Influencing Factors on Information Technological Literacy for Dynamic Effective Teaching of College English Teachers in Shanxi, China

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Abstract

The research aimed to 1) study the current situation and expectation of college English teachers in Shanxi, China; 2) study the various factors affecting information technological literacy for dynamic effective teaching of college English teachers in Shanxi, China; 3) analyze the mediating roles of Advance tutorial and creation competency, Technological innovation enhancement and Information technological literacy, between various factors and Dynamic effective teaching; 4) improve Chinese English teachers' information technological literacy for dynamic effective teaching. This study adopts mixed research method, using survey questionnaires and semi-structured interviews. The survey questionnaire data was collected from 443 English teachers at universities in Shanxi Province, China, and interview data was collected from 17 of them. The collected data were analyzed using descriptive statistics, and software package was also used to run model analysis and analyze output results. The findings revealed that 1) Policy and regulation pressure, Dynamic learning culture, Intensive competitive environment and Technological availability have positive effects on Advance tutorial and creation competency as well as Technological innovation enhancement; 2) Advance tutorial and creation competency and Technological innovation enhancement have positive effects on Information and technological literacy; 3) Information and technological literacy has a positive effect on Dynamic effective teaching; 4) The mediation role of Information and technological literacy between Advance tutorial and creation competency, Technological innovation enhancement and Dynamic effective teaching; 5) Advance tutorial and creation competency and Technological innovation enhancement have positive effects on Dynamic effective teaching; 6) There are cascading mediating effects of mediating variables between independent variables and dependent variables.

Introduction

The history of higher education research shows increasing recognition of its role in educational policy formulation and practice guidance. Initially, education research was separate from teaching but evolved to integrate with it. In the knowledge society, universities face new challenges like the shift to a buyer's market and diverse student expectations, prompting teachers to research and improve their teaching. College English teachers must use information technology tools effectively for digitized instruction, online learning, and personalized teaching. This requires proficiency in online resources, efficient course planning, collaboration facilitation, and feedback mechanisms. Teachers also need information literacy for effective teaching in information-rich environments, constantly updating skills to stay relevant.

Teacher information literacy pedagogical research focuses on improving teaching practices and competence, using qualitative approaches based on teaching experience. Despite challenges in research originality and promotion, it's crucial for enhancing teaching quality and effectiveness. A case study in Shanxi Province, China, highlights challenges in information literacy teaching research and the need for methodological training to improve teaching quality. China's educational informatization efforts have significantly impacted education, emphasizing the importance of integrating information technology into teaching practices to create dynamic learning environments and improve educational equity and quality.

In China, the incorporation of information technology into teaching practices is crucial for creating dynamic learning environments and improving educational quality. However, many college English teachers lack information technological literacy due to various factors, necessitating targeted interventions and professional development initiatives to bridge this gap.

RESEARCH QUESTIONS

1: What is the current situation and expectation of college English teachers?

2: What are the factors affecting China's college English teachers' information technological literacy for dynamic effective teaching?

3: What are mediating roles via policy, dynamic, competitive environment, technological availability and dynamic effective teaching?

4: How to improve Chinese English teachers' information technological literacy for dynamic effective teaching?

RESEARCH OBJECTIVES

1. To study the current situation and expectation of college English teachers in Shanxi, China.

2. To study the various factors affecting information technological literacy for

dynamic effective teaching of college English teachers in Shanxi, China.

3. To analyze the mediating roles of Advance tutorial and creation competency, Technological innovation enhancement and Information technological literacy, between various factors and Dynamic effective teaching.

4. To improve Chinese English teachers' information technological literacy for dynamic effective teaching.

RESEARCH HYPOTHESIS

H1: Policy and regulation pressure has a positive effect on Advance tutorial and creation competency.

H2: Policy and regulation pressure has a positive effect on Technological innovation enhancement.

H3: Dynamic learning culture has a positive effect on Advance tutorial and creation competency.

H4: Dynamic learning culture has a positive effect on Technological innovation enhancement.

H5: Intensive competitive environment has a positive effect on Advance tutorial and creation competency.

H6: Intensive competitive environment has a positive effect on Technological innovation enhancement.

H7: Technological availability has a positive effect on Advance tutorial and creation competency.

H8: Technological availability has a positive effect on Technological innovation enhancement.

H9: Advance tutorial and creation competency has a positive effect on Information and technological literacy.

H10: Technological innovation enhancement has a positive effect on Information and technological literacy.

H11: Information and technological literacy has a positive effect on Dynamic effective teaching.

H12: The mediation role of Information and technological literacy between Advance tutorial and creation competency and Dynamic effective teaching.

H13: The mediation role of Information and technological literacy between Technological innovation enhancement and Dynamic effective teaching.

H14: Advance tutorial and creation competency has a positive effect on Dynamic effective teaching.

H15: Technological innovation enhancement has a positive effect on Dynamic effective teaching.

H16: There are cascading mediating effects of Advance tutorial and creation
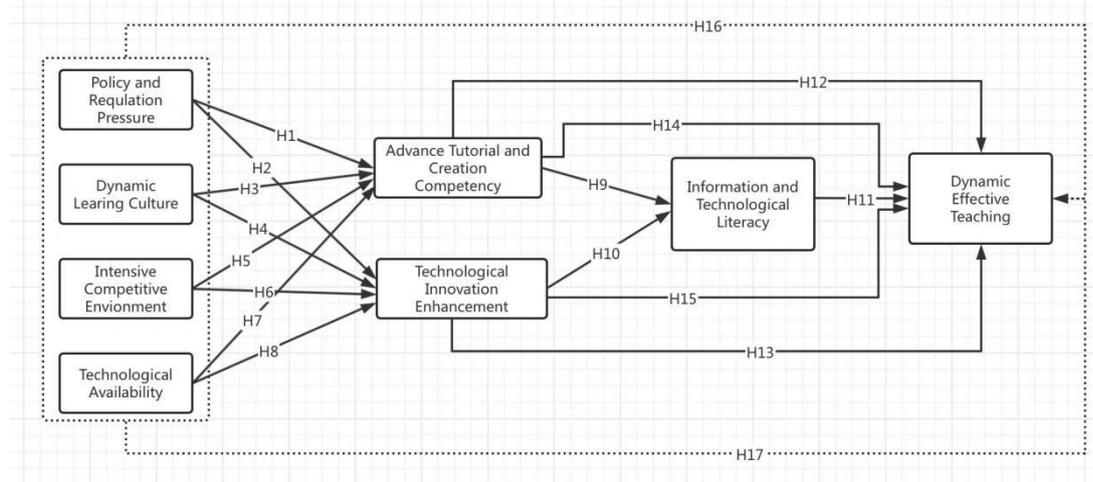
competency and Information and technological literacy between Policy and regulatory pressures, Dynamic learning cultures, Intensive competitive environments, Technology availability, and Dynamic effective teaching.

H17: There are cascading mediating effects of Technological innovation enhancement and Information and technological literacy between Policy and regulatory pressures, Dynamic learning cultures, Intensive competitive environments, Technology availability, and Dynamic effective teaching.

CONTRIBUTION

The research provides theoretical references for university English teachers, offering insights into challenges and factors influencing information technological literacy. At the same time, this study proposes views on how to improve the information technological literacy of English teachers for dynamic effective teaching: reasonable policy and regulatory pressures, dynamic learning culture, intensive competitive environment, and technological availability can promote the improvement of information technological literacy of English teachers in universities from both external and internal perspectives, thus enabling effective teaching. In addition, advance tutorial and creation competency as well as technological innovation enhancement also play an important mediating role. This study also provides suggestions for training programs, incentive measures, and technological infrastructure to improve information technological literacy and thus enhance teaching quality. Recommendations for policy-making in English language teaching in Chinese higher education are derived from the research findings.

CONCEPTUAL FRAMEWORK

Independent variable: Policy and Regulation Pressure; Dynamic Learning Culture; Intensive Competitive Environment; Technological Availability

Mediating Variable: Advance Tutorial and Creation Competency; Technological Innovation Enhancement

Dependent Variable: Information and Technological Literacy; Dynamic Effective Teaching

THEORIES AND LITERATURE REVIEWS

A total of five theories were used in this study, namely, Effective Teaching Theory, Literacy Theory, Integration Theory, Innovation Diffusion Theory and Constructivist Learning Theory. The literature on core variables and hypothesis will also be presented in this section.

Theories

The famous American educator, Silberman, published a book called "The Crisis in the Classroom" in 1970, which proposed the Effective Teaching Theory (Ethel and Mcmeniman, 2000). It helped unify moral education and subject knowledge teaching in the same teaching process, and proposed the famous teaching form stage theory, namely clarity, association, system, and method.

Literacy Theory is concerned with the meaning production process and with individual responses to texts, which was proposed by David Barton in 1988 (Whittingham, 2019). Literary literacy is not a one-dimensional concept, it is a model that includes a critical dimension, a cultural dimension and an operational dimension .

Integration Theory is an interdisciplinary method for comprehending how different entities integrate with one another. With contributions from academics in a variety of fields, including political science, economics, sociology, and international relations, it has changed over time. For instance, political scientist Haas made a contribution to integration theory by developing the idea of "neofunctionalism" (Marsh, Xu and Parker, 2021).

A sociological theory called Innovation Diffusion Theory aims to explain how novel concepts, innovations, products, or practices gradually permeate a society or divide social groups. This theory investigates the trends, processes, and variables that affect how innovations are embraced and spread. Everett Rogers conducted a thorough investigation of the idea of innovation diffusion in his groundbreaking book "Diffusion of Innovations," which was first released in 1962 (Bage, 2019).

Constructivist Learning Theory is an approach to education and learning that places an emphasis on students' active construction of their worldview. According to this theory, rather than just passively absorbing information from outside sources, students actively construct knowledge and meaning through their experiences, interactions, and reflections (Deng, Zhang and Chen, 2020). The constructivist learning theory was proposed by American psychologist and cognitive scientist Jerome Bruner in 1960 (Deng et al., 2020).

Literature reviews

Information and technological literacy refers to a person's capacity to use, assess, and manage information in addition to using tools and resources from technology to solve issues (Jin and Li, 2023). This covers knowledge of, and use of, information and technology innovation (Jin and Li, 2023). The ability to gather, assess, produce, and distribute information is all part of information literacy, which also encompasses the capacity to communicate

clearly while utilizing a variety of technological tools and media.

Dynamic effective teaching refers to educators actively use the newest educational technologies to enhance the appeal and efficacy of their instruction (Peng, 2017). These technologies include virtual experiments, multimedia resources, online learning platforms, and more (Peng, 2017). Personalized learning, in which teachers provide students tasks and instructional materials tailored to their learning levels and needs in order to maximize their learning potential, is the cornerstone of dynamic and effective teaching.

Technological innovation enhancement refers to the process of developing technological talents with innovative abilities, raising the technological bar for talent, and encouraging the advancement of technology and innovation capacity across society (Chen, 2023). In order to support sustainable economic and social development, new technological means must be introduced, new ways of thinking must be adopted in technological research and development, scientific discoveries, and engineering applications.

H1: Policy and regulation pressure has a positive impact on Advance tutorial and creation competency. By establishing standards for curriculum development, teaching methods, and evaluation practices, policies and regulatory pressures in higher education often emphasize the necessity of quality assurance, which has a positive impact on advanced courses and creative abilities (Mannion and Adey, 2023). Under the pressure of complying with these standards, universities will strengthen the supervision and management of advanced courses and encourage teachers to explore creative teaching methods. Some policies and regulations aim to encourage innovation in higher education.

H2: Policy and regulation pressure has a positive impact on Technological innovation enhancement. University technical infrastructure can be continuously improved and innovated upon by universities under pressure to comply with regulations that typically set standards for data security and technical practices (Brown and Cohen, 2019). Universities are under pressure from the government and regulatory bodies to embrace digital transformation. This pressure can lead to increased funding for cutting-edge technologies, increased efficiency, and increased competitiveness overall.

H3: Dynamic learning culture has a positive effect on Advance tutorial and creation competency. The dynamic learning environment places a strong emphasis on adaptability and flexibility, encouraging students to continually experiment with new teaching strategies and resources (Shi and Qi, 2020). This helps them make better use of advanced tutorials to increase their knowledge and proficiency (Shi and Qi, 2020).

H4: Dynamic learning culture has a positive effect on Technological innovation enhancement. The dynamic learning environment fosters interdisciplinary collaboration and communication, which can result in experts, educators, and students from various fields exchanging information and insights, fostering interdisciplinary thinking in technological innovation (Sena, 2020). The dynamic learning culture places a strong emphasis on cooperation and teamwork.

H5: Intensive competitive environment has a positive effect on Advance tutorial and creation competency. People may encounter a variety of obstacles and issues in a highly competitive setting, which fosters their capacity for creativity and problem-solving (Rather, 2021). Developing creative skills and taking part in advanced tutorials could be two approaches to overcoming these obstacles.

H6: Intensive competitive environment has a positive effect on Technological innovation enhancement. Strong competition may encourage business owners and startups to experiment with cutting-edge technologies (Rather, 2021). Organizations may decide to invest more in R&D to create new technologies, goods, or services in response to fierce competition.

H7: Technological availability has a positive effect on Advance tutorial and creation competency. Modern technology facilitates distance learning and collaboration, allowing students to take part in challenging tutorials from any location. Diverse perspectives and innovative teamwork can be fostered in this cooperative and remote learning setting (Mohammed, Baig and Gururajan, 2019) .

H8: Technological availability has a positive effect on Technological innovation enhancement. Technology availability facilitates people's access to the required technological infrastructure, which fosters and enhances technological innovation. Technology accessibility fosters open innovation models, which use teamwork and collaborative innovation to advance technology (Clark, Edwards, Davies and Leaton, 2021).

H9: Advance tutorial and creation competency has a positive effect on Information and technological literacy. Teachers and students can improve their digital literacy by learning how to use digital resources, such as different online tools, databases, and digital content, more skillfully through advanced tutorials and creative activities (Lotan, 2019). The development of creative ability requires technical application and practice in real-world situations.

H10: Technological innovation enhancement has a positive effect on Information and technological literacy. The ongoing development of digital tools and applications has been fueled by technological innovation, which increases people's information literacy and gives them access to and comprehension of the newest tools, resources, and trends in technology (Roliak, 2019). Learners can increase their technical literacy and make better use of digital resources by becoming proficient with new digital tools (Roliak, 2019).

H11: Information and technological Literacy has a positive effect on Dynamic effective teaching. Teachers can improve the depth and breadth of dynamic teaching by creating a more comprehensive learning experience by integrating technology and information from various fields (Zainuddin, Zhang and Liu, 2019). Teachers who are proficient in information and technology can produce and employ multimedia instructional materials, which enhance and animate the subject matter and draw in students (Zainuddin et al, 2019).

H12: The Mediation role of Information and technological literacy between Advance

tutorial and creation competency and Dynamic effective teaching. Teachers who improve their information literacy may be more adept at gathering, evaluating, and applying knowledge from tutorials. Teachers can use more targeted information resources to generate creative ideas because increased information literacy fosters the development of creative abilities (Zainuddin et al, 2019).

H13: The Mediation role of Information and technological literacy between Technological innovation enhancement and Dynamic effective teaching. The degree of teachers' information and technology literacy will have an impact on how well they comprehend, use, and adjust to new technological advancements as well as how they incorporate these advancements into their lesson plans (Zhou and Guo, 2020). The introduction of technological innovation may encourage teachers and students to raise their level of technical literacy because new educational technology tools and platforms may require users to have specific digital skills and information processing capabilities.

H14: Advance tutorial and creation competency has a positive effect on Dynamic effective teaching. More in-depth and thorough academic content can be found in advanced tutorials, and teaching calls for critical thinking and comprehension (Zhou and Guo, 2020). Teachers are better equipped to adjust to changing teaching environments when they have a strong knowledge base thanks to this in-depth learning and reflection process (Zhou and Guo, 2020).

H15: Technological innovation enhancement has a positive effect on Dynamic effective teaching. By using digital tools for course design, resource sharing, and teaching management, educators can streamline administrative tasks, improve lesson planning and organization, and free up more time for student support and engagement (Clark and Isenberg, 2020). Thus, innovation in technology can enhance the effectiveness of instruction. Teachers can use technological innovation to extend their learning scenarios and give students the opportunity to learn at various times and locations.

H16: There is a cascading mediating effect of Advance tutorial and creation competency and Information and technological literacy between Policy and regulation pressure, Dynamic learning culture, Intensive competitive environment, Technological availability and Dynamic effective teaching. Policies and regulations pertaining to education can exert direct pressure on schools and other educational institutions, causing them to implement appropriate strategies and measures (Lotan, 2019). A dynamic learning environment encourages teachers to actively participate in advanced courses and develop their innovative skills by helping them accept and apply new information and ideas. A competitive environment can also foster creativity in educators by encouraging them to try out novel teaching strategies, which in turn can advance the practice of engaging and productive instruction (Clark and Isenberg, 2020). Technology availability may motivate educators and students to improve their technological and information literacy, allowing them to make better use of the tools already in place to support teaching and learning

(Lotan, 2019). The advancement of information and technology literacy could foster innovative teaching practices by enabling more focused implementation plans for dynamic and successful instruction.

H17: There is a cascading mediating effect of Technological innovation enhancement and Information and technological literacy between Policy and regulation pressure, Dynamic learning culture, Intensive competitive environment, Technological availability and Dynamic effective teaching. Higher information and technology literacy improves dynamic and effective teaching, helps instructors better use and adapt to new technologies, and ultimately boosts university competitiveness (Zhou and Guo, 2020). In order to stay competitive in the highly competitive educational market of today, academic institutions and instructors must continuously innovate and boost productivity.

RESEARCH METHODOLOGY

Based on the research questions and research objectives, this study utilizes Sequential Mixed Methods Research (SMMR), Exploratory Sequential Design, which combines elements of quantitative and qualitative research in order to gain an in-depth understanding and interpretation of the research questions. This study adopts mixed research method, using survey questionnaires and semi-structured interviews.

There are a total of 34 universities in Shanxi Province, China. 34 universities are grouped according to the number of college English teachers (S/M/L), with 20 universities in S group, 10 universities in M group, and 4 universities in L group. Finally, 17 universities were selected as the survey subjects. Group S selected 10 universities, including the 5 universities with the highest number of college English teachers and the 5 universities with the lowest number of teachers; Group M selected 5 schools from the 3 schools with the highest number of college English teachers and the 2 universities with the lowest number of teachers in this group; Group L selected two universities, one with the highest number of college English teachers and one with the lowest number of teachers. There are 1126 English teachers from 17 universities.

In this study, Taro Yamane's (1960) sampling formula was used to determine the sample size. The formula has a margin of error of 5% and the results showed that the sample size should be 316 English teachers from 17 universities. In this study, 443 samples were distributed, and the recovered samples will be analyzed for effective data cleaning and elimination of. To determine the dimensions of influencing factors on information technological literacy for dynamic effective teaching of college English teachers in Shanxi Province, China, the required semi-structured interviews were conducted with 17 English teachers. One English teacher from each of the sample schools according to the number of schools, all of whom had rich teaching management experience and solid academic background.

RESULT

Data collection involved online QR codes and links, with analysis performed using SPSS 27.0 and AMOS 26.0 software. Various statistical methods, including reliability and validity analysis, Pearson correlation analysis, and structural equation modeling path analysis using AMOS, were used to assess variable relationships. The model's fit indices met criteria, and Bootstrapping was applied to test for significant mediating effects.

Descriptive Statistical Analysis of samples

Table 1 Basic Information

Item	Indicators	Frequency	Percentage
Gender	male	68	15.3
	female	375	84.7
age	Under 30	35	7.9
	30-40 years old	168	37.9
	41-50 years	169	38.1
	51 years and over	71	16.1
education	bachelor's degree	9	2
	master's degree (MSc)	336	75.8
	doctoral degree	98	22.1
title	Teaching assistant	22	5
	Lecturer	332	74.9
	Associate professor	66	14.9
	Professor	23	5.2
Working Years	1-5 years	40	9
	6-15 years	221	49.9
	16-25 years	177	40
	Over 25 years	5	1.1
	Total	443	100

Reliability

Table 2 Reliability Analysis

Variables	Cronbach's Alpha	N of Items
Policy and Regulation Pressure (PRP)	0.888	5
Dynamic Learning Culture (DLC)	0.873	5
Intensive Competitive Environment (ICE)	0.881	5
Technological Availability (TA)	0.894	5

|		
Advance Tutorial and Creation Competency (ATCC)	0.901	5
Technological Innovation Enhancement (TIE)	0.919	5
Information and Technological Literacy (ITL)	0.897	5
Dynamic Effective Teaching (DET)	0.907	5

The results in the table show high Cronbach's **α** coefficients for each variable, indicating strong internal consistency and reliability.

Validity

Table 3 KMO and Bartlett's Test

Kaiser-Meyer-Olkin		0.970
Bartlett's Test of Sphericity	Approx. Chi-Square	13374.322
	df	780
	Sig.	0.000

The results of the test showed that the KMO test value of the survey data was 0.970, which was greater than 0.70, indicating that the questionnaire was suitable for factor analysis. The Bartlett's test of sphericity showed an approximate chi-square value of 13374.322, which was a value greater than zero, with a probability of significance of 0.000 (p<0.01), thus rejecting the null hypothesis of the Bartlett's test of sphericity. It is considered that the scale is suitable for factor analysis and therefore has a good validity structure.
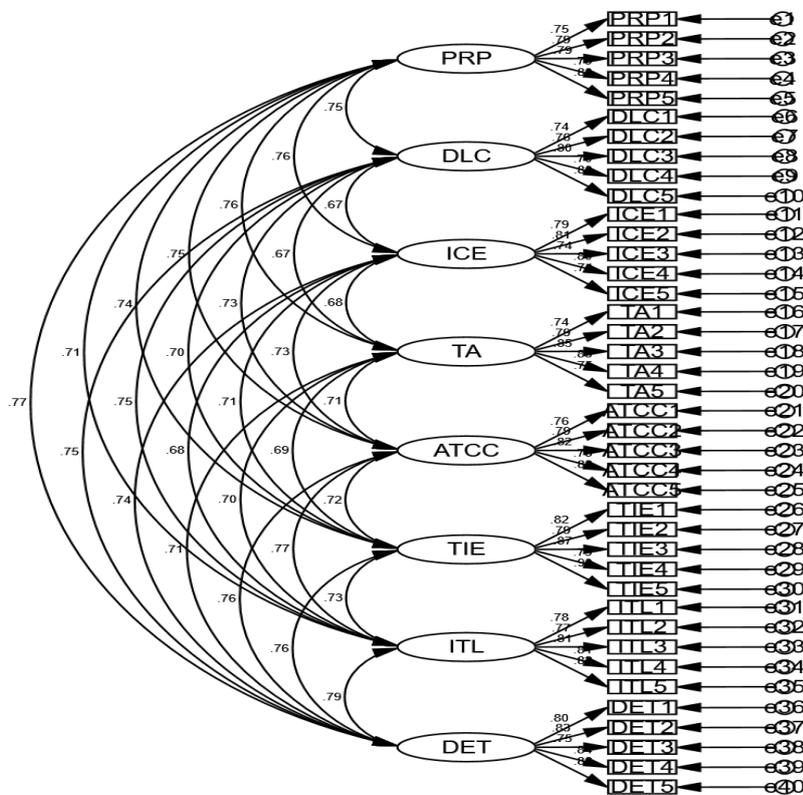
Fig. 1 Diagram of standardized validated factor analysis model

Table 4 Validated factor analysis fit

Reference Indicators	CMIN/DF	FI	GFI	NFI	FI	LI	CFI	MSEA
statistical value	1.816	0.876	0.857	0.906	0.956	0.951	0.955	0.045
Adaptation Standards	3	>0.85	>0.85	>0.9	>0.9	>0.9	>0.9	<0.08
Adaptation results	favorable	acceptable level	favorable	favorable	favorable	favorable	favorable	favorable

According to the criteria of model fitting indicators, the model's fitting indicators are all in line with requirements , so the path of the model is analyzed.

Related analysis

Table 5 Distinguishing validity statistics test

	PRP	DLC	ICE	TA	ATCC	TIE	ITL	DET
PRP	0.786							
DLC	0.667**	0.762						
ICE	0.678**	0.594**	0.776					
TA	0.675**	0.586**	0.611**	0.792				
ATCC	0.684**	0.663**	0.663**	0.635**	0.806			
TIE	0.667**	0.635**	0.646**	0.622**	0.663**	0.835		
ITL	0.634**	0.663**	0.611**	0.625**	0.690**	0.670**	0.798	
DET	0.694**	0.666**	0.667**	0.644**	0.691**	0.704**	0.713**	0.815

The square root value of diagonal AVE, which is greater than the absolute value of the correlation coefficient between this factor and other factors, indicates that the variables are well differentiated.

Structural Equation Modeling
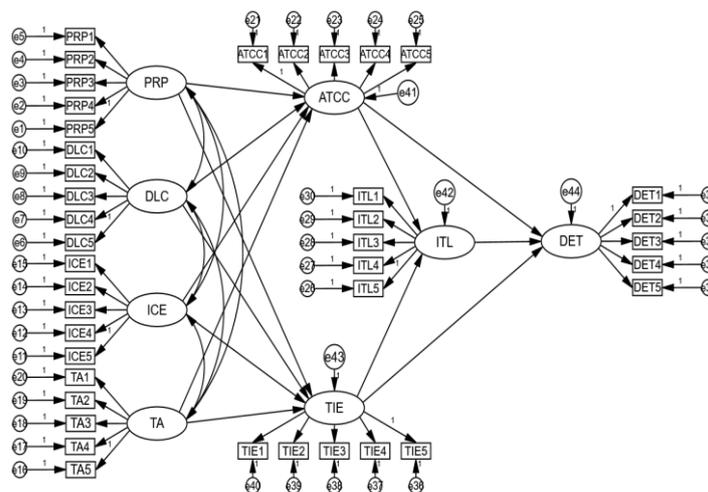
Fig. 2 Model diagram of initialized structural equations

Table 6 Model fitness in this study

Adaptation index	Adaptation Standards	model fitness value
χ2/df	<3	1.895
G FI	> 0.85	0.868
AGFI	> 0.80	0.850
RMSEA	<0.08	0.041
NFI	> 0.9	0.901
TLI	> 0.9	0.946
CFI	> 0.9	0.951
PGFI	>0.5	0.763
PNFI	>0.5	0.833

All the results of the model fitting in this study reached the evaluation criterion, and the results of the model were good. The structure of the empirical data matches the conceptual model.

Testing the direct impact between variables

Table 7 Significance test of path coefficients of latent variables

Impact pathways			Estimate	Std. Estimate	S.E.	C.R.	P
ATCC	<---	PRP	0.175	0.195	0.067	2.618	***
ATCC	<---	DLC	0.282	0.303	0.056	5.071	***
ATCC	<---	ICE	0.256	0.259	0.060	4.259	***
ATCC	<---	TA	0.216	0.202	0.063	3.442	***
TIE	<---	PRP	0.273	0.224	0.094	2.890	***
TIE	<---	DLC	0.325	0.257	0.077	4.223	***
TIE	<---	ICE	0.330	0.247	0.084	3.932	***
TIE	<---	TA	0.275	0.190	0.088	3.123	0.002
ITL	<---	ATCC	0.595	0.517	0.066	9.015	***
ITL	<---	TIE	0.321	0.378	0.045	7.184	***
DET	<---	TIE	0.308	0.334	0.050	6.205	***
DET	<---	ATCC	0.387	0.309	.076	5.089	***

Impact pathways			Estimate	Std. Estimate	S.E.	C.R.	P
DET	<---	ITL	0.327	0.300	.071	4.592	***

CONCLUSION

A major area of concern in both theoretical and practical domains is how to enhance dynamic and effective teaching in light of the opportunities and challenges presented by the widespread use of information technology in college English instruction. Through an exploration of the factors influencing college English teachers' information technology literacy, as well as the mediating role of advanced tutoring and creative abilities, and the enhancement of technological innovation, this study seeks to improve dynamic and effective teaching. The study object was identified as English instructors in universities in Shanxi Province, China, based on an examination and introduction of effective teaching theory, literacy theory, integration theory, innovation diffusion theory, and constructivist learning theory. A research framework was also developed. The current state of information technology literacy and dynamic effective teaching among college English teachers was analyzed and core issues were evaluated using quantitative and qualitative research methods through questionnaire surveys and semi-structured interviews. This study aims to provide new perspectives and practical insights for improving the information technology literacy of college English teachers and achieving dynamic and effective teaching. It also explores the mediating role of advanced tutoring, creative abilities, and technological innovation enhancement. Finally, it provides references for future teacher training and college English reform. These are the main contributions of this research.

DISCUSSION

All English teachers who were interviewed stated that certain policies promote creativity and innovation in advanced courses by offering incentives, funding, and other resources, and laws and regulations can direct technological innovation toward satisfying societal needs. The dynamic learning environment places a strong emphasis on adaptability and flexibility, encouraging teachers to continually experiment with new teaching strategies and resources. In dynamic learning environments, students are more likely to come across real-world problems and are motivated to find creative solutions, which helps foster the potential for technological innovation. Teachers who were interviewed stated that people need to be more adaptable in highly competitive environments in order to adjust to constantly changing conditions. This may lead them to look for more advanced tutorials in order to stay sensitive to new knowledge and skills, but being more adaptable can also foster creativity. When universities are facing intense competition, teachers are inclined to work together and pool their resources for innovation and technology, which could hasten the pace of technological advancement. Personalized learning platforms can offer content

that is tailored to each student's level and interests. This helps to better meet each student's unique learning needs and increases the efficacy of advanced tutorials. Teachers can also experiment and try new ideas more easily when they have access to technology.

The focus of advanced tutoring and creative skills is on the ability to synthesize information, which helps teachers become more adept at gathering, arranging, and evaluating data. Taking part in technological innovation projects can help teachers become more technically literate and gain more real-world experience by helping them understand how technology is used in everyday situations. Teachers who are proficient in information and technology can produce and employ multimedia instructional materials, which enhance and animate the subject matter and draw in students. Information technology literacy facilitates individualized and differentiated instruction. Teachers can closely integrate dynamic and effective teaching, get timely feedback, better understand and apply new technologies, and support technological innovation enhancement by utilizing information and technology tools. Taking advanced courses in-depth can help teachers develop their analytical and critical thinking skills. Teachers can use technological innovation to extend their learning scenarios and give students the opportunity to learn at various times and locations.

RECOMMENDATION AGENDA

According to the research results, the path coefficients of the five hypotheses are lower than those of the other hypotheses. Therefore, there are some suggestions for these hypotheses. H1: Policy and regulation pressure has a positive impact on Advance tutorial and creation competency. The path coefficients of H1 is 0.195. Policies ought to make an effort to strike a balance between creative instruction and normative requirements. H8: Technological availability has a positive effect on Technological innovation enhancement. The path coefficients of H8 is 0.19. When analyzing this issue, it is necessary to comprehensively consider the overall impact of technological availability on innovation. The situation may vary in different industries and innovation activities. H12: The Mediation role effect of Information and technological literacy between Advance tutorial and creation competency and Dynamic effective teaching. The path coefficients of H12 is 0.047. Create equitable policies to guarantee that educational resources are distributed fairly in classrooms and to close the digital divide. More assistance from the government is possible to guarantee that schools receive equal benefits from technical resources and training. H13: The Mediation role effect of Information and technological literacy between Technological innovation enhancement and Dynamic effective teaching. The path coefficients of H13 is 0.03. In order to reduce the digital divide and guarantee that all students have equal access to technology support, the government and educational institutions should make sure that information technology resources are distributed fairly. H17: There is a cascading mediating effect of Technological innovation enhancement and Information and technological literacy between Policy and regulation pressure, Dynamic learning culture, Intensive competitive environment,

Technological availability and Dynamic effective teaching. The path coefficients of H17 is 0.029. To prevent placing too much emphasis on exam-oriented approaches, create comprehensive policies and regulations, define the objectives of promoting technological innovation and information technology literacy, and offer targeted support measures and implementation plans. Encourage educational institutions to create a dynamic, practice-oriented learning environment.

RESEARCH CONTRIBUTION

The study emphasizes the practical value of data analyses, findings, and recommendations for English education administrators, teacher trainers, and teachers in adapting to the information age. The research contributes to the Sustainable Development Goal by addressing the challenges and factors influencing information technological literacy for college English teachers in China. Recommendations for improvement align with the goal of enhancing the quality of English teaching in China's higher education institutions. The study underscores the positive significance of promoting dynamic effective teaching through improved information technological literacy, aligning with the broader goal of advancing education quality.

FUTHER RESEARCH

Pedagogical Strategies: Examine particular pedagogical strategies that improve teachers' proficiency with technology and their ability to function well in dynamic classroom settings. Technology Integration: Examine how teachers' technological literacy and teaching outcomes are affected by the integration of particular technologies, such as educational apps, interactive whiteboards, and internet resources. Professional Development: Research how training workshops and professional development programs enhance college English instructors' technological literacy and capacity to provide engaging and successful instruction. Student Engagement: Examine how teachers' use of technology to engage students and their technological literacy relate to each other, as well as how this affects the motivation and learning outcomes of the students. Contextual Factors: Take into account how teachers' technological literacy and instructional strategies are impacted by contextual factors like institutional support, availability of technology infrastructure, and cultural perspectives on technology. Through further exploration of these domains, scholars can acquire a more all-encompassing comprehension of the elements that mold college English instructors' technological literacy and its influence on dynamic, efficient instruction in Shanxi, China.

REFERENCES

Ethel, R. G., & McMeniman, M. M. (2000). Unlocking The Knowledge in Action of An Expert Practitioner. Journal of Teacher Education.

Whittingham, C. E. (2019). Geosemiotics Social Geography: Preschool Places and School(ed) Spaces. Journal of Literacy Research.

Marsh, H. W., Xu, K. M., Parker, P. D., Hau, K. T., Pekrun, R., Elliot, A., Basarkod, G. (2021). Moderation of The Big-Fish-Little-Pond Effect: Juxtaposition of Evolutionary (Darwinian-Economic) and Achievement Motivation Theory Predictions Based on A Delphi Approach. Educational Psychology Review.

Bage, G. (2019). Lessons and Lacunae? Practitioners' Suggestions for Developing Research-rich Teaching and Learning: Angles on Innovation and Change. Innovations in Education and Teaching International.

Deng, A., Zhang, T., & Chen, A. (2020). Challenges in Learning Aerobic and Anaerobic Concepts: An Interpretative Understanding from The Cognitive Load Theory Perspective. Physical Education and Sport Pedagogy.

Jin, J., & Li, C. X. (2023). The Path to Enhancing Informationized Teaching Ability of College Teachers in the Era of Smart Education. China Information Technology Management, (09), 186-192.

Peng, N. (2017). Exploration on the Construction of the Dynamic Teaching System for Effective College English Instruction. Modern Communication, (23), 163.

Chen, X. (2023). Exploration of the Integrated Development of College English Teaching and Information Technology: A Review of "Research on Innovative Teaching in College English under the Informationized Background." Foreign Language Electronic Teaching, (03), 111.

Mannion, G., & Adey, C. (2023). Place-Based Education Is An Intergenerational Practice. In Children, Youth and Environments.

Brown, H. S., & Cohen, M. J. (2019). Climate-governance Entrepreneurship, Higher-order Learning, and Sustainable Consumption: The Case of The State of Oregon, United States. In Climate Policy.

Shi, C.J., & Qi, Q.J. (2020). An Integration of Internet IPR Synchronous Teaching on Learning Outcomes. Revista de Cercetare si Interventie Sociala.

Sena, A. (2020). The Influence of Organizational Culture, Job Satisfaction, and Professional Commitment on Innovative Behavior of Flight Instructors at the Civil Flight School in Indonesia.

Rather, R. A. (2021). Demystifying The Effects of Perceived Risk and Fear on Customer Engagement, Co-creation and Revisit Intention During COVID-19: A Protection Motivation Theory Approach. Journal of Destination Marketing and Management.

Mohammed, A. A., Baig, A. H., & Gururajan, R. (2019). The Effect of Talent Management Processes on Knowledge Creation. Journal of Industry-University Collaboration.

Clark, H., Edwards, A., Davies, R., Bolade, A., Leaton, R., Rathouse, R., Gibson, O. (2021). Non-contact Physical Health Monitoring in Mental Health Seclusion. Journal of Psychiatric Intensive Care.