International Journal for Housing Science and Its Applications
Publish August 4, 2025. Volume 46, Issue 3 Pages 1801-1810

https://doi.org/10.70517/ijhsa463142

Analysis and Enhancement Strategies of College English Teachers' Intercultural Teaching Competence Based on Graph Theory Models

Yan Wang[1,2,*]
[1] School of Foreign Studies, Henan University of Urban Construction, Pingdingshan, Henan, 467036, China
[2] College of Arts and Sciences, University of the Cordilleras, Baguio City, 2600, Philippines
Corresponding authors: (e-mail: catherine802311@126.com).

Abstract This study systematically analyzes the structural characteristics and enhancement strategies of college English teachers' intercultural teaching competence through the integration of graph theory. A dynamic teaching competence model with three dimensions of curriculum design, facilitation and reflection was constructed, and structural equation modeling was used to verify the model fitness. The results of factor analysis showed that the total interpretation rate of the scale reached 84.714%, the result of X^2/df showed 3.803<5, the value of RMR was 0.028<0.05, and the values of GFI, AGFI, IFI, TLI, and CFI reached the criterion of >0.90. The total effect of Curriculum Design Competence on Facilitation Skill is 0.391, and the total effect of Teaching Reflection Competence on Curriculum Design Competence and Facilitation Skill is 0.322 and 0.357 respectively, which identifies the indirect effect path of intercultural teaching ability of “Teaching Reflection Competence → Curriculum Design Competence → Facilitation Skill”. The indirect effect path of intercultural teaching ability is recognized. Based on the above conclusions, English teachers in colleges and universities should activate the leverage effect of reflective ability to drive the optimization of the ability structure.

Index Terms graph theory model, competence structure model, intercultural teaching competence

I. Introduction

With the accelerated development of globalization, cultural exchanges among countries have become increasingly frequent and extensive. Cross-cultural communication has become an important skill in People’s Daily life and work [1], [2]. In English teaching, cultivating students' cross-cultural communication ability is of great significance. It can not only help them better adapt to the future learning and working environment, but also promote understanding and respect among different cultures [3]. When dealing with people from different cultural backgrounds, students should possess good communication, cooperation and problem-solving skills, which include not only a profound understanding and recognition of their own culture, but also an understanding of the cultural characteristics, values and behavioral patterns of other countries, as well as the adaptability in cross-cultural situations [4], [5]. In the current era of deepening economic globalization, students with cross-cultural communication skills can have a more comprehensive understanding of the cultures, customs and concepts around the world, thereby cultivating a global perspective and enhancing international competitiveness [6].

However, there are many factors affecting the improvement of English teachers' cross-cultural teaching ability, one is the difference between Chinese and Western educational forms [7]. At present, the majority of English teachers serving in colleges and universities are domestic graduates, only a few of them have overseas study experience, and the number of on-campus lay teachers is very limited [8], [9]. Based on the different educational concepts between China and the West, traditional teaching cannot adapt to the needs of English education, especially in terms of schooling concepts, curriculum focus content and examination forms [10], [11]. Secondly, pre-service educational practice in colleges and universities tends to be formalized [12]. Educational practice, as an important part of teacher training, plays a key role in the mastery and application of practical knowledge of English teachers [13], [14]. However, the current educational practice is dominated by apprenticeship, i.e., trainee teachers learn through observation, and there are few opportunities to participate in practical teaching, which is often a formality [15]-[17]. With the application of AI technology in teaching, AI brings new opportunities and possibilities for the improvement of teachers' teaching ability by assisting teachers to carry out personalized teaching, providing accurate learning analysis, and rich teaching resources [18]-[21].

This paper is based on the graph theory models to deal with noise interference and nonlinear characteristics in educational data. The structural equation modeling is systematically elaborated and a model of intercultural teaching

competence of college English teachers is constructed. Taking Province A as the research site, we developed and designed the Intercultural Teaching Competence Measurement Scale for College English Teachers, and distributed questionnaires to collect data. The model is tested through the structural equation modeling factor analysis method to verify the validity of the Competence model. Combined with the structural model of competence constructed, the hierarchical role paths of the competence elements are clarified.

II. Constructing a structural model of intercultural teaching competence based on graph theory models

Under the dual background of accelerated globalization and deeper development of internationalization of education, the intercultural teaching competence of English teachers in colleges and universities has become a key element to improve the quality of talent cultivation. However, the current academic research on the structural dimensions of this competence and its interaction mechanism still suffers from the problems of vague conceptual definition and insufficient empirical basis. The traditional analysis method is difficult to dynamically capture the correlation network and evolution law of the Competence elements. This study innovatively introduces the combination of graph theory models and structural equation modeling to construct a multidimensional structural framework of intercultural teaching competence. On the one hand, the topological relationships of the Competence elements are analyzed through the improved minimum spanning tree clustering algorithm, which breaks through the limitations of the traditional clustering algorithm that is sensitive to noise and dependent on the number of clusters; on the other hand, the structural equation modeling is used to verify the hierarchical effect and path mechanism of the Competence dimensions. The study aims to reveal the systematic features of intercultural teaching competence, provide theoretical support and practical path for teachers' professional development, and help the transformation and upgrading of foreign language education paradigm in the era of artificial intelligence.

II. A. Graph theory models

Graph theory is a tool used to study the binary relationships among things. It can be applied to solve many practical problems, such as the relationships in social networks, electronic components in circuits, and the layout of urban roads, etc. The fundamental principle of graph theory is to abstract a certain type of thing in a practical problem as a point and a specific relationship between things as a line. Therefore, abstracting practical problems into pictorial forms where points and lines have definite relationships can not only clearly represent various connections among things in the studied system, but also facilitate the mathematical description of these connections and convert them into digital codes recognizable by computers, such as association matrices, adjacency matrices, and adjacency lists, etc., thereby combining practical problems with computers. Realize computer-aided design based on graph theory.

II. B. Structural equation modeling

In structural equation modeling, there are concepts such as: latent variable, exogenous latent variable, endogenous latent variable, observed variable, mediating variable, unstandardized path coefficients, standardized path coefficients, direct impact effect, indirect impact effect, total effect value, measurement model, and structural model [22].

The mathematical expression of the measurement model is:

$$X = \Lambda_x \xi + \delta, \ (\text{Exogenous latent variable equation}) \tag{1}$$

$$Y = \Lambda_y \eta + \varepsilon, \ (\text{Endogenous latent variable equation}) \tag{2}$$

where ξ is an $n \times 1$-order vector of n exogenous latent variables; X is a $q \times 1$-order vector of q-observed variables of the exogenous latent variable ξ; Λ_x denotes the coefficients linking the X-variables to the ξ-variables in a $q \times n$-order matrix; and δ is a $q \times 1$-order vector of q measurement errors of X; η is a $m \times 1$-order vector of m-observed variables of the endogenous latent variable, and Y is a $p \times 1$-order vector of p-observed variables of the endogenous latent variable η; Λ_y denotes the coefficients of the linking Y variable on the η variable, a $p \times m$-order matrix; and ε is a $p \times 1$-order vector consisting of the p measurement errors of Y.

Mathematical expression of the structural model

$$\eta = B\eta + \Gamma\xi + \zeta \tag{3}$$

where ξ and η have the same meaning as above, B denotes the directional linkage coefficient between the η variables, as a $m \times m$-order matrix describing the interaction between the endogenous potential variables η;

Γ denotes the regression coefficient of the effect of the ξ variables on the η variables, as a $m \times n$-order matrix, which describes the effect of the exogenous latent variable ξ on the endogenous latent variable η; and ζ denotes the error of the endogenous latent variable, as a $m \times 1st$ order vector.

The occurrences of Λ_x, Λ_y, B_η, and Γ above all refer to the unstandardized path coefficients.

II. C. Construction of the structural model of teaching competence

II. C. 1) Intercultural Teaching Competence (ITC)

ITC enables instructors to achieve two key goals: first, to facilitate learning effectively in classrooms made up of a diverse community of learners (that is, in most classrooms today), and, second, to engage students effectively in global learning.

Given the two goals of the ITC model, we define ITC as: first, the ability of instructors to support the learning of students who are linguistically, culturally, socially or in other ways different from the instructor or from each other across a very wide definition of perceived difference and group identity; and second, the ability to engage students effectively in global learning [23]. Interculturally competent instructors can bridge cultural, linguistic, or other differences in the classroom, help students communicate successfully across disciplinary cultures, and establish meaningful relationships with and among students in order to facilitate learning and promote student engagement [24]. When interculturally competent instructors engage students in global learning, they are able to model intercultural competence for students in the classroom and facilitate dialogue about global issues using respectful, inclusive, and culturally relevant teaching strategies [25]. Interculturally competent instructors are open to diverse ways of knowing are reflective in their approaches to assessment and curriculum design [26], and are able promote multiple perspectives when they select content, readings, and learning activities [27]. The development of ITC is a lifelong process of discovery in the same way that the development of intercultural competence is a lifetime of continuous learning; therefore, interculturally competent instructors will continue to adapt their practice to the changing needs of the student communities they work with.

The ITC model consists of 20 key instructor competencies and teaching strategies, grouped into three interrelated categories: foundational competencies, facilitation skills, and Curriculum Design Competence. Foundational competencies focus on instructor self-awareness and the ability to model intercultural competence for students. Facilitation skills build on the foundational competencies, allowing instructors to interact with students and encourage interaction among students in ways that are respectful of diversity. Finally, Curriculum Design Competence reflect the skills of instructors who not only respond to diversity in their classroom, but also intentionally engage students in global and intercultural learning activities or discussions of social justice issues in order to promote global learning outcomes.

Table 1: Dimension indicators of English teachers' intercultural teaching competence

First-level dimension	Secondary dimension
Curriculum Design Competence	Ontological knowledge(A1)
	Conditional knowledge(A2)
	Practical knowledge(A3)
Facilitation Skill	Interactive guidance ability(B1)
	Teaching management ability(B2)
	Technology empowers teaching ability(B3)
	Interdisciplinary knowledge analysis and integration ability(B4)
Teaching Reflection Competence	Interdisciplinary research competence(C1)
	Teaching innovation ability(C2)
	Evaluate students' abilities in a diversified way(C3)
	Self-evaluation ability(C4)

II. C. 2) Development of Teaching Competence Dimensions

In terms of the development of intercultural teaching competence dimensions for college English teachers, it should be combined with the actual teaching situation of the teachers in order to conform to their teaching work and teaching goals. Starting from the results of existing dimensions of teaching competence, the content and teaching objectives of English intercultural courses in colleges and universities, this paper designs three dimensions of Curriculum Design Competence, Facilitation Skill and Teaching Reflection Competence according to the three time periods of the teaching process before, during and after the teaching process, and the specific elements of intercultural teaching competence of English teachers in colleges and universities are shown in Table 1. The

dimension of Curriculum Design Competence is divided into three indicators: ontological knowledge, conditional knowledge, and practical knowledge; the dimension of Facilitation Skill is divided into four indicators: interactive guidance ability, teaching management ability, technology-enabled teaching ability, and cross-disciplinary knowledge analysis and integration ability; and the dimension of Teaching Reflection Ability is divided into four indicators: cross-disciplinary research ability, teaching innovation ability, multiple evaluation of students' ability, and self-evaluation ability.

II. C. 3) Definition of the dimension of teaching competence

Teaching competence, as a key comprehensive competence that teachers engaged in education should possess, covers a diversity of competence elements. In this paper, teaching ability refers to the synthesis of knowledge, skills, thinking and attitudes that a teacher should have in order to successfully accomplish the teaching of intercultural knowledge in English subject.

(1) Curriculum Design Competence

The new curriculum standards emphasize the need for teachers to strengthen their mastery of curriculum knowledge and set up a long-term plan for teachers to update their ontological and interdisciplinary knowledge in order to ensure the effective implementation and innovation of curriculum content.

Ontological knowledge, also known as subject matter content knowledge, refers to the subject matter knowledge that teachers are expected to possess when teaching, in this case the unique specialized knowledge of English teachers, which forms the cornerstone of knowledge in teaching English.

The term conditional knowledge refers to the pedagogical and psychological knowledge that teachers must have, and this knowledge is the pedagogical and psychological basis for their instructional design and implementation, and it reinforces the ontological knowledge of subject content.

The term practice-based knowledge refers to educators' understanding of the classroom environment and the pedagogy of the subject matter in question through concrete teaching and learning activities that help teachers to meet the challenge of “how to teach in a concrete way”. It is based on the accumulation and reflection of teachers' practical teaching experience in real classroom situations, and is characterized by three distinctive features: subjectivity (derived from teaching experience), contextualization (guiding teaching practice), and discipline-specificity (closely related to the discipline).

(2) Facilitation Skill

Interactive guiding ability refers to the ability to inspire students to think critically through questioning, discussion, debate, etc., which helps to enhance students' active thinking.

Teaching management ability is an important guarantee for the smooth running of teaching. In the process of teaching, teachers not only need to organize learning activities, but also need to adjust the atmosphere and master the rhythm of the classroom.

The ability of technology-enabled teaching refers to whether teachers can utilize digital tools to enhance the teaching effect, and whether they can guide students to practice cross-cultural communication through social media.

Interdisciplinary Knowledge Analysis and Integration Competence refers to the skill of integrating multiple dispersed knowledge points into a complete system. An interdisciplinary way of thinking can assist learners in examining problems from multiple perspectives, which in turn provides them with an all-encompassing solution strategy.

(3) Teaching Reflection Competence

Teachers' interdisciplinary research competence implies that teachers need to possess an interdisciplinary research perspective and consistently explore the intrinsic connections among various disciplines.

The ability to innovate in teaching can be defined as the ability to transform the past with an innovative way of thinking, or it can also be seen as a higher and newer requirement for teachers in the future society.

The ability to evaluate students in a diversified way is the ability of teachers to have an objective, personalized and timely assessment of students' learning outcomes. Teachers should promote teaching and learning through assessment, reflecting the consistency of “teaching-learning-assessment”.

The ability of self-evaluation refers to the ability of teachers to conduct objective and scientific evaluations of the implementation of the teaching process.

III. An empirical test of the cross-cultural teaching competence structure of English teachers in colleges and universities

III. A. Questionnaire Distribution and Data Collection

In this paper, the framework structure of intercultural teaching competence of English teachers in colleges and universities is preliminarily constructed by using qualitative research method, but whether this structure is reasonable or not needs to be empirically examined. Therefore, this paper takes Province A as the research site,

collects relevant data by distributing questionnaires, and then uses the software SPSS 22.0 and AMOS 24.0 to process them and improve the constructed structural model.

The questionnaire in general consists of two parts. The first part is for English teachers in colleges and universities to understand their basic information, such as the teachers' teaching age, education experience and other basic information, with a total of four questions. The second part of the questionnaire is based on the structural model of intercultural teaching competence of college English teachers, and analyzes the three aspects of Curriculum Design Competence, Facilitation skills and Teaching Reflection Competence, using a five-point Likert scale, with scores from 1 to 5 representing the range from “not at all” to “completely”, and this part is composed of two parts. The number of questions set in the three dimensions of this part are: Curriculum Design Competence (4), Facilitation Skill (8), Teaching Reflection Competence (5), with a total of 17 questions.

This paper adopts the online distribution of questionnaires to conduct the survey, firstly, all the questions of the revised questionnaire are sequentially entered into the platform of “Questionnaire Star”, and then the questionnaires are distributed and collected through the network within the scope of Province A. The target respondents of the questionnaire are mainly the English teachers of the colleges and universities from various places in Province A. The survey period is one month (September 8, 2024-October 8, 2024), and the survey period is one month (October 8, 2024). -October 8, 2024). A total of 262 questionnaires were distributed in this paper, and 262 questionnaires were returned, with a recovery rate of 100%. Then, the collected questionnaire information is organized and screened, and it is found that there are individual questionnaires with too short answer time and contradictory answers before and after, in order to ensure the validity of the data information, these invalid questionnaires are deleted, and the final valid questionnaires are 243, with an effective recovery rate of 92.7%. The basic information of the survey respondents is shown in Table 2, of which 117 are male, accounting for 48.15%, and 126 are female, accounting for 51.85%.

Table 2: Statistics of Basic Information of the Survey Subjects

Item	Category	Number of people	Percentage
Gender	Male	117	48.15%
	Female	126	51.85%
Teaching age	Less than 5 years	98	40.33%
	6 to 10 years	77	31.69%
	11 to 15 years	42	17.28%
	More than 15 years	26	10.70%
Highest academic degree	Undergraduate	118	48.56%
	Master's degree or above	125	51.44%
Professional title	Primary level	133	54.73%
	Intermediate level	65	26.75%
	Advanced level	45	18.52%

Table 3: Correlation between the total amount table and each dimension

Category	Curriculum Design Competence	Facilitation skill	Teaching Reflection Competence	Total scale
Curriculum Design Competence	1			
Facilitation Skill	0.748	1		
Teaching Reflection Competence	0.673	0.655	1	
Total scale	0.892	0.918	0.863	1

III. B. Data analysis of the questionnaire

III. B. 1) Exploratory factor analysis

Validity, i.e. validity, refers to the degree to which the scale can actually reflect the validity of the measurement results. This paper uses the software SPSS22.0 to analyze the correlation between the total scale and each dimension, and test whether it is significantly correlated, in which the larger the correlation coefficient, the higher the validity of the scale, the specific correlation coefficient matrix as shown in Table 3, “**” means P<0.01, * means P<0.05. By Table 3, it can be seen that there is a high correlation between the various dimensions of the scale, in which the correlation coefficient between Curriculum Design Competence and Facilitation Skill is 0.0. It can be seen that there is a high correlation between the dimensions of the scale, in which the correlation coefficient between Curriculum Design Competence and Facilitation Skill is 0.748, the correlation coefficient between Curriculum Design Competence and Teaching Reflection Competence is 0.673, and the correlation coefficient between Facilitation Skill

and Teaching Reflection Competenc is 0.655. In addition, the correlations between the scale as a whole and each of the dimensions were strong and all higher than the correlations between the dimensions. The correlation coefficients between Curriculum Design Competence and the total score were 0.892, Facilitation Skill and the total score were 0.918, and Teaching Reflection Competence and the total score were 0.863.

Structural validity refers to the correspondence embodied between the items and the variables, and is usually taken as the method of exploratory factor analysis. A total of three main factors (with eigenvalues greater than 1) were extracted using principal component analysis, and the eigenroots and variance contributions of the scale are shown in Table 4. The total explanation rate of the scale is 84.714%, which shows that the first 3 principal components can explain the 3 dimensions of Curriculum Design Competence, Facilitation Skill, and Teaching Reflection Competence.

Table 4: Characteristic Roots and Variance contribution Rates of the scale

Component	Initial eigenvalue			Extract the sum of squared loads			The sum of squared rotating loads		
	VE%	Var%	CVC%	VE%	Var%	CVC%	VE%	Var%	CVC%
1	9.324	54.564	54.564	9.324	54.564	54.564	5.553	32.496	32.496
2	3.288	19.242	73.806	3.288	19.242	73.806	4.875	28.529	61.025
3	1.864	10.908	84.714	1.864	10.908	84.714	4.048	23.689	84.714
4	0.872	5.103	89.817						
5	0.522	3.055	92.872						
6	0.405	2.370	95.242						
7	0.307	1.797	97.039						
8	0.162	0.948	97.987						
9	0.101	0.591	98.578						
10	0.061	0.357	98.935						
11	0.052	0.304	99.239						
12	0.038	0.222	99.461						
13	0.031	0.181	99.642						
14	0.025	0.146	99.788						
15	0.016	0.094	99.882						
16	0.011	0.064	99.946						
17	0.009	0.054	100.000						

Table 5: Component Matrix after Rotation

Item of question	Component		
	1	2	3
b3	0.846		
b1	0.831		
b2	0.805		
b5	0.772		
b4	0.753		
b6	0.742		
b7	0.731		
b8	0.728		
a2		0.805	
a3		0.783	
a1		0.721	
a4		0.709	
c1			0.842
c3			0.836
c2			0.808
c4			0.764
c5			0.725

Then the maximum variance method was applied to rotate the factors, and the rotated component matrix is shown in Table 5. According to Table 5, it can be seen that the 17 items included in the scale can be divided into 3 categories, which correspond to the preset 3 dimensions, among which 8 items such as b3, b1, b2, b5, b4, b6, b7, b8 belong to Factor 1 (the ability to implement teaching), and all of them have factor loadings greater than 0.7; 4 items such as a2, a3, a1, a4, and so on, belong to Factor 2 (the ability to plan for teaching), and all of them have factor The loadings are all greater than 0.7; c1, c3, c2, c4, c5 and other 5 questions belong to factor 3 (ability to reflect on teaching), and their factor loadings are all greater than 0.7. Through the above statistical analysis, it can be found that the structural validity of this scale is relatively good, and the 17 items contained in it can be retained through the validity test, and they are all valid items.

III. B. 2) Validation factor analysis

According to the operation procedure, the model diagram containing 3 dimensions and 11 measurement indicators was drawn in AMOS software, and after importing the data and running the program, it was found that the factor loadings of the total table were better in terms of initial fitness, but the fit was less satisfactory, so attempts were made to correct the indicators by deleting the question items or by establishing the relationship between the residuals.

By observing the correction indicators to find out the covariates with higher residual chi-square values, it was found that the MI values of e5 ↔ e8 and e6 ↔ e8 were larger, and considering the significance of the indicators in the model, the interactive guiding ability in the implementation of the teaching ability was deleted, and the model was further corrected on this basis. According to the parameter values provided by the amended indicators, the correlation between the residual items e5 ↔ e6 is added, and according to the analysis of the literature as well as practical experience, it can be seen that there is indeed a high correlation between each group of question items. The results of the corrected re-test are shown in Figure 1.

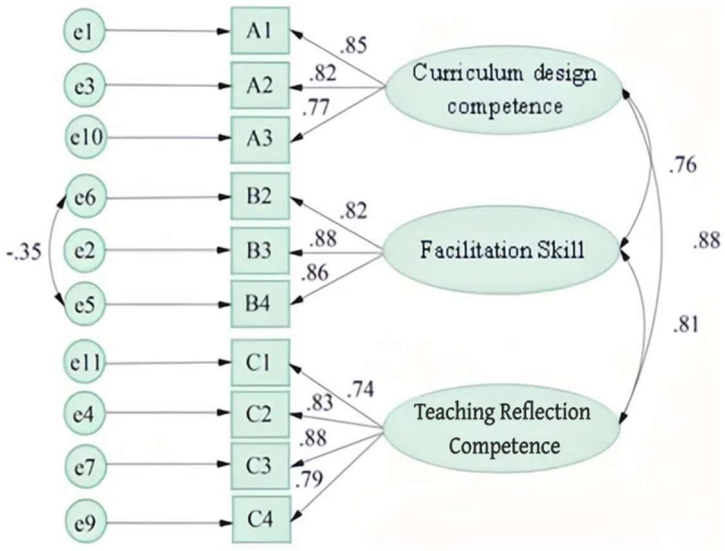

Figure 1: Validation of the overall table and analysis of the results

Observing the fit of the model, the fitness index of the total table validation factor is shown in Table 6. The data in Table 6 shows that the result of X^2/df shows 3.803<5, which indicates that the model fits the data well. The RMR value is 0.028<0.05, which meets the criterion of ideal fit.

Table 6: Compatibility indicators of verification factors

	X^2	df	X^2/df	RMR	GFI	AGFI	IFI	TLI	CFI
Numerical value	64.647	17	3.803	0.028	0.935	0.928	0.943	0.962	0.951
Suggested value	No absolute standard		<5	<0.05	>0.90				

In summary, all the fitness indicators of the intercultural teaching competence scale for college English teachers meet the test criteria and have a good fit.

III. C. Analysis of results

In the modified structural equation model of intercultural teaching competence of college English teachers, the influence effects among the hidden variables are shown in Table 7. As can be seen from Table

(1) Curriculum Design Competence of intercultural teaching of college English teachers has the greatest effect on the implementation teaching ability, and the total effect (i.e., the sum of direct and indirect effects) is 0.391, and the direct effect of Curriculum Design Competence of intercultural teaching of college English teachers on Facilitation Skill is 0.391, which indicates that the effect of Curriculum Design Competence that directly affects Facilitation Skill is greater, and for every one unit of improvement of Curriculum Design Competence, Facilitation Skill will be improved by 0.391 units. This suggests that the direct effect of Curriculum Design Competence on Facilitation Skill is greater, with each 1-unit increase in Curriculum Design Competence resulting in a 0.391-unit increase in Facilitation Skill. Curriculum Design involves the setting of teaching objectives, the integration of cross-cultural content and the design of teaching strategies. Adequate pre-planning can provide a clear framework for classroom implementation and reduce uncertainty.

(2) The total effect of English teachers' cross-cultural teaching Teaching Reflection Competence is 0.322. Reflection can reveal the deficiencies of the original plan and push teachers to optimize the teaching design, which is important for the improvement of teachers' Curriculum Design Competence.

(3) The total effect of college English teachers' cross-cultural teaching reflection ability on the Facilitation skill is 0.357, the direct effect is 0.251, and the indirect effect is 0.106. The insight gained from reflection can directly improve the teaching strategy, and teachers can improve the subsequent teaching through summarization.

(4) The indirect effect of college English teachers' intercultural teaching ability is " Teaching Reflection Competence → Curriculum Design Competence → Facilitation Skill", reflective ability improves the implementation effect by optimizing planning, and teachers can improve the teaching design to make it easier to implement.

Table 7: Influence effects among various latent variables

Relationships between hidden variables			Direct effect	Indirect effect	Total effect
Facilitation Skill	⇐	Curriculum Design Competence	0.391	0.000	0.391
Curriculum Design Competence	⇐	Teaching Reflection Competence	0.322	0.000	0.322
Facilitation Skill	⇐	Teaching Reflection Competence	0.251	0.106	0.357

Based on the results of the empirical analysis of the evaluation of intercultural teaching ability of college English teachers, the standardized path coefficients of the indicators of intercultural teaching ability of college English teachers are shown in Table 8. As shown in Table 8, Curriculum Design Competence has the most significant effect on practice-based knowledge, which is 0.889; Facilitation Skill has the most significant effect on the ability to analyze and integrate interdisciplinary knowledge, which is 0.935; and Teaching Reflection Competence has the most significant effect on interdisciplinary research ability, which is 0.922.

Table 8: Standardized Path Coefficients of Teaching Ability Indicators

Action path			Estimate
Facilitation skills	⇐	Curriculum Design Competence	0.391
Curriculum Design Competence	⇐	Teaching Reflection Competences	0.322
Facilitation Skill	⇐	Teaching Reflection Competences	0.251
Ontological knowledge	⇐	Curriculum Design Competence	0.873
Conditional knowledge	⇐	Curriculum Design Competence	0.856
Practical knowledge	⇐	Curriculum Design Competence	0.889
Teaching management ability	⇐	Facilitation Skill	0.901
Technology empowers teaching ability	⇐	Facilitation Skill	0.896
Interdisciplinary knowledge analysis and integration ability	⇐	Facilitation Skill	0.935
Interdisciplinary research competence	⇐	Teaching Reflection Competence	0.922
Teaching innovation ability	⇐	Teaching Reflection Competence	0.873
Evaluate students' abilities in a diversified way	⇐	Teaching Reflection Competence	0.855
Self-evaluation ability	⇐	Teaching Reflection Competence	0.868

IV. Conclusion

This paper constructs a structural model of intercultural teaching competence of college English teachers and analyzes its validity through factors. The results of the path effects of the factors are analyzed in order to propose strategies for college English teachers to improve their intercultural teaching competence.

(1) The structural model of intercultural teaching competence of college English teachers meets the validation standards.

There are high correlations between the dimensions of the scale, including the correlation coefficients of 0.748 for Curriculum Design Competence and Facilitation Skill, 0.673 for Curriculum Design Competence and Teaching Reflection Competence, and 0.655 for Curriculum Design Competence and Teaching Reflection Competence , 0.918, and 0.863, the total interpretation rate of the scale reached 84.714%, the result of X^2/df showed 3.803<5, the value of RMR was 0.028<0.05, and the values of GFI, AGFI, IFI, TLI, and CFI reached the criterion of >0.90.

This shows that the structural model of intercultural teaching competence constructed with college English teachers as the research object has certain practical value.

(2) Enhancement of College English Teachers' Intercultural Teaching Competence Should Realize Tripartite Cooperation

The total effect of college English teachers' intercultural teaching ability on the implementation of teaching ability is 0.391, and the total effect of Teaching Reflection Competence on the Curriculum Design Competence and Facilitation Skill is 0.322 and 0.357, respectively. The indirect effect of intercultural teaching ability is “Teaching Reflection Competence → Curriculum Design Competence → Facilitation Skill”. Curriculum Design Competence has the most significant effect on practical knowledge, 0.889; Facilitation Skill has the most significant effect on interdisciplinary knowledge analysis and integration ability, 0.935; Teaching Reflection Competence has the most significant effect on interdisciplinary research ability, 0.922.

Combining the hierarchical effect and dynamic correlation of the competence elements, the development of intercultural teaching competence of college English teachers must adopt a holistic strategy. Attaching importance to the synergistic effect of the three competencies, strengthening the underlying support of Curriculum Design Competence, activating Facilitation Skill, optimizing the practical transformation of reflection results, and thus realizing the precise enhancement of intercultural teaching Competence.

Funding

This work was supported by Higher Education Reform and Practice of Henan University of Urban Construction “Research on the Innovative Teaching Mode of Integrating Intercultural Communication Competence into Talent Cultivation of Foreign Language Majors” (Project Number: 2024JG258).

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