, and industry that significantly benefits the region's economic growth (Yao, 2019).

Based on regional policies, economic conditions and educational needs, Henan Province of China has formulated the selection criteria for Chinese-international cooperative education institutions in terms of academic reputation, international recognition, matching of specialized fields, faculty strength, language requirements, cultural adaptability, legal compliance and resource inputs, etc., clarified the objectives and positioning of the institutions of higher education in Henan Province to carry out the Chinese-international cooperative education, and put forward the specific conditions for application. At the same time, the participating institutions were strictly examined and evaluated (Lin, 2021; Wulandari et al., 2023; Ranawaka et al., 2023). In accordance with the Regulations of the People's Republic of China on Chinese-international Cooperative Education, the Measures for the Implementation of the Regulations of the People's Republic of China on Chinese-international Cooperative Education, the Opinions of the Ministry of Education on Certain Issues of Chinese-international Cooperative Education, and other relevant laws and regulations, and by taking into account the factors of manpower, finance, materials and technology, the Department of Education of Henan Province has formulated the planning of Chinese-international Cooperative Education in the higher education institutions in Henan Province, so as to ensure reasonable allocation and full use of various resources, such as finance, teachers, academic resources, technical support, marketing resources and social support (Pang, 2022; Zheng et al., 2023; Sudha et al., 2023). The planning of Chinese-international cooperative education in

higher education institutions in Henan Province has been formulated by comprehensively considering various factors such as human, financial, material and technical factors, so as to ensure the reasonable allocation and full use of various resources such as financial resources, teachers' strength, academic resources, technical support, marketing resources and social support. In recent years, universities in Henan Province have crafted unique development strategies and goals, tailored to their individual characteristics, as noted by Li (2019).

Furthermore, refining the framework of strategic educational planning for Chinese-international cooperative education in Henan Province stands as a crucial measure. This step is essential for higher education institutions in the region to guarantee the successful execution and ongoing progress of such collaborative educational endeavors, as emphasized by Ding (2020). Institutions of higher education in Henan Province running Chinese-international cooperative education regularly evaluate the professional structure and teaching staff of cooperative programmes according to the market demand (Yao, 2019), make adjustments and additions according to the needs of programme development, regularly update the content of curricula, regularly evaluate the cooperative relationship with international cooperative institutions (Pang, 2022), optimize the strategy of student enrolment, actively integrate the social resources, and update and upgrade the technical support in accordance with the development of the cooperative institutions and the needs of the programmes. The technical support is constantly updated and upgraded in accordance with the development and programme needs of the partner institutions to ensure that the optimal structure of the strategic education plan is constantly improved (Li, 2019).

Enhancing the caliber of strategic educational planning for Chinese-international collaborations in Henan Province is crucial for the successful execution and impactful results of educational programs, as Ding (2020) articulates. Institutions in Henan engaging in such cooperative education have set up robust quality control and feedback systems. These encompass student evaluations, faculty reviews, and industry input, allowing for a comprehensive understanding of program strengths and areas needing improvement. Additionally, these programs undergo scrutiny by international accreditation bodies to align with global educational standards. There is a focus on continuous professional development for educators, offering them regular training to elevate teaching quality and keep them informed about the latest educational methodologies and concepts, as highlighted by Yao (2019). The programs also prioritize interdisciplinary collaboration, fostering students' holistic literacy and innovative capabilities, a concept emphasized by Pang (2022). Moreover, there is a commitment to establishing a wide-ranging student support network, including mental health resources and career guidance, to foster students' overall growth. The encouragement of faculty and student involvement in research, community service, international collaborations, and social initiatives is integral. This approach ensures that the educational programs not only meet but lead in both local and international educational trends, creating a synergistic effect for optimal outcomes, as discussed by Xi & Zhu (2023).

Thus, this study investigates the interplay between clearly defined objectives, resource allocation, structural optimization, and quality enhancement in strategic educational planning. It aims to explore and analyze effective strategies for augmenting the efficacy of Sino-foreign cooperative education in Henan's higher education sector.

Strategic educational planning factors

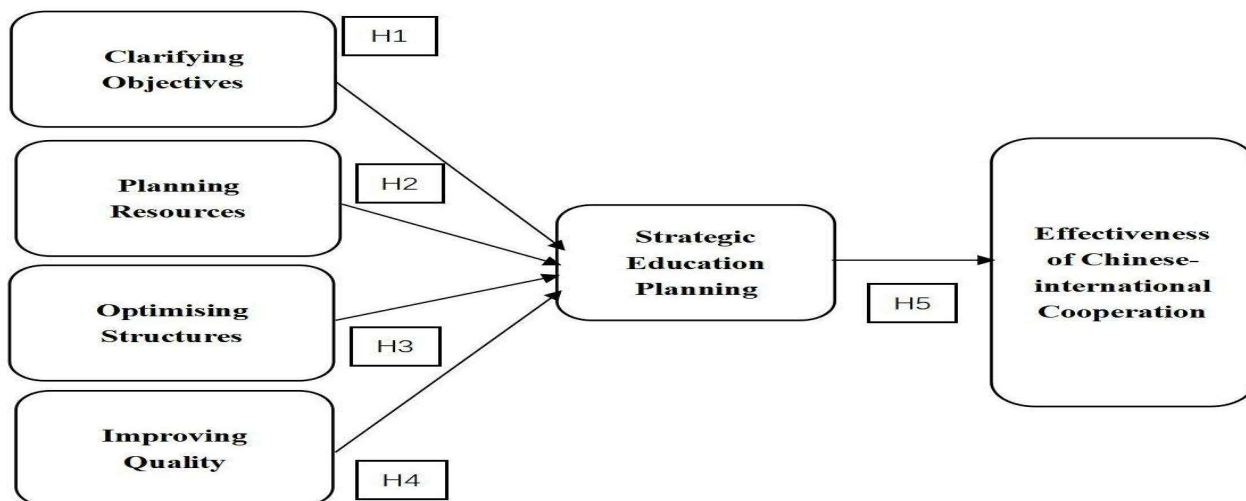


Figure 1. Theoretical Framework

Hypothetical development

Strategic educational planning affects the effectiveness of Chinese-international cooperative education supported by many theories. Resource Dependence Theory, Institutional Theory, Cultural Difference Theory, provide theoretical basis for the relationship between strategic educational planning and the effectiveness of Chinese-international cooperative education in higher education institutions in Henan Province, China. Jeffrey Pfeffer and Gerald Salancik, the founders of Resource Dependence Theory, presented the basic framework of Resource Dependence Theory in their book *The External Control of Organizations: A Resource Dependence Perspective*. The External Control of Organizations: A Resource Dependence Perspective) presented the basic framework of resource dependence theory, they argued that organisations need to be dependent on other organisations in the external environment in order to obtain and maintain the resources they need to exist. Resources here include finance, technology, information, talent, etc., and the interdependence between organisations affects their behaviour and decision-making. Moreover, James W. Michell also states that in the field of education, understanding and managing resource dependencies is crucial for organisational success. Therefore, in the resource dependency theory provides a theoretical basis for analysing the relationship between the effectiveness of strategic educational planning in foreign co-operative education.

Recognizing the importance of institutional factors in educational systems is a widely acknowledged concept among scholars and educational administrators for developing effective strategies. Michael Mintrom's use of institutional theory in his research on educational policy and management, particularly in his works such as "Policy Entrepreneurs and School Choice," delves into the institutional challenges and possibilities in the formulation of educational policy. Similarly, Meyer and Rowan's exploration of the role of organizations and institutions in educational reform offers insightful research findings on how institutions influence schools and the broader education system. They suggest that practical education planning can benefit from institutional theory, enabling government departments, school management, and policymakers to evaluate current systems and devise flexible strategies for educational reform and quality enhancement.

In the realm of cultural differences and its application to strategic educational planning, Geert Hofstede, also known as Jom Kemp, developed influential theories. He posits that understanding the cultural variances among students, teachers, and families through a multidimensional approach

is crucial for creating inclusive and culturally sensitive policies. Eleanor Hubbard, with her focus on intercultural communication and education, emphasizes the impact of cultural differences on educational practices. Her publication "City Kids, City Schools: More Reports from the Front Row" addresses the challenges and approaches for educating culturally diverse students, particularly in urban settings. James A. Banks, in his book "Multicultural education: Issues and perspectives," underscores the importance of incorporating and respecting diverse cultural backgrounds in educational planning. His advocacy for multiculturalism in education suggests that school administrators, policymakers, and education professionals should integrate the theory of cultural differences in practical educational planning. This approach is vital for ensuring that educational policies and practices are more attuned to the needs of a multicultural society and for enhancing equity and inclusion in education.

Overall, these theories underscore the significance of strategic educational planning in the efficacy of Chinese-international cooperation in education. They are complemented by numerous scholars who have conducted empirical analyses to understand this relationship.

In 2021, Sun's study explored the constructive mechanism within Chinese-international cooperative colleges and universities, particularly in terms of clarifying strategic planning goals and integrating teaching methodologies. This research offers foundational insights for college administrators, guiding them to merge diverse learning environments, foster campus learning activities, and make informed, scientifically grounded decisions. Following this, Cindy's 2022 research explored further into the policies and regulations governing cross-border education in China. Her work emphasizes the refinement of educational strategic objectives and the continuous enhancement of management systems. This approach has led to improvements in scale, quality, and efficiency, resulting in a variety of cross-border educational models and institutional innovations.

Song and Yang (2023) stated in their study that strategic planning for the internationalization of higher education in Shandong Province, China, is particularly noteworthy. They outlined clear goals and formulated pertinent policies covering areas such as study abroad programs, Chinese-international cooperative education, the global promotion of the Chinese language, international academic exchanges, and the recruitment of overseas talents. Their approach resulted in the creation of a unique space for the international development of higher education, which distinctly reflects the regional characteristics of Shandong Province and has led to significant developmental achievements. Building upon these research findings, the hypothesis H1 is proposed.

H1: Clearly defined objectives are directly linked to strategic educational planning.

Chen (2020) studied the connotation, characteristics, influencing factors and their roles of knowledge sharing in Chinese-international cooperative education in higher education institutions, solved the problems existing in knowledge sharing in Chinese-international cooperative education, and pointed out that the hosting universities should clarify the objectives of cooperative education and enhance the understanding of the foreign cooperative universities; strengthen the top-level design, formulate an effective knowledge management system and resource planning, and promote the participation of Chinese and foreign teachers in the sharing and the achievement of knowledge innovation. Ding (2021) analysed the status quo and countermeasures of Chinese-international cooperative education in Guangxi universities from the three levels of government, universities and society, and suggested the establishment of a cooperation platform for university alliances, the establishment of an information sharing service mechanism, the reasonable and efficient planning of resources, the innovation of school running methods and the strengthening of teaching quality

supervision. In her 2022 study, Miao conducted an in-depth analysis of the fundamental elements comprising the regulatory framework essential for identifying the goals and necessities of Chinese-international cooperative education. Her research began with a focus on establishing regulatory objectives, delineating the distribution of regulatory authority, enhancing regulatory tools, and implementing regulatory systems. From this basis, Miao proposed specific requirements for developing the resource planning system and refining regulatory methodologies. Her approach aimed to ensure clarity in the delineation of responsibilities among various stakeholders, thereby fostering the optimal allocation of resources for maximum efficiency. Following these research findings, the hypothesis H2 was formulated.

H2: Resource planning is directly related to strategic education planning

Sun (2021) further analysed the development of China's education opening up to the outside world in the twenty years since its accession to the WTO, and proposed stepping up the improvement of the legal system based on WTO rules, enhancing the supply capacity of China's trade in education services, optimising the structure to improve competitiveness, and exploring a regulatory framework for the quality of education that is both Chinese and in line with international standards. Xi et al. (2022) studied the optimisation of the management structure, the construction of a networked organisational support system and the ecological management of continuous innovation in the education ecology supported by an internationalised and blended campus learning environment. Zhang (2023) studied the status and role of opening up of education in the construction of education power and strategy, analysed the intrinsic connection between education exchange and cooperation and opening up and the realization of high-quality development of education, and put forward the deepening of opening up of education to the outside world, focusing on quality assurance, optimizing the structure of education to the outside world, and perfecting the monitoring of quality, to construct a high-quality system of opening up of education to the outside world. Based on the above research results, hypothesis H3 is proposed.

H3: Optimising structures is directly related to strategic educational planning.

In their 2022 study, Dong and colleagues used the Chinese-Italian cooperative schooling program at Jilin Agricultural University as a case study to delve into innovative practices enhancing the quality of talent cultivation within this cooperative program. Their findings include a summarization of strategies for quality improvement in cooperative schooling programs, offering valuable insights for other colleges and universities engaged in similar initiatives. Lin and Gao, in their 2022 research, focused on the current state of Sino-foreign cooperative education in local colleges and universities. They analyzed the factors influencing the quality of such education and explored the establishment of a quality assurance mechanism, aimed at elevating the teaching standards in these cooperative educational settings. In 2023, Niu and Guo examined the existing Chinese-international cooperative education programs in terms of teaching quality and management services. They proposed enhancements to the management mechanisms, including the expansion of the management team, the improvement of the comprehensive quality of management personnel, and the establishment of a system to guarantee quality improvement. Building upon these research outcomes, the hypothesis H4 was formulated.

H4: Quality enhancement is directly linked to strategic education planning.

Meng (2021) studies the complexity of cross-border education services and the effectiveness of Chinese-international cooperative education in colleges and universities, starts from the

attributes and characteristics of Chinese-international cooperative education in higher education, and puts forward corresponding suggestions for the improvement of policies on Chinese-international cooperative education as well as the formulation of relevant legal norms. In his 2021 study, Huang examined the factors influencing the establishment of a quality assurance system for Chinese-international cooperative education, drawing from the developmental state of such projects in colleges and universities. He offered a series of countermeasures and recommendations aimed at fostering the effective progression of Sino-foreign cooperative education. Similarly, in 2021, Lin and Ling conducted research into the policy trajectory of Chinese-international cooperative education. They argued for the necessity of a proactive and ample policy provision to support these programs. Their recommendations included clarifying policy objectives, enhancing a high-quality policy framework, intensifying the provision of superior policies, and realizing the guiding and facilitative role of these policies in the high-quality advancement of Chinese-international cooperative education. Based on these research insights, the hypothesis H5 was developed.

H5: Strategic educational planning is directly related to the effectiveness of Chinese-international cooperation.

Method

In this study, data were collected from faculty and staff of higher education institutions with Chinese-international cooperation in Henan Province, China. The total sample size was 300, and electronic questionnaires were distributed through Questionnaire star to obtain responses. A total of 330 questionnaires were distributed and 325 valid questionnaires were returned. The data collected were statistically analysed using SPSS and AMOS statistical tools, which have powerful data analysis capabilities to make quick and accurate judgements and interpretations of the survey questions. At the same time, AMOS provides rich and intuitive charts and graphs to help users understand the survey results more comprehensively (Azam et al., 2023).

In addition, the data were collected through questionnaires. The questionnaire method was used to collect data from the faculty and staff of Chinese and foreign cooperative higher education institutions in Henan Province. The questionnaire is mainly divided into two parts (Azam et al., 2021). The first section presents an overview of the respondents. The second section deals with items related to key variables, namely strategic educational planning, Sino-foreign co-operation effectiveness, clarifying goals, planning resources, optimising structure, and improving quality. Likert scale was used to collect data in this study.

Results

In reliability analysis, Cronbach's Alpha coefficient is employed to assess the consistency of research variables across various measurement items in a survey questionnaire study. It is generally considered that for variables to exhibit good reliability, the Cronbach's Alpha coefficient should exceed 0.7 (Hair, 2019).

Table 1. Reliability Analysis
Reliability Analysis

Variable	Item	CITC	Cronbach's after item deletion	Cronbach's Alpha
PR	PR1	0.717	0.863	0.886

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	PR2	0.693	0.868	
	PR3	0.739	0.858	
	PR4	0.723	0.861	
	PR5	0.748	0.855	
	CO1	0.707	0.896	
	CO2	0.69	0.899	
CO	CO3	0.772	0.883	0.905
	CO4	0.805	0.875	
	CO5	0.853	0.863	
	OS1	0.641	0.886	
	OS2	0.677	0.879	
OS	OS3	0.748	0.863	0.89
	OS4	0.826	0.845	
	OS5	0.775	0.856	
	IQ1	0.843	0.874	
	IQ2	0.73	0.898	
IQ	IQ3	0.792	0.885	0.91
	IQ4	0.725	0.899	
	IQ5	0.768	0.89	
	SEPV1	0.639	0.866	
	SEPV2	0.736	0.829	
SEPV	SEPV3	0.718	0.837	0.87
	SEPV4	0.813	0.798	
	ECIC1	0.827	0.836	
	ECIC2	0.773	0.857	
ECIC	ECIC3	0.737	0.87	0.892
	ECIC4	0.713	0.879	

From the table above, it can be seen that the Cronbach's Alpha coefficients for all variables exceed the standard of 0.7, indicating good internal consistency reliability for the variables. The standard for Corrected Item-Total Correlation (CITC) also exceeds 0.5, suggesting that the items in the measurement meet the research requirements. Looking at the 'Cronbach's Alpha value after removing this item,' it can be observed that removing any item does not lead to an increase in the Cronbach's Alpha value. This also indicates the good reliability of the variables.

Exploratory factor analysis was conducted using SPSS, with the questionnaire being subjected to the KMO and Bartlett's Test of Sphericity, as shown in Table 2. From Table 2, the KMO value is 0.937, greater than 0.7, and the Bartlett's Test of Sphericity is significant (Sig.<0.001), indicating that the questionnaire data meets the prerequisites for factor analysis. Therefore, further analysis was conducted. Factor extraction was performed using the principal component analysis method, with factors extracted based on eigenvalues greater than 1. Factor rotation was done using the varimax orthogonal rotation method. A total of 6 factors were identified, with a total explained variance of 72.665%, greater than 50%, indicating that the 6 extracted factors are highly representative (Zhu & Song, 2009). In the rotated component matrix, the factor loadings for each measurement item were all greater than 0.5, and the cross-loadings were all less than 0.4, indicating that each item loaded significantly on its corresponding factor, demonstrating good construct validity.

Table 2. KMO and Bartlett's test

Kaiser-Meyer-Olkin metric of sampling adequacy		0.937
Bartlett's test of sphericity	approximate chi-square (math.)	6281.269
	df	378
	Sig.	.000

After completing the above analyses, a validation factor analysis was carried out using Amos to develop the analyses for the six variables of this study, with a total of 28 test questions, which resulted in Figure 2, Tables 3 and 4.

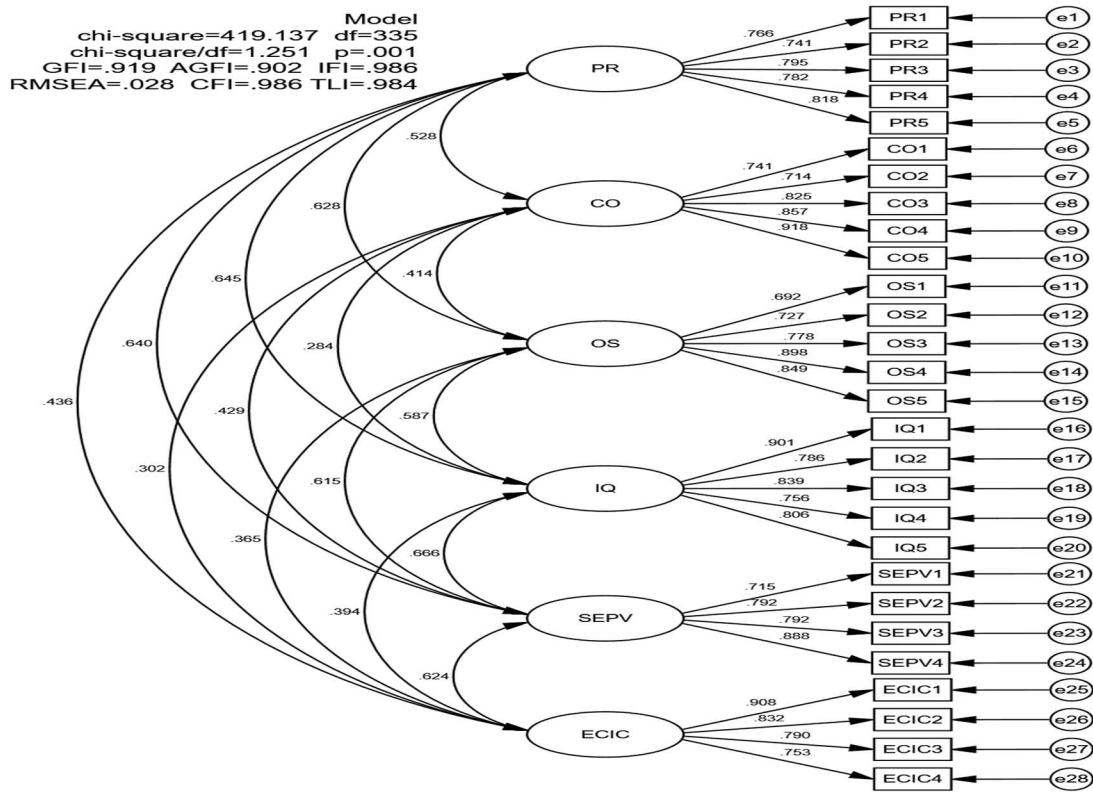


Figure 2. Confirmatory Factor Analysis
Table 3. Confirmatory Factor Model Fit

Model Fit Indices	Optimal Criterion Value	Statistical Value	Fit Condition
CMIN	---	419.137	---
DF	---	335	---
CMIN/DF	<3	1.251	Good Fit
RMR	<0.08	0.040	Good Fit
GFI	>0.9	0.919	Good Fit
AGFI	>0.9	0.902	Good Fit
NFI	>0.9	0.935	Good Fit
IFI	>0.9	0.986	Good Fit

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TLI	>0.9	0.984	Good Fit
CFI	>0.9	0.986	Good Fit
RMSEA	<0.08	0.028	Good Fit

From Table 3, it is evident that CMIN/DF is 1.251, which is below the standard of 3. The GFI, AGFI, NFI, TLI, IFI, and CFI all exceed the standard of 0.9. RMR is 0.040, less than 0.08, and RMSEA is 0.028, also less than 0.08. All fit indices meet the general research standards, therefore, it can be concluded that this model has a good fit.

Table 4. Confirmatory Factor Analysis Results

Variable	Item	Factor Loading	CR	AVE
PR	PR1	0.766	0.886	0.61
	PR2	0.741		
	PR3	0.795		
	PR4	0.782		
	PR5	0.818		
CO	CO1	0.741	0.907	0.663
	CO2	0.714		
	CO3	0.825		
	CO4	0.857		
	CO5	0.918		
OS	OS1	0.692	0.893	0.628
	OS2	0.727		
	OS3	0.778		
	OS4	0.898		
	OS5	0.849		
IQ	IQ1	0.901	0.91	0.671
	IQ2	0.786		
	IQ3	0.839		
	IQ4	0.756		
	IQ5	0.806		
SEPV	SEPV1	0.715	0.875	0.639
	SEPV2	0.792		
	SEPV3	0.792		
	SEPV4	0.888		
ECIC	ECIC1	0.908	0.893	0.677
	ECIC2	0.832		
	ECIC3	0.79		
	ECIC4	0.753		

From Table 4, it is observed that the standardized factor loadings of each variable are greater than 0.6, Composite Reliability (CR) are all above 0.7, and the Average Variance Extracted (AVE) are all above 0.5, indicating good convergent validity of the variables.

Table 5. Discriminant validity

	PR	CO	OS	IQ	SEPV	ECIC
PR	0.781					

CO	.479**	0.814				
OS	.572**	.390**	0.792			
IQ	.589**	.269**	.539**	0.819		
SEPV	.595**	.420**	.582**	.622**	0.799	
ECIC	.376**	.267**	.327**	.358**	.562**	0.823

The AVE method was used to assess the discriminant validity in this study, Fornell and Larcker (1981) The open root sign of the AVE for each factor had to be greater than the correlation coefficient of each paired variable to indicate that there was discriminant validity between the factors. The AVE open root sign for each factor is greater than the standardised correlation coefficient off the diagonal, therefore this study still has differential validity, with the diagonal lower triangle being the correlation coefficient. See Table 5 below for details. Calculations were performed using AMOS and estimated using the maximum likelihood method and the results are displayed in Figure 3.

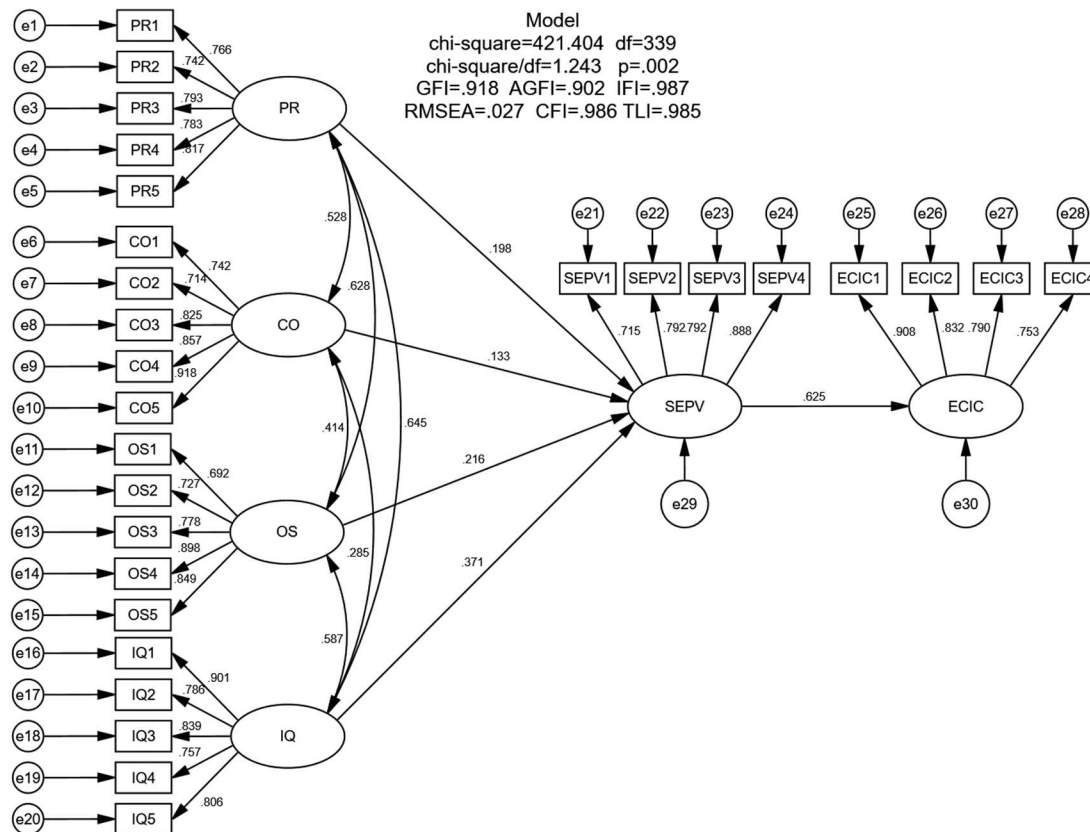


Figure 3. Structural equation model

Table 6. Model Fitting

Model fitting metrics	Optimum value	Statistical value	Fitting situation
CMIN	—	421.404	—
DF	—	339	—
CMIN/DF	<3	1.243	well-fitted
RMR	<0.08	0.040	well-fitted
GFI	>0.9	0.918	well-fitted

AGFI	>0.9	0.902	well-fitted
NFI	>0.9	0.935	well-fitted
IFI	>0.9	0.987	well-fitted
TLI	>0.9	0.985	well-fitted
CFI	>0.9	0.986	well-fitted
RMSEA	<0.08	0.027	well-fitted

From Table 6, it is observed that CMIN/DF is 1.243, which is less than the standard of 3. GFI, AGFI, NFI, TLI, IFI, and CFI all reach the standard of over 0.9. RMR is 0.040, less than 0.08, and RMSEA is 0.027, also less than 0.08. All these model fitting metrics meet the general research standards, suggesting that this model has a good level of fit.

Table 7. Path Coefficient

Path	Standardized coefficient	Unstandardized coefficient	S.E.	C.R.	P	Hypothesis
SEP <-- V PR	0.198	0.13	0.051	2.555	0.011	Supported
SEP <-- V CO	0.133	0.091	0.038	2.427	0.015	Supported
SEP <-- V OS	0.216	0.154	0.047	3.287	0.001	Supported
SEP <-- V IQ	0.371	0.201	0.037	5.417	***	Supported
ECI <-- C SEP V	0.625	1.126	0.112	10.047	***	Supported

Table 7 indicates that PR has a significant positive impact on SEPV ($\beta=0.198$, $p<0.05$), thus the hypothesis is supported; CO has a significant positive impact on SEPV ($\beta=0.133$, $p<0.05$), supporting the hypothesis; OS has a significant positive impact on SEPV ($\beta=0.216$, $p<0.05$), confirming the hypothesis; IQ has a significant positive impact on SEPV ($\beta=0.371$, $p<0.05$), supporting the hypothesis; and SEPV has a significant positive effect on ECIC ($\beta=0.625$, $p<0.05$), hence the hypothesis is supported.

Table 8. Mediation Analysis

	Effect size	Bias-Corrected		Percentile	
		95%CI		95%CI	
		Lower	Upper	Lower	Upper
PR_SEPV_ECIC	0.124	0.022	0.234	0.019	0.231
CO_SEPV_ECIC	0.083	0.018	0.153	0.015	0.15
OS_SEPV_ECIC	0.135	0.066	0.213	0.064	0.212
IQ_SEPV_ECIC	0.232	0.137	0.329	0.131	0.324

In AMOS, the Bootstrap method was used to run 5000 iterations, resulting in Bias-Corrected and Percentile values at the 95% confidence level, as shown in Table 8. The mediation effect of PR_SEPV_ECIC is 0.124, with the Bias-Corrected and Percentile 95% CI's Lower and Upper bounds not containing 0, indicating that the mediation effect is supported. The mediation effect of CO_SEPV_ECIC is 0.083, with its Lower and Upper bounds in the Bias-Corrected and Percentile 95% CI also not containing 0, suggesting the mediation effect is confirmed. The mediation effect of OS_SEPV_ECIC is 0.135, and its Lower and Upper bounds in the Bias-Corrected and Percentile

95% CI do not include 0, indicating the mediation effect is established. The mediation effect of IQ_SEPV_ECIC is 0.232, with its Lower and Upper bounds in the Bias-Corrected and Percentile 95% CI also not containing 0, confirming the mediation effect.

Conclusion

We can see from the results of the above research that clarifying objectives, planning resources, optimizing structure and improving quality have a significant positive effect on strategic educational planning. Strategic educational planning plays a mediating role between clarifying objectives, planning resources, optimising structure and improving quality and the effectiveness of Chinese-international cooperation. Therefore, it is of great significance to establish a reasonable and scientific strategic educational planning to promote the healthy and sustainable development of Chinese-international cooperative education.

The impact of strategic educational planning on Chinese-international cooperative education is very important. In terms of clarifying objectives: through the formulation of strategic education planning, it can help both parties of Chinese-international cooperative education to clarify the objectives and positioning of the cooperation, and ensure that the cooperation project is in line with the overall development strategy of the university. In terms of planning resources and optimising structure: Strategic planning helps cooperative schools to better integrate all kinds of resources, including teachers, facilities and curricula, so as to improve the quality of teaching and meet the academic needs of both sides. In terms of quality enhancement: Chinese-international cooperative education involves cooperation between different countries and cultures, which helps to cultivate international talents with cross-cultural knowledge and skills, thus effectively enhancing international competitiveness and providing a steady stream of intellectual support for China's economic and social development. Therefore, establishing a reasonable and scientific educational plan is the key to successful high-level educational cooperation. Strategic educational planning has a strong guiding significance for the effective development of Chinese-international cooperative education.

Theoretical significance

The development of this study is an expansion of the theory of integration of strategic management and education, especially in the context of Chinese-international cooperative education, and provides a new theoretical perspective and analytical framework for applying strategic educational planning to the field of education. In the context of international cooperative programmes, the results of this study contribute to the understanding and implementation of effective educational strategies. At the same time, this study enriches the research on intercultural educational cooperation and enhances the understanding of cultural teaching, management and communication in intercultural educational cooperation. In particular, its application in the specific context of Henan Province, China, not only theoretically expands the perspectives of strategic management and educational integration, but also helps to understand and adapt to the needs of educational cooperation in different cultural and managerial contexts, and provides lessons and references for other countries and regions in the world. By exploring the effectiveness of strategic educational planning in practice, this study deepens educational policy research and provides a theoretical basis for managers of international educational cooperation to develop effective management policies. The conduct of this study provides new insights into the design, implementation and management of international educational cooperation programmes and helps to improve the effectiveness and quality of these programmes.

Practical significance

The conduct of this study can provide assistance in the development of strategies for Chinese-international cooperation in higher education institutions in Henan Province, and help to improve the educational quality and efficiency of Chinese-international cooperation in higher education institutions in Henan Province. The analysis of the effectiveness of current strategic planning can provide practical guidance for future educational planning, especially in international cooperation in higher education. At the same time, it can promote better cross-cultural communication and understanding, which is particularly important for educational cooperation in the context of globalisation. Specifically, the study highlights the importance of clear goals in strategic educational planning, and therefore, Chinese and foreign cooperative providers need to clarify their long-term goals and visions. Clear goals help guide the direction of the entire educational programme and ensure that all resources and efforts are directed towards a common goal. Studies point out that effective resource planning is essential for strategic educational planning. Therefore, in Chinese-international cooperative education, attention needs to be paid to the rational allocation and utilisation of resources including financial resources, human resources and other educational resources. At the same time, the study shows that optimising structure and improving quality are also very important to strategic educational planning. Adequate consideration of the two important influencing factors of optimising structure and improving quality is conducive to the formulation of a more scientific and reasonable plan. Strategic educational planning plays a mediating role between clarifying goals, planning resources, optimising structure and improving quality and the effectiveness of Chinese-international cooperation, and provides scientific suggestions and guarantees for promoting the healthy and sustainable development of Sino-foreign cooperative education. Overall, the findings of this study are of great significance in guiding educational management in practice, especially in the specific field of Chinese-international cooperative education. Through the implementation of these findings, the quality, efficiency and overall success of educational programmes can be effectively enhanced.

Innovation points

The development of this study not only expands on the theory, but also plays a positive role in promoting the reality. Especially in applying the concept of strategic educational planning to the field of Chinese-international cooperative education. By combining education theory and strategic management theory, the study provides a new theoretical perspective for Chinese-international cooperative education. The conduct of this study not only contributes to the theory, but also plays a positive role in promoting the practice level. It provides educational policy makers and practitioners with concrete strategies and frameworks that help them to develop and implement strategic plans more effectively in Chinese-international cooperative education programmes. And compared with previous studies, this study's innovative focus on a specific region (Henan Province, China) provides a unique geographic and cultural context for the study, adding originality and depth to the research. It innovatively enriches the empirical research on Chinese-international cooperative education from the perspective of applied strategic educational planning. Provides a reference for Chinese-international cooperative education as well as international educational cooperation activities in other countries or regions around the world.

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